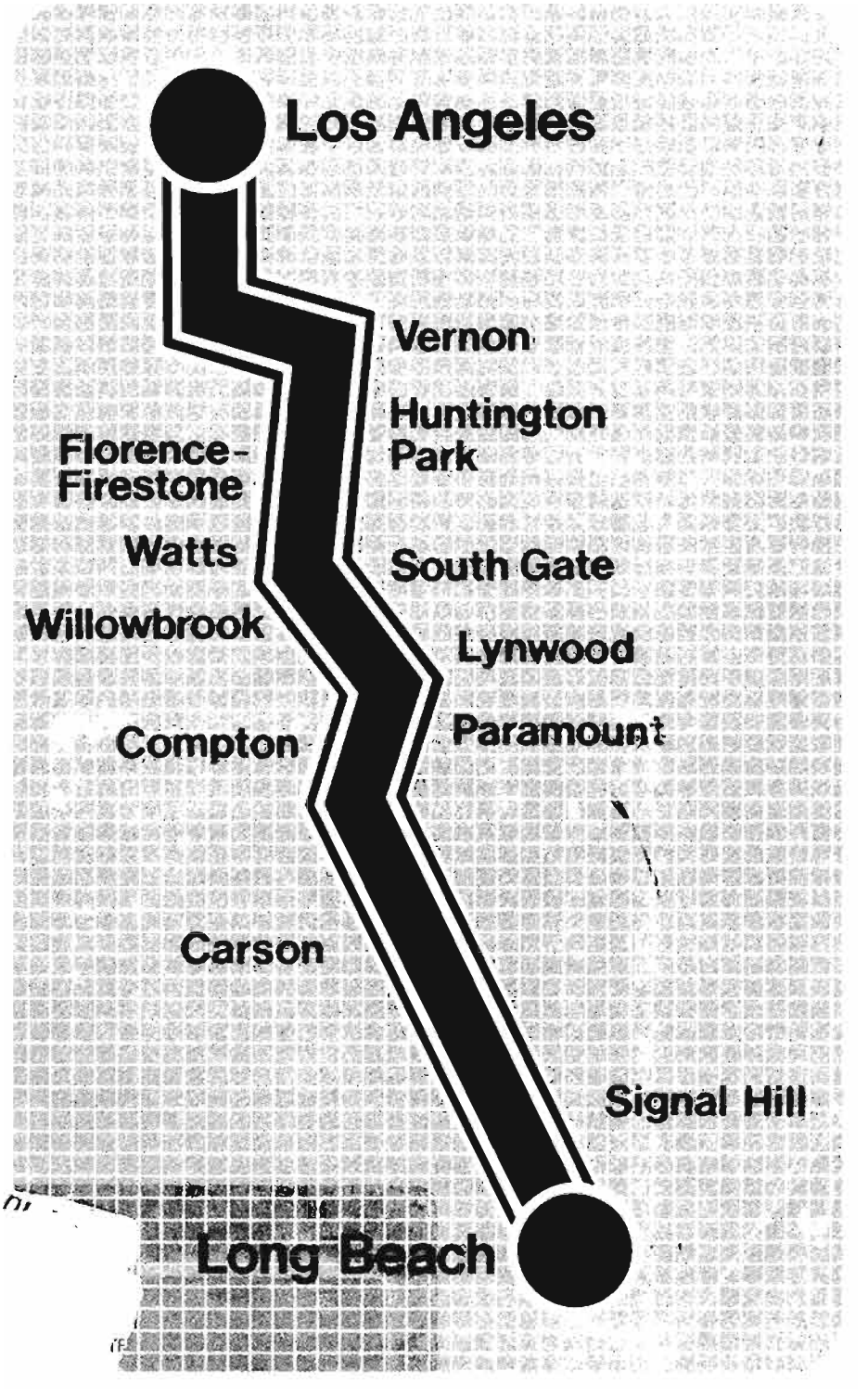
Final Environmental Impact Report

The Long Beach - Los Angeles Rail Transit Project

March 1985



LACTC

Final Environmental Impact Report

(SCH No. 83091415)

The Long Beach-Los Angeles Rail Transit Project

March 1985

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- KENNARD DESIGN GROUP
- PACIFIC INTERNATIONAL ENGINEERS
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COUNTY OF LOS ANGELES
- Department of Regional Planning
- Road Department
- Engineer - Facilities
- Community Development Commission
- Flood Control District

CITY OF LOS ANGELES
- Department of Transportation
- Planning Department
- Department of Public Works
- Community Redevelopment Agency

CITY OF COMPTON
- Planning Department
- Department of Public Works
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CITY OF LONG BEACH
- Department of Public Works
- Department of Planning and Building
- Department of Community Development
- Long Beach Transit

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
CITY OF CARSON - Department of Public Works
CALIFORNIA PUBLIC UTILITIES COMMISSION
CALIFORNIA DEPARTMENT OF TRANSPORTATION

IN COOPERATION WITH

SOUTHERN PACIFIC TRANSPORTATION COMPANY
SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES DEPARTMENT OF WATER AND POWER
UNION PACIFIC RAILROAD
ATCHISON, TOPEKA AND SANTA FE RAILWAY

LACTC

LOS ANGELES COUNTY TRANSPORTATION COMMISSION

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF TABLES

LIST OF FIGURES

This Final Environmental Impact Report on the Long Beach-Los Angeles Rail Transit Project consists of this volume and the volumes listed below:

- Volume I: Summary
- Volume II: DEIR
- Volume III: Design Appendix
- Volume IV: Supplement to the DEIR

SUMMARY

This Final Environmental Impact Report (FEIR) is the last document in a series of planning, feasbility, and environmental documents prepared by the Los Angeles County Transportation Commission (LACTC) in the course of its consideration of the Long Beach-Los Angeles Rail Transit Project.

S-100 HISTORY OF THE PROCESS

The Long Beach-Los Angeles Rail Transit Project is part of an ongoing transit development process for Los Angeles County. As part of this process, the Long Beach-Los Angeles corridor and 13 other corridors in the county were identified as candidates for transit improvements to be undertaken following the passage of Proposition A (passed November, 1980), which enacted a one-half-cent sales tax dedicated to transit improvements in Los Angeles County, specifically including rail transit development. The fundamental goals of the Long Beach-Los Angeles project are:

- To provide the citizens in the Long Beach-Los Angeles corridor with the benefits of improved public transportation in a cost-effective, environmentally sensitive and socially responsible manner, and

- to construct the system as expeditiously as possible.

The project is planned as a conventional light rail transit system located primarily in the existing Southern Pacific Transportation Company (SPTC) right-of-way (Wilmington and East Long Beach Branches) extending from downtown Los Angeles to downtown Long Beach. The proposed line will pass through the cities of Compton and Carson, and the unincorporated areas of Florence-Firestone, Willowbrook, and Dominguez Hills in Los Angeles County. The total route will be approximately 22 miles in length, with about 18 miles of it following the existing SPTC right-of-way. Much of the project route will be essentially the same as the last line operated by the Pacific Electric Railways' "Red Cars" which went out of service in 1961. The proposed project, however, will be designed to meet today's transit standards and to satisfy both present and anticipated future needs.

After passage of Proposition A, authorization of project development was delayed until May of 1982, when the State Supreme Court cleared the legal challenges, permitting collection of the one-half-cent sales tax beginning July 1, 1982.

In the meantime, two planning studies were completed on the feasibility of constructing new transit facilities along the corridor: the Caltrans study of October 1981, and the Preliminary Analysis (February, 1982) and Summary Report (February, 1983) produced by Parsons Brinckerhoff Quade & Douglas, Inc. and Kaiser Engineers (PB/KE). These studies investigated and evaluated transit opportunities in other corridors throughout the county relative to the Long Beach-Los Angeles corridor. They also included an assessment of various forms of light rail transit (LRT), automated guideway transit (AGT), and cable-suspended transit (CTS) technologies. Light rail was found to meet the greatest number of system objectives. In the process of identifying candidate alignments, primary consideration was given to maximizing the use of existing public right-of-way (i.e., city streets) and existing rail right-of-way of the SPTC Wilmington and East Long Beach Branch lines.

Workshops among Los Angeles County and City agencies produced agreement on alternative routes in downtown Los Angeles to be analyzed. In the mid-corridor, consultations were held with the City of Compton and Los Angeles County staff on the impacts of rail transit operations on traffic circulation and community disruption. In Long Beach, city staff conducted development, analysis, and selection of possible alternatives to serve their community and presented their findings to the LACTC for evaluation with total system requirements. In the workshop sessions, evaluation criteria were developed for screening the various proposed alignments. These criteria included service level, CBD access, transit interface, traffic impacts, operations/maintenance, capital costs, land use development goals, construction feasibility, parking impacts, transit travel time, jobs in the vicinity, bus route interface, redevelopment potential, landscaping impacts, residential impacts, business impacts, and intersection crossings. Over 25 alternative alignments and dozens of potential station locations were defined and evaluated, and a variety of system design issues were explored at a preliminary level.

On August 30, 1983 the Notice of Preparation for the Environmental Impact Report (EIR) was distributed. Preparation of the EIR was the next step in complying with local and state environmental review requirements which have to be satisfied prior to project funding and construction.

In September, 1983 the LACTC issued a Concept Design Report, containing the findings of these preliminary studies and soliciting feedback from government agencies and the general public on the 10 alternative alignments approved for further study.

These alternatives included three in the downtown Los Angeles segment (adopted by the LACTC May 25, 1983), three in the mid-corridor segment

(two adopted May 25, 1983 and the third on September 14, 1983), and four in the City of Long Beach (adopted by the Long Beach City Council on April 26, 1983 and subsequently refined). The three Los Angeles alignments are described below.

- Alternative LA-1 (Broadway/Spring Couplet, At-Grade): From the east side of Union Station, double tracks on an aerial structure would proceed westward, parallel to and above the Hollywood Freeway (Route 101). After crossing Alameda Street, the double tracks would separate and become at-grade at Spring Street. At that point, an at-grade, one-way track couplet would be created by a northbound track in Main and Spring Streets and a southbound track in Broadway. At Washington Boulevard the tracks would rejoin to form double tracks and proceed eastward at-grade in a median on Washington Boulevard to the SPTC right-of-way at Long Beach Avenue.

- Alternative LA-2 (Flower Street Subway): This alternative would begin as a double subway track at the Metro Rail station at 7th and Flower Streets. After proceeding southward under Flower Street, the tracks would emerge from a portal, located between 11th and 12th Streets. From the portal the double tracks would continue southerly, at-grade, in a reserved median in Flower Street. At Washington Boulevard the double tracks would proceed eastward, as in LA-1, to the SPTC right-of-way at Long Beach Avenue.

  A possible future extension of this alignment to Union Station has been assessed. Such an extension is not part of the project, and Union Station may not be the ultimate terminus. However, the extension studied would run north, then east along and under the Hollywood Freeway and finally north to Union Station.

- Alternative LA-3 (Olympic/9th Aerial): From a terminus station south of 3rd Street, double tracks on an aerial guideway would proceed south along the median of Figueroa Street. At 9th Street, the tracks would turn east and continue above the north curb lane of the one-way traffic roadway. At Santee Street, the aerial line would revert back to follow the median in Olympic Boulevard, which is a two-way street. At Long Beach Avenue and Olympic Boulevard, the tracks would join the SPTC right-of-way and become at-grade. Continuing at-grade in the SPTC right-of-way, the tracks would pass under the Santa Monica Freeway and join the mid-corridor section of the alignment at the intersection of Long Beach Avenue and Washington Boulevard.

A possible future extension of this alignment (not part of the current project) would proceed as follows: At 3rd Street, the line would turn east and go underground through the Bunker Hill area. It would then portal on 1st Street to an aerial line east of Hill Street. The line would continue on 1st Street to Los Angeles Street, where it would turn north and proceed to the Hollywood Freeway, terminating at Union Station. Although Union Station has been studied as an ultimate terminus, further studies may change extension routings.

The differences among the mid-corridor alternatives are limited to the Compton area between Watts and Dominguez Junctions. North and south of these points, only one alignment is under consideration. Descriptions of the three mid-corridor alternatives follow.

- Alternative MC-1 (Compton At-Grade): This alternative would provide for an at-grade, double-track rail transit configuration adjacent to and sharing the right-of-way with the SPTC rail freight operations.

- Alternative MC-2 (Compton Grade Separation): Rail transit and rail freight tracks would be grade-separated (depressed) throughout the central Compton area.

- Alternative MC-3 (SPTC Railroad Relocation): SPTC rail freight operations would be rerouted from the Wilmington Branch at Watts Junction to the San Pedro Branch (along Alameda Street) via the West Santa Ana Branch. The railroad's Wilmington Branch operations would follow the San Pedro Branch to Dominguez Junction. Thus, from Watts Junction to Dominguez Junction, the rail transit systems would operate at-grade in an exclusive right-of-way.

The four Long Beach alternatives are described below.

- Alternative LB-1 (Atlantic Avenue Two-Way): This alternative would provide two tracks at-grade on Atlantic Avenue to 1st Street, where the tracks would turn west and terminate at Long Beach Boulevard. The terminus would be a stub-end station with a tail track. Along Atlantic Avenue north of Anaheim Street, the rail system would run either in a reserved median or in mixed traffic. South of Anaheim Street the system would operate in mixed traffic in the second travel lane.

- Alternative LB-2 (Atlantic/Long Beach Couplet): Beginning at the SPTC railroad right-of-way near Willow Street, a one-way at-grade couplet would be created by a track southbound on Long Beach

Boulevard, eastbound on 1st Street, and northbound on Atlantic Avenue, returning to the SPTC right-of-way.

- Alternative LB-3 (Los Angeles River Route): This alternative would be located just outside the levee on the east side of the Los Angeles River. The alignment would proceed from the existing SPTC bridge, crossing the river on retained embankment to 7th Street, along the Long Beach Freeway right-of-way at-grade to 4th Street, eastbound on 4th, south on Pacific Avenue to 1st Street, and then east to a terminal station near Pacific Avenue with tail tracks extending to Elm Avenue.

- Alternative LB-4 (Atlantic with Pacific Avenue Loop): This alternative would provide two tracks on Atlantic Avenue from the SPTC right-of-way near Willow Street to 9th Street. There, the southbound track would swing west to Long Beach Boulevard, south to 1st Street, west to Pacific Avenue, north to 8th Street, east back to Atlantic Avenue, and finally north to the SPTC right-of-way. The Atlantic Avenue portion of this alternative would be similar to alternative LB-1 in that the two tracks would either be in a reserved median or in mixed traffic on Atlantic Avenue from Anaheim Street to the SPTC right-of-way near Willow Street. South of Anaheim Street, the system would run in mixed traffic.

In an attempt to minimize property acquisitions while maintaining efficient rail transit operations, the following three alignment options were investigated for the portions of alternatives LB-1 and LB-4 along Atlantic Avenue north of Anaheim Street.

- Option A: Rail transit tracks in a reserved median with on-street parking generally maintained.

- Option B: Rail transit tracks in a reserved median with on-street parking generally eliminated.

- Option C: Rail transit tracks generally in mixed traffic except in the vicinity of stations. On-street parking would be maintained except in the vicinity of stations.

A baseline system alternative -- a full 22-mile route including all at-grade alignments -- was defined to assist in comparing and evaluating the performance, cost, and impact characteristics of each of the alternative rail transit systems.

BASELINE SYSTEM ALTERNATIVE

Number	Name	Location
LA-1	Broadway/Spring Couplet, At-Grade	Downtown Los Angeles
MC-1	Compton At-Grade	Mid-Corridor
LB-4	Atlantic with Pacific Avenue Loop, At-Grade	Long Beach

The Draft Environmental Impact Report (DEIR) for the Long Beach-Los Angeles Rail Transit Project was issued in May of 1984. This report discussed the proposed project and described the existing conditions along the transit corridor (known as the setting). The bulk of the report went on to discuss the environmental impacts of the proposed project in each of the three segments, for each of the proposed alternatives.

Issued along with the DEIR was a Summary, as well as a Design Appendix containing maps, plans and profiles, typical sections, yard and shop plans, and station concept drawings.

Following the circulation of the DEIR, a series of public hearings were held throughout the corridor, at which members of the public, as well as private and public companies and agencies, were able to voice their concerns regarding the project. Those hearings took place on the dates and at the locations listed below:

1) June 19, 1984 - 930 Wilshire Boulevard, Los Angeles

2) June 20, 1984 - Downtown Los Angeles, 255 S. Hill Street, Los Angeles

3) June 21, 1984 - 205 S. Willowbrook Avenue, Compton

4) June 21, 1984 - Florence-Firestone, 7807 S. Compton Avenue, Compton

5) June 27, 1984 - 333 W. Ocean Boulevard, Long Beach

6) June 30, 1984 - Watts-Willowbrook, 1776 E. Century Boulevard, Los Angeles.

During the public review period, one of the chief issues raised was the objection of Long Beach residents and community service facilities to the use of Atlantic Avenue as a route for the light rail system. On July 24, 1984, after review of a Conceptual Assessment report on additional Long Beach alternatives, the City of Long Beach requested examination of three additional routes. In response to the city's request, the LACTC authorized (on August 15, 1984) the preparation of a Supplemental EIR (SEIR) to evaluate the three additional alternative alignments proposed for the City of Long Beach. Descriptions of these additional alternatives follow.

- Alternative LB-3 (Broadway Aerial-Modified River Route)

  This alignment would proceed south from the eastern side of the SPTC Los Angeles River bridge crossing; double tracks would be located just outside the levee on a retained embankment. Along the river, there could be three variations in the number of stations. Option A would have three river stations located at Willow Street, Pacific Coast Highway, and Anaheim Street. All three stations would have neighborhood parking areas (25 to 100 spaces), bus-to-train transfer facilities, and a kiss-and-ride drop-off area. Option B would have one major river station at Pacific Coast Highway. This station could incorporate a major mode change facility which would include a large park-and-ride facility (up to 1,000 spaces) and possible joint development opportunities. Option C would have no stations along the river portion of the alignment.

  At a point just south of the Long Beach Freeway overpass, the tracks would rise on an aerial structure. At Broadway, the tracks would turn east and continue above the south side of Broadway to a terminus at the Long Beach Civic Center. Aerial stations would be located at the soon-to-be-built World Trade Center and at the Civic Center terminus in Lincoln Park. Two options are proposed for the aerial section entering the downtown area. The primary option (Option D) would run above Broadway to a diagonal terminal station in Lincoln Park. The secondary option (Option E) would penetrate the northeast corner of the World Trade Center and, with a pair of reverse curves, proceed southeast and traverse the Civic Center complex. The terminal station would be located in Lincoln Park and would lie perpendicular to Pacific Avenue.

- Alternative LB-5 (Long Beach Boulevard, Two-Way)

  This proposed baseline alignment would consist of tracks running north and south along Long Beach Boulevard in a reserved median from Willow Street to 7th Street. Landscaping would be provided at

station areas only. South of 7th Street, tracks would be installed on either side of the existing landscaped median, and light rail trains would operate in mixed traffic.

An extra cost optional alignment is possible north of 7th Street whereby the street is widened and landscaping is provided between the tracks for the full length of the boulevard.

Stations would be located at Wardlow Road and Willow Street in the SPTC right-of-way. These stations would have neighborhood parking lots. Stations along Long Beach Boulevard would be located at Hill Street, Pacific Coast Highway, Anaheim Street, 6th/7th Street, and 1st Street. These stations would not have parking associated with them and would all be situated in the median of the street with a center loading platform. Beyond the 1st Street station on Long Beach Boulevard, the tracks would turn to the east to form tail track on 1st Street.

o Alternative LB-6 (Willow Street Terminus)

This alternative would follow the SPTC right-of-way (East Long Beach Branch) and would include stations at Wardlow Road and at the Willow Street Terminus (located between 27th and 28th Streets). The Willow Street station would be a transportation center with adequate bus bays, on-site bus turnaround capability, a parking area for about 100 cars, good access, and provision for kiss-and-ride drop-off. Tail track would extend south of the station approximately 300 feet along West American Avenue.

In discussing a system alternative for the SEIR, LA-2 (Flower Street Subway) and MC-1 (Compton At-Grade) were used as the Los Angeles and mid-corridor segments.

At the same time the SEIR was being prepared, another report (which itself is not part of the FEIR) was being readied. This was the Alternatives Evaluation Report (AER) which compared the various alternatives in the downtown Los Angeles and mid-corridor segments of the system. As a result of this analysis, Alternative LA-2 (Flower Street Subway) in Los Angeles and Alternative MC-1 (Compton At-Grade) in the mid-corridor were chosen as the recommended alternatives in these segments. Selection of a recommended alternative for Long Beach was held in abeyance until after the issuance of the SEIR and the close of the public review period. A separate AER comparing all the Long Beach alternatives will be distributed to the commission concurrently with consideration of this FEIR on March 13, 1985.

The SEIR was issued on December 3, 1984, and followed the same format as the original document, incorporating the DEIR by reference. (It was assumed that those reviewing the SEIR would have the DEIR available for cross-referencing.) After a shortened review period, a public hearing was held in Long Beach on January 9, 1985, and preparation of this Final Environmental Impact Report (FEIR) began in earnest. This preparation has involved the compilation of all public testimony, the recommendations contained in both Alternatives Evaluation Reports, the proposed mitigation measures to be implemented as part of the project, and a statement of revisions to the project description.

S-200 ORGANIZATION OF THE FEIR

The current document, the Final Environmental Impact Report (FEIR) for the Long Beach-Los Angeles Rail Transit Project, incorporates by reference all previous environmental documents as follows: Volume 1 - Summary DEIR (May, 1984); Volume 2 - DEIR (May, 1984); Volume 3 - Design Appendix (May, 1984); Volume 4 - Executive Summary and SEIR (December, 1984).

As previously noted, both the DEIR and the SEIR were organized in the same fashion for ease of reference. Chapter I described the project; Chapter II, the setting; Chapter III, Construction Impacts; Chapter IV, Operations Impacts; and Chapter V, Regional Impacts. If the reader keeps these chapter numbers in mind, he or she will have no difficulty in cross-referencing any material found in this document with the appropriate sections cited from the DEIR or SEIR.

The current volume is organized as follows:

- Summary

  This section is a history of the environmental process and the FEIR itself.

- Chapter I - Addendum: Optional Elements and Revisions to the Project

  This chapter details changes that have been made to the project since publication of the DEIR and SEIR.

- Chapter II - Alternatives Evaluation

  This chapter contains a summary evaluation (based on the AERs) of each of the alternatives proposed for each of the three project

segments. This chapter also contains the Summary of Project Impacts and Mitigation Measures table, which identifies those measures the commission has committed to performing as part of the project.

- Chapter III - Comments Requiring Responses

  This chapter forms the bulk of the FEIR. It is a summary of all the comments, both written and oral, received on the DEIR and the SEIR during their respective circulation periods. The comments are grouped by document into categories, and each comment is followed by its response. Responses to comments are often themselves cross-referenced to another section of the chapter, to the corrections chapter, or to original page numbers in the DEIR or SEIR.

- Chapter IV - Comments Not Requiring Responses

  This chapter contains a general discussion of the route preferences identified in the comments (both oral and written) to the DEIR and SEIR.

- Chapter V - Corrections and Additions

  This chapter contains errata, including typographical as well as other errors or omissions, which came to the attention of the commission after the publication dates of the DEIR and SEIR.

- Chapter VI - Persons and Organizations Commenting

  This chapter contains a listing of those commenting, either orally or in writing, on the DEIR and SEIR.

Chapter

I ADDENDUM: OPTIONAL ELEMENTS AND REVISIONS TO THE PROJECT

I-100 INTRODUCTION

Since publication of the DEIR (May 1984) and the SEIR (December 1984), there have been a number of refinements to the basic project descriptions given in those documents. This is the natural consequence of the move from the conceptual stage of preliminary engineering to a further and more defined level. Preliminary assumptions have not held and/or additional aspects to the project engineering have been discovered, requiring new solutions.

The changes described and analyzed in this Addendum fall into three categories: revisions to the project as previously described, options that are still being considered for adoption into the project, and possible requests accompanying approval of the project by other agencies. Revisions to the project include:

- Revised Traffic Signal Program at Grade Crossings
- Relocation of Freight Rail Tracks in the Mid-Corridor
- Lowering the Track Profile between Imperial Highway and Rosecrans
- Non-Revenue Track Connection Between LB-LA Light Rail and Proposed Century Transitway
- Security/Central Control Facility

Some of these were discussed conceptually in the DEIR, but further engineering refinement requires additional discussion here.

Optional elements of the project include items that have arisen because of refined engineering since publication of the DEIR. They are being discussed here because a final decision cannot be made prior to completion of the EIR. The changes that fall into this category include:

- Alternate Main Yard and Shop Site
- Lowering the Track Profile at Century Boulevard and 104th Street
- Design Refinement of LB-5, South of 7th Street
- Embankment at Hill Street Pump Station

In addition to the above changes, the following items are included because other agencies have made specific requests accompanying their respective approvals of the project: 1) a connection at the LA-2 subway portal for the Harbor Freeway Transitway, and 2) additional grade separations in the mid-corridor. Information about the possible additional grade separations is not as precise as that given for the possible future connection at the LA-2 subway portal. If these items do become part of the project, a determination will have to be made at the time as to whether the information presented in this document is sufficient to provide environmental clearance or if additional environmental documentation is required.

All of the items--whether revisions, options, or possible conditions of approval--are discussed in the remainder of this chapter, which has been organized by geographic segment in a manner similar to the DEIR and SEIR, as outlined below.

I-200 DOWNTOWN LOS ANGELES

I-210 CONNECTION AT THE LA-2 SUBWAY PORTAL FOR THE HARBOR FREEWAY TRANSITWAY (Request Accompanying Approval)

I-300 MID-CORRIDOR

I-310 MODIFICATIONS TO MID-CORRIDOR TRAFFIC ANALYSIS

I-311 REVISED TRAFFIC SIGNAL PROGRAM AT GRADE CROSSINGS (Revision)

I-312 ADDITIONAL GRADE SEPARATIONS IN THE MID-CORRIDOR (Request Accompanying Approval)

I-320 RELOCATION OF TRACKS IN MID-CORRIDOR (Revision)

I-330 LOWERING THE TRACK PROFILE BETWEEN IMPERIAL HIGHWAY AND ROSECRANS (Revision)

I-340 NON-REVENUE TRACK CONNECTION AT THE PROPOSED CENTURY FREEWAY TRANSITWAY (Revision)

I-350 SECURITY/CENTRAL CONTROL FACILITY (Revision)

I-360 ALTERNATE MAIN YARD AND SHOP SITE (Option)

I-400 LONG BEACH

I-410 DESIGN REFINEMENT OF LB-5, SOUTH OF 7TH STREET (Option)

I-420 EMBANKMENT AT HILL STREET PUMP STATION (Option)

I-200 DOWNTOWN LOS ANGELES

I-210 CONNECTION AT THE LA-2 SUBWAY PORTAL FOR THE HARBOR FREEWAY TRANSITWAY

I-211 DESCRIPTION

It is anticipated that the City of Los Angeles, accompanying its approval of the Long Beach-Los Angeles Rail Transit Project, will request the LACTC to build the openings for the proposed connection to the possible future Harbor Freeway rail transitway The transitway is planned to open as a bus/high occupancy vehicle (HOV) transitway with possible future conversion to rail. Planning studies have indicated that this bus/HOV-way could be ready for conversion in 2015.

The connection between the Harbor Freeway Transitway and LA-2 would be through "sleeves" or access openings (knockout walls) that could be opened and used when connection is desired. The northbound tracks would enter on the easterly side of the proposed subway tunnel and the southbound tracks would exit on the westerly side. Both tracks would connect at a "y" to the LA-2 tracks in the subway just north of the portal.

The additional construction work proposed, if adopted, will be minimal. As the tunnel for the subway is being excavated, an additional area on either side of that tunnel will also be excavated. The exact location of this additional excavation will be determined during the final engineering phase of the project, after additional studies are completed to locate the optimal point for connection. This point will be along the subway route between 11th and 8th Streets. The additional excavation for these sleeves would follow the construction sequence outlined for the tunnel in Section I-525 of the DEIR. After initial excavation, the street would be decked so that traffic could proceed. The triangular areas, one on either side of the tunnel, will require excavating 12,000 cubic yards of soil. This dirt will be moved by truck to dump sites that will be accepting material at the time of construction.

I-212 DURING CONSTRUCTION

I-212.1 Impacts Assessment

Constructing the access sleeves into the subway near the portal (under LA-2) would potentially require the removal of approximately 12,000 cubic yards of excess material. This material would be in addition to the 203,000 cubic yards of material estimated to come from the LA-2 subway

construction. No additional impacts are expected other than what has already been described for the construction of LA-2.

I-212.2 Mitigation Measures

All excess material for Alternative LA-2 would be hauled to the appropriate disposal site as described on pages III-1 and III-5 of the DEIR. No special construction mitigation measures for protection against seismic hazards would be necessary, other than those already proposed. Mitigation measures for traffic during construction would be as outlined in Section II-600 of the FEIR.

I-213 OPERATIONS

I-213.1 Impacts Assessment

These sleeves will not change the impacts previously described for the LA-2 subway. When and if the Harbor Freeway Transitway is converted to rail operation, these sleeves will reduce the construction impacts associated with that project and permit integration of the two projects. Any additional impacts of converting the Harbor Freeway busway to rail operations, particularly for underground operation in downtown Los Angeles, will have to be addressed in a separate environmental analysis.

I-213.2 Mitigation Measures

No additional mitigation measures beyond those already described for the LA-2 subway in Section II-600 of this FEIR will be necessary.

I-214 SIGNIFICANCE

Constructing sleeves at the LA-2 subway portal to better accommodate future rail conversion of the Harbor Freeway Transitway would create negligible increased construction impacts for portal construction. Impacts during operation would also be insignificant.

I-300 MID-CORRIDOR

I-310 MODIFICATIONS TO MID-CORRIDOR TRAFFIC ANALYSIS

I-311 REVISED TRAFFIC SIGNAL PROGRAM AT GRADE CROSSINGS

I-311.1 Description

Since the preparation of the DEIR, detailed studies of the Light Rail Transit (LRT) Signalization Program for the mid-corridor have been conducted in consultation with traffic engineering personnel from each of the four affected jurisdictions. The LRT operating strategy in the mid-corridor, which is both technically feasible and acceptable to the local jurisdictions, especially in terms of its impact on street traffic, is presented in detail in the "Mid-Corridor LRT and Street Traffic Control System" report dated January, 1985, prepared by DKS Associates and LTK Engineering Services. The revised signalization program differs from that originally proposed in the DEIR as described below.

The traffic impacts assessment in the DEIR assumed modifications to the signal cycle lengths at major intersections in order to accommodate a green window for the LRT. After consultation with traffic engineering personnel from each local jurisdiction, existing signal timing was assumed to apply in the year 2000, except at the following locations:

- On Gage Avenue, the County provided details of the planned future timing.

- On Florence Avenue, existing signal timing is to be modified slightly to take advantage of new signal controllers planned for some intersections.

- At the Rosecrans and Alondra crossings, existing signal phasing will be simplified as part of the grade crossing reconstructions for this project.

Existing intersection geometry and street widths were also assumed to apply except at Imperial/Wilmington where details of the planned intersection layout were obtained from the City of Los Angeles and Caltrans. That intersection will be rebuilt as part of the Century Freeway construction; at the Rosecrans crossing, two of the Willowbrook Avenue legs will be realigned as part of the light rail project.

The revised signalization program relies upon a Controlled Arrival Time Concept to minimize delays to auto traffic at the major street crossings in the mid-corridor. The concept assumes that the light rail vehicles will be held at upstream stations until they can catch the north-south green at the next major traffic intersection. This strategy minimizes potential

traffic impacts and reduces the need for changing existing traffic signalization equipment. Figure I-1 illustrates the concept. Generally, the light rail vehicle will pull into a station normally. However, instead of closing the doors and moving off as soon as possible, it will wait at the station until a signal indicates that it should leave in order to arrive at the downstream street crossing at the optimum point in the traffic signal cycle. Once it moves off, it travels at maximum speed to the next station.

The net effect of this revision is to increase the dwell times at some station platforms and thus increase the overall end-to-end travel time by 0 to 9 minutes. For example, for the LA-2/MC-1/LB-5 system combination, the end-to-end travel time would increase from about 50 minutes to as much as 59 minutes. This run time is similar to those previously modeled for patronage calculations. It is likely that longer run times would result in slightly diminished patronage estimates and slightly increased costs.

I-311.2 Construction

This revision will not require any additional construction activities beyond those described in the DEIR.

I-311.21 Impacts Assessment

Because this Controlled Arrival Time Concept does not require changes to the adjacent street signalization system, it may minimally reduce the extent of construction. On the other hand, the LRT signalization system may be more complex. The net effect would likely be no change from the impacts described in the DEIR.

I-311.22 Mitigation Measures

Since no additional construction impacts are anticipated, no additional mitigation measures, beyond those already identified in Section II-600 of this document, are necessary.

I-311.3 Operations

I-311.31 Impacts Assessment

The proposed system will eliminate any major delays to street traffic due to LRT operations. However, some minor adverse impacts on traffic will remain.

At Vernon Avenue and El Segundo Boulevard, the short 60-second traffic signal cycle length does not provide sufficient time to serve traffic turning left onto the main street during those cycles when an LRV is crossing. Although volumes are small, this traffic will experience additional delays

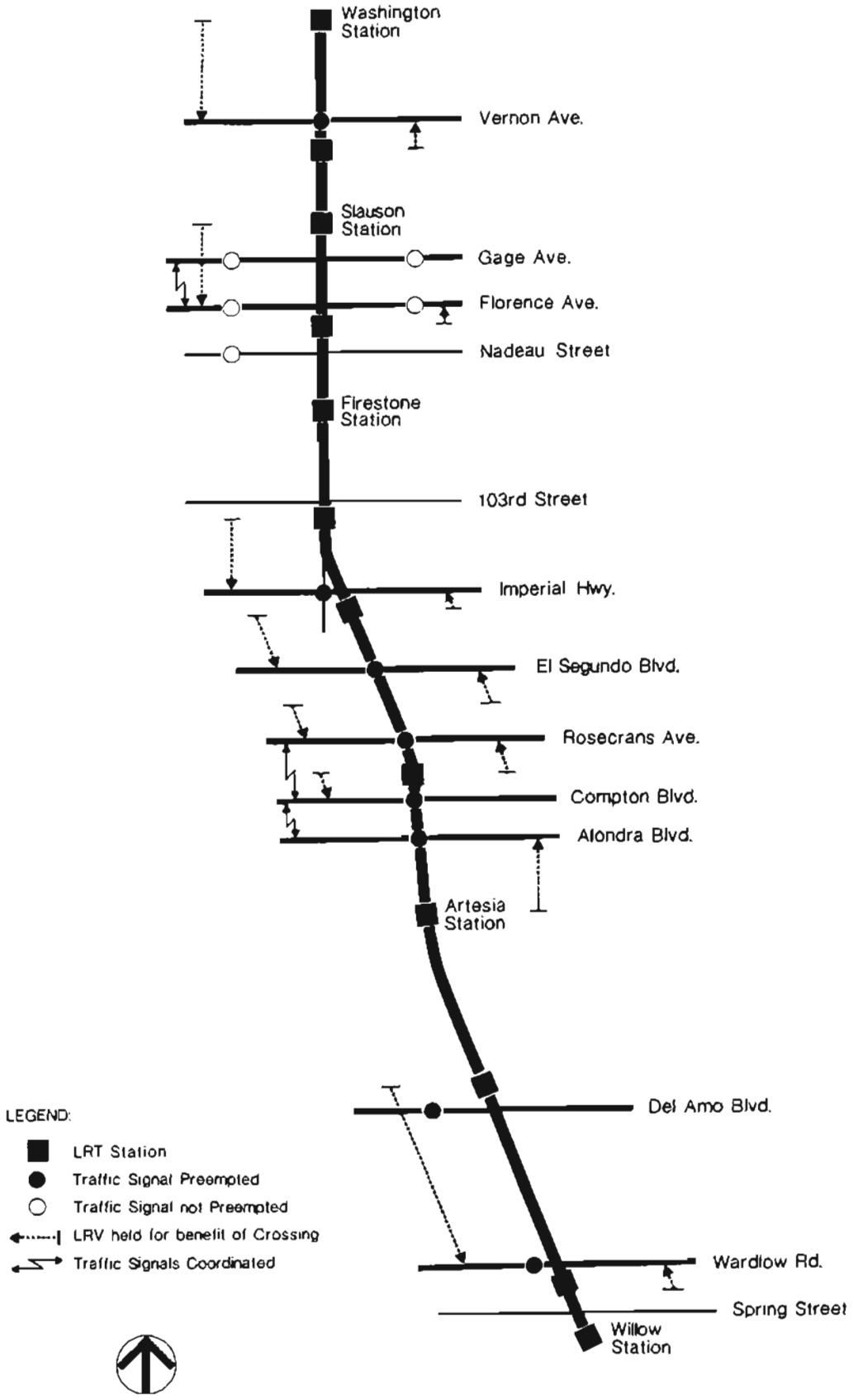


Figure I-1

Long Beach - Los Angeles RAIL TRANSIT PROJECT
LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Revised Traffic Signal Program at Grade Crossings (Option)
PARSONS BRINCKERHOFF/KAISER ENGINEERS

due to the LRT. In the worst case, a left-turning vehicle could have to wait up to 150 seconds before being able to make the turn. This could occur when LRVs arrive from opposite directions in consecutive cycles, which would happen every 18 minutes on average during the peak period.

At Gage Avenue and Florence Avenue, there is no left turning traffic involved, but some through traffic will have to make an additional stop at the crossing when the gates are down. By controlling the arrival time of the LRVs, this impact will be restricted to that traffic which would have had to stop in any case at a downstream signal. Thus, these vehicles will generally not experience an increase in their overall travel time.

During peak hours at Imperial Highway, freeway-bound traffic turning right from Wilmington northbound onto Imperial eastbound will be delayed at the crossing when an LRT is present. The resulting queue may back up to the intersection, but will not interfere with the operation of the intersection because it is a right turn movement. Northbound traffic may be delayed at the Wilmington crossing, but the addition of a third lane will ensure it does not queue back into the intersection.

At El Segundo, as at Vernon Avenue, traffic will not be able to turn left from Willowbrook Avenue during a signal cycle in which an LRV arrives at the crossing. When LRVs arrive in consecutive cycles, it is possible that cars may have to wait up to 150 seconds to turn left. The county has expressed concern that in this worst case, which would occur every 18 minutes on an average in the peak period, an impatient motorist may choose to ignore the red signal and turn left during the El Segundo signal phase. This issue is being studied in more detail.

Traffic may be delayed at the Del Amo Boulevard crossing when an LRV is present. However, the adjacent traffic signal at Santa Fe Avenue will automatically adjust to the associated fluctuations in demand. At the Rosecrans, Compton, Alondra and Wardlow crossings, the 90-second traffic signal cycle is long enough to allow all traffic to be served during those cycles when an LRV is crossing.

At any crossing, it is possible that an LRV will arrive just before or just after a freight train. In this case the time that the crossing gates are down because of the freight train could be extended up to 36 seconds by the LRV. The rate of dissipation of queues built up during a freight train passage will not be affected by subsequent LRV arrivals, except for the left turn movements from the side streets at the Vernon and El Segundo crossings.

The two primary impacts upon the LRT will be the increased travel time due to the additional delays at stations and the schedule variances caused by the uncertainties of those delays.

To control the arrival time of LRVs at all major mid-corridor crossings with fixed cycle length traffic signals will require holding LRVs at seven locations in each direction. Six of those seven delays will occur at stations. The delay to an LRV at any one of these stations may range from zero to almost the length of the crossing's traffic signal cycle. Signal cycle lengths will vary from 60 to 120 seconds. The average total delay resulting to an LRV traversing the 16-mile mid-corridor segment in one direction will be approximately four and one-half minutes.

I-311.32 Mitigation Measures

The mitigation measures in the DEIR (Section IV-231.6) are revised and incorporated into the project as follows:

- At the intersection of Gage and Holmes Avenues, restripe the east and west approaches to accommodate two through and one left turn lane.

- At Florence and Holmes Avenues, restripe the east and west approaches to add an extra through lane.

- At Imperial Highway and Wilmington Avenue, widen the approaches by one lane; this will be done by Caltrans as part of the Century Freeway project. At the Rosecrans Crossing, two of the Willowbrook Avenue legs will be realigned as part of the light rail project.

- At Del Amo Boulevard and Santa Fe Avenue, restripe the westbound approach to provide dual left turn lanes. Dedicate 10 feet on the north side of Del Amo from the light rail parking lot to add an exclusive right turn lane for access and egress to the parking lot.

- At Willow Street and Long Beach Boulevard, add a through lane and provide dual left turn lanes at the southbound approach; revise signalling.

- Continue to refine the coordinated north-south traffic control/light rail train control system with the affected jurisdictions.

I-311.4 Significance

Revising the light rail signalization program would have minimal adverse construction impacts and beneficial operations impacts to local traffic. The adverse operations impact is more likely to affect the light rail project itself because of slightly increased run times to avoid creating adverse effects on surface street traffic flows.

I-312 ADDITIONAL GRADE SEPARATIONS FOR THE MID-CORRIDOR

The project as proposed and described in the DEIR calls for three grade separations in the mid-corridor at the Slauson, Dominguez, and Cota Crossings. These three grade separations allow the light rail tracks to cross over freight rail tracks.

During the circulation periods for the DEIR and the SEIR, a number of comments raised the issue of additional grade-separated crossings, primarily to separate auto traffic from rail operations. The traffic analysis in the DEIR (Section IV-231) indicated that light rail operations will have an insignificant effect on auto traffic. Revisions to the LRT signaling system (see Section I-311, above) will further reduce such impact. However, projected increases in rail freight operations could have significant impacts on automobile traffic.

The LACTC is willing to coordinate light rail construction with additional grade separations in the mid-corridor, for both light rail and freight rail operations, if sufficient alternative (non-Proposition A) funds are committed to such grade separations by other public entities. The following section generally describes the impacts of such grade separations if they were built simultaneously with the light rail project. Depending on the specific location of such separations, their construction timing, design, and specific construction techniques, additional environmental analysis might be necessary.

I-312.1 Description

Major streets that require bringing the local cross traffic overhead above the light rail and SPTC freight tracks will involve the construction of bridge structures and approach embankments.

Approach embankments would be approximately 75 feet wide and begin between 500-600 feet easterly and westerly of the bridge structure that would span the proposed light rail and freight right-of-way. The embankments would rise on a maximum six percent grade to the bridge decks. The bridge decks would be 23 feet above the light rail and freight roadbed.

Construction of the bridges and embankments could begin at the same time that the utilities are being relocated. Depending upon the subsurface geology at a particular site, individual decisions would be made to use either drilled caissons or deep-set piles to support the bridge abutments.

Retaining walls may be used to support the sides of the approach embankment, if necessary, to minimize the cross-streets' right-of-way width.

Retaining wall and embankment construction would be as described on page I-74 of the DEIR. The bridges and embankments could take between 18 and 24 months to complete.

For undercrossings, a concrete box structure and retained cuts for approaches would generally be constructed to accommodate automobile cross-traffic.

Cut-and-cover construction would be used to build the concrete box structure. The retaining walls that would support the sides of the cut, which would extend between 500 and 600 feet on either side of the undercrossing structure, would be erected either on a continuous-spread footing or pile footing, depending on the soil conditions. Detours for the rail freight traffic could be accomplished by constructing a temporary shoo-fly track or constructing half the undercrossing at a time, with rail traffic on the other until complete.

I-312.2 Construction

I-312.21 Impacts Assessment

The construction of new grade separations would create excess material for undercrossings (rail overhead) or required additional fill for overcrossings (auto overhead). A typical four-lane overcrossing would need approximately 60,000 cubic yards of fill material to construct the embankments for the approaches to the bridge structures over the freight and LRT tracks. A typical four-lane undercrossing would require the removal of approximately 50,000 cubic yards of excess material to go under the freight and LRT tracks.

There would be some minor drainage structures, such as down drains and small culverts. Other than the inclusion of these minor facilities, hydrology and water quality would be as described in the DEIR on page III-24.

Where undercrossings would be constructed for major intersections, the rail would remain at existing grade with vehicles in a subway below. The construction of the undercrossing would create a localized sump that would need to be drained by pumps during heavy rains. This sump and pump system would eventually drain into the local drainage system.

Noise and vibration impacts during construction would be the same as those described for the trench, retaining wall, and fill construction on pages III-25 and III-26 of the DEIR.

The construction of overcrossings would potentially require some additional right-of-way acquisition to establish approach embankments. The

right-of-way requirements are expected to be minor; however, some nearby buildings could be affected. The construction of undercrossings could be contained within the existing right-of-way with the use of retaining walls. No additional right-of-way would need to be acquired.

Some additional disruption and access problems would temporarily affect nearby businesses. There would also be visual impacts similar to those described for the aerial guideway segments for downtown Los Angeles and Long Beach.

Construction of the additional grade separations would involve traffic congestion and reduced access that would potentially require detour routes during construction for most through traffic. However, at least one lane would be kept open across the intersection for emergency and construction equipment access. Temporary detour routes around the bridges and embankments would need to be established during the construction period. However, if it is necessary to maintain traffic through the construction zone, then special working hours and techniques, such as partially constructing the proposed structure and utilizing it while construction on the remainder continues, would be implemented. Extensive use of shoring and falsework would provide safe passage for local traffic.

I-312.22 Mitigation Measures

No additional mitigation measures besides those already outlined in the DEIR and SEIR are planned. A discussion of those mitigation measures can be found in Section III-200 of the DEIR. Any displacement would be mitigated according to state law (see page III-45 of the DEIR for this discussion).

I-312.3 Operations

Auto traffic and rail traffic operations would be improved with the additional grade separations.

I-312.31 Impacts Assessment

Grade separations would reduce rail/auto conflicts and delays. They would also improve emergency vehicle access by eliminating delays at rail crossings. Ambient noise levels would change depending on design. Depressing auto traffic would tend to reduce noise, while overcrossings might increase noise levels. The visual impacts of overcrossings could be adverse, depending on location and design.

I-312.32 Mitigation Measures

The only additional mitigation measure, beyond those already discussed in the DEIR, would be the installation of soundwalls for overcrossings, depending on projected noise impacts and the character of surrounding land uses.

I-312.4 SIGNIFICANCE

Depending on location, design, and construction techniques, construction and operations impacts could range from minimal to significant, and operations impacts could range from minimal to significant and could require additional environmental documentation.

I-320 RELOCATION OF TRACKS IN MID-CORRIDOR

Refinements in track layouts in the mid-corridor have continued while the DEIR and SEIR have been in circulation. As noted in the DEIR, construction of the Long Beach-Los Angeles Rail Transit project will require relocating SPTC freight rail tracks in some portions of the mid-corridor. Refinement of LRT track drawings has also occurred. The discussion that follows summarizes the latest information about the proposed location of the rail freight and LRT tracks and assesses the impacts. The primary impacts of the LRT track refinements occur during construction; there will be some residential and business displacements. The primary impacts of freight rail relocation are operational; there will be some potentially significant noise increases at specific locations. Potential displacements are discussed in Section I-322; noise impacts are discussed in Section I-323. Those relocations which would engender significant impacts are described below.

I-321 DESCRIPTION

In the mid-corridor, sections of the SPTC freight track(s) would be relocated within the existing SPTC right-of-way to accommodate placement of the LRT tracks and station areas, as well as to comply with PUC clearance requirements. It is currently anticipated, however, that most of these tracks will be relocated less than 10 feet away from their present position and, therefore, would create no significant impacts. However, from Florence Avenue north to 62nd Street, two SPTC tracks would be moved approximately 20 feet to the west and would parallel the existing alignment. At a point just north of 62nd Street, the SPTC track to the west would converge with the second track to the east. North of 61st Street, there would be a single SPTC track relocated approximately 10 feet west of the existing alignment.

I-322 CONSTRUCTION

Section I-500 of the DEIR described the construction techniques to be used in relocating rail freight tracks and constructing light rail tracks in the mid-corridor.

I-322.1 Impacts Assessment

The DEIR discussed noise, dust, traffic, and business disruption impacts in the mid-corridor due to track relocation and construction. It indicated that land acquisition would be necessary for substations, light rail stations, and parking lots. As a result of the refinement of track drawings, taking into account minimum clearances between light rail and freight rail operations, it is now apparent that some residential and commercial acquisitions will be necessary. Table I-1 summarizes potential property acquisitions not previously discussed in the DEIR.

TABLE I-1

SUMMARY OF POTENTIAL PROPERTY ACQUISITIONS

IMPACT CHARACTERISTICS	LRT STATION/TRACK RELOCATION
Residential Displacement	
Single-Family Units	0
Multi-Family Units	
No. of Structures	2
No. of Dwelling Units	4
Persons	12-24
Non-Residential Displacement	
Commercial	
No. of structures	1
No. of businesses	0
No. of vacant businesses	1
Employees	0
Partial Acquisitions	
No. of Parcels	28
Approximate Square Footage	30,100
Complete Acquisitions (Vacant Land)	
No. of Parcels	1
Square Footage	62,700
Street Right-of-Way	
Graham Street Vacation (Square Footage)	10,200

Source: M. L. Frank & Associates, 1985.

Most of the newly identified acquisitions occur in the Vernon, Florence, and Rosecrans station areas because of the need to spread the light rail tracks around the station platforms.

Acquisitions are grouped according to geographical location from north to south along the right of way. While a specific description of the individual displaced residents is not possible at this time, the mid-corridor displacements can be characterized as minority (93.1% minority in the 1980 Census) with larger household sizes than in other segments of the route. The average household size was the largest in the mid-corridor (2.96 persons per dwelling unit), and the mid-corridor also had the largest proportion of large households (six or more members). It is assumed that these persons potentially displaced by the project would be similar to others within their census tracts.

- The acquisition of 2,718 square feet of industrial warehouse yard within a heavy industrial zone near 24th Street would have minimal impact. No mitigation measures are necessary for this strip area.

- Right-of-way acquisitions in the Vernon station area would involve acquiring a sliver of land from 14 parcels, 12 of which would only be a partial acquisition of fee rights for the strips. Such right-of-way acquisitions would have negligible impacts in most areas. In only two cases would a structure be involved. In the first case, a two-story commercial building assumed to be used as a two-family residence would be acquired along with a small strip of the parcel. The second case would require the purchase of a residential parcel containing a small duplex. These acquisitions would result in the displacement of approximately 12 persons (2.96 persons per dwelling unit unit), or in the worst case (six persons per household), for four households, 24 persons could be displaced.

  There is the potential for loss of business during the construction phase of the project for a laundromat in a small commercial mall in this area. This property would require some reconstruction and repair as a result of acquiring a strip of the parcel for right-of-way.

  Throughout the Vernon Avenue acquisitions, consideration would be paid for the removal and replacement of fences and other improvements located within the strips of property to be acquired. One piece acquired is part of a parcel which is itself a long narrow strip. The acquisition of this 6.5-foot piece would leave an unusable section for which compensation would be provided.

- The realignment of tracks in the Florence station area would require acquiring one vacant commercial building, and the acquisition of five 12.5-foot strips of property from industrial/commercial parcels and a strip from a residential property which may include a garage. No relocations would be necessary. Some fences, walls, and other improvements would be acquired.

  To accommodate the additional right-of-way required for the Florence station area, there would be a street vacation of 12 feet from Graham Avenue south of Florence for approximately 850 feet. As Graham Avenue currently has a total width of 40 feet with six-foot sidewalks, acquiring 12 feet for right-of-way would leave 18 feet between curbs. This is sufficient for a one-way lane with one lane of parking. If the one-way traffic were southward, then northbound traffic could terminate in a cul-de-sac where the road narrows to one lane at approximately 74th Street. Graham Avenue is a minor street which basically serves the residential community and permits access to F.D. Roosevelt Playground. It is not a through street south of the area from 83rd Street to Nadeau. (It does run north-south between Nadeau and Florence Avenue.) However, even with removal of the northbound lane, access and parking for residents and access to the playground would remain available.

- Realigning tracks in the vicinity of Rosecrans Avenue also would require reconstruction of the existing road. The acquisitions in this area would include three to five slices of property of 8.5 feet to two feet in width or less on the west side of Willowbrook Avenue. Since Willowbrook Avenue and the sidewalk are merely being moved closer to the properties, the impacts from the track itself would be minimal once the construction phase has passed. During construction, noise, dust, and disruption in access may be expected but would be minimal and of short duration. Additional payment to the building supply firm currently shown as a partial acquisition may be required if realignment of the roadway and sidewalk warrants complete acquisition of the property.

- In the vicinity of Mealy Street, an existing spur track serving the Owens-Corning plant would be relocated from the Wilmington Branch to the San Pedro branch. The relocation would require acquisition of right-of-way from one single-family residence, and 62,700 square feet of an unimproved industrial parcel. No displacement would be required.

  In addition, a team track and loading docks, currently located just north of Compton Boulevard on the Wilmington Branch right-of-way, would be relocated to the southeast corner of Mona and Mealy Streets,

the site of the existing spur track which will be relocated. Acquisitions for this team track relocation are included in the Mealy Street spur track discussion above.

I-322.2 Mitigation Measures

For the majority of partial acquisitions, mitigation measures will take the form of payment for land acquired and compensation for improvements. Improvements in the mid-corridor include such things as fences, landscaping, signage, walls, and paving.

Generally, such acquisitions will not necessitate relocation of either residents or businesses. One exception occurs in the Vernon Street area, where a commercial building which may be in use as a residence will be acquired, thereby potentially causing displacements.

In addition to compensation for property acquired, full fee acquisitions of property will require relocation of residents and businesses. As a partial mitigation measure, all residents and businesses whose property must be acquired for the construction of the rail line and related facilities will be provided relocation assistance under a relocation program pursuant to state and county regulations. After the final engineering design of the project is completed, a relocation assistance policy and plan will be adopted by LACTC in accordance with the requirements of the state law (California Government Code, Section 7260 et seq.).

During final design, the commission will coordinate with Los Angeles County Road Department to minimize impacts to Graham Avenue. Efforts will be made to maintain two traffic lanes in the section south of Rosecrans.

I-323 OPERATIONS

I-323.1 Impacts Assessment

A noise/vibration analysis of the proposed SPTC track relocations by Bolt Beranek & Newman indicates that noise sensitive residential areas along the section alignment from 62nd Street to Florence Avenue would experience potentially significant noise impacts. Approximately a dozen dwellings bordering the SPTC right-of-way on the west would be exposed to a 3 dB increase on the CNEL scale and a maximum A-level passby increase of 6 dB.

The noise-sensitive areas adjacent to the other SPTC track relocations in the mid-corridor would experience insignificant 1-2 dB increases on the CNEL scale and maximum A-level increases of 4 dB or less.

Although a number of residents would experience adverse noise impacts, it should be noted that others would benefit from the track relocations; if the distance between their homes and the SPTC track were increased, they would experience a decrease in the noise/vibration levels.

The vibration impacts due to the SPTC freight track relocations are not expected to be significant. The increases in groundborne vibration would not produce any structural damage. No additional impacts during operation from relocation of these tracks is anticipated.

The Mealy Street relocation of spur and team tracks will create some additional noise impacts. However, given the distance between the tracks and adjoining residential uses, the slow speed of the rail cars, and the limited number of movements (two to three per week), noise or vibration impacts in this area are considered minimal.

I-323.2 Mitigation Measures

A monitoring system will be implemented to determine the extent of the potential noise impacts at those residences within 30 feet of the relocated rail freight tracks. Residences within this distance could experience significant increases. If test results indicate maximum A-level passby increases of 6 dB or more, there are several alternatives which would mitigate the adverse noise impacts.

1) Provide "soundproofing" for the affected residences to reduce interior noise levels. Typical costs of "soundproofing" modifications would be approximately $22,000 per unit.

2) Acquire noise easements from owners affected significantly.

Freight rail cars are the major source of vibration. Use of continuously welded rail (CWR) in place of existing jointed freight tracks would reduce vibration levels significantly, such that vibration levels would decrease below existing levels, though residences are closer to the tracks.

The existing SPTC tracks from 62nd Street to Gage Avenue are jointed. From Gage to Florence Avenue, the west SPTC track is welded and the east track is jointed. All relocated SPTC freight track in this and other areas of the mid-corridor would be welded, as feasible.

I-324 SIGNIFICANCE

Construction impacts will be essentially as described in the DEIR. Additional acquisitions in the mid-corridor will require the displacement of four households and the demolition of four housing units and a vacant commercial structure. Full and partial acquisitions will be fully compensated according to the provisions of state law. Although adverse, the individual and cumulative impacts of these additional acquisitions are not judged significant.

Though there is a potential for significant noise increases at homes within 30 feet of the relocated rail freight track, mitigation has been incorporated into the project to reduce these increases to an acceptable level. Consequently, these impacts are not considered significant.

Potential vibration impacts are not expected to be significant; the replacement of jointed rail with welded rail will reduce vibration in many portions of the corridor.

I-330 LOWERING THE TRACK PROFILE IN THE MID-CORRIDOR

I-331 DESCRIPTION

As a result of engineering studies and discussions with other agencies along the alignment, consideration is being given to lowering the existing railroad embankment in portions of the mid-corridor. From Imperial Highway to Rosecrans, the LACTC is considering lowering the embankment about two to three feet below the existing embankment. Engineering analysis has suggested that widening the embankment to accommodate three tracks rather than two will create an unacceptable grade for existing cross-streets in that area. Drivers approaching the embankment could have difficulties with sight distances if the embankment is not lowered. The amount and location of such lowering will not be known until final design.

At Century Boulevard and 104th Street, there have been discussions with the Community Redevelopment Agency (CRA) of the City of Los Angeles about lowering the embankment and bringing the streets across the railroad tracks. Any lowering at these locations to bring the streets across the tracks would be at the request and at the expense of the CRA. Preliminary estimates place the cost at $3.8 million for these crossings. Additional at-grade crossings of the railroad tracks would require approval from the Public Utilities Commission (PUC).

The discussion below specifically addresses the impacts of the commission's proposed action between Imperial Highway and Rosecrans. The environmental consequences of lowering the track profile at Century Boulevard and 104th Street would be similar to those between Imperial Highway and Rosecrans.

I-332 CONSTRUCTION

I-332.1 Impacts Assessment

Lowering the profile grade between Imperial Highway and Rosecrans Avenue within the mid-corridor will not significantly change the construction scenario for the LRT project within the mid-corridor. There would be an increase in length of time (approximately two - four months) and some additional excess material (40,000 to 50,000 cubic yards) to be hauled away and disposed. However, the construction schedule and procedure would remain essentially the same as described on page I-71 of the DEIR (Trackwork in the Mid-Corridor).

It was reported in the DEIR on page I-71 that construction of the trackwork in the mid-corridor would require the temporary relocation and reconstruction of the SPTC freight tracks. Lowering the profile grade from two to five feet would not alter this procedure.

This relocation would first involve the construction of the SPTC tracks at their new permanent location. When these tracks are completed, train operation would be switched onto them to maintain freight service during the remainder of construction for the LRT tracks. All trackwork construction would involve the same techniques of clearing, grading, and lowering each new trackbed. Staged construction could be used to minimize impacts for both the new light rail transit and rebuilt SPTC tracks. During the rough grading process, the profile grade would be lowered to the required depth. The depth of the profile grade would range from two feet on the northerly segment between 92nd Street and 104th Street to a maximum depth of up to three feet between Imperial Highway and Rosecrans Avenue.

The overall lowering would require the removal of an additional 40,000 to 50,000 cubic yards of excess material over what was presented in the DEIR for Alternative MC-1 (265,000 cubic yards). This material would be disposed of either on the Century Freeway project, at the Los Angeles Harbor for land reclamation purposes, or in the Puente Hills Sanitary Landfill for covering rubbish.

Lowering the profile grade might cause some minor increases in noise (1 to 2 dBA) over what was reported in DEIR (page III-26) for at-grade construction. This would be true especially between Imperial Highway and Rosecrans Avenue, due to additional grading and excavation required to lower the profile grade up to three feet. Additional dump trucks would be used to remove excess material from the project area. In areas where the profile grade is only lowered between one and two feet, the potential increase in noise would be even less significant.

I-332.2 Mitigation

No additional mitigation measures beyond those identified in Section III-200 of the DEIR would be necessary.

I-333 OPERATIONS

I-333.1 Impacts Assessment

Lowering the track profile between Imperial Highway and Rosecrans would not change the operations impacts described in Section IV-200 of the DEIR. It would, however, improve sight distances for drivers using the cross-streets in this section.

Lowering the track profile at Century and 104th Streets will increase circulation across the tracks for residents of these communities. Additional lights and gates would create new visual elements in the landscape,

but the convenience of getting from one side of the railroad tracks to the other without having to detour to the nearest existing cross-street should reduce the visual division of the adjacent communities.

I-333.2 Mitigation Measures

No additional mitigation measures are proposed beyond those already discussed in the DEIR.

I-334 SIGNIFICANCE

The construction and operational impacts of this revision are essentially the same as those described in the DEIR. There would be slightly increased noise levels associated with construction, and the amount of excavated materials to be disposed of would increase by about one-third in comparison to the original MC-1 alternative. However, the total amount of excavation is within the range discussed in the DEIR for the mid-corridor alternatives.

I-340 NON-REVENUE CONNECTOR AT THE CENTURY FREEWAY

I-341 DESCRIPTION

A non-revenue track connection for Century Transitway light rail cars has been proposed to allow Century Transitway light rail vehicles to reach the Long Beach-Los Angeles main yard and shop site. The connector would be used only for empty light rail vehicles on their way to and from the yard site. It would not be used for passenger service. Figure I-2 shows the location of the non-revenue track connection.

The connector would be located at the southeast corner of the intersection of the light rail tracks along Willowbrook Avenue and the proposed Century Freeway overpass. The non-revenue connector is intended to proceed at grade from its junction with the main line, about 100 feet south of the 117th Street intersection; cross at-grade in a tight radius the northbound lanes of Willowbrook Avenue as it passes under the eastbound lanes of the proposed Century Freeway; and rise in elevation above the proposed park-and-ride lot to meet the Century Freeway rail transit in the median strip. As part of the current project, only the portion of the connector within the rail right-of-way along Willowbrook Avenue will be built. (When the Century Freeway project is complete, Willowbrook Avenue will be closed to all but bus traffic in this area.)

Single-family and multi-family housing land uses dominate the Willowbrook Avenue area. Much of the surrounding area has been vacated as clearance for construction of the Century Freeway.

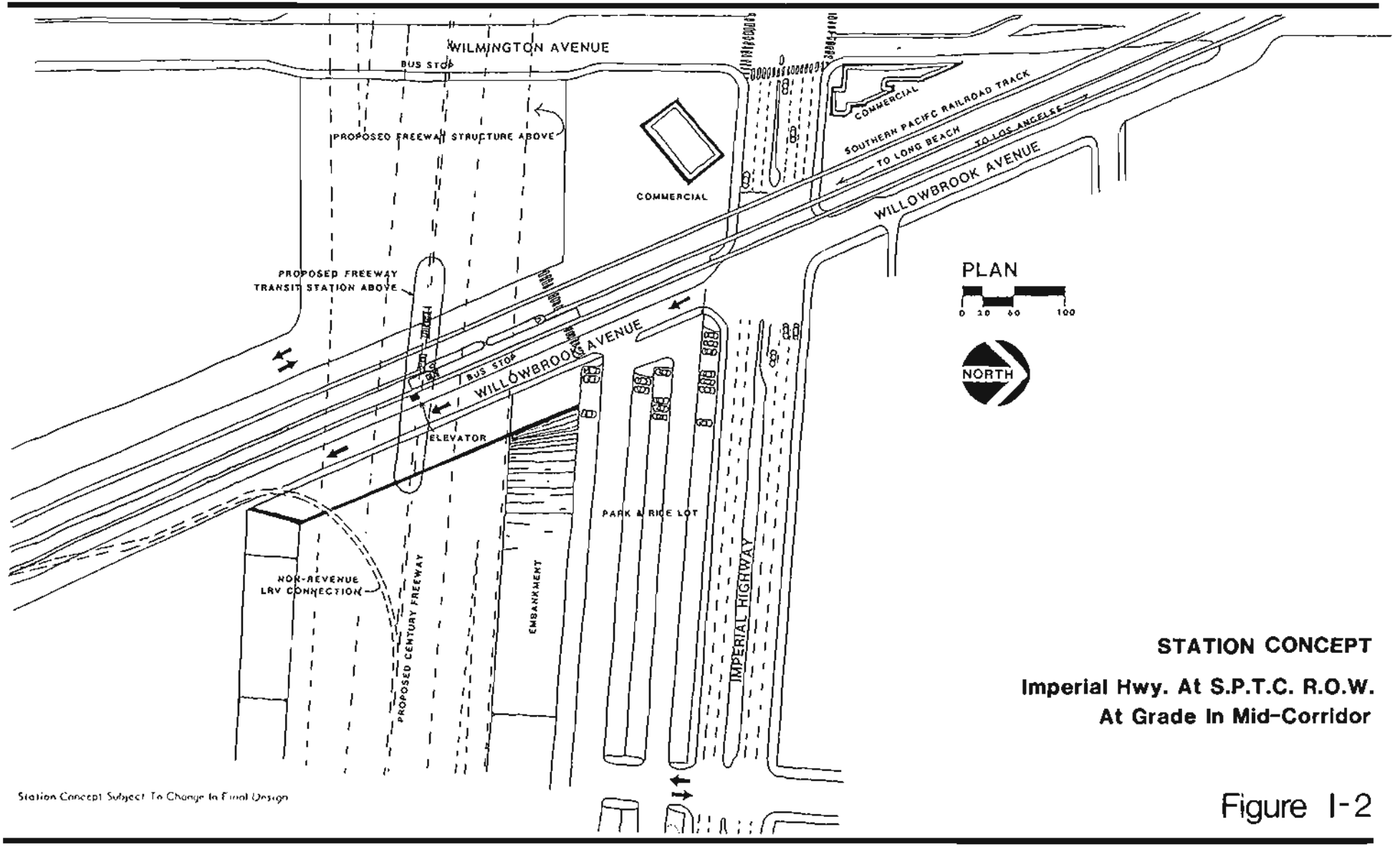
I-342 CONSTRUCTION

I-342.1 Impacts Assessment

Increases in visual and noise impacts during the construction phase of the non-revenue connector will be minimal because the elevation will not be increased until after it passes under the eastbound lanes of the freeway, and the construction equipment and methods will be essentially identical to those employed in laying the tracks along Willowbrook and in constructing the Century Freeway.

I-342.2 Mitigation Measures

No additional acquisition of rights-of-way will be required. The non-revenue connector will not exceed the right-of-way required for construction of the Century Freeway. No additional mitigation measures will be required as a result of construction of the non-revenue connector.



STATION CONCEPT

Imperial Hwy. At S.P.T.C. R.O.W.
At Grade In Mid-Corridor

Figure 1-2

Long Beach - Los Angeles
RAIL TRANSIT PROJECT
LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Non-Revenue Connection at the Proposed Century Freeway Transitway (Revision)

PARSONS BRINCKERHOFF/KAISER ENGINEERS

I-343 OPERATIONS

I-343.1 Impacts Assessment

There will be minimal increases in noise and visual impacts during operations due to the rise in elevation of the connector. These impacts will be negligible, however, since the increase in elevation does not occur until after the tracks have begun to pass under the eastbound lanes of the freeway.

I-343.2 Mitigation Measures

No additional mitigation measures will be required as a result of the operation of the non-revenue connector.

I-344 SIGNIFICANCE

The construction and subsequent operation of the proposed non-revenue connector at the Century Freeway overpass should create no significant increase in impact on the surrounding area.

I-350 SECURITY/CENTRAL CONTROL FACILITY

I-351 DESCRIPTION

Construction of a Security/Central Control Facility has been proposed at the Century Freeway crossing. Figure I-3 shows the proposed location and layout of the facility. The two-story rectangular structure (60 by 200 feet) would contain approximately 24,000 square feet of floor space. The first floor would accommodate the main transit security facilities and administrative offices. The second story would include the central control facility, computer room, records vault, and CCTV/security monitoring area. The final configuration of the structure could be adapted to the specific site location chosen at the Century Freeway overpass. The preferred site location is at the southeastern corner of the crossing, occupying portions of the proposed park-and-ride lot and partially constructed within the freeway embankment. Land use in the surrounding area is predominantly single-family and multi-family housing. Much of the area to be affected has been vacated as clearance for construction of the Century Freeway. Across Willowbrook Avenue are located several commercial structures and the future site of an additional park-and-ride lot.

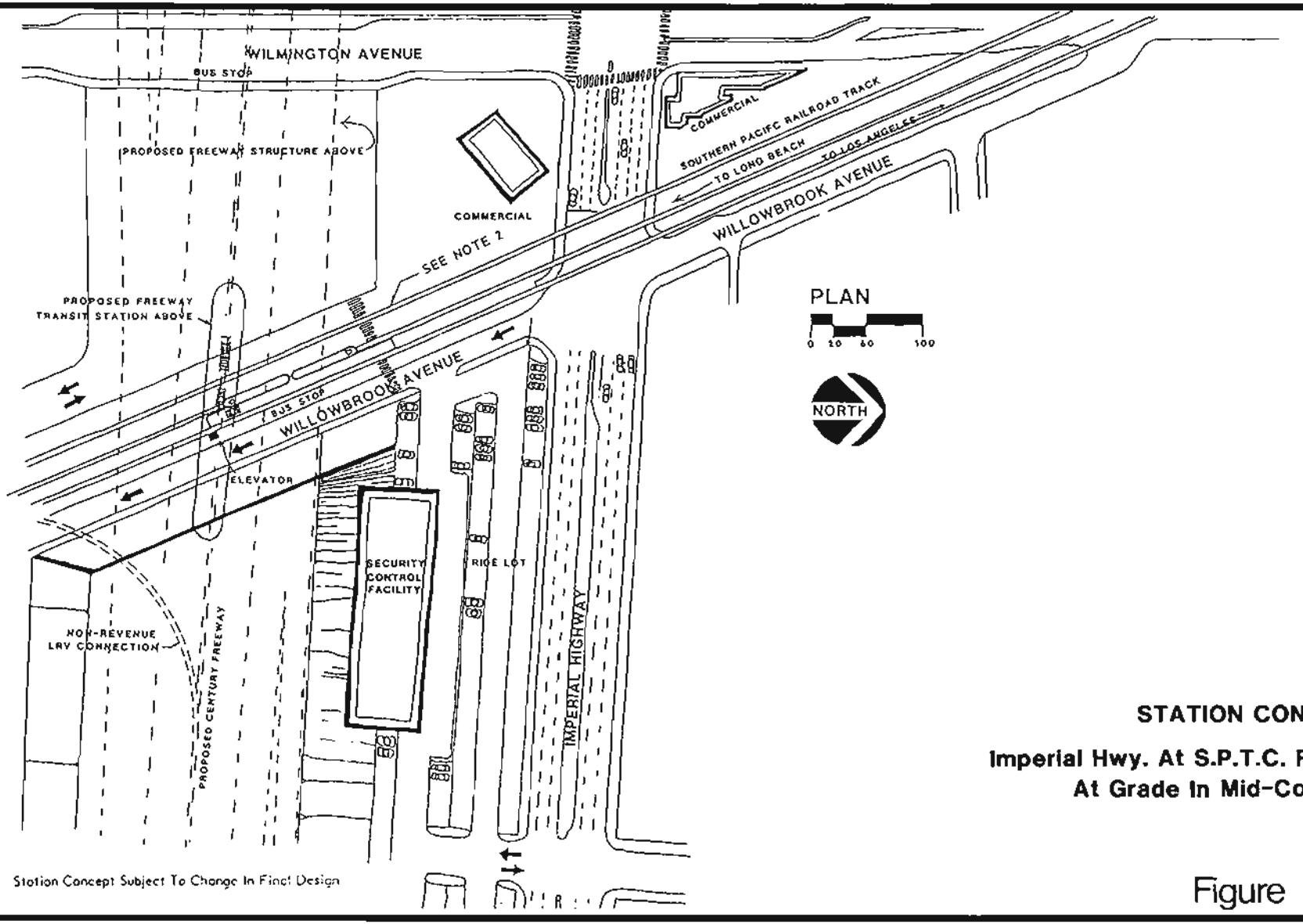
I-352 CONSTRUCTION

I-352.1 Impacts Assessment

Construction of the Security/Central Control Facility would produce a negligible impact at the preferred site location. Transportation and storage of construction equipment and materials would be facilitated by the accessibility and size of the park-and-ride lot. In addition, the construction phases of both the Century Freeway and Long Beach-Los Angeles light rail transit project at this intersection will be undertaken simultaneously. This overlap of construction schedules will facilitate incorporation of the facility with the freeway embankment. Since the surrounding areas has been vacated as clearance for the proposed adjacent Century Freeway, visual and noise impacts are also expected to be negligible.

I-352.2 Mitigation Measures

No additional mitigation measures would be required as a result of construction of this facility at this site.



STATION CONCEPT

Imperial Hwy. At S.P.T.C. R.O.W.
At Grade In Mid-Corridor

Figure 1-3

Long Beach - Los Angeles RAIL TRANSIT PROJECT

LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Security/Central Control Facility (Option)

PARSONS BRINCKERHOFF/KAISER ENGINEERS

I-353 OPERATIONS

I-353.1 Impacts Assessment

There would be no additional major impacts resulting from operation of the Security/Central Control Facility. The site has already been dedicated to use as right-of-way for the Century Freeway and as a park-and-ride lot. The only potential additional impacts during operation of the two-story structure would be to visual quality and traffic flow.

The visual impacts of a two-story structure of this scale designed in a utilitarian manner, partially situated in the freeway embankment as well as parallel to it, and buffered from all local vantage points by the park-and-ride lot, are expected to be negligible.

The impact on traffic and transportation at the Imperial Highway/Willowbrook Avenue intersection would also be negligible. Personnel work schedules are expected to be arranged according to the following two categories: 1) the security, fare inspection, and central control staffs would be working in one of three shifts, seven days per week, and 2) the administrative staff would be working in one shift, five days per week. The first shift would involve a maximum of 28 personnel working from 5:00 AM to 2:00 PM; the second shift would also involve a maximum of 28 personnel working from 2:00 PM to 11:00 PM; and the third shift would involve a maximum of 20 personnel working from 11:00 PM to 5:00 AM. The above timetables for each shift are tentative. The administrative staff has tentatively been scheduled to begin their regular shift by 7:00 AM. The maximum number of administrative personnel would be 32; this number is based on the assumption that the administration will oversee four proposed light rail lines (Long Beach-Los Angeles, Century, Pasadena, and Coast). It is advantageous that they be at their desks before the peak traffic hours for the following reasons: 1) to be available to handle an emergency situation occurring during rush hour, 2) to lessen the impact of their own commuting on the peak traffic flow, and 3) to minimize any overlap of arrival and departure with the security staff also working at this facility.

If the above schedule is adopted, a maximum possible number of 32 personnel would be arriving and departing only at off-peak traffic hours; no shift would be scheduled to begin or end during peak traffic hours. Therefore, the impact of security personnel vehicles on traffic at the Imperial Highway/Willowbrook Avenue intersection is negligible. In addition, construction of the Century Freeway is anticipated to reduce the traffic flow along Imperial Highway because these two arteries run basically in a parallel route. Since the Security/Central Control Facility would be situated within the proposed park-and-ride lot, no additional geometrical

modifications would need to be undertaken at this intersection other than those accommodating the lot and those programmed by Caltrans as part of the Century Freeway construction. Eighty-eight parking places would be required to accommodate the two largest personnel shifts simultaneously. These places will be made available in the proposed park-and-ride lot and will not affect local parking patterns.

I-353.2 Mitigation Measures

No additional mitigation measures would be required as a result of the operation of the Security/Central Control Facility at this site beyond commitment to a staggered personnel arrival and departure schedule.

I-354 SIGNIFICANCE

There are no significant adverse effects associated with the construction or operation of this Security/Central Control Facility.

I-360 ALTERNATE MAIN YARD AND SHOP SITE

In January, 1985, the LACTC was notified that the Dawson Steel foundry site on Del Amo Boulevard in Carson was being offered for sale by the owners. The site is immediately adjacent to the Southern Pacific rail right-of-way to be used by the commission for the light rail project. After reviewing the site, commission staff directed that it be incorporated into the project as an alternate main yard and shop site. The decision on whether to use this site or the site described in the DEIR will be made after project adoption.

I-361 DESCRIPTION

The alternate site for the main yard and shop is located west of Compton Creek and the Long Beach Freeway, south of Del Amo Boulevard, and east of the existing SPTC right-of-way. Figure I-4 shows the location and proposed layout of this alternate site. This site has been developed and has recently been used as a highly automated production steel foundry facility (Dawson Steel, Inc.). The existing main building consists of a structural steel frame with pre-cast tilt-up exterior wall panels. It is a modern, 200,000-square-foot industrial building containing open manufacturing areas served by overhead cranes, offices, employee facilities including showers and locker rooms, material storage areas, industrial waste and air pollution control equipment, and complete utility services. The site is fully improved with paved roads and parking areas, complete fire protection, site drainage and sanitary sewer systems, and is served by rail and road access routes off Del Amo Boulevard. The site, including the buildings and any desired equipment, is currently for sale. The existing building and site can be modified to accommodate full light rail vehicle and maintenance-of-way equipment.

There are several apparent advantages of this site as the location for primary maintenance and storage facilities:

- The proposed use is compatible with the City of Carson's General Plan, though the municipal code requires that a conditional use permit be obtained. The site is totally buffered on all sides by freeways, the rail line, and Compton Creek.

- The site has excellent security. Outside access is through one control point for all 19.2 acres.

- The existing road and rail access, fire protection, sanitary, sewer, water, gas, and power systems, together with a comprehensive site drainage system, may provide significant cost and construction time

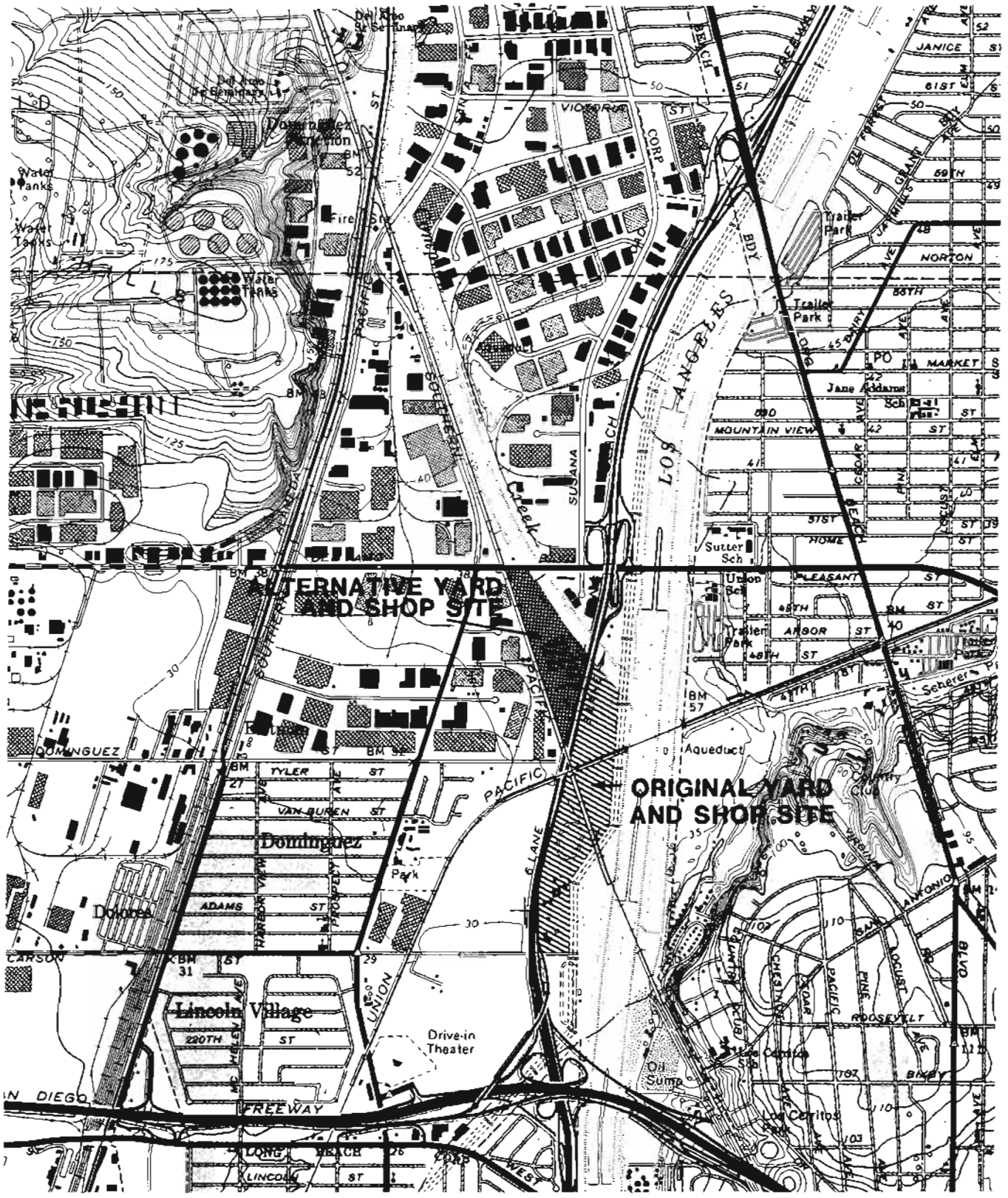


Figure I-4

Long Beach - Los Angeles RAIL TRANSIT PROJECT

LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Alternate Main Yard & Shop Site (Option)

PARSONS BRINCKERHOFF / KAISER ENGINEERS

savings when compared to development costs and schedules of the other main yard candidate.

- The availability of this developed site will eliminate anticipated costs of storing material and equipment required for early construction activities.

- Location along the Long Beach Freeway provides excellent visual presence to freeway users in south Los Angeles County, encouraging park-and-ride interest at the Del Amo station.

Effective use of the site will require modifications to the interior of the existing main building, some demolition of existing ancillary facilities that cannot be utilized, and development of the property to accommodate rail vehicle storage. No significant changes to the existing road and rail access, water, and sewage systems are anticipated.

I-362 CONSTRUCTION

I-362.1 Impacts Assessment

- Topography, Soils, Geology, and Seismicity

  Modification of the existing main building and the demolition of some ancillary facilities would produce debris requiring disposal. The amount is expected to be insignificant. All debris would be disposed of at an appropriate local landfill site.

  The modifications to the existing main building would not compromise its structural integrity. Additionally, the probability of a major earthquake occurring during the construction phase is considered to be low. All available construction techniques, specified to meet applicable California building codes, would be implemented for the safety of workers.

- Floodplains, Hydrology, and Water Quality

  Construction would not result in excessive erosion and/or the introduction of sediments, wastewater, or chemicals into adjacent bodies of water.

- Vegetation and Wildlife

  The construction of the main yard and shop would not affect vegetation. There are no threatened or endangered species located in the yard site area.

- Noise and Vibration

  There are no noise-sensitive areas located within 1,200 feet of the proposed yard site. The area is zoned "Heavy Industrial" and the site is buffered to the east by the Long Beach Freeway and to the west by the SPTC freight tracks. Construction noise impacts would not be significant.

- Displacement

  Construction activities would be confined to the proposed yard site. The site is currently unoccupied and for sale. There are no additional properties that would have to be acquired.

- Community Services

  Construction of the yard site would not affect community services. Accessibility to community and recreational facilities would not be diminished. Utilities would not be disrupted.

- Economic Activity

  There would be no street or lane closures required during construction. Local businesses would not be disrupted.

- Visual Quality

  Construction activities would not create any significant visual impacts. Demolition of some ancillary facilities and development of the property would change the visual setting.

- Historic and Cultural Resources

  There are no historic structures that would be affected by construction activities

- Traffic and Transportation

  The only access to the yard site is from Del Amo Boulevard. There is a left turn lane for vehicles approaching the property from the east. Vehicles exiting the yard site are restricted to right turns onto Del Amo Boulevard. Construction-related traffic would have a minimal effect on Del Amo Boulevard and the level of service at the Del Amo/ Santa Fe intersection. Street or lane closures would not be required during construction activity.

I-362.2 Mitigation Measures

No additional mitigation measures beyond those outlined in Section II-600 would be necessary.

I-363 OPERATIONS

I-363.1 Impacts Assessment

- Topography, Soils, Geology, and Seismicity

  Seismic conditions could affect the main yard and shop. However, its construction and operation would have no effect on existing seismic conditions.

- Floodplains, Hydrology, and Water Quality

  No federally defined floodplains would be affected and existing patterns of runoff would not be changed. Compton Creek, which is not in a natural state, borders the proposed yard site on the northeast. The operation of the main yard and shop would not result in the disposal of hazardous, polluting, or toxic substances into Compton Creek or any nearby bodies of water.

  Provisions would be made for containing possible pollutants. Washwater from the train washer would be recycled.

  The existing site drainage and sanitary sewer systems are fully adequate for the project's needs.

- Vegetation and Wildlife

  There would be no effect on vegetation at the yard site. Wildlife would not be displaced, and there are no threatened or endangered species located within the proposed main yard and shop area.

- Air Quality

  The traffic generated on Del Amo Boulevard and at the nearest signalized intersection (Santa Fe Avenue/Del Amo Boulevard) by main yard and shop operations would not contribute measurably to the air pollution levels.

  The proposed vehicle paint shop would be an enclosed space with adequate environmental provisions.

The main yard and shop operations would not violate local or national air quality standards.

- Noise and Vibration

  There are no noise sensitive sites within 1,200 feet of the proposed main yard and shop site. The yard site is located in an area that is zoned for heavy industry. Presently, there are industrial facilities to the west and south adjacent to the SPTC tracks. North of Del Amo Boulevard there are additional industrial facilities.

  Compton Creek and the Long Beach Freeway border the yard site on the northeast and southeast respectively. Freeway and SPTC freight track noise would effectively mask the main yard and shop operations.

- Land Use

  The main yard and shop is compatible with existing land uses. The site is located within the City of Carson, in an area zoned for heavy industry. It is also compatible with the City of Carson's General Plan, but the municipal code does require that a conditional use permit be obtained.

- Economic Activity

  The City of Carson does not levy a property tax. There would be some loss of property tax revenue to the county with the acquisition of the 19.2-acre site. However, there would be a greater loss of tax revenue to the local jurisdiction if the alternate Long Beach site were selected.

- Visual Quality

  The visual impacts of the main yard and shop would not be significant. The exterior of the existing main building would not be substantially altered. The development of the yard and the yard operations would not be incompatible with the visual character of the present setting.

- Historical and Cultural Resources

  There are no historic structures that would be affected.

- Traffic and Transportation

  The impacts to vehicular traffic on Del Amo Boulevard and Santa Fe Avenue due to LRT operations at the proposed main yard and shop site would be minimal. During peak hour periods, the LOS at the Del Amo/Santa Fe intersection would not be significantly affected.

  The current V/C ratio at the Santa Fe/Del Amo intersection is 0.79 (level of service "C"). In year 2000 without the LRT project, the V/C ratio is projected to be 0.98 (level of service "E") if the intersection is not improved. With the project in operation and no improvements to the intersection, the V/C ratio could increase to 1.04 (level of service "F"), but this would not be due to the yard operation at the Dawson site. The primary reason for this increase would be the LRT parking lot on the northeast corner of Del Amo and Santa Fe Avenue. With the improvements to the intersection recommended in the DEIR, the V/C ratio would improve to 0.89. The analysis to support the conclusion of little effect by the Dawson yard site is as follows.

  On a typical weekday with an ultimate fleet size of 90 vehicles, the main yard and shop would require a total staff of 275 employees. One hundred and thirty-three employees would work the day shift (5 AM to 2 PM tentative times). The afternoon shift (2 to 11 PM, tentatively) and the night shift (8 PM to 5 AM) would employ 73 and 69 persons, respectively. It is evident that most employee arrivals and departures would occur during off peak hours when traffic is light. Potentially, some employees either departing upon completion of the day shift or arriving for the afternoon shift may encounter peak hour conditions. However, even if half the personnel employed for these two shifts encountered peak hour conditions, the increase in V/C ratio at the intersection of Del Amo Boulevard and Santa Fe Avenue would be less than one percent. The year 2000 traffic estimates assumed full utilization of this site, in any case. There is currently a protected left turn for westbound traffic on Del Amo into the yard site. Eastbound traffic on Del Amo Boulevard would access/egress the yard site on a right-in/right-out basis, thereby reducing any impacts at the yard entrance.

  LRT train movements in and out of the main yard would occur during off-peak hours. All yard operations and maintenance activities would be off-street, confined to the yard site area.

I-363.2 Mitigation Measures

No additional mitigation measures beyond those already identified in the DEIR for the original main yard and shop site, or for the Santa Fe/Del Amo intersection, are necessary for this alternate site.

I-364 SIGNIFICANCE

There are no significant adverse effects associated with construction or operation of this alternate yard site. Because the site is already developed and the existing building can be adapted to project uses, there are fewer construction impacts associated with this site than with the original yard site.

I-400 LONG BEACH

I-410 DESIGN REFINEMENT OF LB-5 SOUTH OF 7th STREET

I-411 DESCRIPTION

The LB-5 alternative presented in the SEIR would utilize the reserved median of Long Beach Boulevard between Willow Street and 7th Street. At 7th Street and south to 1st Street, the light rail tracks would straddle the median in the inner travel lanes, operating in mixed traffic. (The SEIR also discussed an optional LB-5 configuration north of 7th Street that would maintain the landscaped median by widening Long Beach Boulevard.)

In consultation with and in response to concerns expressed by the City of Long Beach, an optional design refinement for LB-5 south of 7th Street has been defined. Figure I-5 illustrates this optional design. The refinements in the alignment between 7th and 1st Street are as follows:

1) the LRT would operate in a reserved median (similar to the layout proposed north of 7th Street) between 7th and 1st streets;

2) all existing travel lanes and bus lanes would be maintained; however, the existing sidewalk widths would be variably reduced on both sides of the street to accommodate the reserved median;

3) left turn lanes from Long Beach Boulevard to 3rd Street and Broadway would be maintained;

4) the LRT station proposed between 6th and 7th streets in the SEIR would be moved to between 5th and 6th streets;

5) some bus stops would be consolidated and relocated; and

6) a single tail track would be installed between 1st Street and Ocean Boulevard to temporarily accommodate disabled light rail vehicles.

I-412 CONSTRUCTION

I-412.1 Impacts Assessment

The construction of the refined LB-5 option would remain essentially the same as described in the SEIR for the mixed traffic option (LB-5) with some variation.

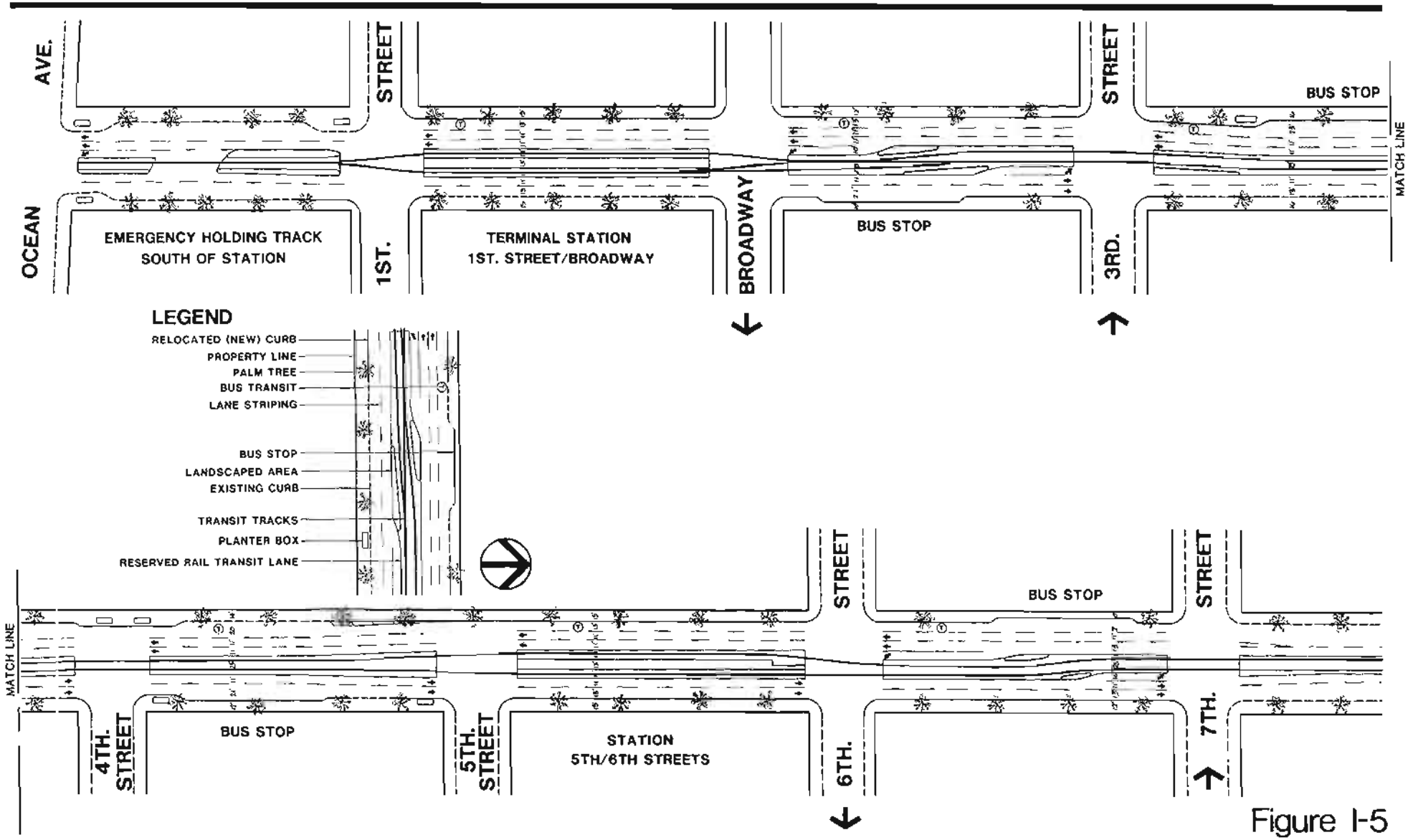


Figure I-5

Long Beach - Los Angeles RAIL TRANSIT PROJECT

LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Design Refinement of LB-5, South of 7th Street (Option)

PARSONS BRINCKERHOFF / KAISER ENGINEERS

Major construction activities would now occur within the existing median south of 7th Street. Also, in order to preserve the existing bus lane and some of the bus turnouts, reconstruction of the existing sidewalks would be required. The existing sidewalk area on each side of Long Beach Boulevard now ranges from 24-26 feet wide in areas without bus turnouts to 14-16 feet wide at bus turnouts. With this option sidewalks would become 15-18 feet wide, except at bus turnouts where the width would be reduced to 10-16 feet wide.

The use of additional sidewalk area on each side of Long Beach Boulevard would present the most significant difference between the two options during the construction phase. Construction activities would be moved that much closer to adjacent commercial businesses and would further restrict pedestrian activity and bus service in construction areas.

The construction period for the refined LB-5 option would not be significantly increased and would take approximately the same amount of time as the mixed traffic option, i.e., between 24 and 30 months.

For the refined LB-5 alignment there would be no significant utility relocation because the proposed alignment is located in the existing median. The median of Long Beach Boulevard was the historical alignment for the former Pacific Electric line; therefore, most utilities were placed away from the proposed light rail roadbed. However, there would be some relocation of recent electrical conduit and associated structures that have been installed since the cessation of Pacific Electric operations. Any construction on Long Beach Boulevard would require significant utility reconstruction at cross-streets where existing utilities traverse perpendicular to Long Beach Boulevard. Other impacts would be the same as those described in Section I-320 (Typical Construction Methods) in the SEIR.

I-412.2 Mitigation Measures

Impacts with the appropriate mitigation measures for the refined LB-5 option remain the same as for the original (mixed traffic) LB-5, except as detailed below.

- Vegetation and Wildlife

  The light rail facility will be constructed within the existing landscaped median on Long Beach Boulevard. The median was originally landscaped in 1966-1967, and new landscaping has been added continually since then. The landscaped vegetation includes common varieties of palms and magnolias. No rare or endangered species occur along Long Beach Boulevard.

Construction of the refined LB-5 alternative would require the removal of all the landscaped vegetation within the median from Willow Street to 1st Street and some of the landscaping in adjacent sidewalk areas between 7th and 1st streets. Vegetation and landscaping would be replaced at station locations in the median. Other median landscaping would be relocated to the sidewalks on either side of the street. The only locations where sidewalk space may not permit such relocation would be at LRT stations and bus stops.

- Noise and Vibration

Noise levels could increase slightly for adjacent businesses due to moving construction activities into sidewalk areas between 7th and 1st Streets. The increase in noise levels would be between 1 and 2 dBA CNEL over what was estimated for the LB-5 (mixed traffic) alternative. Mitigation measures would remain the same.

- Displacement

The refined LB-5 alternative would not require the acquisition of any property (same as mixed traffic option). Some additional sidewalk area and the existing median would be utilized, but no businesses would be displaced.

- Economic Activity

Some temporary increase in disruption to businesses would be expected to occur due to construction activity in sidewalk areas. However, no additional businesses would be affected over what was described for the mixed traffic option. Pedestrian access could be reduced further, but, in no case would it be completely blocked. Special covered walkways, handrails, signing, and other safety measures would be provided as appropriate to maintain continuity of pedestrian access. Careful coordination and scheduling of construction activities with adjacent businesses and bus/transit operators would be the most effective mitigation measure for reducing potential impacts.

- Traffic and Transportation

Using the existing median for construction would remove some activity from the travel lanes, thereby allowing for better traffic movement on Long Beach Boulevard south of 7th Street. However, any gain would probably be offset by activities necessary to modify curb and sidewalk areas. Careful coordination and scheduling of construction work would be most effective in reducing bus and auto conflicts. Staging

of various activities and non-peak hour construction would lessen potential impacts. A minimum of one traffic lane in each direction would be kept open at all times during construction.

Other potential mitigation measures would include: 1) restricting construction activity on moving traffic lanes to off-peak hours and to nights and weekends wherever feasible; 2) phased construction; 3) on-street curb parking temporarily eliminated to accommodate construction operations and traffic flow on streets where construction is taking place, and on adjacent parallel streets where additional travel lanes would be required to accommodate diverted traffic; 4) contractors required to follow all construction procedures developed by the City of Long Beach and the "Standard Specifications for Public Works Construction" prepared by the State of California; 5) traffic control plans, including detour plans, formulated during final design in cooperation with all affected jurisdictions; 6) traffic signage developed to alert motorists to the location and duration of the project construction activities, and in special instances, temporary traffic lights or modifications to traffic lights to expedite traffic diversions; 7) no designated major or secondary highway closed completely to vehicular or pedestrian traffic unless unforeseen circumstances dictate, and no local street or alley completely closed for any significant time period; 8) where pedestrian activities are affected, appropriate warning regulatory signs installed and pedestrians diverted, but pedestrian access to residences and business maintained during construction.

I-413 OPERATIONS

I-413.1 Impacts Assessment

Operations impacts remain as described for the original LB-5 with the following additions:

- Vegetation and Wildlife

  A description of the impacts upon the planted median in Long Beach Boulevard between 7th and 1st streets is provided in the Construction Impacts section. However, removal of this vegetation has an impact on the visual character of the boulevard. See the Visual Quality section for a discussion of these impacts.

- Visual Quality

  Long Beach Boulevard from 7th Street south to 1st Street is especially visually sensitive because the right-of-way has been reconstructed to include a number of streetscape improvements: bus

lay-bys and parking areas, signage, historic street lighting standards, street furniture, and sidewalk paving. In addition, tall palm trees in the center median currently exist, visually dividing the street into two channels. The street space is weakly defined, however, by a mixed scale of buildings with an intermittent commercial street facade.

The refined LB-5 option would alter this existing visual environment in several ways. The LRT would operate in a reserved median that would replace the existing one. The existing center median street trees and other appointments would be removed to allow for placement of the LRT tracks and stations. Because the LRT would replace the existing median, full restoration of the median landscaping would not be possible. However, vegetation and landscaping would be placed at station locations and sidewalk areas where desirable and appropriate. This would be a partial mitigation for the altered visual setting insofar as vegetation is concerned.

The refined LB-5 alternative would also necessitate reconstruction of the street configuration, including changes to the travel lane striping and sidewalks that would have varying widths to accommodate the striping changes. Thus, the existing sidewalks and associated street furniture (light standard, signing, etc.) would be altered from its present state. In this regard, it may not be possible to fully restore the street furniture to its original placement. However, it would be possible to replace the various street furniture components in such a way as to be visually consistent with the new street definition resulting from the implementation of the LRT. It would be possible to effect a nearly complete mitigation of the visual effects relating to street furniture and sidewalk definition. It is not, therefore, expected that there would be a residual negative visual impact insofar as street furniture is concerned.

- Historic and Cultural Resources

Some of the historic street lighting standards south of 7th Street would have to be moved. However, final placement of these standards will be designed to be consistent with the overall redefined streetscape.

- Traffic

The refined LB-5 alignment was developed to mitigate some of the impacts on vehicular traffic south of 7th Street, particularly between 6th and 7th Streets, where heavy traffic volumes are projected for year 2000 and where, under the original LB-5 alternative, the LRT

would leave the reserved median and operate in mixed traffic between 6th and 1st streets. Also, by relocating the LRT station to between 5th and 6th Streets in the reserved median, the impact on left turn traffic from Long Beach Boulevard to 6th and 7th streets would be substantially reduced. South of 6th Street, the traffic volumes drop significantly, and impacts to vehicular traffic would be insignificant.

Similar to the original LB-5 alternative, the refined LB-5 alignment would require a separate left turn phase at each signalized intersection along Long Beach Boulevard to avoid potential conflicts between left turn traffic and the LRT vehicles. However, based on traffic projections at key intersection locations, the City of Long Beach would need to provide the extra left turn phase to accommodate the heavy left turn volumes in any case. Consequently, the left turn phase would be part of the setting (existing conditions) for the LRT start of operation year 1989.

In some instances where the traffic operation will not reach a critical level of service until after the start of LRT operations, the LRT project would basically accelerate the installation of the left turn phase. In such cases the left turn green time would be part of the overall green time allocated for the north-south traffic movements along Long Beach Boulevard so as not to disrupt the heavier east-west traffic flow. As part of the construction process, the LACTC would install the signal equipment and the City of Long Beach could fine-tune the signals for maximum flow.

The reduction in vehicular traffic volumes with the refined LB-5 alternative would be about two percent from that identified in the SEIR for the LB-5 alternative. The impact on vehicular traffic with the refinement would be similar to the impact north of 7th Street identified in the SEIR. There would be virtually no change in the intersection levels of service on Long Beach Boulevard between the No Project alternative and the refined LB-5 alternative.

- Transit

The proposed bus route and frequency modifications for local and express services under the refined LB-5 alternative would be similar to those identified on page IV-52 of the SEIR.

The existing bus stops (turnouts) would be modified to maintain northbound stops between Broadway and 3rd Street, and 4th and 5th Streets. The northbound bus turnouts between 3rd and 4th Streets, and 6th and 7th Streets (RTD only) would be eliminated.

Southbound, the existing bus turnouts would be maintained between 6th and 7th Streets. The existing southbound bus turnout between 4th and 5th Streets would be relocated to between 3rd and 4th Streets and the southbound turnout between Broadway and 3rd Street would be eliminated altogether. The repositioning of the bus turnouts would maintain easy walking distance to bus service.

- Parking

  South of 7th Street, with the refined LB-5 alignment, an additional 13 curbside parking spaces along the east side of Long Beach Boulevard would be eliminated.

I-413.2 Mitigation Measures

- Provide as much street vegetation as possible in finished streetscape, consistent with the redefined visual setting.

- Reinstall as much of the existing street furniture as possible, consistent with the redefined streetscape.

- Restore as many historic street lighting standards as is feasible to their original placements. Install the remainder in such locations as to be consistent with the redefined streetscape.

- The refined LB-5 alternative is, in itself, a mitigation measure with regard to heavy traffic volumes projected for Long Beach Boulevard between 6th and 7th Streets. Relocation of the LRT station to between 5th and 6th Streets, in particular, substantially reduces the impact on left turn traffic from Long Beach Boulevard to 6th and 7th Streets.

- Control each LRT station with appropriate warning signs and barriers so as to channel passengers safely to controlled sidewalks.

I-414 SIGNIFICANCE

The refined LB-5 alternative, if implemented together with its associated mitigation measures, would not result in significant residual adverse effects.

I-420 HILL STREET PUMPING STATION

I-421 DESCRIPTION

The Hill Street pumping station is situated at the termination point of Hill Street where it encounters the flood control channel levee (see Figure I-6). To the west of the pumping station, across the Los Angeles River channel, runs the Long Beach Freeway. A residential neighborhood occupies the adjacent area to the east of the pumping station. This residential community is served by the Los Angeles River Rio Hondo Trail bicycle path which runs along the top of the flood control levee. The neighborhood is subjected to noise generated by the pumping station, most noticeably during the winter rainy season.

The Hill Street pumping station is located in the light rail right-of-way (for modified LB-3) along the flood control channel. There is not enough width between the pumping station and the flood control levee at grade level to allow passage of the rail guideway.

In the SEIR, the proposed solution to this problem was the modification of the structural configuration of the pumping station. This would entail removal and relocation or reconstruction of the intruding portion of the west elevation of the pumping station. This portion of the pumping station contains an office, stairway to forebay, lavatory, and metering equipment. Reference is made to the modification of the Hill Street pumping station on pages I-33 and III-5 of the SEIR.

The proposed alternative to the modification of the pump station would raise the guideway approximately five feet above grade and remove a portion of the flood control wall, shifting the track alignment and effectively bypassing the pumping station facility. This alternative is similar to that proposed for the section of railway parallel to the City Corporation yard.

At a five percent grade, the guideway would require 100 feet to rise five feet above grade; it would level off for approximately 40 feet (the width of the pump station) and would require 100 feet to descend back to grade. The top-of-rail elevation would be raised to a level approximately 10 feet below that of the bicycle path. A retaining wall would be required to maintain the structural integrity of the flood control wall. This retaining wall would be located approximately 11 to 13 feet from the edge of the bicycle path or 27.5 to 29.5 feet from the wall of the pumping station. An additional wall or series of columns would be constructed approximately one foot from the wall of the pumping station in order to provide support for the guideway.

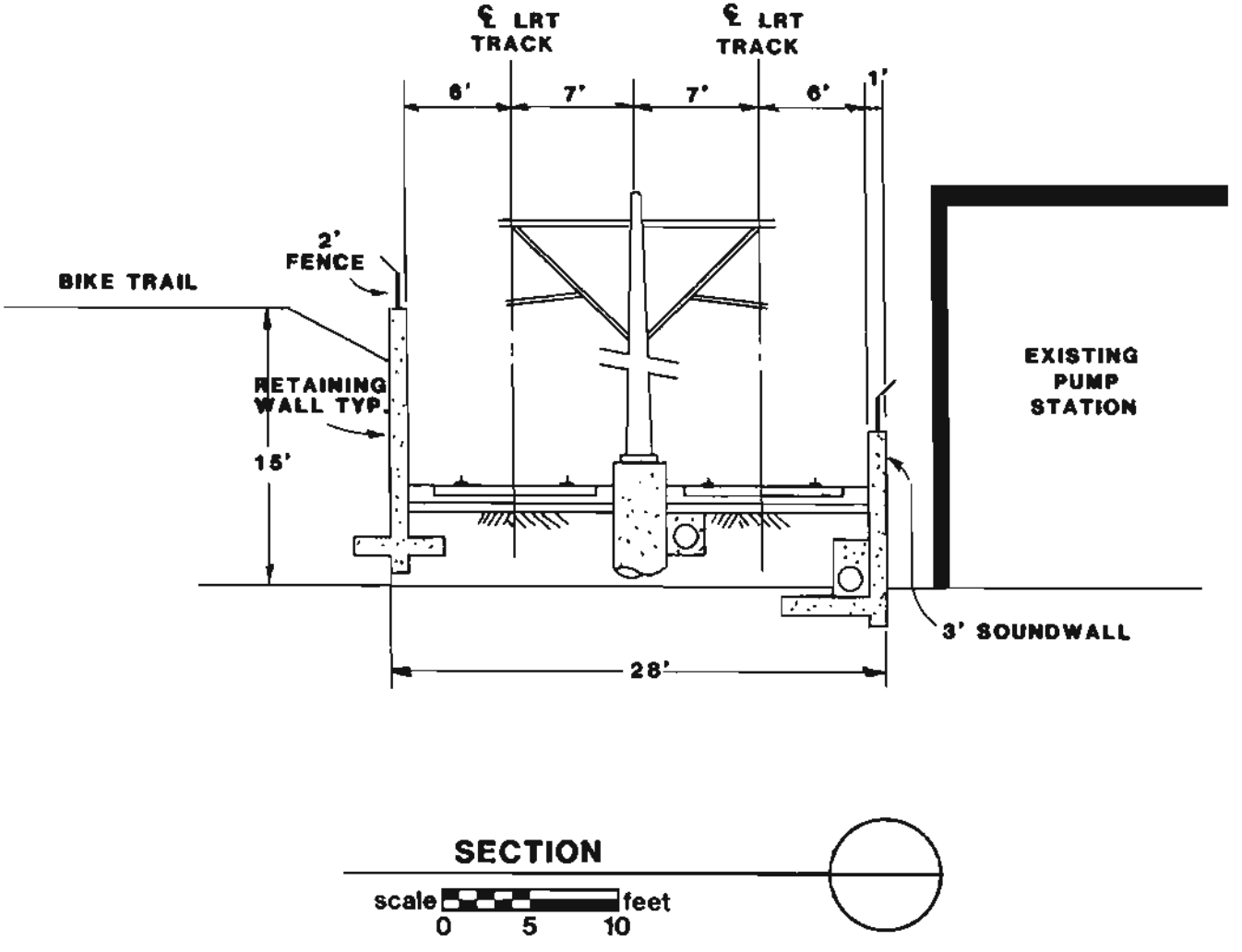


Figure I-6

Long Beach - Los Angeles RAIL TRANSIT PROJECT

LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Embankment at Hill Street Pump Station (Option)

PARSONS BRINCKERHOFF / KAISER ENGINEERS

I-422 CONSTRUCTION

I-422.1 Impacts Assessment

Adoption of this revision would require additional grading, excavation, and construction of embankment. Constructing the new embankment would require bringing in about 2,000 cubic yards of fill, possibly from another portion of this project. The excavation and removal of material from the flood control levee and construction of the retaining walls would lengthen the time frame for construction of the guideway. The overall time frame of construction would not be lengthened, however, as the need for any demolition and reconstruction of the pumping station would be eliminated. It is estimated that there would be a minimal increase in noise levels generated during the construction phase of this alternative over that originally proposed.

I-422.2 Mitigation Measures

Fill material required for construction of the embankment could be trucked in from sources at either end of Alternative LB-3 by traveling on the proposed roadbed for the light rail tracks and not through any adjacent residential neighborhoods. No additional mitigation measures would be required during the construction phase of this alternative.

I-423 OPERATIONS

I-423.1 Impacts Assessment

Because the elevation of the guideway would be raised five feet above grade, there would be an increase in noise level and visual impacts over those generated by an at-grade configuration. Any increase in noise levels at this elevation would be rendered negligible by the realignment of the tracks up to 20 feet farther away from the residential area. The soundwall proposed to accompany this section of track would rise along the top of the outbound retaining wall. The top of the soundwall would rise from about three-four feet above-grade to a maximum height of 10-11 feet above-grade over a distance of 100 feet on either side of the pump station. No soundwall would be necessary behind the 40-foot-wide pumping station. The visual impact of this alternative at its highest level would be minimized by the prominence of the 24-foot-high pumping station structure located between the guideway and neighboring residential area.

I-423.2 Mitigation Measures

No additional mitigation measures would be required during operation for this option.

I-424 SIGNIFICANCE

The proposed alternative would appear to cause no significant increase in noise and visual impacts over the original proposal. Mitigation measures required by any potential increases would be minor.

Chapter

II ALTERNATIVES EVALUATION

II-100 INTRODUCTION

The Long Beach-Los Angeles Rail Transit Project has been under development by the Los Angeles County Transportation Commission (LACTC) since early 1982. Detailed technical studies of various kinds have been conducted and environmental documentation has been prepared and circulated.

For purposes of evaluating alternative routes, the Long Beach-Los Angeles corridor was divided into three segments: downtown Los Angeles, the mid-corridor, and Long Beach. A number of alternative alignments were considered within each of the three segments. These are documented in detail in the Draft EIR. As a result of comments received from the Long Beach area, three new Long Beach alignment alternatives, beyond the original four defined in the DEIR, were identified for study. These were described and evaluated in the Supplemental (SEIR).

The intent of the extensive study to which the proposed project has been subjected was to define it in sufficient detail to meet key requirements of the planning and development process. These requirements are:

1) determination of basic project feasibility from the perspectives of service, cost, and environmental impact;

2) documentation of all possible significant impacts of the project and mitigation measures; and

3) selection of a final "preferred" alignment for the system prior to initiation of detailed engineering and construction.

With documentation of alignment alternatives complete in all three segments of the project corridor, project development reached the point of selecting a preferred alternative in each of those segments. An Alternatives Evaluation Report (AER), issued November, 1984 by the staff of the LACTC and its consultants, was prepared and circulated for review and comment. This report documents the reasons supporting selection of preferred alignments in the downtown Los Angeles and mid-corridor segments of the project. A second AER, issued in March, 1985, evaluates the various alternatives in Long Beach in an effort to assist commission members in selecting a preferred alignment for that city.

Of the seven alternatives identified for study in Long Beach, three are no longer under consideration. These are: LB-1 (Atlantic Avenue Two-Way), LB-3 (original Los Angeles River Route), and LB-4 (Atlantic With Pacific Avenue Loop). LB-1 and LB-4 were considered with three suboptions regarding the placement of tracks along Atlantic Avenue, the first two of which would have required substantial private property acquisition. The third option eliminated property takes, but required the trains to run in mixed traffic throughout the entire length of the street.

Intense opposition to the first and second options was expressed at the first public hearing on June 27, 1984, while the significant additional cost of widening Atlantic Avenue and compensating displaced families and businesses was viewed with concern by commission members. The third option was determined in the DEIR to provide inadequate service when operating in two-way mixed traffic along a street as narrow as Atlantic Avenue.

Reflecting these land use, community, and traffic impacts (all documented in detail in the DEIR), there has been no support offered the LB-1 or LB-4 alternatives by any government agency, organization, or private citizen since the June, 1984 public hearing. Accordingly, these two alternatives were eliminated from further consideration.

The original LB-3 (Los Angeles River Route) was also dropped from further consideration due to its relatively less desirable characteristics when compared with the LB-3 (Broadway Aerial-Modified River Route) detailed in the SEIR. The original river route called for double tracks along 4th Street, Pacific Avenue, and 1st Street, with trains operating in mixed traffic on all these relatively narrow streets. In addition, there were no stations along the entire length of the river portion of the alignment, resulting in inferior service and lower patronage estimates.

It is the purpose of this chapter to summarize the findings and conclusions presented in the Alternatives Evaluation Reports. It is organized as follows: overview of the technical evaluation process, the technical evaluation of alternatives, and findings and recommendations.

II-200 OVERVIEW OF THE TECHNICAL EVALUATION PROCESS

II-210 MAJOR ELEMENTS AND CONSIDERATIONS

The technical evaluation of alternatives is one of two criteria used to select a preferred alignment for implementation. The second is the public and agency comment on the project received through the environmental review process. The technical evaluation was designed to accomplish one of two objectives:

1) identify that alternative which best achieves accepted goals and objectives for the project, or

2) failing to identify one alternative as clearly superior on technical grounds, present all information in a manner which facilitates the understanding of benefit and cost tradeoffs among the alternatives.

The evaluation process had two basic elements: selection and estimation of evaluation criteria (measures), and use of one or more frameworks to present information in a manner which addresses all concerns of the decision process.

II-300 SELECTION OF EVALUATION MEASURES

In selecting evaluation measures, an attempt was made to rely on quantifiable items where possible, and where not, to use measures which could be clearly defined to all parties involved. The selection of a limited set of evaluation measures was governed by three considerations: 1) that they reflect and fully measure the extent to which the alternatives achieve accepted project goals and objectives, 2) that they conform with the format and information requirements of the evaluation frameworks chosen, and 3) that the total number of measures selected be kept reasonable while still preserving thorough coverage of all goals and objectives.

Two primary goals were defined for the project early in the study phase, namely that the system will provide the citizens of Los Angeles County with the benefits of improved public transportation in a cost-effective manner which is environmentally sensitive and socially responsible, and that the system will be constructed as expeditiously as possible.

In addition to goals established specifically for the project, there are a number of regional criteria (neutral statements of goals and objectives) which apply to project development. These are as follows:

Regional (Corridor Selection)

- o Support development of activity centers
- o Relieve capacity deficiencies
- o Promote balanced sub-regions

Corridor Alignments

- o Meet existing needs first
- o Maximize ridership
- o Use existing facilities and rights-of-way

Project

- o Cost-effectiveness
- o Environmental soundness
- o Financial feasibility
- o Public acceptability

Other regional goals and new transportation projects cited by the LACTC and SCAG include: improving intra-regional travel; improving accessibility for the elderly and handicapped; revitalizing older neighborhoods; and assisting in implementing other economic and land use plans.

From these general goals for public transportation investment, 13 objectives were adopted by the Commission to guide design efforts:

1) Allow low-cost construction
2) Provide speed competitive with the automobile
3) Serve area in need of transit improvement
4) Cause only acceptable environmental impacts, and where possible, enhance the environment
5) Attract patronage sufficient for cost-effective operation
6) Emphasize use of existing rights-of-way wherever feasible
7) Secure the minimum capital and operating cost
8) Provide an attractive level of service exceeding that of buses
9) Use existing technology requiring minimum developmental efforts
10) Provide capacity adequate to meet presently-anticipated future needs
11) Be suitable for staged construction and capable of being expanded
12) Offer minimal implementation difficulties for an initial segment
13) Be compatible with other existing and anticipated transportation system elements.

The selection of evaluation measures was a two-step process. First, theoretical discussions of evaluation methodology and its application to rail transit projects were reviewed to assemble the full range of possible measures for each goal/objective category. Second, the candidate measures were reduced to a more manageable number for actual use in the evaluation. Emphasis was placed on selecting those measures which best reveal significant differences among alternatives while at the same time covering all criteria and addressing all known issues. The measures were then grouped into categories reflecting issues of concern in the corridor. The final list of measures used in the technical evaluation is as shown below.

Ridership

(1) Average Daily Rail Transit Ridership
(2) Average Daily Corridor Transit Ridership (Rail and Bus)

Transit Service

(3) Average One-Way Running Time
(4) Accessibility to Activity Centers
(5) Mobility for Transit Dependents
(6) Reliability, Safety, and Security
(7) Capacity for Additional Service
(8) Integration with Regional Transportation Plan
(9) Guideway Transit Transfer Volumes
    - o Metro Rail
    - o Century Freeway Transitway
(10) Impact on Bus Operations

Cost and Revenue

(11) Total Capital Cost by Segment
(12) Total Capital Cost by System Alternative
(13) Annual Rail Transit Operation and Maintenance Cost
(14) Annual Rail Transit Operating Revenue and Cost Recovery

Energy

(15) Construction Energy by Segment
(16) Construction Energy by System Alternative
(17) Construction Energy Feedback

Environmental Impacts

(18) Construction Impacts
(19) Economic Development and Revitalization
(20) Traffic
(21) Rail Freight Operations

(22) Noise and Vibration
(23) Visual Quality
(24) Historic and Cultural Resources
(25) Other Socioeconomic Concerns
- o Population and Housing
- o Community Services
- o Business Activity

(26) Air Quality
(27) Other Natural Environmental Concerns
- o Topography
- o Water Quality
- o Vegetation and Wildlife

Plans and Policies

(28) Conformity with Plans and Policies
- o Air Quality Management Plan (AQMP)
- o Regional Transportation Plan (RTP)
- o Redevelopment Plans

II-400 TECHNICAL EVALUATION OF ALTERNATIVES

This section presents the results of applying the evaluation measures discussed in the previous section. Alternative alignments within the downtown Los Angeles and mid-corridor segments are addressed in separate sections. Each subsection begins with the evaluation measures used for each category. The data used in the technical evaluation have been developed over the course of the entire study period (18 months) and have been documented in various technical reports and memoranda, including the DEIR itself.

II-410 DOWNTOWN LOS ANGELES

Table II-1 (page II-14 immediately following this discussion) summarizes the results of the technical evaluation for downtown Los Angeles alternatives.

II-411 Ridership (Measures 1 & 2)

Ridership figures are year 2000 estimates developed by the Southern California Association of Governments (SCAG). The only significant variation in rail system ridership is for the LA-3 alignment (Figueroa/9th Aerial) which results in 40 percent more daily riders than the other two alignments. This is due to a considerably faster running time in the downtown area, better service to high density employment areas, and direct connection with Metro Rail at 7th Street. Comparisons of total ridership in the corridor show that none of the downtown Los Angeles alignments function more efficiently than the others in attracting total transit riders.

Ridership is not an effective measure in the selection process because of the similarity in the corridor as a whole, and because the apparent superiority of the LA-3 alignment is felt only in the downtown area and is accompanied by shifts in riding patterns elsewhere in the corridor.

II-412 Transit Service (Measures 3-10)

Because it does not have at-grade conflicts with vehicular and pedestrian traffic, the LA-3 alignment has the best one-way running time. The LA-2 alignment is mostly an at-grade system (only one mile of subway) and therefore has a running time equivalent to the LA-1 alignment.

The Los Angeles Community Plan and various downtown redevelopment plans were used to determine centers of activity for downtown Los Angeles. The alternative alignments were evaluated for quality of service provided to these centers. The three segments can be ranked in descending order of service as follows: LA-1, LA-3, and LA-2. LA-1 serves six of the major activity centers best, five as well as other alternatives, and four not very well. LA-3 serves four centers best, eight as well as other alternatives, and three not very well. LA-2 serves three centers best, five as well as other alternatives, and seven not very well.

Service to transit dependents was determined by calculating the number of people within one-quarter mile of project stations. A transit dependent is generally defined as a person who does not own a private vehicle, or who cannot drive and must use public transportation. In general, LA-1 provides the best accessibility to most transit dependents. LA-2 provides marginally more accessibility to youth, but is the least accessible to the elderly. LA-2 performs most poorly using this measure.

With regard to reliability, safety, and security, use of the system itself does not depend on alignment, because the system will have appropriate design features to make it safe and easy to use. The LA-1 alignment, however, has the greatest track mileage at-grade; thus, it is more likely to have potential conflict with vehicular traffic with the attendant risk of collision. In this regard, alignments LA-2 and LA-3 would be considered safer. In the case of an emergency, LA-1 would be the safest because of its ease of access compared to the subway tunnel (LA-2) or aerial guideway (LA-3). LA-3 is probably the least safe in an emergency. The three alternatives cannot be easily distinguished on the basis of passenger security.

Capacity for system expansion refers to the ability to add additional service on existing track, and the ability to construct extensions to the existing alignment. The LA-1 alignment offers the least flexibility to increase service because its capacity is dictated by block lengths and traffic signal timing, neither of which can be easily modified. The LA-3

alignment offers the most flexibility because it is almost entirely grade-separated. The LA-2 alignment falls somewhere in between the two.

The LA-3 alignment offers considerable flexibility to add new trackage but not without attendant environmental impact. The LA-2 alignment offers similar freedom with less permanent impact but at greater cost. The LA-1 alignment, by being entirely at-grade, offers the greatest opportunity for physical expansion; however, maintaining the system at-grade carries with it increased exposure to vehicular conflict.

The Regional Transportation Plan (RTP) is a year 2000 projected transportation system for the SCAG five-county area. Integration with this plan consists of supporting transit usage on other systems identified in the plan as well as maximizing overall transit usage in the region.

All three downtown Los Angeles alignments provide connections with the Metro Rail and therefore the two systems reinforce each other. As suggested by transfer volume forecasts, this support would be most effective with the LA-3 alignment and only minimal with the LA-2 alignment.

Connection with the I-5 Transitway depends upon the system selected. With a bus/HOV lane, there would be no direct connection. With rail technology, the transitway would terminate at Union Station by means of the San Bernardino Transitway and a connection with the LA-1 alignment would be possible. The I-5 Transitway and the rail transit project would offer competing service to southeast Los Angeles County.

The proposed I-10 busway extension would terminate at Alameda Street, creating an opportunity for connection with the rail transit project at Union Station. LA-1 would then offer some support, but LA-2 and LA-3 would have little effect.

A connection between the LA-2 alignment and the Harbor Freeway (I-110) Transitway is possible at Flower Street and Washington Boulevard. The transitway and the Long Beach-Los Angeles line would offer somewhat competing service to parts of the South Bay area, particularly for alignments LA-2 and LA-3. Alignment LA-1 would have a negligible effect on I-110 ridership.

The Century Freeway Transitway would intersect the rail line at Imperial Highway where a dual station would offer transfer opportunities. System alternatives which include alignments LA-1 and LA-3 would cause a slight decrease in transitway ridership, whereas LA-2 would cause a slight increase.

In summary, the LA-1 alignment does not directly compete with other proposed service but also does not tie in efficiently with routes such as Metro Rail and the Harbor Transitway. By contrast, both the LA-2 and LA-3 alignments would cause some competition with South Bay service on the Harbor facility, and also to Orange County if a rail transit facility were built on I-5. However, LA-2 and LA-3 would benefit overall transit service by providing connectivity superior to that offered by LA-1.

The LA-3 alternative would have a significantly greater impact on local bus operations than the other alternatives. The LA-1 alignment would have the least impact. Based on a conceptual service study, implementation of the LA-1 alignment would require minor service changes on two existing SCRTD routes. The other two alignments would not necessitate these changes. Overall, the impact of any of the project alignments on local bus operations is minor.

II-413 Cost and Revenue (Measures 11-14)

Capital costs for the project were estimated based on conceptual design drawings and included such cost items as construction labor, materials, and services; design and construction management services; general overhead and administration; and public agency costs. Not included in the cost estimates were right-of-way, relocation assistance, environmental impact mitigation, and escalation.

There is little variation in the capital cost figures for the downtown alignments because of the offsetting effects of alignment length and type of construction required. The LA-1 alignment, while constructed entirely at grade, is considerably longer than the other alternatives. The LA-2 alignment, being in subway, is the most expensive, but only by three percent above the next most costly alternative, LA-3.

The capital costs for system alternatives were estimated by joining each of the Los Angeles alignments with the MC-1 and LB-4 alternatives. These costs included systemwide elements such as vehicles, maintenance facilities, and administration facilities.

The relative ranking of the downtown alternatives changes when total system costs are considered. Both the LA-1 and LA-3 alignments require a considerably larger number of vehicles than does LA-2. Thus, LA-2 results in the least overall system capital cost, and LA-3 is the most costly; however, the total variation in cost between these two is only five percent.

Little variation was found among the downtown alternatives when compared on the basis of annual operations and maintenance costs. The range of

variation was eight percent from the least costly (LA-2) to the most costly (LA-3).

Comparisons on the basis of revenue revealed the LA-3 alignment as providing the highest level of cost recovery because of its significantly higher ridership.

II-414 Energy (Measures 15-17)

Construction energy requirements were calculated using estimates of quantities of materials and fabrication derived from plan and profile drawings. For the downtown alternatives, all of the construction north of Washington Boulevard and Long Beach Avenue was included. The system alternatives included the energy needs for vehicle assembly and construction of maintenance and control facilities.

When considered in isolation, the LA-1 and LA-2 alignments are virtually identical in their construction energy consumption. The LA-3 alignment, however, requires almost double the amount of energy, primarily due to the extensive length of aerial guideway. This comparison holds true when system energy requirements are compared, with the exception that the difference between the LA-3 alignment and the others is reduced somewhat.

Energy savings on a regional basis will result from implementation of any of the downtown alternatives. Based on these savings, the expected payback periods for construction energy are 5.5 years (LA-2), 7.3 years (LA-2), and 8.6 years (LA-3). The LA-1 alignment is superior on the basis of energy efficiency, but the differences among the alternatives are not sufficient for this measure to become a significant basis for selection of a preferred alternative.

II-415 Environmental Impacts (Measures 18-27)

- Construction Impacts

When the downtown Los Angeles alignments are compared in terms of construction impacts, only two differences are revealed: 1) construction of the LA-2 subway might require removal of oil- and gas-bearing soils; and 2) construction of the LA-1 alignment would potentially encroach on historic terrazzo sidewalks. On this basis, the LA-2 alignment can be considered to have the least significant impact during construction.

- Economic Development and Revitalization

The evaluation measure used here has net fiscal impact (projected property and sales tax increases, taking into account tax decreases due to land

acquisition required for the project). None of the downtown Los Angeles alignments is expected to produce more than modest changes in economic development and revitalization. LA-2 and LA-3 could encourage development incentives already programmed for the South Park area. LA-1 could increase the visibility of rehabilitation efforts along Broadway and Spring Street.

o Traffic

The downtown Los Angeles alternatives would be expected to produce only moderate changes in the level of service at any of the intersections analyzed in the Draft EIR. Alternative LA-1 would have the greatest affect on traffic since it is primarily an at-grade system. The subway alternative (LA-2) would have the least impact on vehicular and pedestrian traffic. The aerial alignment (LA-3) would slightly reduce street capacity and parking spaces along Figueroa and Olympic/9th and would cause visual and sight impacts along Figueroa Street.

o Rail Freight Operations

None of the downtown Los Angeles alignments uses freight rights-of-way or interacts in any way with rail freight service; therefore, no impacts result.

o Noise and Vibration

None of the project alternatives in downtown Los Angeles would create a significant adverse noise impact. Passing vehicles would increase ambient noise levels, but by an insignificant amount.

o Noise Quality

The LA-2 alignment has been judged most compatible with the visual setting because it intrudes the least on the surrounding streetscape. Between the freeway overpass and the subway portal, however, Flower Street would have to be widened and the curbside trees would have to be removed during construction.

The LA-1 alignment would run at-grade through heavily congested historic districts. Because Broadway and Spring were at one time trolley streets, introducing a new rail system would not be out of context with the surrounding visual environment. Some streetscape changes would be required, including removal of some portions of terrazzo sidewalk, as well as street tree replacement. The aerial portion of the alignment could affect views of El Pueblo de Los Angeles, and the modern aerial structure would not be compatible with the historic context of this area.

The LA-3 aerial alignment would have the most significant adverse visual impacts of all of the downtown Los Angeles alternatives. The guideway would be out of scale with the historic structures along Olympic and 9th Streets and the proximity of the guideway would create shade and shadow impacts on sidewalks and adjacent buildings. There are also potential visual impacts on adjacent new developments, such as the Skyline Condominiums.

o Historic and Cultural Resources

In comparative terms, the LA-2 alignment would have the least impact on historic and cultural resources, the LA-1 alignment a more negative impact, and the LA-3 alignment the most negative.

The Flower Street subway would have no effects on historic resources because it is underground in historic areas.

The Broadway/Spring Couplet (LA-1) traverses the Broadway Theater and Spring Street financial districts, both historically significant; however, street cars were a part of the conditions contributing to their significance and, hence, the at-grade segment is not considered to have adverse effects. Some changes in the streetscape would be necessary, such as the removal of portions of terrazzo sidewalks and relocation of historic street furniture. Also, the aerial segment of this alignment would produce visual impacts on El Pueblo de Los Angeles, Father Serra Park, and Union Station.

The Olympic/9th Aerial (LA-3), because of its additional length, creates a visual intrusion for 12 historic structures along its alignment. Two of these buildings are National Register structures, one a City of Los Angeles historic landmark, and three are contributing structures to the Broadway Theatre National Register Historic District.

o Other Socioeconomic Concerns

Alternatives in downtown Los Angeles would vary greatly in their potential to serve the general population. LA-1 would serve a projected year 2000 population of 13,500 with its eight stations, LA-2, 8,830 residents (five stations), and LA-3, 4,590 residents (five stations).

The project is expected to have both beneficial and adverse effects on downtown Los Angeles community services. The LA-1 alignment provides improved access to 51 community facilities while the LA-2 and LA-3 alignments provide access to 17 and 21 facilities, respectively. The most significant adverse effects would be an additional demand placed on LAPD's law enforcement efforts, and impairment of emergency vehicle operations

due to increased congestion at grade crossings. The severest impacts would be associated with the LA-1 and LA-2 alignments.

All of the downtown Los Angeles alternatives pass through predominantly highly-developed commercial areas which would not be significantly affected by the light rail system. The project could indirectly result in increased retail sales and attendant tax revenues through enhanced potential for new development. Additional annual tax revenue estimates for the downtown Los Angeles alternatives are $1.5 million (LA-1); $2.8 million (LA-2); and $2.9 million (LA-3).

o Air Quality

All of the project alternatives would create a slight overall decrease in regional pollution. Differences among the downtown Los Angeles alternatives are insignificant.

o Other Environmental Concerns

Alternative LA-1 could result in the removal of substantially more mature street trees than would the other alternatives. None of the alternatives would adversely affect soil conditions, nor would they result in adverse water quality impacts.

II-416 Conformity with Plans and Policies (Measure 28)

o Air Quality Management Plan. The change in emission levels associated with any of the downtown Los Angeles alternatives would be extremely small. Alternative LA-1 would provide the most emissions reduction.

o Regional Transportation Plan. The system alternatives which would include the LA-3 alignment would best contribute to the public transit objectives of the RTP because of the increased patronage.

o Local Redevelopment Plans. For the most part, all of the downtown Los Angeles alternatives would conform to these plans; however, the LA-3 alignment could adversely affect residential development in the South Park area in visual terms. Also, it is possible that the LA-1 alignment could adversely affect retail activity on Broadway. No adverse effects are associated with LA-2.

TABLE II-1

EVALUATION OF ALTERNATIVES - DOWNTOWN LOS ANGELES

Measure		LA-1	LA-2	LA-3
(1)	Average Daily Rail Transit Ridership (Boardings)	54,446 riders	54,702 riders	76,303 riders
(2)	Average Daily Corridor Transit Ridership (1)	148,767 riders	148,449 riders	149,194 riders
(3)	Average One-Way Running Time (2)	68 minutes (57 minutes to 4th Street)	57 minutes (7th Street)	49 minutes (4th Street)
(4)	Accessibility to Activity Centers	Service: Best - 6 centers As Well - 5 centers Not Served - 4 centers	Service: Best - 3 centers As Well - 5 centers Not Served - 7 centers	Service: Best - 4 centers As well - 8 centers Not Served - 3 centers
(5)	Mobility for Transit Dependents	All LA alternatives fully accessible to the handicapped. Most accessible of LA alternatives to minorities, elderly, and low income.	Most accessible of LA alternatives to youth, least accessible to elderly.	Least accessible of LA alternatives to minorities, youth, and low income.

Notes: (1) Excluding through trips. Includes rail and bus.
(2) Assumes alternatives MC-1 (Compton At-Grade) and LB-4 (Atlantic/Pacific Loop).

TABLE II-1

EVALUATION OF ALTERNATIVES - DOWNTOWN LOS ANGELES

Measure		LA-1	LA-2	LA-3
(6)	Reliability, Safety, and Security	Proven technology. Greatest Auto and pedestrian conflict. Evacuation most straightforward. Security most enforceable of LA alternatives.	Proven technology. Less auto and pedestrian conflict. Best safety of LA alternatives. Security less responsive in short tunnel.	Proven technology. Best reliability of LA alternatives. Safety and security minimally less than other LA alternatives.
(7)	Capacity for Additional Service	Most flexible for addition of new CBD trackage. Limited capacity for additional peak hour service.	Extensions or new routes most costly. Moderate capacity for additional peak hour service.	Extensions or new routes more difficult than LA-1. Greatest capacity for additional peak hour service.
(8)	Integration with Regional Transportation Plan	Links with Metro Rail, I-5 Transitway (rail only) and I-10 Busway. No link with I-110 Transitway. No competition with other service.	Best link with Metro Rail. Good link with Harbor Transitway. No link with I-5 (rail only) and I-10 Busway. Minor competition with other service to South Bay and Orange County.	Good link with Metro Rail. No link with I-5 (rail only) and I-10 Busway. Minor competition with other service to South Bay and Orange County.
(9)	Guideway Transit Transfer Volumes - Metro Rail - Century Transitway	 138 7,751	 2,504 7,573	 3,376 7,805
(10)	Impact on Bus Operations	Minor service changes for two routes.	No changes proposed.	No changes proposed.

TABLE II-1

EVALUATION OF ALTERNATIVES - DOWNTOWN LOS ANGELES

Measure		LA-1	LA-2	LA-3
(11)	Total Capital Cost by Segment (1, 3)	$70,800,000 At Grade - 3.85 miles Aerial - 0.58 miles	$78,300,000 At Grade - 2.44 miles Subway - 0.83 miles	$76,400,000 At Grade - 0.34 miles Aerial - 2.83 miles
(12)	Total Capital Cost by System Alternative (1, 2, 3)	$407,200,000	$399,400,000	$427,300,000
(13)	Annual Rail Transit Operation and Maintenance Cost (4)	$13,200,000	$12,500,000	$13,500,000
(14)	Annual Rail Transit Operating Revenue - Operating Cost Recovery	$8,300,000 63%	$8,400,000 67%	$11,700,000 86%
(15)	Construction Energy by Segment	594 billion BTU 4.75 million gal. gasoline	599 billion BTU 4.79 million gal. gasoline	1,065 billion BTU 8.53 million gal. gasoline

Notes: (1) Costs do not include right-of-way, relocation, impact mitigation, and escalation.
(2) Assumes alternatives MC-1 (Compton At-Grade) and LB-4 (Atlantic/Pacific Loop). Includes vehicles and maintenance facilities.
(3) Difference in alternative rankings between Measures 11 and 12 is due to differing vehicle needs (and costs) resulting from travel time and patronage differences.
(4) In 1984 dollars.

TABLE II-1

EVALUATION OF ALTERNATIVES - DOWNTOWN LOS ANGELES

Measure		LA-1	LA-2	LA-3
(16)	Construction Energy by System Alternative (1)	1,878 billion BTU 15.02 million gal. gasoline	1,883 billion BTU 15.06 million gal. gasoline	2,346 billion BTU 18.77 million gal. gasoline
(17)	Construction Energy Payback (1)	5.5 years	7.3 years	8.6 years
(18)	Construction Impacts	Significant impacts on traffic, noise, business activity. Partial encroachment on historic sidewalk.	Similar to LA-1. No impact on historic district. Possible contact with oil/gas bearing soils.	Similar to LA-1. No impact on historic district.
(19)	Economic Development and Revitalization	All LA alternatives produce modest benefits.		
		Improved access to and visibility of Broadway-Spring area.	Assist redevelopment effort in South Park area.	Minor assistance to South Park redevelopment effort.
(20)	Traffic	Greatest impact on LA alternatives due to at-grade profile and length.	Lease impact of LA alternatives due to shorter length and partial tunnel profile.	Moderate impact on streets following alignment.

Notes: (1) Assumes alternatives MC-1 (Compton At-Grade) and LB-4 (Atlantic/Pacific Loop).

TABLE II-1

EVALUATION OF ALTERNATIVES - DOWNTOWN LOS ANGELES

Measure		LA-1	LA-2	LA-3
(21)	Rail Freight Operations	No impact on rail freight operation (all alternatives)		
(22)	Noise and Vibration	All alternatives - No significant noise effect relative to ambient levels. No vibration impact.		
		Moderate impact relative to other LA alternatives.	Least impact of LA alternatives.	Most impact of LA alternatives.
(23)	Visual Quality	Moderate adverse impact. Aerial structure over Hollywood/Santa Ana Freeway visually intrusive for El Pueblo de Los Angeles.	Least adverse impact. Some impact (tree removal) on Flower Street, south of subway portal.	Most adverse impact. Not compatible with historic structures along Olympic and 9th Streets, and new development at Figueroa and 9th Street intersection.
(24)	Historic and Cultural Resources	Displacement of terrazzo sidewalks and period streetlights on Broadway. Visual intrusion at Union Station and El Pueblo State Park.	No impact.	Visual impact on several historic buildings.
(25)	Other Socioeconomic Concerns			
	- Population and Housing	Walk-distance population - 13,500 No induced residential development.	Walk-distance population - 8,830 Possible induced residential development.	Walk-distance population - 4,590 Possible induced residential development.
	- Community Services	Improved access - 57 facilities	Improved access - 17 facilities	Improved access -21 facilities
	- Business Activity	Tax Revenue - $1.5 million	Tax revenue - $2.8 million	Tax revenue - $2.9 million

TABLE II-1

EVALUATION OF ALTERNATIVES - DOWNTOWN LOS ANGELES

Measure		LA-1	LA-2	LA-3
(26)	Air Quality	All alternatives produce minor reduction in regional burden levels for all pollutants except nitrogen oxide, which is marginally increased. All comply with the AQMP.		
(27)	Other Natural Environmental Concerns - Topography - Water Quality - Vegetation and Wildlife	No significant impact. Possible removal of mature trees.		
(28)	Conformity with with Plans and Policies	All LA alternatives conform with 1982 Air Quality Maintenance Plan.		
		Conforms with all RTP goals and policies. Conforms with redevelopment plans except along Broadway.	Conforms with RTP goals and policies and local redevelopment plans.	Best meets RTP goal of increased transit ridership. Conforms with RTP goals and policies and redevelopment plans except in South Park (9th Street).

Source: Alternatives Evaluation Report (PB/KE: November, 1984)

II-420 MID-CORRIDOR

Table II-2 (page II-25 immediately following this discussion) summarizes the results of the technical evaluation of the mid-corridor alternatives.

II-421 Ridership (Measures 1 & 2)

All of the mid-corridor project alternatives assume the same rail transit alignment. The only variations are: 1) MC-2 has one transit station below-grade, and 2) rail freight operations are removed from transit station areas between 103rd Street and Del Amo Boulevard. Neither modification would have a measurable effect on overall rail system ridership.

II-422 Transit Service (Measures 3-10)

Because the physical and operating characteristics of the mid-corridor alternatives are virtually identical, there is little or no variation in the measures used to evaluate the quality of transit service. Two measures, however, did reveal some differences among alternatives. These are discussed below.

The alternative treatments of the rail transit system in the Compton area add a modest measure of reliability and safety. In the case of MC-2, grade separation removes five rail/arterial grade crossings, thereby improving performance and slightly reducing the chances of collision. MC-3 removes rail freight operations from the right-of-way south of Watts Junction. The magnitude of these improvements is not significant enough to dictate a preferred alignment.

There are no adverse impacts on vehicular traffic associated with MC-2. With MC-3, the five grade separations improve the efficiency of vehicular traffic crossing the rail corridor; however, relocating rail freight traffic to the West Santa Ana Branch and the San Pedro Branch will increase potential rail freight/vehicular conflict along Santa Ana Boulevard and Alameda Street. A tradeoff is thus created between improved rail transit safety and reliability and potentially increased vehicular/rail conflict.

The single below-grade station in Compton under alternative MC-2 creates a marginally greater security risk to patrons.

All of the mid-corridor alternatives provide substantially the same increased service or route expansion. Because the MC-2 alternative has five arterial grade crossings in Compton, its potential for accommodating increased train service may be greater; however, the difference would be small.

II-423 Cost and Revenue (Measures 11-14)

In terms of capital costs, the significant difference between the MC-1 and MC-2 options is the open cut through central Compton. The cost of the Compton grade separation adds over $135 million to the cost of the basic mid-corridor alignment, exclusive of escalation.

The MC-3 alternative includes the cost of constructing a six-mile new freight track along the West Santa Ana and San Pedro Branches of the SPTC. A major rail grade separation is required at Watts Junction. The net cost of these improvements is almost $12 million, exclusive of escalation and environmental mitigation.

II-424 Energy (Measures 15-17)

When considered in isolation, the MC-1 and MC-3 alternatives are virtually identical in their construction energy requirements. Construction of the open cut in Compton under the MC-2 alternative, however, raises the energy consumption of that alternative to almost triple that for the other two.

When considered on a systemwide basis, alternatives using MC-1 and MC-3 continue to be extremely close in total energy consumption. The difference shown by MC-2 is reduced somewhat but continues to account for more than twice the energy need of the other two options.

Regional energy savings will result from any of the rail transit alternatives, and the savings, due to reduced automobile travel, are apprroximately the same for all of the mid-corridor options. Based on these savings, the energy payback periods for each of the mid-corridor alternatives are as follows: MC-1, 5.5 years; MC-2, 11.7 years, and MC-3, 5.7 years.

II-425 Environmental Impacts (Measures 18-27)

o Construction Impacts

Some excavation and grading is required for all of the mid-corridor alternatives. Alternative MC-2, however, would require extensive excavation with attendant siltation and water runoff consequences.

All mid-corridor alternatives would cause more increases in the air pollutant burden during construction, including fugitive dust. Noise levels would also be increased during construction. Both noise levels and fugitive dust would be highest in the area of the Compton Grade Separation (MC-2).

There would be temporary increases in traffic congestion, disruption to adjacent business, reduced parking, and obstructions of emergency vehicle access. These impacts would be minimal for MC-1 and MC-3; however, they would be significant for alternative MC-2 along the length of the trench.

o Economic Development and Revitalization

All of the mid-corridor alternatives offer advantages and disadvantages for economic revitalization efforts in that segment. The MC-1 alternative does not adversely affect redevelopment efforts, but it also does not address Compton's desire to remove rail freight traffic from the downtown area. The MC-2 option improves the character of downtown Compton, but it also has substantially increased costs and some adverse impacts. The MC-3 option would remove rail freight traffic from Compton Center, but at a possible cost to redevelopment plans at Watts Junction. While net benefit to the mid-corridor segment cannot be quantified, it appears that the MC-1 alternative provides the greatest assistance to redevelopment efforts with the least adverse consequences.

o Traffic

The effects of the rail project on traffic in the mid-corridor are quite limited and are essentially the same for all three alternatives. The MC-2 alternative grade separation would provide a benefit to traffic in the Compton area between Rosecrans Avenue and Alondra Boulevard. The MC-3 alternative would move rail freight traffic from the Wilmington Branch to the San Pedro Branch between Watts Junction and Dominguez Junction. This would have the effect of removing rail/auto conflicts from cross-streets on the Wilmington Branch and adding them to streets crossing the West Santa Ana and San Pedro Branches. Thus, the impact is to shift the location of undesirable traffic delay without changing the magnitude of that delay.

o Rail Freight Operations

All of the mid-corridor alternatives provide for full maintenance of SPTC rail freight operations at maximum levels of activity projected for the year 2000. Rail transit and freight rail branch lines will be fully segregated and all mainline crossings of the two systems will be grade separated.

The MC-1 and MC-2 alternatives maintain the same alignment for the SPTC Wilmington Branch, but alternative Mc-2 depresses the freight line through the City of Compton. The MC-3 alternative adds new freight traffic on the West Santa Ana Branch and on the San Pedro Branch through the Watts-Compton area. Other than a minor increase in distance traveled, no significant impact on rail freight operations is anticipated.

The cities of Compton and Los Angeles have indicated concern over the potential traffic impact of rerouting freight operations onto the San Pedro Branch, particularly in light of forecasts which show a doubling of freight traffic to and from the port district. The SPTC has indicated that it would not consider such a change in its operations without guarantees from affected cities that no action would be taken to attempt to curtail freight service. This issue is related to the larger question of consolidating freight service throughout the Long Beach-Los Angeles corridor.

o Noise and Vibration

Rail transit operations would not create a significant adverse noise impact under any of the alternatives. Depressing the rail transit and freight tracks through Compton would result in decreased noise levels in that area. The addition of freight rail service on the West Santa Ana and San Pedro Branches would result in significant increases in noise levels along both alignments.

No significant increase in vibration levels would result from the rail transit service regardless of the alternative chosen. Under the MC-2 alternative, vibration from rail freight operations would be reduced in the Compton area. Diverting freight service to the West Santa Ana Branch (MC-3) would increase vibration along Santa Ana Boulevard with possible adverse effects on the historic Watts Towers.

o Visual Quality

In general, the rail project would have relatively little adverse impact on the visual setting of the mid-corridor. The MC-2 alternative would lessen the visual impact of rail transit and freight trains in the central Compton area. However, the cut would physically and visually separate the residential communities on either side of Willowbrook Avenue. Also, transit riders would lose their view of downtown Compton.

The elevated grade crossing at 103rd Street (MC-3) would be visually prominent. Its scale would be incompatible with the historic Watts Station. Also, freight traffic on the West Santa Ana Branch would create an adverse visual impact on residential areas. MC-3 is therefore considered to be the least attractive alternative. MC-1 ranks as the best choice.

o Historic and Cultural Resources

Alternative MC-3 is the only option which has potentially adverse impacts on historic resources, these being primarily related to Watts Station. The noise and visual intrusion of freight trains in the area around the Watts Towers cannot be mitigated.

o Air Quality

The rail transit project would create a slight decrease in regional air pollution regardless of the alternative chosen.

o Other Socioeconomic and Environmental Concerns

No significant differences exist among the alternatives and no significant adverse effects are anticipated.

II-426 Conformity with Plans and Policies (Measure 28)

Regardless of the mid-corridor alternative implemented, the rail transit project will be in conformance with the 1982 Air Quality Management Plan and the Regional Transportation Plan.

The project should support and assist several redevelopment projects in the mid-corridor and there is little difference among the alternatives.

The MC-2 and MC-3 alternatives might provide assistance to the Compton Redevelopment Project beyond that offered by MC-1 by removing freight traffic from Compton Center. MC-3 would create a negative visual impact on the Watts Station area, potentially inhibiting redevelopment plans for that area.

Finally, selection of a mid-corridor alternative may have important consequences for long-range plans for rail freight service to the ports of Long Beach and Los Angeles. MC-1 would have no impact on freight rail decision-making. MC-3 would represent a first step toward rail freight consolidation onto the San Pedro Branch, providing an interim solution while not precluding later full consolidation. MC-2, however, would represent a commitment of large resources toward the maintenance of rail freight activity on the Wilmington Branch.

TABLE II-2

EVALUATION OF ALTERNATIVES - MID-CORRIDOR

Measure		MC-1	MC-2	MC-3
(1)	Average Daily Rail Transit Ridership (Boardings)	No measurable difference among mid-corridor alternatives.		
(2)	Average Daily Corridor Transit Ridership	No measurable difference among mid-corridor alternatives.		
(3)	Average One-Way Running Time (Minutes)	No measurable difference among mid-corridor alternatives.		
(4)	Accessibility to Activity Centers	Same for all mid-corridor alternatives.		
(5)	Mobility for Transit Dependents	Same for all mid-corridor alternatives. All stations fully accessible to the handicapped.		

TABLE II-2

EVALUATION OF ALTERNATIVES - MID-CORRIDOR

Measure		MC-1	MC-2	MC-3
(6)	Reliability, Safety, and Security	No significant difference among mid-corridor alternatives.	Security slightly less at below-grade stations.	Slightly better rail transit reliability and safety due to removal of rail freight operations from Wilmington Branch. Slightly increased rail freight/vehicular conflicts along Santa Ana Boulevard and Alameda Street.
(7)	Capacity for Additional Service	Additional capacity possible with with shorter headways. Same as MC-2.	Additional capacity with shorter headways. Same as MC-1.	Capacity increase possible with additional tracks south of Watts Junction. Superior to MC-1 and MC-2.
(8)	Integration with Regional Transportation Plan	Same for all mid-corridor alternatives. Direct linkage to Century Transitway at Imperial; indirect linkage to Harbor Transitway.		
(9)	Guideway Transit Transfer Volumes - Metro Rail - Century Transitway	Same for all mid-corridor alternatives.		
(10)	Impact on Bus	Same for all mid-corridor alternatives. Service modifications proposed for 13 RTD bus lines and one LBT bus line.		

TABLE II-2

EVALUATION OF ALTERNATIVES - MID-CORRIDOR

Measure		MC-1	MC-2	MC-3
(11)	Total Capital Cost by Segment (1)	$159,400,000 At Grade - 13.82 miles Aerial - 1.45 miles	$294,800,000 At Grade - 11.48 miles Aerial - 1.45 miles Open Cut - 2.34 miles	$171,200,000 At Grade - 13.29 miles Aerial - 1.98 miles Railroad Relocation - 6.20 miles
(12)	Total Capital Cost by System Alternative (1, 2)	$427,300,000	$562,700,000	$439,100,000
(13)	Annual Rail Transit Operation and Maintenance Cost	No estimable difference among mid-corridor alternatives.		
(14)	Annual Rail Transit Operating Revenue - Operating Cost and Recovery	Same for all mid-corridor alternatives.		
(15)	Construction Energy by Segment	$1,069 billion BTU 8.55 million gal. gasoline	3,180 billion BTU 25.44 million gal. gasoline	1,131 billion BTU 9.05 million gal. gasoline

Notes: (1) Cost do not include right-of-way, relocation, impact mitigation, and escalation.
(2) Assumes alternatives LA-3 (Figueroa/9th Aerial) and LB-4 (Atlantic/Pacific Loop). Includes yard facilities and vehicles.

TABLE II-2

EVALUATION OF ALTERNATIVES - MID-CORRIDOR

Measure		MC-1	MC-2	MC-3
(16)	Construction Energy by System Alternative (1)	1,878 billion BTU 15.02 million gal. gasoline	3,989 billion BTU 31.91 million gal. gasoline	1,940 billion BTU 15.62 million gal. gasoline
(17)	Construction Energy by Payback (1)	5.5 years	11.7 years	5.7 years
(18)	Construction Impacts	Standard temporary minor impacts, including water runoff, siltation, vegetation removal, noise, and traffic congestion. No permanent or significant effects.	Same as MC-1. Possible temporary flooding in Compton trench.	Same as MC-1.
(19)	Economic Development and Revitalization	All alternatives link and provide modest assistance to major revitalization projects.		
		At-grade profile increases visibility in Compton area.	Depressed profile reduces visibility in Compton area. Pedestrian cross-traffic improved.	At-grade profile increases visibility in Compton area. Removal of freight traffic further supports Compton projects. Watts grade separation adversely affects station redevelopment plans.
(20)	Traffic	Minimal rail transit impact during peak hours. Rail freight conflicts unaffected.	Minimal rail transit impact during peak hours. Three new grade separations in Compton improve traffic flow in that area.	Minimal rail transit impact during peak hours. Freight rail conflicts removed from Wilmington Branch and added to West Santa Ana and San Pedro Branches in Watts-Compton area. Minor increases in aggregate auto waiting time over MC-1.

Notes: (1) Assumes alternatives LA-1 (Broadway/Spring Couplet) and LB-4 (Atlantic/Pacific Loop). Includes vehicles and yard facilities.

TABLE II-2

EVALUATION OF ALTERNATIVES - MID-CORRIDOR

Measure		MC-1	MC-2	MC-3
(21)	Rail Freight Operations	No impact on through operations. Minimal impact on switching activity at select freight spur/ rail transit at-grade crossings.	No impact on through operations. Minimal impact on switching activity at select freight/rail transit at-grade crossings.	Operations diverted to West Santa Ana Branch and San Pedro below Watts Junction. Minor impact on switching activity.
(22)	Noise and Vibration	Rail Transit -- No significant noise effect relative to ambient levels. No vibration impact. Rail Freight -- Track relocation will increase maximum passby noise levels up to 6 dBA, minimal vibration impacts expected.	Rail Freight -- Noise reduced in Compton area.	Rail Freight -- Noise and vibration removed from Willowbrook. Perceptable noise increase (4-12 dBA) along West Santa Ana Branch. Possible vibration impact to Watts Towers (1).
(23)	Visual Quality	No change from existing condition.	Visual intrusion in Compton reduced. Visual division of community added at same location.	Potentially significant adverse impact on Watts Station (LRT aerial structure).
(24)	Historic and Cultural Resources	No significant impact.	No significant impact.	Potential adverse impact on Watts Station (visual) and Watts Towers (vibration).
(25)	Other Socio-economic Concerns - Population and Housing - Community Services - Business Activity	No significant differences among mid-corridor alternatives.	Possible minor increase in housing and business activity in Compton area.	Possible minor increase in housing and business activity in Compton area.

Notes: (1) Adverse noise and vibration impacts are mitigable.

TABLE II-2

EVALUATION OF ALTERNATIVES - MID-CORRIDOR

Measure		MC-1	MC-2	MC-3
(26)	Air Quality	All alternatives produce minor reductions in regional burden levels for all pollutants except nitrogen oxide, which is marginally increased. All comply with the AQMP.		
(27)	Other Natural Environmental Concerns - Topography - Water Quality - Vegetation and Wildlife	No significant impacts (all alternatives).		
(28)	Conformity with Plans and Policies	All alternatives conform with 1982 Air Quality Plan. All alternatives conform with RTP goals and policies.		
		Conforms with local redevelopment plans except in Compton Center.	Conforms with local redevelopment plans. Conflicts with rail freight consolidation proposal.	Conforms with local redevelopment plans except in Watts (visual impact).

Source: Alternatives Evaluation Report (PB/KE: November, 1984)

II-430 LONG BEACH

Table II-3 (page II-38 immediately following this discussion) summarizes the results of the technical evaluation of the LB-2, LB-3 (Broadway Aerial-Modified River Route), LB-5, and LB-6 alternatives in Long Beach.

II-431 Ridership (Measures 1 & 2)

Ridership estimates for the year 2000 were based on assumed systems, comprised of the indicated Long Beach alignment plus the MC-1 (Compton At-Grade) and LA-2 (Flower Street Subway) alignments in the other two corridor segments.

The only significant variation in ridership occurs for the LB-6 (Willow Street Terminus) alternative. For this alternative, approximately 4,000 fewer riders would be expected to use the system on a daily basis. This is due to 1) the relative lack of attractors within walking distance of the Willow Street station, 2) a longer total travel time to downtown, due to the need to transfer to buses, and 3) the inconvenience of the transfer itself. Differences in ridership estimates among the other three alternatives are insignificant. Comparisons of total transit ridership in the Long Beach-Los Angeles corridor show that none of the Long Beach alignments function measurably more efficiently than the others in attracting total transit riders. Therefore, ridership alone is not an effective measure contributing to the selection of a final project alignment in Long Beach.

II-432 Transit Service (Measures 3-10)

Reflecting the lack of at-grade crossings and a smaller number of stations, the LB-3 (Modified River Route) alternative has the best one-way running time (49 minutes) from downtown Los Angeles to downtown Long Beach. The LB-6 (Willow Street Terminus) alternative has the worst travel time (58 minutes) and the LB-2 and LB-5 alternatives are very nearly equal (54 and 55 minutes).

It should be noted that the Modified River Route alternative offers the functional equivalent of "rapid rail" service to the Long Beach segment of the project corridor. The virtual lack of grade crossings on this alignment contributes significantly to the improved running time.

With regard to accessibility to existing and planned centers in Long Beach (as identified in the DEIR), the four alternatives can be ranked in the following descending order: LB-3 (Modified), LB-2/LB-5, and LB-6. The LB-3 (Modified) alignment would serve the greater concentration of office employment in downtown Long Beach, while also serving the greatest

existing residential development. The LB-2 and LB-5 alignments best serve the retail center and the Convention Center, as well as high density residential areas. The LB-6 alignment provides no benefits to any downtown activity centers.

The number of transit-dependent persons served by any of the Long Beach alignments is relatively small and, therefore, this measure is not significant. Alternative LB-2 provides the best service to minorities, youth, and the elderly, with LB-5 ranking second in this regard. LB-3 (Modified) ranks third, serving only one-half the number served by the previous alignments. Alternative LB-6 is the worst alignment in terms of service to transit dependents.

Fully grade-separated systems typically offer slightly more reliable and safer performance. For this reason, LB-6 can be considered the most reliable and safest alternative (i.e., no rail operations in Long Beach). However, if bus transfers are also considered, the LB-3 (Modified) alignment would be the most reliable from a systemwide perspective. Also, the LB-3 (Modified) alternative offers the best passenger safety, but it has safety problems relating to the close proximity of bicycle and horse trails, particularly where access is required. The at-grade alternatives (LB-2 and LB-5) offer marginally lower levels of reliability and safety, but also a better level of passenger security (actual and perceived). It should be noted that the above distinctions are modest at best and, therefore, do not contribute significantly to the selection of a Long Beach alignment.

The alternatives without portions running in the street, LB-3 (Modified) and LB-6, offer the greatest opportunity for adding additional trains during the peak hour. The remaining alternatives perform less well in this regard. The LB-3 (Modified) alternative offers the least flexibility for joining with other lines in Long Beach, whereas the two at-grade alternatives would have greater flexibility. In the event that upgrading the light rail system to full rapid transit operation is desired, this could be accomplished with either the Modified River Route or Willow Street Terminus alternatives.

The Long Beach portion of the project would not connect with any other proposed regional mass transit line, and thus the choice of alignment within Long Beach does not have direct bearing on regional system performance.

With implementation of the rail transit project, local bus trips would decline, but overall transit usage in Long Beach would increase. The most significant change (50 percent reduction in boardings for LB-5) would occur on RTD Line 56. Boarding changes in other bus routes would be

less significant under each Long Beach alternative, ranging from a reduction of 18 percent for LB-5 to an increase of 21 percent with LB-3 (Modified).

II-433 Cost and Revenue (Measures 11-14)

The LB-3 (Modified) alternative is the most expensive option due to extended sections of fill, aerial guideway, and special treatments at station areas and grade separations. The Willow Street Terminus alternative is the least expensive due to straightforward reasons of length and restriction to the SPTC right-of-way. The LB-2 alternative is considerably more expensive than the LB-5 alternative because of utility relocation requirements on two streets rather than one, plus a greater number of station areas.

In terms of annual operating and maintenance costs, little variation is found among the Long Beach alternatives. A five percent gap separates the lowest estimated cost (LB-6) from the highest (LB-2).

II-434 Energy (Measures 15-17)

When considered in isolation, the LB-6 alternative has the lowest construction energy consumption while the LB-5 alternative (the highest) requires over 60 percent more energy than LB-6.

When considered on a systemwide basis, the same ranking of alternatives occurs; however, the relative differences decline.

The energy payback periods for the various Long Beach alternatives (the time required for operating energy savings to overcome construction energy expenditures) are very close; 6.6 years for LB-6; 7.1 years for LB-2; 7.0 years for LB-3 (Modified); and 7.2 years for LB-5.

II-435 Environmental Impacts (Measures 18-27)

- Construction Impacts

  Construction of the LB-3 (Modified) alternative would be in an area that potentially contains oil- and gas-bearing soils, requiring transport to a Class I or II disposal site.

  Both at-grade alignments (LB-2 and LB-5) would require excavation below existing street level to relocate utilities and construct the roadbed. The LB-3 (Modified) alternative would require excavation at column locations for the aerial guideway. This excavation would temporarily increase suspended particulates.

All Long Beach alternatives would have temporary increases in noise levels associated with construction activities. Noise levels would be highest around the sites of aerial column footings for the Modified River Route alternative along Broadway.

Construction of any of the Long Beach alternatives would cause increased traffic congestion, reduced on-street parking, disruption to adjacent businesses, and some obstruction to emergency vehicle access. These effects would be more pronounced for alternatives LB-2, LB-5, and LB-3 (Modified).

Construction of LB-5 would require removal of approximately 185 mature trees, while construction activity along the Los Angeles River (Modified LB-3) would cause removal of existing vegetation which would be replaced. The Modified River Route alternative would also remove Lincoln Park from public use and would require major redesign of the park.

All Long Beach alternatives would require acquisition of small parcels of land for power substations.

All Long Beach alternatives would significantly increase local construction employment.

Taking all construction impacts into account, the LB-6 alternative would have the least adverse effect. The LB-2 alternative would rank second in this regard.

Construction activity along Long Beach Boulevard (LB-5) would create adverse impacts to adjacent businesses. While the majority of these impacts would be mitigated, marginal businesses will be negatively affected. Adverse impacts from constructing the LB-3 (Modified) alternative would occur in residential areas along the Los Angeles River and also in the commercial area along Broadway.

o Economic Development and Revitalization

None of the Long Beach alternatives would be expected to produce more than modest changes in economic redevelopment and revitalization. The LB-2 and LB-5 alternatives would most directly serve the downtown portion of the Downtown-Tideland and Redevelopment Project, benefiting additional retail development along Long Beach Boulevard.

The LB-3 (Modified) alternative would serve the western end of the Downtown-Tideland Project, reinforcing recent office development. It would provide little incentive for new retail activity in west downtown, however.

The LB-3 (Modified) alternative could provide an undesired stimulus to new growth at station areas located along the Los Angeles River, although this growth would be moderate.

The LB-6 alternative would not directly enhance any Long Beach revitalization effort.

o Traffic

With implementation of the project, Long Beach traffic volumes in the year 2000 would differ only slightly from the no project condition. Minimal to moderate impacts are expected at key intersections adjacent to the rail stations. Alternative LB-5 would have the greatest impact, affecting Long Beach Boulevard, particularly between 6th and 7th Streets. The LB-3 (Modified) alternative would have the least impact. The LB-6 alternative would have a minor impact on the intersection of Willow Street and Long Beach Boulevard. The LB-2 alternative could produce a moderate impact on traffic along Atlantic Avenue and Long Beach Boulevard.

o Noise and Vibration

Alternatives LB-2, LB-5, and LB-6 would create no significant adverse noise impacts when system noise levels are compared with ambient conditions. Because of the lower noise environment along the Los Angeles River, however, the LB-3 (Modified) alternative could produce significant adverse effects on nearby residential areas. To mitigate this impact, a sound barrier wall would be required from Wardlow Road to Pacific Coast Highway. With this mitigation, the noise impact on adjacent areas would become substantially lessened.

There would be no significant increase in vibration levels with any of the Long Beach alternatives.

o Visual Quality

Alternative LB-6 would be located in a visually non-sensitive area and would therefore have no adverse visual impacts.

There are several visually sensitive segments identified for alternative LB-2, but the visual impacts of the alignment in these segments are not expected to be significant.

The LB-5 alternative would have relatively insignificant adverse impacts on the overall visual setting in Long Beach. However, between 15th and 7th streets, approximately 120 mature palm trees would be removed from the median, which would constitute an adverse visual impact. North of 15th Street, about 65 additional trees, contributing to a lesser extent to the visual setting, would also be removed. The impact upon the visually sensitive segment between 7th and 1st Streets would be minor.

The LB-3 (Modified) alignment would alter the visual setting south of Wardlow Road to 8th Street. The chain link fence, bike trail overpasses, and other rail transit structures could be visually intrusive. The aerial portions of the LB-3 (Modified) alignment along Broadway would potentially produce the most significant adverse impacts.

o Historic and Cultural Resources

Only the LB-2 alternative would potentially affect historic and cultural resources. Along Atlantic Avenue south of 6th Street there are three potentially historic structures whose visual environment could be affected by the rail alignment.

o Other Socioeconomic Concerns

The Long Beach alternatives vary greatly in their potential to serve the general population. Alternative LB-2 would serve a projected year 2000 population of 35,250 persons within walking distance of the stations. Comparable figures for the remaining alternatives are 22,775 for LB-5; 13,710 for LB-3 (Modified); and 5,390 for LB-6.

The project is expected to stimulate housing growth only in those station areas where trends toward such growth already exist. The LB-3 (Modified) alternative would induce the construction of 250-280 housing units. Alternative LB-5 would induce the construction of approximately 780 units, LB-2 would induce 790 units, and LB-6 would induce only 50 units. It should also be noted that the Modified River Route alternative would preclude construction of a planned 75-unit detached single-family development between 34th and Spring Streets.

The project is expected to have both beneficial and adverse impacts on Long Beach community services. The LB-3 (Modified) alignment would serve only 10 facilities, LB-2 would serve 87, LB-5 would serve 93, and LB-6 would serve 14. However, the right-of-way fencing required for alternatives LB-2, LB-5, and LB-6 would restrict access to some facilities, especially those located between Spring and

28th streets. The impairment of emergency vehicles crossing at-grade would be significant only for the LB-2, LB-5, or LB-6 alignments, producing potential delays of 30 to 45 seconds.

II-436 Conformity with Plans and Policies (Measure 28)

Regardless of the Long Beach alignment selected, the rail transit project will be in conformance with the region's 1982 Air Quality Management Plan.

The SCAG Regional Transportation Plan has as objectives increasing transit capacity by 30 percent and tripling transit ridership during peak hours. The system alternatives best supporting these objectives are those with the highest patronage. The Long Beach alternatives which best contribute to this are LB-2, LB-3 (Modified), and LB-5.

All of the downtown alignments would conform to the goals of the redevelopment areas they serve. The Downtown-Tideland Project would be best supported by alternatives LB-2 and LB-5.

TABLE II-3

EVALUATION OF ALTERNATIVES - LONG BEACH

(Page 1 of 6)

Measure		LB-2	LB-3 (Modified)	LB-5	LB-6
(1)	Average Daily Rail Transit Ridership (Boardings)	54,700 riders (1)	54,330 riders	54,700 riders (1)	50,300 riders
(2)	Average Daily Corridor Transit Ridership (2)	No significant differences among alternatives			
(3)	Average One-Way Running Time (7th & Flower to Transit Mall) (3)	55 Minutes (1st Street)	49 Minutes (1st Street)	54 Minutes (1st Street)	58 Minutes (4)
(4)	Accessibility to Activity Centers	Service: Best - 2 centers As Well - 1 center Not Served - 2 centers	Service: Best - 2 centers As Well - 2 centers Not Served - 1 center	Service: Best - 2 centers As Well - 1 center Not Served - 2 centers	Service: Best - 0 centers As Well - 0 centers Not Served - 5 centers
(5)	Mobility for Transit Dependents	All LB alternatives fully accessible to the handicapped.			
		Most accessible of LB alternatives to transit dependents.	Less accessible than LB-5.	Less accessible than LB-2.	Least accessible of Long Beach alternatives to transit dependents.

Notes: (1) Minor difference between LB-2 and LB-5 outside level of model accuracy.
(2) Excluding through trips. Includes rail and bus.
(3) Assumes alternatives MC-1 (Compton At-Grade) and LA-2 (Flower Street Subway). Times are from 7th and Flower Street in Los Angeles to the Long Beach Transit Mall.
(4) With transfer to bus at Willow to the Long Beach Transit Mall.

TABLE II-3

EVALUATION OF ALTERNATIVES - LONG BEACH

(Page 2 of 6)

Measure		LB-2	LB-3 (Modified)	LB-5	LB-6
(6)	Reliability, Safety, and Security	Proven technology. Reliability, safety, and security marginally less than LB-5.	Proven technology. Safety best of Long Beach alternatives. Rail reliability and security equal to LB-6	Proven technology. Reliability and safety slightly less than LB-3 or LB-6. Security best of Long Beach alternatives.	Proven technology. Bus transfer reliability lower. Safety and security marginally less on buses.
(7)	Capacity for Additional or Upgraded Service	Most flexible for addition of new trackage.	Least flexible for new trackage. Greatest capacity for additional peak hour service.	Moderate flexibility for additional trackage. Limited capacity to increase peak hour service.	Considerable capacity for peak hour rail service increase (not bus).
(8)	Integration with Regional Transportation Plan	Conforms with RTP. Good integration with existing bus service.	Service in Long Beach functionally equivalent to rapid rail. Moderate local bus route changes required. Otherwise same as LB-2.	Same as LB-2.	Least compatible with RTP -- no direct service provided to downtown Long Beach.
(9)	Guideway Transit Transfer Volumes				
	- Metro Rail	3,642	3,874	3,642	3,569
	- Century Transitway	6,401	6,900	6,401	6,193
(10)	Impact on Bus Operations	Service modifications proposed for four LBT lines and three RTD lines.	Service modifications proposed for three LBT lines and three RTD lines. Two (2) new feeder LBT lines are proposed.	Service modifications proposed for four LBT lines and three RTD lines.	Service modifications proposed for four LBT lines and three RTD lines. Two (2) new LBT lines are proposed.

TABLE II-3

EVALUATION OF ALTERNATIVES - LONG BEACH

(Page 3 of 6)

Measure		LB-2	LB-3 (Modified)	LB-5	LB-6
(11)	Total Capital Cost by Segment (1, 2)	$45,707,600 At-Grade - 4.8 miles	$50,815,100 At-Grade - 3.9 miles Aerial - 0.7 miles	$35,987,400 At-Grade - 4.7 miles	$17,022,400 At-Grade - 2.0 miles
(12)	Total Capital Cost by System Alternative (1, 3)	$399,200,000	$404,100,000	$389,500,000	$370,500,000
(13)	Annual Rail Transit Operation and Maintenance Cost (4)	$12,200,000	$11,900,000	$12,100,000	$11,600,000
(14)	Annual Rail Transit Operating Revenue	$8,400,000	$8,200,000	$8,400,000	$7,700,000
	- Operating Cost Recovery	69%	69%	69%	66%
(15)	Construction Energy by Segment	367 billion BTUs 2.9 million gallons of gasoline	358 billion BTUs 3.0 million gallons of gasoline	401 billion BTUs 3.3 million gallons of gasoline	246 billion BTUs 2.0 million gallons of gasoline

Notes: (1) Costs do not include right-of-way, relocation, impact mitigation, and escalation. Costs reflect December 1983 prices.
(2) Measured from east end of Los Angeles River Bridge.
(3) Assumes alternatives MC-1 (Compton At-Grade) and LA-2 (Flower Street Subway). Includes vehicles and maintenance facilities.
(4) In 1984 dollars.

TABLE II-3

EVALUATION OF ALTERNATIVES - LONG BEACH

(Page 4 of 6)

Measure	LB-2	LB-3 (Modified)	LB-5	LB-6
(16) Construction Energy by System Alternative (1)	1,821 billion BTUs 14.6 million gallons of gasoline	1,812 billion BTUs 14.5 million gallons of gasoline	1,855 billion BTUs 14.8 million gallons of gasoline	1,700 billion BTUs 13.6 million gallons of gasoline
(17) Construction Energy Payback (1)	7.1 years	7.0 years	7.2 years	6.6 years
(18) Construction Impacts	Impacts on traffic, noise, business activity Increased employment during construction.	Similar to LB-2. Greater impact on limited residential areas. Possible contact with oil-and-gas bearing soils.	Similar to LB-2. Activity limited to Long Beach Boulevard -- greater effect over smaller area.	Least of Long Beach alternatives. Impacts limited to Willow Street station area.
(19) Economic Development and Revitalization	All Long Beach alternatives produce modest benefits.			
	Provides moderate assistance to commercial areas along Atlantic Avenue and Long Beach Boulevard, particularly the south end of the CBD.	Provides assistance to west downtown area, primarily to new residential development. Serves office areas.	Similar to LB-2. Greater focus on Long Beach Boulevard commercial and retail activity, particularly south of 7th St.	Least benefit. No direct assistance to redevelopment projects.
(20) Traffic (Operation)	Moderate impact along Atlantic Avenue and Long Beach Boulevard.	No adverse impact.	Moderate impact due to mixed traffic operations south of 7th Street (primarily between 6th and 7th Streets).	Moderate impact. Effects limited to Willow Street station area.
(21) Rail Freight Operations	No impact on rail freight operations (all alternatives)			

Notes: (1) Assumes alternatives MC-1 (Compton At-Grade) and LA-2 (Flower Street Subway).

TABLE II-3

EVALUATION OF ALTERNATIVES - LONG BEACH

(Page 5 of 6)

Measure	LB-2	LB-3 (Modified)	LB-5	LB-6
(22) Noise and Vibration		All alternatives - No vibration impact.		
	No significant noise effect relative to ambient levels. Moderate impact relative to other Long Beach alternatives.	Probable insignificant noise impact after mitigation along Los Angeles River. Greatest of Long Beach alternatives.	No significant noise effect relative to ambient levels.	Impact least of LB alternatives.
(23) Visual Quality	Insignificant adverse impact.	Greatest adverse impact. Guideway along Los Angeles River visually intrusive. Significant impact along Broadway.	Moderate adverse impact. Displacement of 185 mature palm trees north of 7th Street.	No adverse impact.
(24) Historic and Cultural Resources	Minor visual impact on three potentially historic structures.	No significant impact.	No significant impact.	No impact.
(25) Other Socioeconomic Concerns				
- Population and Housing	Walk-distance population = 35,250 (1)	Walk-distance population = 13,710	Walk-distance population = 22,775	Walk-distance population = 4,680
- Community Services	Possible induced residential development (790 units).	Possible induced residential development (250-280 units).	Possible induced residential development (780 units).	Possible induced residential development (100 units).
	Transit Access - 87 facilities.	Altered access to and recreational quality of bicycle and horse trails.	Transit Access - 93 facilities	Transit Access - 14 facilities.
	Restricted cross-alignment access to public facilities and commercial establishments, especially those located between Spring and 28th Street.		Restricted cross-alignment access to public facilities and commercial establishments, especially those located between Spring and 28th Streets.	Restricted cross-alignment access to public facilities and commercial establishments, especially those located between Spring and 28th Streets.
	Impairment of emergency vehicles at grade crossings.	No impact.	Impairment of emergency vehicles at grade crossings.	Impairment of emergency vehicles at grade crossings.

Note: (1) Access to single-direction stations.

TABLE II-3

EVALUATION OF ALTERNATIVES - LONG BEACH

(Page 6 of 6)

Measure	LB-2	LB-3 (Modified)	LB-5	LB-6
(26) Air Quality	All alternatives produce minor reduction in regional burden levels for all pollutants except nitrogen oxide, which is marginally increased. All comply with the AQMP.			
(27) Other Natural Environmental Concerns - Topography - Water Quality - Vegetation & Wildlife	No impact.	Minor adverse impact after mitigation.	Probable removal of 185 mature palm trees. No other significant impact.	No impact.
(28) Conformity with Plans and Policies	All LB alternatives conform with 1982 Air Quality Maintenance Plan. All LB alternatives conform with RTP goals and policies.			
	Conforms with local redevelopment plans.	Conforms with redevelopment plans, except between 34th and Spring Streets (LACCDD housing project). North of Anaheim Street there is no general plan or zone designation; project will change character of area. South of Anaheim Street, project is compatible with existing and proposed plan uses.	Conforms with local redevelopment plans.	No assistance to downtown redevelopment.

Source: Alternatives Evaluation Report (PB/KE: March, 1985)

II-500 RECOMMENDATIONS

The project alternative recommendations are the outgrowth of the joint consideration of principal findings from the technical evaluation of alternatives and public and agency comment on the Draft EIR and SEIR. The sections which follow attempt to first identify a project alternative in each of the two corridor segments which is clearly superior to the other options. Failing that, the analysis shifts to identifying and assessing the benefits and costs of competing alternatives -- a tradeoff analysis. Finally, these two approaches are supplemented by an identification of serious deficiencies in one or more of the options which eliminate them from further consideration.

II-510 DOWNTOWN LOS ANGELES

II-511 Principal Conclusions

Table II-4 (page II-46) presents a summary evaluation of the downtown Los Angeles alternatives. Both the "most desirable" and "least desirable" alternatives are identified where possible for a given evaluation measure.

Ridership forecasts indicate that the LA-3 alignment would achieve approximately 50 percent more patronage than the other two options; however, when total corridor transit ridership is considered, all of the alternatives perform equally. Thus, it must be concluded that this more global measure of transit system utilization is not sensitive to the choice of a downtown Los Angeles alternative.

The LA-2 alternative, when considered as part of a complete system, is estimated to be the least expensive of the three downtown Los Angeles alternatives by a small amount; the LA-3 alignment has the highest initial capital cost. By contrast, LA-3 is the most cost-effective alternative on an operational basis, while the LA-1 alternative is the least efficient.

Among the three alternatives, the measures of transit service show mixed results, none of which are highly significant. The LA-3 alignment has the best one-way running time, but this is reflected in patronage estimates. The LA-1 alternative is marginally superior in its service to downtown activity centers and transit dependents. The final measure of transit service reliability, safety and security, does not significantly distinguish among the three alternatives.

More consistency is found in the areas of conformity with plans and policies and environmental impact. The LA-2 alternative has consistently been identified as providing the greatest assistance in achieving transportation

and redevelopment plan goals. It provides better links with other proposed linehaul systems, including Metro Rail and the Harbor Transitway. It provides support to redevelopment plans in South Park while at the same time producing the least adverse environmental impact.

In four impact areas -- visual, historic, noise, and traffic -- the LA-2 alternative is clearly less harmful than the other two options. The LA-3 alignment has the potential to create significant adverse impacts in redeveloping residential areas and historic districts. The LA-1 alignment would cause the greatest impact on vehicular traffic due to its at-grade profile, although the magnitude of this impact would be moderate. The LA-3 alignment would also have traffic impacts because of the need to place guideway columns in the middle of some streets.

Table II-5 (page II-47) presents a summary of public opinion expressed on the downtown Los Angeles alternatives. Of considerable importance in assessing public opinion on the downtown options is the Los Angeles City Council resolution expressing opposition to the LA-1 alternative, primarily for reasons associated with traffic impact. This alternative is also opposed by other public agencies, adding safety and reliability as concerns. Private groups and individuals are divided on alternative LA-1.

Strong opposition to LA-3 was expressed by private groups and individuals on environmental grounds. This view is generally concurred in by public agencies.

The LA-2 alternative is the only one of the three which has received consistent support, with the exception of concern expressed over temporary construction impacts. It is found desirable by private groups and individuals because of its relative lack of long-term impact. It is also supported by public agencies because of its connectivity and expansion potential.

TABLE II-4

SUMMARY EVALUATION OF ALTERNATIVES

DOWNTOWN LOS ANGELES

CONSIDERATION	MOST DESIRABLE	LEAST DESIRABLE	COMMENTS
RIDERSHIP			
Rail System	LA-3	LA-1/LA-2 equal	50% difference. Related to running time.
Total Corridor (Rail and Bus)	No significant differences.	--	--
COST			
System Capital Cost	LA-2	LA-3	Figures from Draft EIR.
Operating Cost Recovery	LA-3	LA-1	Related to ridership.
SERVICE			
Running Time	LA-3	LA-1/LA-2 equal	Related to ridership.
Accessibility/Mobility	LA-1	LA-2/LA-3 equal	Minor differences.
Reliability/Safety	No significant differences.	--	--
PLANS/POLICIES			
Conformity with RTD	LA-2	LA-1	Somewhat better links with Metro Rail and Harbor Transitway.
Conformity with Development Plans	LA-2	LA-3	See impacts discussion.
IMPACT			
Visual	LA-2	LA-3	Unmitigable adverse impact on historic and residential property.
Historic	LA-2	LA-3	
Noise	LA-2	LA-1	
Traffic	LA-2	LA-1	LA-1 impact partially mitigable.
Other	No significant differences.	--	--
ENERGY	LA-1/LA-2	LA-3	Minor differences.
AGENCY/PUBLIC RESPONSE			
City of Los Angeles	No position.	LA-1	On record opposing LA-1.
Public Agencies	LA-2/LA-3 equal	LA-1	Consistent opposition to LA-1.
Private Groups	LA-2	LA-3	Support for LA-2; strong opposition to LA-3; mixed reation to LA-1.

Source: Alternatives Evaluation Report (PB/KE: November 1984)

TABLE II-5

SYNOPSIS OF PUBLIC POSITIONS

DOWNTOWN LOS ANGELES

	LA-1	LA-2	LA-3
City Council	Opposed (1)	-	-
Elected Officials	-	-	-
Public Agencies	Opposed (1,2)	Split (1,4,5)	Split (1,7)
Private Groups	Split (1,3)	Supportive (4,6)	Opposed (1)
Individuals	Split (1,3)	Supportive (6)	Opposed (1)

Basis:
(1) Most environmental impact
(2) Less safety and reliability
(3) Best accessibility
(4) Best connectivity and expansion potential
(5) Best support for plans and policies
(6) Least environmental impact
(7) Best running time and job access

Source: Alternatives Evaluation Report (PB/KE: November, 1984)

II-512 Project Recommendations for Downtown Los Angeles

Following a complete review of the foregoing data, analysis, findings, and conclusions, it is the recommendation of the staff of the Commission that the LA-2 alignment (Flower Street Subway) be adopted as the project alignment in downtown Los Angeles at the time of project authorization. This recommendation is derived from the following conclusions:

1) The LA-2 alignment is superior in virtually all environmental impact categories.

2) Differences in transit service delivery, corridor transit ridership, and energy savings are not significant for virtually every measure.

3) The LA-2 alignment results in a slightly lower system capital cost for the project.

4) The LA-2 alignment is the only one to receive consistent public and agency support, while suffering only limited criticism.

5) The technical evaluations of alternatives differs with expressed public opinion only in assessing the magnitude of probable adverse environmental impacts.

While the magnitude of probable traffic impact is subject to debate, there is general agreement among technical analysts and public figures that an at-grade alignment (such as LA-1) will not be adequate as the permanent downtown segment of a countywide system. Projected levels of building density and vehicular traffic strongly argue for a grade-separated system.

The aerial alignment (LA-3) is capable of capturing ridership and eliminating surface traffic impacts, but it would also create significant adverse impacts on the character of a historic district and developing residential area.

The LA-2 alignment would minimize conflict with vehicular traffic through its combination of compatible at-grade treatment and subway profile as it enters the financial district.

II-520 MID-CORRIDOR

II-521 Comparison of Basic Alternatives

The summary evaluation of the mid-corridor alternatives is presented in Table II-6 (page II-51).

The choice of mid-corridor alternative will not affect rail system ridership and operating cost recovery, because the system's alignment and stations are the same for all three alternatives.

Differences in capital costs for the three alternatives differ dramatically. The open cut through Compton adds approximately $135 million to the cost of the baseline alternative (MC-1, Compton At-Grade), excluding escalation. Rerouting rail freight service off the Wilmington Branch adds slightly more than $12 to the cost of MC-1.

Using virtually all of the transit service measures, no significant distinctions can be found among the three alternatives. There are differences in terms of safety, however. Under alternatives MC-1 and MC-2, transit riders are at slightly greater risk because of the proximity to freight operations on the Wilmington Branch. Relocating freight service off that line provides modest improvement in vehicle safety and overall system reliability. However, this creates some increased potential for rail/auto conflicts at cross-streets along the West Santa Ana Branch and along the San Pedro Branch.

Under MC-1, rail freight operations are maintained through downtown Compton. Because the City of Compton is pursuing a program of redevelopment and economic revitalization, significant adverse effects would occur, although they are incidental to the rail transit project.

The MC-2 alternative increases the capital cost of the project by over 50 percent. It also conflicts with efforts of the Southern California Association of Governments and various South Bay municipalities to consolidate rail freight traffic onto the San Pedro Branch.

The MC-3 alternative was developed as an alternative to MC-2. This alternative is superior to MC-2 in achieving the objective of removing rail freight traffic from Compton. It also avoids the adverse impacts associated with the open cut.

Alternative MC-3, however, creates adverse environmental impacts at three locations, namely 1) visual and historic impact to Watts Station; 2) noise, vibration, and visual impacts to properties abutting the West Santa Ana Branch, and 3) traffic impacts along the San Pedro Branch. These impacts can be mitigated but not without altering the character of some areas.

Table II-7 (page II-52) summarizes the public comment on the mid-corridor alternatives. MC-3 is opposed by the City of Los Angeles and is conditionally opposed by the City of Compton and the Southern Pacific Transportation Company. The City of Compton is on record as supporting MC-3 only if the San Pedro Branch is grade-separated (depressed) through Compton. The SPTC will agree only if rights to preserve service on the San Pedro Branch can be guaranteed.

TABLE II-6

SUMMARY EVALUATION OF ALTERNATIVES

MID-CORRIDOR

CONSIDERATION	MOST DESIRABLE	LEAST DESIRABLE	COMMENTS
RIDERSHIP	No differences.	--	--
COST			
System Capital Cost	MC-1	MC-2	Cost Difference - MC-2: +$135 million Cost Difference - MC-3: +$ 12 million*
Operating Cost Recovery	No differences.	--	--
SERVICE			
Safety - Transit Riders	MC-3	MC-1	Differences are minimal.
Safety - Vehicular Traffic	MC-1/MC-2 equal	MC-3	Differences are minimal.
Other	No significant differences.	--	--
PLANS/POLICIES			
RTP	No differences.	--	--
Compton	MC-3 (modified)	MC-1	Supports only modified MC-3 (rail freight in depressed section).
CRA/Watts Junction	MC-1/MC-2 equal	MC-3	--
Rail Consolidation	MC-3	MC-2	MC-2 renders rail consolidation unlikely.
IMPACT			
Traffic	MC-2	MC-1/MC-3 equal	Superiority of MC-2 for traffic, noise, and visual is minimal. MC-3 merely shifts MC-1 traffic and noise impacts from one location to another, and adds vibration as an impact.
Noise	MC-2	MC-1/MC-3 equal	
Visual	MC-2	MC-3	
Historic	MC-1/MC-2 equal	MC-3	
Vibration	MC-1/MC-2 equal	MC-3 (mitigable)	
Other	No significant differences.	--	--
ENERGY	MC-1	MC-2	--
AGENCY/PUBLIC RESPONSE			
City of Compton	MC-3 (modified)	MC-1	Supports only modified MC-3 (rail freight in depressed section).
City of Los Angeles	No position.	MC-3	On record opposing MC-3.
County of Los Angeles	No position.	No position.	--
SPTC	MC-1/MC-2 equal	MC-3	Requires service and insurance guarantees for MC-3.
Public Agencies	Mixed positions.	No positions.	Limited response.
Public Groups	No positions.	No positions.	Limited response

* Does not include additional right-of-way or other enhancements (see text).

Source: Alternatives Evaluation Report (PB/KE: November, 1984)

TABLE II-7

SYNOPSIS OF PUBLIC POSITIONS

MID-CORRIDOR

	MC-1	MC-2	MC-3
City Councils	-	-	Opposed (6)*
Elected Officials	-	Supportive (2)	-
Public Agencies	Opposed (1)	Opposed (1,3)	Split (1,6)
Private Groups	-	-	Opposed (6)
Individuals	Split (7)	Opposed (4)	Split (6,7)

* A Compton City Council Resolution supports the MC-3 alternative only with the relocated rail freight line fully grade-separated along Alameda Street ("depressed trainway"). This resolution is interpreted as opposition to the MC-3 alternative as it is now officially defined. The Los Angeles City Council is on record opposing MC-3.

Basis:
(1) Reliability and safety
(2) Economic benefit
(3) Cost
(4) Visual impact
(5) Traffic impact
(6) Visual, noise, traffic, and historic impacts
(7) Reasons not given

Source: Alternatives Evaluation Report (PB/KE: November, 1984)

II-522 MC-3 Enhancements

Before and during conceptual design of MC-3, increasing attention was paid to its potential adverse impacts. As a result, a variety of design alternatives or additional design elements -- "enhancements" -- were formulated to address the impacts. These enhancements are as follows:

- Watts Junction

  1) Rail transit line "flyunder" and station, either north or south of 103rd Street (visual mitigation)

  2) Restoration of project impact on Watts Towers park area

- West Santa Ana Branch (Santa Ana Boulevard)

  3) Tree planting (visual mitigation)

  4) Noise mitigation (building soundproofing)

  5) Fencing (increased safety for residents)

- San Pedro Branch (Alameda Street)--Traffic Mitigation

  6) At-grade intersection improvements, and/or

  7) Underpasses at selected arterials, or

  8) Full rail grade separation (Compton "depressed trainway")

None of the proposed enhancements has been officially incorporated into the definition of the MC-3 alternative. The estimated cost of the enhancements, excluding the full grade separation along Alameda Street, is $25 - $30 million. The cost of the full grade separation along Alameda Street is estimated to be $130 million. These enhancements may not qualify for funding under Proposition A.

II-523 Comparison of Alternatives MC-1 and MC-3

The extremely high cost of the MC-2 alternative and its potential impact on plans to consolidate rail traffic in the corridor has led to a more focused look at the remaining two options. This comparison, including and excluding enhancements, is shown in Tables II-8 and II-9, immediately following.

TABLE II-8

COMPARISON OF MID-CORRIDOR ALTERNATIVES
MC-1 and MC-3

(MC-3 without Enhancements)

CONSIDERATION	MOST DESIRABLE	LEAST DESIRABLE
RIDERSHIP	No difference.	
SERVICE	No difference.	
ENERGY	No significant change.	
COST	MC-1	MC-3
IMPACT		
Noise	MC-1	MC-3
Visual	MC-1	MC-3
Historic	MC-1	MC-3
Other	No difference.	
CONFORMITY WITH PLANS		
Compton (1)	MC-3	MC-1
Watts Junction (2)	MC-1	MC-3
Other	No difference.	
INSTITUTIONAL RESPONSE		
City of Compton (3)	MC-3 (modified)	No position taken.
City of Los Angeles (4)	No position taken.	MC-3
SPTC (5)	MC-1	MC-3
County of Los Angeles	No position.	
Public Agencies	No clear positions.	
Private Groups	No position.	

Notes:
(1) Compton Redevelopment Project
(2) Watts Redevelopment Project
(3) Compton supports MC-3 only with rail freight grade separation along Alameda Street.
(4) Los Angeles opposes MC-3.
(5) SPTC will accept MC-3 only with service continuance guarantees from municipalities.

Source: Alternatives Evaluation Report (PB/KE: November, 1984)

TABLE II-9

COMPARISON OF MID-CORRIDOR ALTERNATIVES
MC-1 and MC-3

(MC-3 with Enhancements)

CONSIDERATION	MOST DESIRABLE	LEAST DESIRABLE
RIDERSHIP	No difference.	
SERVICE	No difference. (2)	
ENERGY	No significant difference.	
COST	MC-1	MC-3
IMPACT		
Noise	MC-1	MC-3 (3)
Other	No difference.	
CONFORMITY WITH PLANS		
Compton	MC-3 (4)	MC-1
Watts Junction	MC-3	MC-1
Other	No difference.	
INSTITUTIONAL RESPONSE	No change from basic alternative.	

Notes:

(1) Does not include rail freight grade separation along Alameda Street.

(2) One relocation option for the 103rd Street station would have a moderate adverse impact on train speed in that area.

(3) Proposed mitigation measure effective for building interiors only.

(4) Compton supports MC-3 only with rail freight grade separation along Alameda Street.

Source: Alternatives Evaluation Report (PB/KE: November, 1984)

Without enhancements, MC-1 is judged superior to MC-3 on three environmental grounds: noise, visual, and historic. The two are equal in terms of traffic impact. Alternative MC-1 is superior to MC-3 from the perspective of redevelopment efforts in the Watts Station area. MC-3 is superior in its contributions to redevelopment in downtown Compton. There is no difference between them in terms of other plans, including freight consolidation.

Construction of MC-3 with enhancements narrows the differences between it and MC-1, but some distinctions remain. MC-1 remains relatively cheaper, even with the enhancements. While the majority of the environmental problems associated with MC-3 are removed, the problem of noise mitigation along the West Santa Ana Branch remains.

II-524 Project Recommendation for the Mid-Corridor

Although it has not been possible to reconcile all conflicts inherent in a mid-corridor alternative, the evaluation process has clearly identified all the relevant project characteristics and the implied tradeoffs in the selection process.

It is the recommendation of the Commission staff that the MC-1 alternative (Compton At-Grade) be adopted as the project definition in the mid-corridor at the time of project authorization. This alternative is considered superior in two ways: 1) it provides transit service at a level at least equal to the other options, and 2) it offers the best opportunity for early implementation.

This recommendation is supported by the findings that the MC-2 alternative (Compton Grade Separation) contains two serious drawbacks: First, the $135 million cost of constructing the grade separation (open cut) would constitute a significant percentage of the cost of the entire rail transit project (over 30 percent). In view of this additional cost, it is noted that the grade separation alternative was developed to mitigate adverse environmental conditions caused by rail freight traffic in downtown Compton, conditions which are incidental to and not the result of the rail transit project.

Second, such a major new capital investment in the Wilmington Branch of the Southern Pacific Transportation Company would effectively preclude implementation of the rail freight consolidation plan now under active development and review by SCAG and affected jurisdictions in the project corridor. Most jurisdictions agree that the implementation of this plan is needed to permanently remove rail freight traffic from the Wilmington Branch.

The MC-3 alternative (SPTC Railroad Relocation) has been proposed as an alternative solution to the rail freight traffic problem in downtown Compton. During the course of its development, however, it has engendered significant organized opposition from the two affected mid-corridor municipalities (Compton and Los Angeles) for similar but varying reasons. Both cities consider this alternative, as it is presently defined, unacceptable due to adverse environmental consequences. The City of Compton has gone on record supporting the alternative only if a rail grade separation is constructed along Alameda Street to mitigate what they perceive as an unacceptable traffic impact. The City of Los Angeles has gone on record opposing the alternative due to unacceptable visual, noise, and vibration impacts in the vicinity of Watts Junction and along Santa Ana Boulevard. In effect, the MC-3 alternative is perceived to merely move the traffic impact of rail freight service from downtown Compton to a new location along Alameda Street and to add the additional adverse effects of noise, vibration, and visual intrusion on historic resources.

Enhancements of the MC-3 alternative designed to mitigate these adverse consequences are only partly successful and add significantly to the cost of the project. Problems with outdoor noise and visual intrusion would remain along the West Santa Ana Branch after soundproofing of affected buildings. Some traffic delay would remain along the San Pedro Branch after performing at-grade intersection improvements and constructing selective arterial grade separations. Applicability of Proposition A funding to these enhancements would be questionable, particularly for a full grade separation along Alameda Street.

It should be observed that neither MC-1 nor MC-3 precludes the implementation of the rail consolidation plan, part of which has been proposed as a fourth mid-corridor alternative not now under consideration as part of this project. The MC-3 alternative does represent a first step toward realizing that plan, but carries with it a buried cost attendant with any temporary or interim measure; namely, that full implementation of rail traffic consolidation would take freight traffic off the Wilmington Branch well north of Watts Junction. At that time, the rail transit grade separation at Watts Junction would no longer be needed, and as such, would represent a prematurely retired and, hence, inefficient capital investment. Alternative MC-1, without the Watts Junction grade separation, would not present this potential problem.

The Southern Pacific Transportation Company has expressed serious reservations with the MC-3 alternative, citing as their primary concerns two issues: 1) the need for guarantees from affected jurisdictions stating that they will take no action to curtail SPTC operations on the San Pedro Branch to levels below what would prevail after implementation of the relocation alternative; and 2) indemnification of their operations along the

West Santa Ana Branch. These are not irreconcilable problems, but they do add to the lengthy list of problems associated with MC-3.

The commission staff acknowledges that the recommended adoption of alternative MC-1 carries with it an interest by the commission in seeing that the Wilmington Branch rail freight traffic is ultimately consolidated with traffic using the Alameda Street rail corridor (San Pedro Branch). This interest derives not only from the commission's overall role in addressing transportation mobility in Los Angeles County (here, helping to reduce or eliminate rail freight/auto traffic congestion), but also from the benefits to the operation and safety of the light rail transit system by removing freight trains from proximity to transit tracks and stations. Accordingly, the staff recommends that the commission continue its active participation in the region's port rail consolidation effort, moving toward interagency adoption of facilities and funding plans. Timely resolution of funding and other institutional issues should result in effective mitigation of potential rail freight/auto conflicts.

II-530 LONG BEACH

II-531 Analysis of Baseline Alternatives

II-531.1 Summary Rankings

The technical evaluation documented in Section II-430 presents the results of 28 measures which describe the positive and negative attributes of the Long Beach alignment alternatives under consideration. The measures vary in their ability to distinguish among the alternatives; in some cases a superior choice is evident, whereas in others the alternatives all seem to perform nearly equally.

In the tables which follow, the alternatives have been ranked according to how well they perform relative to one another. The rankings range from "1," meaning "best" to "4," meaning "worst." It should be remembered that these rankings are relative and that a "4" does not necessarily indicate bad performance on an absolute basis.

In Table II-10, two conclusions are apparent:

1) Alternative LB-6 (Willow Street Terminus) is the least desirable choice from the perspectives of ridership, transportation service, and conformity with plans and policies.

2) The LB-6 alternative is clearly superior from the perspectives of cost, environmental impact, and energy consumption.

TABLE II-10

SUMMARY RANKING OF LONG BEACH ALTERNATIVES

BY MAJOR CRITERIA

CONSIDERATION	LB-2	LB-3 (Broadway Aerial)	LB-5	LB-6
RIDERSHIP	---------Equal (1)----------			4
COST[1]	3	4	2	1
SERVICE[2]	3	1	2	4
PLANS/POLICIES	---------Equal (1)----------			4
IMPACT	2	4	3	1
ENERGY (CONSTRUCTION)	3	2	4	1

1 = Best of those shown.
4 = Worst of those shown.

Notes:

(1) Also reflects relative complexity of construction, with attendant possibility of delay and unexpected impact.

(2) Ranking incorporates tradeoffs in nature and location of service and characteristics of those served.

Source: Alternatives Evaluation Report (PB/KE: March, 1985)

After consideration of the Willow Street Terminus alternative, the focus of the analysis shifts to the three remaining alternatives which penetrate the downtown, and differentiation among these alternatives is much more difficult. All of the alternatives are expected to generate approximately equal levels of ridership, although the nature of that ridership will be different, and all conform to local and regional plans.

- There are small but significant cost differences among the alternatives. The LB-3 (Modified) alternative is estimated to cost $10-$15 million more than the LB-5 alternative, depending upon the final right-of-way costs and alignment along Broadway.

- The higher cost of the LB-3 (Modified) alternative is due to more complex construction requirements, including potential utility relocation, the aerial configuration, the need to import fill material, and access treatments for the bicycle and horse trails.

- The Modified River Route alternative provides marginally superior transportation service. The distinction between LB-2 and LB-5 is even finer.

- The Modified River Route alternative has the greatest adverse environmental effect.

- The LB-2 alternative has a marginally lower level of service and moderately better level of adverse environmental impact.

II-531.2 Ranking With Service and Impact Measures

Table II-11 provides a more detailed ranking of the alternatives using several of the service measures. The alternatives evaluated are limited to those which provide service to the downtown area.

TABLE II-11

RANKING OF LONG BEACH ALTERNATIVES

BY SERVICE MEASURES

SERVICE	LB-2	LB-3 (Broadway Aerial)	LB-5
RUNNING TIME	3	1	2
ACTIVITY CENTERS SERVED	2	1	2
SERVICE TO DOWNTOWN	2	1	1
NEIGHBORHOOD SERVICE	1	3	2
ACCESS BY TRANSIT DEPENDENTS	1	3	2
SYSTEM RELIABILITY, ETC.	2	1	2
CAPABILITY FOR ADDITIONAL SERVICE	2	1	2
INTEGRATION WITH RTP	1	1	1

1 = Best of those shown
3 = Worst of those shown

Source: Alternatives Evaluation Report (PB/KE: March, 1985)

The figures shown in the table indicate that the Modified River Route is most effective for a majority of service measures. It ranks first in terms of running time, activity centers served, service to downtown, ability to provide additional service and integration with the RTP.

The LB-2 alternative ranks first in three categories, while LB-5 ranks first in two categories. However, there are several caveats which must be stated.

- o While the Modified River Route has the best running time, its primary mode of access is the auto, as compared with a larger share of walk-ons for the other two alignments. Average door-to-door travel time is probably nearly equal for all three alternatives.

- o The Modified River Route and Long Beach Boulevard alternatives provide essentially equivalent service to the downtown area. The LB-3 (Modified) alternative provides better service to the office, government, and new residential areas on the west side, whereas LB-5 provides better service to the retail and new industrial areas east of Long Beach Boulevard. Both of the Long Beach Boulevard alternatives (LB-2 and LB-5) provide better service to residential neighborhoods, smaller commercial areas, and transit dependents.

- o The Modified River Route alternative offers slightly better reliability and capacity for adding service.

The alignment alternatives are ranked according to probable severity of potential environmental impact in Table II-12. As shown in the table, the Modified River Route alternative has more severe impacts on all categories except traffic. The Atlantic/Long Beach Couplet alternative (LB-2) and the Long Beach Boulevard alternative (LB-5) provide essentially equivalent levels of impact, both less than the LB-3 (Modified) alternative. The following additional comparisons can be drawn:

- o Impacts of the Modified River Route alternative include visual and noise intrusion in neighborhoods along the Los Angeles River, altered quality of access to recreational resources in that area, potentially altered development patterns in station areas, and altered visual quality on Broadway.

- o Impacts along Long Beach Boulevard from the LB-5 alternative include altered visual character due to removal of palm trees, and potential traffic impacts between 6th and 7th Streets. Adjacent businesses would experience adverse impacts during construction.

- Many of the same construction impacts would occur with the LB-2 alternative, though their magnitude would be less due to the single-track configuration. Few, if any, of the other permanent adverse effects would occur.

TABLE II-12

RANKING OF LONG BEACH ALTERNATIVES

BY ENVIRONMENTAL IMPACT MEASURES

IMPACT	LB-2	LB-3 (Broadway Aerial)	LB-5
CONSTRUCTION	1	2(1)	2(1)
OPERATIONS			
ECONOMIC DEVELOPMENT	-------Minimal Distinction-------		
TRAFFIC	3	1	2
NOISE	2	3	1
VISUAL QUALITY	1	3	2
COMMUNITY RESOURCES	2	3	1

Note:

(1) Impacts are to different groups (i.e., businesses versus residents) and cannot be strictly compared. Both sets of impacts are significant.

Source: Alternatives Evaluation Report (PB/KE: March, 1985)

III-531.3 Public Opinion

A summary of the public positions expressed regarding the Long Beach alternatives is presented in Table II-13 below. In that table, opinions are shown to be either essentially supportive, essentially opposed, or significantly divided. Upper case letters indicate an extensive position. In some cases, N.C. is used to indicate that particular groups did not take positions.

TABLE II-13

SYNOPSIS OF PUBLIC OPINION

	LB-2	LB-3 (Broadway Aerial)	LB-5	LB-6
PUBLIC AGENCIES	Split	Supportive[1]	N.C.	Opposed[1]
BUSINESS GROUPS[2,3]	N.C.	Split	Split	Split
TRANSIT GROUPS[3]	N.C.	Split	SUPPORTIVE	Opposed
NEIGHBORHOOD GROUPS[2]	Split	OPPOSED	Supportive	N.C.
INDIVIDUALS[2]	Opposed	OPPOSED	Supportive	Split

N.C. = No Comment

Notes:
(1) One agency
(2) Primarily based on perceived environmental impacts
(3) Primarily based on perceived economic benefits

Source: Alternatives Evaluation Report (PB/KE: March, 1985)

As can be seen from the table, opinion is primarily, if not overwhelmingly, in favor of the LB-5 (Long Beach Boulevard, Two-Way) alternative and opposed to the LB-3 (Modified River Route) alternative. Opinion on the remaining two alternatives is notably lacking, though the opinions expressed were predominantly in opposition. Neighborhood groups are split on the LB-2 (Atlantic/Long Beach Couplet) alternative. Individuals commenting expressed a negative opinion. Business and transit groups have shown no interest in Alternative LB-2. Transportation-oriented groups and one public agency have expressed opposition to the LB-6 (Willow Street Terminus) alternative. Business groups and individuals are split.

The two primary concerns affecting the opinions expressed are environmental impact and economic benefit. Few benefits and minimal impact are seen from the LB-6 alternative. Little benefit is seen in the LB-2 alternative, though this viewpoint is inconsistent with the results of the technical analysis.

The magnitude of the opinion expressed opposing the Modified River Route alternative overwhelmed other opinions primarily due to the organized response of the Wrigley community. The business community is split on their view of the Long Beach Boulevard option. The Long Beach Boulevard Association and the Downtown Association are opposed, whereas the Redevelopment Project Advisory Committee and the Long Beach Plaza management are supportive. As yet, the Chamber of Commerce has not expressed a position.

Transit groups have shown solid support for the Long Beach Boulevard option, while splitting their views on the Modified River Route alternative. Public agencies have generally not offered views on any of the alternatives.

II-531.4 Policy Implications of Available Choices

There is considerable ambiguity inherent in the choices available for the rail transit project alignment in Long Beach, arising out of the closeness of the options in providing effective service and minimizing adverse environmental impacts.

It is perhaps most useful to examine the alternatives in light of what they accomplish, and then evaluate their acceptability in light of known adverse characteristics and public opinion.

The essential characteristics of the Long Beach alternatives are summarized in Table II-14. The basic focus and orientation of the service provided to Long Beach and the region is indicated on the first line. The remaining lines address the considerations of rider and service area characteristics, ridership, development influence, adverse impacts, conformity with plans, cost and ease of construction, and public opinion.

Based on the information contained in the table, the following descriptions may be applied to the four alternatives:

- o LB-2 (Atlantic/Long Beach Couplet)
  LOCAL SERVICE - NEIGHBORHOOD AND DOWNTOWN FOCUS

  - Effective ridership attractor
  - Maximum accessibility to transit dependents
  - Maximum influence on secondary commercial areas
  - Least environmental impact of three downtown alternatives
  - Conforms with applicable plans
  - Moderate cost and ease of construction
  - Limited public awareness - support or opposition

- o LB-3 (Broadway Aerial-Modified River Route)
  "RAPID TRANSIT SERVICE" - REGIONAL AND DOWNTOWN FOCUS

  - Effective ridership attractor
  - Maximum accessibility to downtown office centers
  - Maximum reinforcement to World Trade Center project and residential development in west downtown
  - Maximum connectivity with other corridor locations
  - Provides equivalent of "rapid rail" services in the Long Beach segment
  - Greatest environmental impact of Long Beach alternatives
  - Greatest cost and complexity of construction
  - Greatest level of public opposition

- o LB-5 (Long Beach Boulevard Two-Way)
  LOCAL SERVICE - DOWNTOWN FOCUS

  - Effective ridership attractor
  - Maximum service to downtown retail centers
  - Effective orientation to secondary commercial centers and transit dependents
  - Moderate level of environmental impact
  - Maximum "visibility" of project in Long Beach
  - Moderate cost and complexity of construction
  - Greatest level of public support

TABLE II-14

SUMMARY CHARACTERISTICS OF LONG BEACH ALTERNATIVES

Evaluation Factors	LB-2 Local/Neighborhood Service	LB-3 (Broadway Aerial) Regional/Downtown Service	LB-5 Local/Downtown Service	LB-6 Regional/Commuter Service
Rider Characteristics	Local (Commuter)	Commuter	Local/Commuter	Commuter
Long Beach Service Area Characteristics	Neighborhood/Downtown	Downtown/Office	Downtown/Retail	Limited
Ridership	----------Equal----------			Less
Development Influence (Limited in all cases)	Retail/Residental	Office/Residential	Retail/Residential	None
Environmental Impact	Moderate	Most	Moderate	Least
Conformity with Plans and Policies	Yes	Yes	Yes	No
Cost/Constructability	Moderate	Highest/Most Complex	Moderate	Lowest/ Least Complex
Public Support	Limited	Moderate	Considerable	Very Limited
Public Opposition	Moderate	Extensive	Limited	Limited

Source: Alternatives Evaluation Report (PB/KE: March, 1985)

- o **LB-6 (Willow Street Terminus)**
  COMMUTER SERVICE - REGIONAL FOCUS

  - Reduced ridership
  - Exclusive orientation to commuter service
  - Primary focus to remainder of project corridor and greater Los Angeles region
  - No influence on development activity
  - Not in conformity with RTP
  - Minimum environmental impact
  - Minimum cost and complexity of construction
  - Limited public awareness - opposition exceeds support

Any of the three alternatives which penetrate downtown will provide effective service to some portion of downtown; the choice lies with the area of downtown served and the characteristics of the ridership. The two alternatives which use Long Beach Boulevard, however, also provide substantial service to intermediate locations in Long Beach, compared with only limited service availability along the Los Angeles River provided by the Modified River Route option. That alternative provides better connection between the Long Beach CBD and the rest of the project corridor, and, ultimately, the region.

The environmental impacts of the three alignments which penetrate downtown vary and affect different groups. The Modified River Route primarily affects residential areas. The Long Beach Boulevard alternative almost exclusively affects commercial areas. The Atlantic/Long Beach Couplet alternative affects both residential and commercial areas.

Both the Atlantic/Long Beach Couplet (LB-2) and the Long Beach Boulevard (LB-5) alternatives provide similar service. The LB-2 alternative delivers virtually all of the effectiveness of the LB-5 alignment, yet with somewhat less social cost.

The Willow Street Terminus alternative (LB-6) does not maximize system utilization and also does not meet transportation planning objectives of downtown penetration and maximization of connectivity. However, it does achieve the goals of minimizing potential adverse impact and cost. This alternative is adequate for rail transit operations in other corridor segments, and it provides adequate ridership.

II-532 Analysis of Optional Treatments

II-532.1 Probable Adverse Impacts and Proposed Mitigation

The baseline versions of the LB-3 (Modified River Route) and LB-5 (Long Beach Boulevard, Two-Way) alternatives both have certain adverse environmental impacts which cannot be fully mitigated within the bounds of their original design. In response to this, certain design modifications have been proposed which would reduce some of these impacts.

For the Modified River Route alternatives, there are two areas of concern: 1) visual quality of the Los Angeles River area and Broadway, and 2) community resources along the Los Angeles River. Adverse visual quality impacts along the Los Angeles River north of Pacific Coast Highway are associated with the placement of the guideway, barrier fence, catenary poles, and a soundwall. A proposed mitigation measure would place landscaping immediately outside the soundwall and fence to screen them from the neighborhood.

A second enhancement measure would provide grade-separated access to the bicycle trail at all access points, rather than the baseline configuration of at-grade access paths at station locations and SPTC rail crossings.

Visual quality and traffic are two concerns affecting Broadway. The guideway would create a "visual tunnel" and would also reduce the number of traffic lanes. An alternative design would place the guideway entirely out of the public right-of-way onto the World Trade Center property and would also require reconstruction of an existing parking garage at the Civic Center. An intermediate option has been suggested whereby the guideway would remain within the public right-of-way but would be placed over a sidewalk and parking lane. All existing travel lanes could then be maintained.

For the LB-5 alternative, there are two concerns, namely visual quality and traffic. Adverse visual quality impacts would result from the removal of existing median landscaping. Adverse traffic impacts would occur south of 7th Street, particularly between 6th and 7th, from placement of the rail tracks in vehicular travel lanes and operating the service in mixed traffic.

An optional design has been developed to mitigate these adverse effects. North of 7th Street, the transit median would be widened to retain landscaping. Palm trees would be placed between the two rail transit tracks.

South of 7th Street, the rail transit tracks would be placed in an exclusive median, similar to the treatment north of 7th Street. The palm trees would be relocated to the sidewalks. The station now shown between 6th and 7th Streets would be moved one block south, and all but one local bus stop would be retained. Finally, the tail track would be relocated to Long Beach Boulevard, between 1st Street and Ocean Boulevard.

The optional treatment south of 7th Street does have some impacts associated with it, however. Sidewalks would be narrowed, and up to 13 parking spaces would be eliminated at station areas and intersections. Higher cost and increased construction impacts would result. However, these changes would also result in improved system reliability and passenger/pedestrian safety.

II-532.2 Analysis and Conclusions

The optional design features which have been suggested for the LB-3 (Modified River Route) and LB-5 (Long Beach Boulevard, Two-Way) alternatives would generally enhance the project.

For the Modified River Route, placement of high landscaping along the Los Angeles River would mitigate the visual intrusion, but it would achieve little additional noise attenuation. Grade-separated bicycle path access would eliminate bicycle/train safety hazards but bicycle/auto safety might be reduced in certain locations. The intermediate design solution for Broadway would eliminate the potential traffic impact and the potential need for private property acquisition. The visual impact of the aerial guideway would be only partially mitigated, however.

For the Long Beach Boulevard alternative, the optional design would preserve the existing visual character of the street. Adverse traffic impacts south of 7th Street would be largely eliminated. However, sidewalk narrowing and some loss of parking would occur. South of 7th Street, system reliability and passenger/pedestrian safety would be improved. Both project costs and construction impacts would be increased however.

The relative attractiveness of the two alternatives is only slightly changed by the optional design features. The LB-3 (Modified River Route) continues to change the quality of the neighborhood and community resources. The LB-5 (Long Beach Boulevard, Two-Way) alignment, slightly preferable on environmental grounds, is made slightly more attractive with the design modifications. The primary factors affecting choice of an alignment (service, utilization, and cost) are still of equal importance. The selection of the Long Beach alignment should reflect that full set of considerations.

II-600 PROJECT IMPACTS AND MITIGATION MEASURES

The table that follows summarizes the impacts associated with implementation of the project and the mitigation measures that are incorporated into the project to substantially lessen the project's environmental effects. The mitigation measures identified include both significant adverse and adverse impacts. The table assumes that either LA-2/MC-1/LB-5 or LA-2/MC-1/LB-3 (one station at Pacific Coast Highway) is the adopted project. Where mitigation measures differ because of a difference in the Long Beach alignment, the route to which the mitigation measure applies is identified in the table.

The table also identifies the Implementing Agency for each mitigation measure. The Los Angeles County Transportation Commission has incorporated the mitigation measures, for which they are the identified Implementing Agency, into the project and into the project budget. Other agencies either have adopted or can and should adopt the mitigation measures for which they are the identified Implementing Agency.

TABLE II-15

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Topography, Soils, Geology						
Construction:	All All	Cut-and-cover soil excavation, possible contaminated soil	Minor Adverse	Proper disposal of excess material, shoring and falsework for safety	LACTC	None
	LA-2 LB-3*	Possible oily muck	Minor Adverse	Separate contaminants, dispose of material properly	LACTC	None
Operation:	All	General Southern California seismic risk	Minor Adverse	Soils testing and site-specific engineering to ensure conformance to codes and seismic safety standards; operating safety systems; structures designed to withstand collapse	LACTC	None
	LA-2	Possible gas buildup in subway section	Potential Adverse	System to be vented if gas considered likely	LACTC	None
	MC-1	Cherry Hill fault crossed by tracks	Potential Adverse	Soils testing to ensure conformance to codes; operating safety systems	LACTC	None
Floodplains, Hydrology, Water Quality						
Construction:	All	Possible siltation and water runoff during construction	Minor Adverse	Control by temporary culverts, catch basins, settling ponds, and other standard techniques	LACTC	Very Minor Adverse
	LA-2	Water table incursion	Minor Adverse	Dewater subway section	LACTC	None
	LA-2 LB-3*	Possible groundwater contamination	Minor Adverse	Separate contaminants before disposal	LACTC	None

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Floodplains, Hydrology, Water Quality (Cont'd)	LB-3*	Modification and relocation of drainage facilities such as pipelines and pump station	Minor Adverse	Relocation of utilities as necessary	LACTC	None
	LB-3*	Reported ponding along flood control alignment	Adverse	Hydrology study to determine if problem exists; additional pumping stations, etc., if warranted	LACTC	None
Operation:	All	Increased runoff from parking lots, yards, and right-of-way	Minor Adverse	Catch basins, curbing, culverts, gutters, pumping stations, and storm sewers to control surface runoff, as necessary. Install curbs to improve situation where no drainage exists. Storm sewer connections to mitigate project runoff	LACTC	None
	All	Water from yard operations	Minor Adverse	Separate oil before disposal, recycle wash water	LACTC	None
Vegetation and Wildlife						
Construction:	All	Removal of some trees and existing vegetation; displacement of animals; no endangered species	Minor Adverse	Replace landscaping where appropriate and feasible	LACTC	Minor Adverse
Operation:	All	Replaced landscaping would require watering and maintenance	Very Minor Adverse	Maintain and water landscaping	Local Jurisdictions and SCRTD	None
Air Quality						
Construction:	All	Slight increase in particulates; slight increase in auto emissions	Minor Adverse	Control dust at construction sites	LACTC	Very Minor Adverse
Operation:	All	Slight reduction in pollutant burden for region	Minor Beneficial	None necessary		Minor Beneficial

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Air Quality (Cont'd)	MC-1 LB-3*	Slight increase in carbon monoxide at parking lots	Very Minor Adverse	None, within state standards		Very Minor Adverse
Energy						
Contruction:	All	Energy expended during construction sites	Very Minor Adverse	Minimize haul distances; recycle materials where possible	LACTC	None
Operation:	All	Slight decrease in regional regional energy consumption	Minor Beneficial	None necessary		Minor Beneficial
	All	Energy expended during operation	Very Minor Adverse	Incorporate features to foster energy conservation	LACTC	None
Noise and Vibration						
Construction:	All	Temporary increases around construction sites	Minor Adverse	Use of alternative construction methods, proper scheduling, noise barriers	LACTC	Minor Adverse
Operation:	All	Possible vibration impact if residence within 50 ft. of LRT tracks	Adverse	Residences within 50 ft. of track will have vibration analysis during final design. If problems are found vibration damping to be incorporated.	LACTC	None
	MC-1	Relocated freight rail track within 30 feet of residences could increase maximum passby noise levels by 6 dBA	Significant Adverse	Noise monitoring before and after construction to determine extent of increased noise; soundproofing to be installed at affected structures.	LACTC	Minor Adverse
	LB-3*	Aerial section may create noise and/or vibration	Minor Adverse	Aerial track structures to include resilient materials	LACTC	None
	LB-3*	Noise increase of 5 dBA CNEL at some residences	Possibly Significant Adverse	Noise barrier wall from Wardlow Road to Pacific Coast Highway	LACTC	Minor Adverse

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Land Use, Population, Housing						
Construction:	All	Purchase of substation sites could require displacement depending on sites	Minor Adverse	Select sites to minimize displacement, relocation assistance	LACTC	Probably None
	MC-1	Complete or partial acquisition of 32 parcels; 1 residential/commercial structure and 1 vacant commercial building will be demolished	Significant Adverse	Relocation assistance	LACTC	Adverse
	LB-3*	Complete or partial acquisition of 30 parcels; 1 duplex, 3 storage sheds and 1 industrial property to be displaced	Significant Adverse	Relocation assistance	LACTC	Adverse
	LB-3*	Precludes construction of 75 housing units	Adverse	None possible		Adverse
Operation:	All	Slight increase in population, employment, housing	Minor Beneficial	None necessary, with adopted plans		Minor Beneficial
	All	Enhancement of revitalization efforts	Minor Beneficial	None necessary		Minor Beneficial
Community Services						
Construction:	All	Very slight intermittent increase in response times for emergency vehicles	Minor Adverse	Signage, definition of alternate routes, one lane to remain open at all times	LACTC	Minor Adverse
	All	Temporary obstruction to facilities	Minor Adverse	Access to be maintained by walkway, protective barriers, fencing, and signing	LACTC	Minor Adverse

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Community Services Cont'd)	LB-3*	Temporary obstruction of LARIO equestrian trail during relocation	Very Minor Adverse	Signage, definition of alternate routes	LACTC	Slight Adverse
	LB-3*	Temporary obstruction of bike trail	Very Minor Adverse	Signage, definition of alternate routes	LACTC	Slight Adverse
Operation:	All	Improves accessibility to community services	Beneficial	None necessary		Beneficial
	All	Train operations could block intersections to emergency vehicles	Very Minor Adverse	None possible		Very Minor Adverse
	All	Possible increased responses from police forces along route.	Potential Minor Adverse	Security measures to mitigate crime potential	LACTC (Design) SCRTD and local jurisdiction (Operations)	Slight Adverse
	MC-1	Some walk times to community services increased because of fencing	Very Minor Adverse	Existing legal track crossings will be maintained; signs along route to indicate nearest permitted crossing	LACTC	Very Minor Adverse
	MC-1	Fencing of rail tracks will improve safety	Minor Beneficial	None necessary		Minor Beneficial
	LB-3*	Access to LARIO bike and equestrian trails would be modified	Slight Adverse	Maintenance of existing bike trail access points either at-grade or grade separated; at-grade bike/pedestrian crossing equipped with walking signs and lights; relocate horse trail	LACTC	None
	LB-3*	Aerial section uses portion of Lincoln Park	Minor Adverse	Integrate station with City's proposed redesign of Lincoln Park	LACTC	Minor Adverse
	LB-5	Improves accessibility to community services	Beneficial	None necessary		Beneficial

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Economic Activity						
Construction:	All	Increased jobs and purchases in region	Beneficial	None necessary		Beneficial
	All	Disruption to business during construction	Adverse	One traffic lane open, limit number of blocks closed at a time, maintain pedestrian access, temporary signing	LACTC	Minor Adverse
	LA-2	Congestion on Flower Street	Minor Adverse	Flower Street decked over for station construction, intersection of 7th and Flower not blocked.	LACTC	Very Minor Adverse
Operation:	All	Loss in property tax because of acquisition for project facilities	Minor Adverse	Minimize acquisitions, consider joint development, disposal of excess property	LACTC	Very Minor Adverse
	All	Increases in property and sales bases because of new development	Minor Beneficial	None necessary		Minor Beneficial
	LB-5	Mid-block left turns deleted on Long Beach Boulevard.	Minor Adverse	Signs to indicate next left turn opportunity	LACTC, City of Long Beach	None
Visual Quality						
Construction:	All	Temporary disruption and visual clutter	Minor Adverse	Fencing and barriers where appropriate, temporary in nature	LACTC	Very Minor Adverse
Operation:	All	Existing and proposed power and communication lines produce visual clutter	Adverse	Combine and consolidate where feasible, remove poles and lines no longer in service	LACTC	Minor Adverse

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Visual Quality (Cont'd)	All	Introduction of stations into areas	Minor Adverse	Landscaping and other design treatment for visual integration; compatible design with adjacent projects, especially redevelopment areas and historic structures	LACTC	None
	MC-1	Visual incompatibilities with aerial sections	Minor Adverse	Materials and design, landscaping	LACTC	Minor Adverse
	LB-3*	Visual incompatibilities with adjacent residential areas	Minor Adverse	Replace landscaping along soundwall/fence	LACTC	Minor Adverse
	LB-3* (Option E)	Introduction of aerial guideway through Civic Center	Very Minor Adverse	Redesign and integrate landscaping along Civic Center Mall, relocate clock tower	LACTC	None
Historic and Cultural Resources						
Construction:	All	Increased noise and dust, reduced access	Minor Adverse	Standard practices to minimize impacts; as much as possible route trucks and other equipment away from historic properties	LACTC	Very Minor Adverse
Operation:	LB-3*	Visual incompatibility of aerial structure and possible historic buildings	Minor Adverse	Materials and design to reduce bulk; photo documentation of National Register-eligible structures	LACTC	Very Minor Adverse

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Traffic and Transportation						
Construction:	All	Increased congestion, traffic delays to autos, buses, pedestrians	Minor Adverse	Schedule and minimize street closures to reduce impacts, schedule activities on moving traffic lanes during off-peak periods, phase construction, temporary elimination of curb parking, directional signing, maintain pedestrian access, traffic control, coordination, and plans.	LACTC and local jurisdictions	Minor Adverse
	LA-2 LB-3* LB-5	Reduction in on-street parking during construction period	Minor Adverse	None feasible		Minor Adverse
	MC-1	Disruption to freight rail	Minor Adverse	Relocate freight operations to avoid problems	LACTC and Railroads	None
Operation:	All	Reduce vehicle miles traveled by autos	Minor Beneficial	None necessary		Minor Beneficial
	All	Increase transit usage	Minor Beneficial	None necessary		Minor Beneficial
	LA-2 LB-3* LB-5	Reduction in some street capacities; some increased local congestion with at-grade alternatives; permanent reduction in on-street parking, along Flower Street and one side of Washington Blvd. in Los Angeles, at station locations and intersections in Long Beach	Adverse	To accommodate project, additional or revised traffic signals and TSM improvements, park-and-ride lot adequate circulation, feeder bus, ride-share incentives, discouragement of spillover to adjacent area; to extent feasible, traffic not to be preempted at intersections. Reconstruct intersections at station locations south of Willow on Long Beach Boulevard to maintain thru and turn lanes.	LACTC and local jurisdictions	Minor Adverse

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

TABLE II-15 (Continued)

SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Factor	Segment	Description of Impact	Impact Determination	Mitigation	Implementing Agency	Net Impact
Traffic and Transportation (cont'd)	MC-1	Slight increase in congestion around stations	Minor Adverse	Restriping and widening, additional turn lanes at various locations to improve east-west cross-traffic along major arterials; reduce rail embankment between 108th and Rosecrans	LACTC	Minor Adverse
	MC-1	Slight increase in traffic delays at grade crossings	Adverse	Develop coordinated traffic control system for rail transit and major arterials	LACTC	Minor Adverse
	MC-1	Disruption to freight operations	Minor Adverse	Grade separated LRT from main railroad lines at Slauson, Dominguez and Cota to fully maintain freight operations	LACTC	None
Related Projects						
Construction:	All	Increased effects due to other projects in same areas	Very Minor Adverse	Coordinate with other projects to use same equipment, labor, staging areas, detours, haul routes, excess soil, whenever practicable	LACTC and other project sponsors	None
	LA-2	Effects of joint construction of 7th and Flower stations	Minor Adverse	Coordinate activities in Downtown Los Angeles with SCRTD Metro Rail.	LACTC and SCRTD	None
	MC-1	Integration with Century Freeway, ICTF and Long Beach Coal Project, railroad freight traffic, Harbor Transitway, and U.S. postal facility.	Minor Adverse	Coordinate activities in mid-corridor with affected entities	LACTC; SCRTD, Caltrans, and Railroads	None
	LB-3*	Integration with World Trade Center and downtown redevelopment projects.	Minor Adverse	Coordinate activities in Long Beach with affected entities	LACTC; WTC Developers, City of Long Beach	None

* For purposes of this table, LB-3 refers to the LB-3 (Broadway Aerial-Modified River Route) alternative.

Chapter

III COMMENTS REQUIRING RESPONSES

III-100 INTRODUCTION

This chapter details all the comments received during the public review periods for the Draft Environmental Impact Report (DEIR) and the Draft Supplemental EIR (SEIR).

Due to the large volume of comments received, it was not practical to reproduce them in this document in their entirety. Instead, a summary of each comment was prepared. The person or organization making the comment is identified in parentheses following the comment (in some cases, more than one commenter). Abbreviations for agency or organization names are used, and in the case of individuals, the last name is noted. Where an oral comment was received, and the individual delivering the comment identified him/herself as speaking on behalf of some agency, group, or organization, the represented body is identified as the source of the comment.

The remainder of this chapter is organized as follows:

- Section III-200 is a list of Abbreviations of Agencies and Organizations Commenting.
- Section III-300 details comments and responses pertaining to the DEIR.
- Section III-400 details comments and responses pertaining to the SEIR.

III-200 ABBREVIATIONS OF AGENCIES AND ORGANIZATIONS COMMENTING

AAA - Automobile Club of Southern California

AGNA - Avalon General Neighborhood Association

AHSR - American High Speed Rail Corporation

Atlantic Methodist - Atlantic United Methodist Church, represented by Mr. Bon

Bauer - Bauer Professional Building

Bell - City of Bell

Carson - City of Carson

Caltrans - California Department of Transportation

CCA - Central City Association of Los Angeles

CDAC - Community Development Advisory Committee, represented by Mary Maye

CDC - Community Development Commission, County of Los Angeles

CITRT - Citizens for Responsible Transit

City DOT - City of Los Angeles, Department of Transportation

City Engineering - City of Los Angeles, Bureau of Engineering

City Fire - City of Los Angeles, Fire Department

City Planning - City of Los Angeles, Planning Department

Compton - City of Compton

Compton Merchants - Downtown Compton Merchants Association, represented by Roland Exum

County Planning - Los Angeles County Regional Planning Commission

County Road - County of Los Angeles, Road Department

County Sheriff - County of Los Angeles, Office of the Sheriff

Covenant Presbyterian - Covenant Presbyterian Church, represented by Sam Rue

CRA - Community Redevelopment Agency, City of Los Angeles

CRC - Citizens for Rail California

CRT - Coalition for Rapid Transit

DLBA - Downtown Long Beach Associates

Downtown Business - Downtown Long Beach Business Association, represented by Vito Romans

ERC - Economic Resources Corporation, represented by Sy Richardson

ERHA - Electric Railway Historical Association of Southern California

1st Lutheran - First Lutheran Church, represented by Clarence Walker and Helena Segelhorst

Gospel Memorial - Gospel Memorial Church, represented by Freddie Davis

HRC - Hoover Redevelopment Committee

Huntington Park - City of Huntington Park

LAC - Los Angeles Conservancy

LB Blvd. Assn. - Long Beach Boulevard Area Association, represented by Robert Caso

LB Citizens - Long Beach Citizens for Responsible Light Rail

LB Housing - Long Beach Housing Action Association, represented by Sharon Cotrell

LBPTA - Long Beach Parent Teachers Association, represented by Virginia Wright

LBT - Long Beach Transit

LBUSD - Long Beach Unified School District, represented by Leon Taylor

LB 1st Christian - Long Beach First Christian Church, represented by John Turner

Long Beach - City of Long Beach

NAACP - Los Angeles National Association for the Advancement of Colored People

Parks - Department of Parks and Recreation, State of California

Poly - Polytechnic High School, represented by Robert Ellis, Principal

Port of LA - Port of Los Angeles, City of Los Angeles

PUC - Public Utilities Commission, State of California

RRPA - Railroad Passengers Association of California

SCAG - Southern California Association of Governments

SCAQMD - Southern California Air Quality Management District

SCRTD or RTD- Southern California Rapid Transit District

Signal Hill - City of Signal Hill

St. John's Baptist - St. John's Baptist Church represented by Rev. Ralph Mosby

St. Luke's Episcopal - St. Luke's Episcopal Church, represented by Douglas Stenhouse

St. Mary - St. Mary Medical Center

UMA - United Ministerial Service, represented by Rev. Louis Chase

WNA - Westminster Neighborhood Association, represented by Grace Payne

III-300 COMMENTS AND RESPONSES BY TOPIC - DEIR

The public review period for the DEIR commenced on May 18, 1984, and the close of comments occurred on July 16, 1984. Public hearings were held on the following dates and at the following locations:

1) June 19, 1984 - Downtown Los Angeles, 930 Wilshire Boulevard, Los Angeles.

2) June 20, 1984 - Downtown Los Angeles, 255 S. Hill Street, Los Angeles.

3) June 21, 1984 - Compton, 205 S. Willowbrook Avenue, Compton.

4) June 23, 1984 - Florence-Firestone, 7807 S. Compton Avenue, Compton.

5) June 27, 1984 - Long Beach, 333 W. Ocean Boulevard, Long Beach.

6) June 30, 1984 - Watts/Willowbrook, 1776 E. Century Boulevard, Los Angeles.

During the course of the public review period, some 66 written communications (comprising 214 pages) were received: three from political office holders; 28 from public agencies; 14 from private organizations; and 21 from individuals. Some of the letters received raised a single issue or requested additional information, whereas others contained multiple comments or questions. Generally speaking, public agency comments were the most lengthy, although there were a few private organizations which also submitted lengthy comments.

At the public hearings, a total of 102 pieces of testimony (358 pages transcribed) were taken before the hearing officers. A few of these duplicated comments which had also been submitted in written form. In general, comments heard at the public hearings were spoken on behalf of local community groups, residents, and interested individuals, whereas the written comments were predominantly from public agencies.

Comments were organized into categories and are listed alphabetically, with the exceptions of "Miscellaneous" and "Corrections and Additions" which are at the end. Of all the comments (written and oral) received, Route Preference and Traffic were the two most frequently encountered categories, with 39 comments on each subject. Other comment categories heard frequently were: Safety - 24; Freight Operations - 22; Historic Concerns - 17; Bus Service - 16; Rail Coordination - 14; Operations - 14; Construction Impacts - 14; Mitigation Measures - 11; and Patronage - 10.

III-301 Accessibility

Comment 1:

High level platform operation is desirable because it would provide superior accessibility for the handicapped, as well as reduce vehicle loading times. (SCAG, SCRTD, County Planning).

Response:

Selection of high platform stations for the light rail system is preferred and sought by the LACTC for many operational benefits, including the superior accessibility for elderly and handicapped patrons.

Comment 2:

It would be advisable to purchase vehicles capable of both high and low platform loading. (Zimmerman)

Response:

The LACTC desires the project to be developed with high platform stations. However, even if all stations are constructed as high platform, the light rail vehicle would still require high-low steps. At this time, the LACTC expects that provision of high-low steps will be a required initial or future retrofittable feature of the light rail vehicle procurement for this line.

Comment 3:

The station serving both the I-105 Transitway and the light rail train should be accessible from the Willowbrook Shopping Center. (County Planning)

Response:

Final design of the Century Freeway/Imperial Highway station requires further evaluation of the relative patron demands of the proposed Century Freeway Transitway, and the Imperial Highway area versus the Willowbrook Shopping Center. During the final engineering phase, the station platform will be located so as to be easily accessible to patrons, whether they are walking, transferring from bus or transitway, or arriving by auto. Pedestrian connections to the Willowbrook Shopping Center are intended in any case.

Comment 4:

It is questionable that people who live or work beyond one-quarter mile from an LRT station will walk the necessary distance to use the system. Information obtained from LARTS indicates that the majority of riders will be attracted from within one-quarter mile. (LB Citizens)

Response:

The majority of walk trips to light rail stations would come from within a one-quarter-mile radius. Beyond this distance, access to stations would principally be by means of both existing and proposed feeder bus service, as well as auto trips.

Comment 5:

LB-3, the River Route, is too inaccessible to potential ridership and services in downtown Long Beach. (Conrad)

Response:

The analysis presented in the DEIR indicates that the LB-3 alternative has some strong positive accessibility attributes as well as some which are not so positive. In terms of its relationship to existing development, LB-3 ranks third with respect to office space and fourth with respect to retail space and housing units. In terms of new development between 1980 and year 2000 (without the project), LB-3 ranks second in accessibility to new office space, third in accessibility to new housing units, and fourth in accessibility to new retail space. It would, however, have the least effect in inducing new housing unit development (a bit more than one-half of other alternatives), although it is similar in its effect on new office space.

As the DEIR points out, none of the original Long Beach alternatives is located in the most densely populated areas of Long Beach, which are located to the west and east of the proposed routes. LB-3 serves only the southernmost portion of downtown Long Beach, and it has only two stations. However, this alignment does serve the Civic Center, and it is the only alternative among the original Long Beach alternatives which serves the World Trade Center. The Supplement to the DEIR (SEIR) discusses the ridership and accessibility to services for a Modified River Route alternative with additional stations which would serve to enhance access.

Comment 6:

How convenient will it be for people to board the train? (Morgan)

Response:

The light rail system is being designed to afford its patrons a level of convenience which is at least equal to other such systems operating throughout the country. Stations would be provided at frequent intervals. High level station platforms are desired because they provide greatest accessibility to those patrons who have mobility difficulties. Parking lots, accessways to stations, and all other system elements would be equipped for elderly and handicapped patrons. In all aerial or below-grade stations, vertical transportation would be by means of elevators, escalators, stairs, ramps, and walks, as appropriate. In short, the system would conform to all standards of modern public transportation design, incorporating such provisions as are necessary to promote maximum convenience.

Comment 7:

Page I-32 mentions that it may not be practical to have high level platforms on Broadway/Spring Street. We suggest a look at 7th Avenue in Calgary for a possible method of incorporating high level platforms. (Caltrans)

Response:

High level platforms are not considered feasible on Broadway and Spring because of narrow sidewalks, high pedestrian volumes, and high level of general traffic. This situation differs from that found on 7th Avenue in Calgary, where there is an exclusive transit mall.

III-302 Air Quality

Comment 1:

Table V-11A gives potential construction emissions and the discussion concludes that they are insignificant. We disagree. District policy establishes thresholds of significance as follows (in pounds/day): Carbon Monoxide (550); Sulfur Dioxide (150); Nitrogen Oxides (100); Particulates (150); Reactive Organic Gases (75); Lead (3). (SCAQMD)

Response:

The comment is correct. The projected emissions would be marginally significant. Accordingly, the sentence following Table V-11A is herewith corrected to read: "Overall, the air pollutant emissions are expected to be only marginally significant on a regional basis."

Comment 2:

The conclusion (page V-24) regarding electric generation emissions is not supported by calculations and may not be correct. (SCAQMD)

Response:

The statement on page V-24 leaves the reader with the impression that, since the electrical demand is less than 0.05% of the region's total, the emissions likewise are less than 0.05%. This is not true. The correct percentages are:

CO - .0362

NO_x - .1276

SO_x - .1874

TSP - .1489

ROG - .0946

These percentages are based on emissions in the year 2000 resulting from the production of 279 billion BTUs of electrical energy, the annualized requirement for the Broadway/Spring alternative, which would be as follows:

CO - 14.7 pounds/day

NO_x - 169.3 pounds/day

SO_x - 198.7 pounds/day

TSP - 29.5 pounds/day

ROG - 12.5 pounds/day

Note: An oil-fired facility with generation in the basin is assumed and represents a worst case condition.

Electric utilities are projected to emit the following quantities in total in the year 2000:

CO - 20.3 tons/day
NO_x - 66.3 tons/day
SO_x - 53.0 tons/day
TSP - 9.9 tons/day
ROG - 6.6 tons/day

It is believed that the projected emissions constitute such small percentages of the total electrical demand of the area that it is correct to conclude the project's impact on power plant emissions would be minimal.

Comment 3:

Air quality impacts in the DEIR are limited to carbon monoxide. Other pollutants should be discussed, particularly total hydrocarbons, nitrogen oxides, particulates, and sulfur oxides. (Port of LA)

Response:

Estimated levels of all pollutants associated with the project were tabulated in the DEIR (Table V-22A) and their significance assessed in terms of regional air quality. As stated in the DEIR, page IV-4, "carbon monoxide is considered a general indication of microscale violations of other primary pollutants (including nitrogen dioxide, sulfur dioxide, and particulates); thus it is representative of potential health effects." The impacts associated with carbon monoxide were assessed at the microscale level, such as would be encountered at intersections and parking lots, and were found to be insignificant. As stated in the DEIR, these results were applied to other non-reactive pollutants (particulates, lead, sulfur oxides) that could have their primary impact near their source. Based on the carbon monoxide microscale analysis, the effects of these non-reactive pollutants were also judged insignificant. Hydrocarbons and nitrogen oxides are both of concern because they react in the atmosphere to form photochemical oxidants, which can affect air quality at some distance from the actual emission locations.

Comment 4:

I did not hear (at public hearing) too much mentioned about air pollutants and fuel emissions. (Freeman)

Response:

The DEIR includes a complete analysis of air quality impacts associated with the project. Existing air quality conditions are documented in Section II-140. Local air quality impacts associated with the project are discussed in Sections IV-114, IV-214, and IV-314. Regional air quality impacts are covered in Sections V-110 and V-220. The reader is referred to these sections for specific findings.

III-303 Alternatives Analysis

Comment 1:

The bus system presented in the alternatives analysis has twice as many stops in the mid-corridor as the rail alternative. This creates an unfair comparison. (AAA)

Response:

The travel time analysis for the bus alternative was based on actual roadway conditions, including vehicular traffic volumes, roadway capacities, signalization, and other operating characteristics. Reducing the number of bus stops along the alignment would not significantly alter the overall travel time, particularly during peak hours. It should be noted, however, that without the additional bus stops, the patronage estimates would be affected and total ridership on the bus option would be reduced.

Comment 2:

The discussion of the environmentally superior alternative is insufficient in that it does not analyze each of the proposed four routes and their sub-options. (LB Citizens)

Response:

As pointed out in Section VIII-300, the California Environmental Quality Act (CEQA) calls for a discussion of the environmentally superior alternative in terms of avoidance of adverse impacts of the proposed action. In that regard the discussion in Section VIII-300 goes on to state the following findings: a) the rail

transit alternatives are generally superior to the bus alternative, although the differences are slight; b) the rail alternatives are superior to the No Project alternative on a regional basis; and c) the environmentally superior alternative in terms of avoidance of adverse effects is the No Project alternative. Because the differences among specific route options are small, this characterization of the various alternatives is deemed sufficient for purposes of the CEQA discussion of the environmentally superior alternative.

III-304 Bus Service

Comment 1:

Three of the four Long Beach rail alternatives have stations at existing bus stops. Further analysis of bus/rail coordination at these shared stops is needed. Of particular concern is the southbound Long Beach Boulevard station at 6th Street. (LBT)

Response:

The light rail system would operate in the transit lane with LBT buses and would follow the normal flow of bus traffic (alternatives LB-2 and LB-4). During peak periods, light rail trains would operate at six-minute headways in the transit lane for these alternatives. Existing bus operations on Long Beach Boulevard would experience some minor delays at stations stops.

Comment 2:

The DEIR calls for termination of RTD Line 457 at the Del Amo station. We oppose provision of local service by the RTD in our service area. Also, we operate existing lines which can function as feeders. (LBT)

Response:

RTD Line 457 express service would be eliminated under the Long Beach river route (LB-3) alternative. In the remaining Long Beach alternatives, Line 457 service is eliminated north of the Del Amo station, because it duplicates service to be provided by the project between Long Beach and Los Angeles. Service is maintained south of the Del Amo station for planning purposes. Actual line operations and jurisdictional concerns would be worked out during start-up operations.

Comment 3:

The issue of rail/bus conflicts in the transit mall has not been adequately addressed for alternatives LB-3 and LB-4. (LBT, Long Beach)

Response:

The light rail transit system would operate in the transit mall along with LBT buses and would follow the normal flow of bus traffic. The addition of 10 trains per hour during the peak periods to the approximately 113 buses operating in the transit mall would cause some delays in existing bus operations. However, elimination of bus stops on the transit mall has not been proposed.

Atlantic with Pacific Avenue Loop (LB-4) has only one-way LRT traffic on the transit mall rather than the two-way LRT traffic proposed under the original LB-3 river route. Conflicts and delays are undesirable, but experience in Calgary, Canada has shown that mixing bus and LRT in a transit mall can be done successfully.

Comment 4:

The full impact of the project on transit ridership should be discussed in order to evaluate the benefits in relation to costs. (SCRTD)

Response:

A complete discussion of the LRT system's ridership is provided in Section I-240 of the DEIR. Included in this section is information regarding project boardings (both systemwide and by individual station) and corridor and county mode split. Section V-200 of the DEIR presents regional information concerning transit ridership. Included within this section is information relating to the project corridor, the county, and the region such as transit ridership, automobile travel, and a discussion of the project impact on both local transit patronage and several major proposed transit facilities, including the Metro Rail project, the I-5 Transitway, the Harbor Freeway Transitway, and the Century Freeway Transitway. Given this documentation, it would appear that the full impact of the project on transit ridership has already been discussed.

Comment 5:

The operation of light rail vehicles in mixed traffic in the Spring Street contraflow lane is operationally impractical. Adding fixed rail service would impact bus operations on other downtown streets feeding into the contraflow lane. (SCRTD, CRA)

Response:

Operating the light rail vehicles in mixed traffic with buses on the Spring Street contra-flow lane would affect present bus operations, particularly at common and separated bus and rail transit stops. However, with only 10 LRT operations during the peak hour, present bus operations should be able to accommodate the light rail train with minor delays at station stops. Minimal RTD bus route modification has been proposed under the Complementary Bus Network (page I-45). Peak period frequencies would be slightly reduced for RTD bus lines 55 and 56. No replacement of local bus lines is recommended.

Comment 6:

Additional discussion is needed regarding transit ridership impacts in south Los Angeles resulting from Proposition A fund allocation shifts in 1985. (City DOT)

Response:

Transit ridership impacts resulting from Proposition A fund allocation shifts in 1985 are unrelated to impacts of the Long Beach-Los Angeles Rail Transit Project. However, ridership impacts are being addressed by the LACTC and SCRTD in relationship to bus fare and service characteristics following the 1985 reallocation of Proposition A bus subsidy funds.

Comment 7:

Page IV-133 identifies RTD bus lines to be eliminated in the City of Compton. What is the effect of this on transit dependents? (Compton)

Response:

The RTD bus routes suggested for elimination are routes which parallel the rail transit alignment. Other existing bus lines are

planned to be reoriented to collect and distribute riders to and from rail stations. Therefore, there should be no negative impacts to transit dependents. With the addition of the rail project there should be an increase in the quality of transit service.

Comment 8:

A complementary bus network is key to the successful functioning of the rail system. Since Long Beach Transit does not now have a major east-west line on Willow Street, a new linkage commitment should be made. (Signal Hill)

Response:

During final design, the complementary bus system will be refined in conjunction with the bus operators. As part of the Complementary Bus Network proposed in the SEIR, a new line (LB-10A) would serve the Willow Street corridor between the Willow Street station and Los Altos as part of two additional Long Beach alternatives: LB-3 (Broadway Aerial-Modified River Route) with three stations, and LB-6 (Willow Street Terminus).

Comment 9:

There should be additional analysis of how bus service will connect with the various rail stations and with various regional and community centers and services. What adjustments will be needed to the routing and schedules of the municipal operators? What would be the impact of these changes and transfers on transit ridership? (County Planning, LB Citizens, Valley)

Response:

A preliminary Complementary Bus Network is presented on page I-45 of the DEIR for purposes of analysis in conjunction with light rail operations. Rerouting feeder bus service to connect with neighborhood and commercial centers would require operational changes by the respective bus operators. The adjustments and changes will be worked out and analyzed for impacts during the final design phase of the project.

Comment 10:

The last paragraph on page IV-157 has a discussion of intersecting bus trips. These numbers should include the intersecting bus trips on the 1st Street Transit Mall for LB-3 and LB-4. (Long Beach)

Response:

Daily bus trips represent approximate two-way bus operations along streets where there are proposed light rail stations. Bus movements at the 1st Street Transit Mall (approximately 1,077 daily) were considered as a base for all LRT alternatives terminating daily at the mall. The Long Beach Alternatives Conceptual Assessment report (July 1984) compares the Long Beach alternatives in terms of intersecting bus trips.

Comment 11:

The report fails to include an analysis of the accessibility of the various route options to the Greyhound Bus Station located on Los Angeles Street. (ERHA)

Response:

For the LA-2 and LA-3 alternatives, access to the Greyhound Bus Station on Los Angeles Street between 6th and 7th would be by means of transfer to RTD buses. The LRT would primarily accommodate home/work trips, and the number of such trips associated with transfers to intercity service, such as that provided at the Greyhound station, would be minimal. For LA-1, access would be by walking two blocks east from Spring Street or by bus transfer.

Comment 12:

It would be beneficial to have some bus rerouting to serve the Wardlow Station. (Blossom, Huss)

Response:

The proposed station at Wardlow would be served by Long Beach Transit Route No. 4, which would operate between Wardlow and the 1st Street Transit Mall. Transfers to most other local and express bus routes could be made at other rail stations or at the mall.

Comment 13:

If rail service is to be put on Broadway and Spring, will existing bus service be removed? (Gusky)

Response:

With the exception of minor reductions in the service frequency of SCRTD lines 55 and 56, no change in existing bus service is proposed under the Broadway/Spring alternative (LA-1). Information concerning the Complementary Bus Network is available on page 1-45 of the DEIR.

III-305 Business Impacts

Comment 1:

Page III-40 states that partial takes would generally not require relocation but would disrupt businesses. More description is needed on this subject, particularly with regard to the potential survival of marginal businesses. (LB Citizens, St. John's Baptist)

Response:

Partial takes would be limited to portions of sidewalks, parking areas, and fronting yards, if any (with LB-1 or LB-4, if in reserved median on Atlantic). Disruptions during construction would be of a nature common to all businesses located along the project alignment. It is hoped that the mitigation measures discussed for construction impacts on page III-50 of the DEIR will result in the survival of marginal businesses, but there is no assurance that such businesses would survive.

Comment 2:

The proposed route along Spring and Broadway would be potentially destructive to a thriving Hispanic business community dependent upon foot traffic. (Traub)

Response:

The opposition to the LA-1 alignment is noted. However, the basis for opposition, namely the elimination of foot traffic, is unfounded, because all present legal street-corner crossings would

be maintained. Transit has traditionally supported business activity in dense and active commercial districts in cities throughout the world, and there is no evidence to suggest that downtown Los Angeles would be an exception to this pattern.

Comment 3:

Construction on Atlantic Boulevard (LB-2) will severely curtail access to businesses and drastically impact retail sales. (LB Blvd. Assn.)

Response:

As the DEIR points out, the LB-2 alternative is acknowledged to have potentially the most significant adverse effects on businesses, both because of the number of adjacent businesses and because the track would run in the first traffic lane, inhibiting pedestrian and vehicular access more than if it were in the median. The DEIR also recognizes that LB-2, along with LB-1 and LB-4, would require partial or entire street closures at some time during the construction period. However, on balance, the impacts on businesses attributable to Alternative LB-2 are considered to be moderate. Furthermore, recognizing the fact that businesses are particularly sensitive to the disruption arising from construction activities, every effort would be made to develop mitigation measures and plans that would lessen the impact. Potential mitigation measures would include maintaining at least one traffic lane and pedestrian access to businesses, using temporary signing to maintain visibility of business establishments, and providing other measures developed in consultation with the local business community.

Comment 4:

The two-way route on Atlantic will virtually eliminate the potential for the black community to have a business district. (Berry)

Response:

Implementing Option A of the LB-1 or LB-4 alternatives would result in the displacement of certain businesses, primarily service in nature. Redevelopment plans under that option would call for mostly residential construction, offering a new market for retail, entertainment, and service industries. The focus of business establishments along Atlantic Avenue might shift from a community level to a neighborhood level, but overall, sales volumes would be expected to hold steady or increase.

III-306 Community Involvement

Comment 1:

A higher community profile on the part of the commission is sought in south central and southwest Los Angeles. (NAACP, CDAC)

Response:

The commission staff is making an effort to communicate with community organizations in south central Los Angeles as well as along the entire length of the project. The commission itself has at least two members who represent the area, Supervisor Kenneth Hahn and Mayor Tom Bradley. To date, the commission has concentrated its efforts on the portion of the county for which there are current projects in various stages of development. The staff is working throughout the county to develop transportation improvements and will, of course, communicate with the affected areas in this process.

III-307 Configuration

Comment 1:

Consideration should be given to extending the LA-2 subway portal one block south to avoid surface operation through the intersection of Pico and Flower. (SCRTD)

Response:

The location of the subway portal was decided upon after consultation with the City of Los Angeles and is based on the results of a detailed traffic and engineering study. The specific location of the subway portal on the Flower Street alignment between 11th and 12 Streets is believed to be the proper response to the issues raised in the traffic and engineering study.

Comment 2:

There should be full grade separation within Long Beach since it is being provided for the City of Los Angeles. (Long Beach)

Response:

Traffic volumes and route opportunities in Long Beach do not present requirements for grade separation in Long Beach to the extent encountered in downtown Los Angeles. An additional Long Beach alternative identified in the Supplement to the DEIR provides for an aerial configuration in downtown Long Beach. Refer to the Supplement for a detailed analysis of this grade-separated alignment (LB-3 Modified River Route).

Comment 3:

Design Appendix, Figure 63, Section H -- Consideration should be given to running the single track down the street centerline, providing a separate 11-foot travel lane and eight-foot parking lane on each side. (Long Beach)

Response:

It is possible to establish a separate 12-foot-wide reserved median for light rail vehicle operation in 8th and 9th Streets (LB-4). This would leave room for two 11-foot travel lanes, two eight-foot parking lanes, and the existing 15-foot-wide sidewalks. This configuration has the advantage of separating light rail vehicle operations from regular traffic; however, it also has the disadvantge of making the travel lanes much narrower. Because traffic is light on both 8th and 9th Streets, either configuration can be implemented without significant impact.

Comment 4:

Design Appendix, Figure 65, Section L -- Placing the track in the centerline of the 1st Street Transit Mall is unacceptable. It should be in the #1 westbound lane. (Long Beach)

Response:

Figure 65, Section L is associated with Long Beach alternatives LB-2 and LB-4. In LB-2, the light rail vehicles travel eastbound on 1st Street between Long Beach Boulevard and Atlantic Avenue. This section is not in the transit mall and, because traffic is

relatively light, the light rail vehicles can operate effectively in either the #1 eastbound travel lane or a reserved median without significant impact. In the LB-4 alternative, however, light rail vehicles travel westbound through the 1st Street Transit Mall and, because of congestion resulting from bus traffic, it is preferable to widen the street sufficiently to allow for a separate light rail lane in the middle of the street. If the street is not widened, light rail vehicles would have to be placed in the #1 westbound lane, which would result in added congestion.

Comment 5:

Design Appendix, Figure 65, Section M -- This is unacceptable. The light rail vehicles should load in the curb lane, thereby leaving the #1 lane free for bus movement. (Long Beach)

Response:

As shown in Figure 65, Section M, there is a distance of 37 feet between the south curb and the position of the light rail system for passenger loading (in LB-4). This leaves room for two 13-foot travel lanes and one 11-foot parking lane on the south side of the street. The advantage of this configuration is that it minimizes weaving of the tracks and lateral movements of light rail vehicles. Also, it is necessary for the light rail tracks to be as near to the street centerline as possible to provide the minimum allowable curve radius when turning from 1st Street to Pacific Avenue. This configuration does not restrict bus movements and hence does not impact bus operations.

Comment 6:

Design Appendix, Figure 66, Section P -- This is not appropriate for the segment of Long Beach Boulevard south of 7th Street. In this segment, the light rail should run in the existing exclusive bus lane. (Long Beach)

Response:

It is intended that the light rail will be aligned in the exclusive bus lane on Long Beach Boulevard south of 7th Street for both alternatives LB-2 and LB-4. The Design Appendix includes only alternatives discussed in the Draft EIR.

Comment 7:

LRT train consists should not extend beyond one city block in length. (Note: "Consist" is a technical term for a number of cars assembled into a train.) (Swan)

Response:

Although three-car trains were proposed in the DEIR for use in downtown Los Angeles and the mid-corridor, subsequent analysis determined that because of system operating constraints, such trains would not be feasible. Currently, the system is being designed for two-car trains.

Comment 8:

LB-1 and LB-2 should be redesigned so that the inner lanes of Long Beach Boulevard will be used for this single track. (RAILPAC)

Response:

Alternative LB-1 is located on Atlantic Avenue only and would not affect Long Beach Boulevard. Alternative LB-2 would require that southbound traffic travel in the westside travel lane on Long Beach Boulevard. The use of one travel lane for combined auto/LRT mixed traffic operation would be similar to bus operations in mixed traffic. The placement also would have the least impacts to parking and the landscaped median. Therefore, neither grade separation nor the use of an inner (reserved) lane is necessary. An alternative (LB-5) which would provide two-way operation on Long Beach Boulevard in a reserved median is evaluated in the Supplement to the DEIR. This option would not conflict with either northbound or southbound traffic. All rail transit alternatives on Long Beach Boulevard would travel through the intersections during the green phase of traffic signal operation and would not conflict with the flow of cross traffic. Specific design treatments would provide for turning traffic. Grade separation is not warranted.

Comment 9:

Long Beach Boulevard should have some grade separation, either subway or overpass/underpass. (Huss)

Response:

See the response to Comment 8 above.

Comment 10:

The placement of two rails on Atlantic Avenue is not feasible because of narrow street width. (Bon)

Response:

With alternative LB-1 (Atlantic Avenue, Two-Way) and LB-4 (Atlantic with Pacific Loop), the rail tracks on Atlantic Avenue may be located in either mixed traffic or a reserved median. Both configurations involve varying levels of on-street parking, to be provided by street widening in the case of rail tracks in reserved median. The two through-traffic lanes in each direction on Atlantic Avenue would be maintained. As the DEIR shows, it is possible to have two-way operation on Atlantic Avenue.

Comment 11:

Why are different configurations used in each of the downtown Los Angeles segments, i.e., surface along Broadway/Spring, subway under Flower Street, and aerial on 9th? (Ruonale)

Response:

Different configurations are used in each of the downtown Los Angeles alternatives due to the different characteristics of the alignments. The LACTC wished to examine at least one at-grade alternative, and the Broadway/Spring couplet (LA-1) was determined in consultation with planning and transportation authorities to be the most viable choice. For alignment alternatives along the westside of the downtown area, where building is more dense and traffic volumes higher, grade separation is needed. Two options were considered in this area: the Flower Street Subway (LA-2) and the Olympic/9th Aerial (LA-3).

Comment 12:

Aerial, underground, or depressed route segments are unacceptable except for crossing railroad routes. (Stromme)

Response:

The acceptability of grade-separated configurations for rail transit lines is a function of the physical condition present in the area of the contemplated grade separation. In most cases, grade separations are designed to avoid problems relating to traffic congestion which cannot otherwise be effectively dealt with. For the Long Beach-Los Angeles Rail Transit Project, grade separation for other than rail crossings is proposed on three alternatives: the LA-2 and LA-3 alternatives in downtown Los Angeles (Flower Street Subway and Olympic/9th Aerial, respectively) and the LB-3 (Broadway Aerial-Modified Reiver Route) alternative in downtown Long Beach. In these cases grade separation is needed to accommodate the LRT in existing situations of heavy traffic congestion.

III-308 Construction Impacts

Comment 1:

The EIR states that up to one million cubic yards of excess soil may be generated. If the Century Freeway cannot be counted on as a potential site, where will this excess soil be put? (SCRTD, CRA)

Response:

The maximum amount of excess material to be disposed of for each alternative is shown in DEIR Table I-51C (for all alternatives) and Tables III-11A, III-21A, and III-31A (for downtown Los Angeles, mid-corridor, and Long Beach, respectively). These estimates are as accurate as practicable without knowing final design requirements. The available disposal sites shown in Table I-51B are the closest facilities accepting waste from the project. Since the Monterey Park facility has been closed, Puente Hills is the nearest facility which accepts both Class II (organic mixed) and Class III (non-soluble) materials.

Unknown quantities of oily muck (perhaps in excess of 200,000 cubic yards) could be encountered during construction of LA-2 (Flower Street Subway). These wastes are Class I according to the State Health Department and are normally deposited at Class I sites equipped to handle hydrocarbon material. The BKK site, as discussed in the DEIR, has been closed to Class I wastes and is no longer a qualified site. Available sites include locations in Kings, Imperial, and Santa Barbara counties. Several facilities in the Bakersfield area (Kern County) are also options.

The reference to one million cubic yards of soil on page III-21 is in regard to the MC-2 alternative. The remaining mid-corridor alternatives would generate only one-third as much material. Some of the excavated material would be used as backfill for the LRT (see following table). The yard site shown in the DEIR alone would require 121,000 cubic yards.

The Century Freeway and Harbor Freeway Transitway projects would require large quantities of clean fill material. If these projects cannot use all of the excess material, then it could be transported to the Los Angeles Harbor for land reclamation purposes or to the Puente Hills landfill site. Both the Los Angeles Harbor and the Los Angeles County Sanitation Department have indicated capacity for all of the uncontaminated fill material generated by the project.

MAXIMUM AMOUNTS OF EXCESS MATERIAL

GENERATED BY LIGHT RAIL PROJECT
(cubic yards)

	LA-1/MC-1/LB-4	LA-2/MC-1/LB-4	LA-3/MC-1/LB-4
Excess Excavated Material			
	70,000	203,000(1)	42,000
	265,000(2)	265,000(2)	265,000(2)
	60,000	60,000	60,000
Subtotal	+395,000	+528,000	+367,000
Required Backfill			
	38,000	70,000	11,000
	39,000	39,000	39,000
	40,000	40,000	40,000
Subtotal	-117,000	-149,000	-90,000
Yards & Shops Construction			
Excavated	40,000	40,000	40,000
Backfill	-121,000	-121,000	-121,000
Yards & Shops Subtotal	-81,000	-81,000	-81,000
Net Sum to be disposed of (without MC-2)	+197,000	+298,000	+196,000
Excess Material Excavated from Alternative MC-2 (Compton Trench)	+961,000	+961,000	+961,000
Net Sum to be disposed of (with MC-2)	+1,158,000	+1,259,000	+1,157,000

(1) Sleeves for the Harbor Transitway future connection would add 12,000 cubic yards of excavated material.

(2) Lowering the rail embankment for MC-1 would add 80,000 to 100,000 cubic yards of excavated material.

Source: PB/KE, 1984.

Comment 2:

Page III-53, paragraph 5 discusses realignment of the northbound lanes of the Long Beach Freeway during construction of LB-3. This needs further clarification. (SCRTD)

Response:

The discussion on page III-53 refers to the realignment of a northbound freeway ramp. This ramp channels downtown Long Beach traffic from Shoreline Drive, 1st Street, and 3rd Street northbound across the Los Angeles River via the Shoemaker Bridge onto

the Long Beach Freeway. The northbound ramp is separated from the southbound ramp by a wide median, currently owned by the City of Long Beach, and is vacant except for the Southern California Edison (SCE) Seabright Substation. Edison is planning expansion of this facility. Realigning a 1400-foot section (between 3rd and 6th Streets) of the northbound ramp 20 feet westerly into the median would require a small portion of the SCE property. Development plans for SCE expansion and the LRT project would be carefully coordinated should the original LB-3 alternative be selected.

Comment 3:

There are a number of significant construction impacts on businesses and residences in downtown Los Angeles which require the careful preparation of a mitigation plan. The length of the construction period could extend to 36 months. The length of time required for street closures should be noted. Of particular concern are: 1) street closure impacts on businesses attributable to the at-grade alternative, 2) impacts attributable to subway cut-and-cover construction on the Broadway Plaza, 3) access to the Skyline Condominiums, 4) partial closure of the Hollywood Freeway, and 5) congestion on Los Angeles and Broadway. (CRA)

Response:

The footnote on page I-66 specifically states that ". . . activities would overlap or be conducted simultaneously, which would decrease construction time." The cut-and-cover construction process is fully detailed in the DEIR (pages I-73 and I-74), and construction of the subway is not expected to extend beyond 36 months. Construction of the subway would proceed from one end of the tunnel to the other and would not remain in any one spot for a lengthy period of time. Once the initial cut has been made in Flower Street, it would be decked over, allowing vehicle and pedestrian access. At no time would Flower and 7th Streets be completely blocked, and pedestrian and emergency vehicle access would be continually provided for the duration of the project. Mitigation measures are discussed on pages III-13 and III-20 of the DEIR.

The DEIR acknowledges that there will be significant short-term impacts on businesses in certain locations during construction; however, efforts will be made to limit the duration of these impacts and thereby reduce their magnitude to the minimum feasible level. The conclusion on the impacts to business of LA-1 (the at-grade alternative) is stated on page III-13. This alternative would have

effects on the most number of businesses. However, with careful mitigation, i.e., keeping the duration of closure to a minimum and keeping at least one access lane open, the effects could be successfully minimized. The potential impacts of subway construction along Flower Street have been assessed on pages III-12 and III-13. In the event that the LA-2 alignment is selected for implementation, these impacts will be carefully considered throughout the final design and construction phases of the project and a thorough mitigation plan will be prepared and implemented. This, of course, would include consideration of Broadway Plaza. Access to the Skyline Condominums will be maintained, with at least one lane open at all times. Partial and temporary closure of the Hollywood Freeway would be mitigated by generally limiting these occurrences to non-peak traffic hours. No reference is made in the DEIR to the increase of congestion on Los Angeles Street. There is a reference to increased congestion during construction on Washington Boulevard between Los Angeles Street and Broadway. This will be mitigated as stated in the DEIR on pages III-19 and III-20.

The impacts associated with LA-1 and LA-3 are also detailed in the DEIR under the discussion of the construction scenario (Section I-500). Mitigation for the effects of all construction has been incorporated into the project (see Section II-600 of this FEIR).

Comment 4:

Construction of the project in Flower Street will make the street inaccessible to equipment needed for construction of the Skyline Condominium project. Also, what effect will construction have on the marketing of the South Park area? (Forest City)

Response:

Phases I and II of the Skyline development project will have north-south access during construction of LA-2, either from Hope or Flower. Hope Street would not have any construction activity that would interfere with the Skyline project. Flower Street will be the site of major construction activity but access will not be fully restricted for the entire 36-month period. During most of that time, construction will occur primarily underground beneath a decked-over street. Individual block-long segments (between 7th and 12th Streets) will also have intermittent periods when no construction activity will occur and vehicle access will be unrestricted. Furthermore, it is possible to coordinate the construction of the Phase II Skyline project with the light rail project such that all construction equipment can use the same access paths.

Since construction activities are temporary and access will be maintained into the area (DEIR, page III-13), no significant impact is expected on the marketing of the South Park area as a desirable residential development.

Comment 5:

What are the impacts of loss of on-street parking during construction on Atlantic Avenue? It would appear that this would be devastating on small and marginal businesses and that the impacts will be disproportionately high on minorities. (LB Citizens)

Response:

The loss of on-street parking during construction (LB-1, LB-2, LB-4) could have a significant adverse impact on marginal business establishments. Mitigation measures such as temporary signing identifying alternate parking would be implemented to minimize the degree of adverse impact.

III-309 Coordination

Comment 1:

The DEIR assumes all city Capital Improvement Program (CIP) projects to be in place in the "no project" street system. Each of the project's alternatives will impact different projects in the city's CIP. Coordination is necessary. (City Engineering)

Response:

Communications are on-going between the LACTC and agencies of the City of Los Angeles. This process will continue and will ensure detailed design relationships between the light rail project and projects included in the city's CIP.

Comment 2:

Under alternative LA-3, additional street dedications will be required for Figueroa Street between 3rd and 9th and may be required for Olympic Boulevard. (City Engineering)

Response:

It is acknowledged that alternative LA-3 could require additional street dedication along Figueroa and Olympic. This is a matter for final design and will be reviewed with the appropriate city departments if LA-3 is the chosen alternative.

Comment 3:

The Streets and Highways Element of the General Plan should be amended to redefine the roles of the various streets along the transit route. (City Engineering)

Response:

The LACTC is in full agreement with this comment.

Comment 4:

To insure maximum coordination and efficiency of operation, the integration of operation and maintenance functions and support services with Metro Rail and the bus system should be examined. (SCRTD)

Response:

It is the intention of the LACTC to mutually investigate with the SCRTD the potential for integrating the operation/maintenance functions and support services of both the light rail and Metro Rail systems.

Comment 5:

Section II-421 should include a discussion of compatibility with the general plans of the city and county and other affected jurisdiction. (SCRTD)

Response:

Section II-421 is concerned only with the existing conditions (setting) of the Long Beach area. Discussion of compatibility with general plans is found in Sections IV-121.12, IV-221.12, and IV-321.12. The project is consistent with the general plans of the City and Los Angeles County in that it supports the "centers" concept by connecting community centers previously established during the Pacific Electric era as well as providing support to socially and economically depressed areas of south central Los Angeles.

III-310 Cumulative Impacts

Comment 1:

The DEIR identifies the Intermodal Container Transfer Facility as a related project and the SCAG Ports Access Study is referenced. The discussion of cumulative impacts should be expanded to include both of these. (Port of LA)

Response:

For the purposes of noise and traffic analysis, the DEIR investigated several proposed ports projects, including the impacts of high scenario train movements to and from the Intermodal Container Facility, in accordance with projections contained in SCAG's Ports Access Study (Setting, Section II-334 and Table II-33B). See also Section IV-215, particularly Tables IV-21D and 21E (noise impacts) and Section IV-231.3 (Table IV-23E for traffic impacts). The DEIR assumed that these related projects would be built and addressed the cumulative impacts in the above-referenced sections, as well as separating them into a separate Section IV-240, Cumulative Impacts. With regard to Long Beach, the DEIR did not find adverse cumulative impacts from these projects for the reasons stated in Section IV-340.

Comment 2:

The cumulative and growth-inducing impacts of all aspects of the options need to be considered. (LB Citizens)

Response:

Growth-inducing impacts of all of the original Long Beach alternatives are discussed in Section IV-321.1; growth-inducing impacts of the system alternatives are discussed in Sections V-241 and V-242.

III-311 Data Request

Comment 1:

The tables on population trends on page II-18 should use the Los Angeles-Long Beach urbanized area densities. (SCRTD)

Response:

Delete the last row in Table II-15A, which contains data for the Southern California Region.

Comment 2:

Parking data in appropriate sections of the DEIR (II-233, II-333, II-433) should be expanded and updated as follows:

a) An inventory of the existing parking supply near the stations with level of use is needed, and any technical reports should be referenced.

b) The data taken from the 1978 Long Beach Parking Study is outdated, because it does not take into account developments such as the transit mall. This data should be updated.

c) Specific attention should be given to the extent of spillover parking in neighborhoods. (SCRTD)

Response:

Table II-33A in the DEIR presents the number of parking spaces available at the rail stations in the mid-corridor. Usage of the major park-and-ride facilities during the peak hour is presented in Table IV-23G. The data in the tables was prepared by SCAG, and the technical report is referenced under "Source."

Development of the transit mall would not affect parking availability within one-quarter mile of the Hill Street, Pacific Coast Highway, and Anaheim Street stations in Long Beach. The number of spaces presented in Table II-43A includes parking spaces generated by proposed phased developments as outlined in Table 1 of the Long Beach Circulation and Access Study (July 1983).

The 1978 Comprehensive Parking Study for downtown Long Beach was conducted by Wilbur Smith and Associates. Subsequent work conducted by Barton-Aschman Associates, Inc. in the above-mentioned downtown circulation study updates the parking supply, usage, and parking strategies suggested to solve downtown circulation problems. The reduction in curbside parking spaces under each Long Beach alternative is presented in Table IV-33E in the DEIR and Table V-33A in the Supplement to the DEIR.

Projected available parking spaces in the mid-corridor with the project are presented in Table II-33A. As identified in section II-333, some curbside parking would be available on neighborhood streets at stations, in addition to the parking spaces above, which are primarily used by residents of the area. According to SCAG's estimates of mode of arrival to LRT stations with no new parking proposed, access to the stations would be largely by means of feeder buses or on foot. Therefore, impacts of spillover parking on neighborhood streets would not be significant.

Comment 3:

I am requesting a mode of access table for each of the stations and an origin-destination matrix for the patronage studies. (Allen)

Response:

See the response to Comment 25 in Section III-343 (Traffic).

Comment 4:

A table should be added to the project description of the system alternatives which shows a) the distance between each pair of stations, b) the number of grade crossings between each station pair, and c) the average speed between stations allowing 20-second stop time. (Schiffer)

Response:

Details such as those cited in the comment are available in the Preliminary Operations Plan (PB/KE, January 1984). The level of detail requested exceeds that which is reasonably required or necessary for an environmental document of this nature. Related technical reports are available at the LACTC offices for inspection.

III-312 Displacement

Comment 1:

We are deeply concerned with Options A and B which would cause elimination of housing and businesses on Atlantic Avenue. The EIR does not fully discuss the economic, social, and psychological impacts of this. There is no discussion of the need for replacement housing. (LB Citizens, Poly, St. John's Baptist)

Response:

The DEIR notes on page III-40 that it is not possible to characterize individual residents. A demographic and economic profile of those likely to be displaced was presented in Section III-321.1 to assist in preparing a relocation policy if LB-1 or LB-4 were selected as the preferred route in Long Beach. Section III-321.2 notes that a relocation plan and policy in accordance with state law will be prepared by LACTC after route selection, at which time the need for replacement housing will be investigated.

Comment 2:

We are concerned about the differential displacement impacts on homeowners versus renters. The Final EIR should analyze them separately. (LB Housing)

Response:

If the adoption of the preferred alignment by the LACTC necessitates the acquisition of occupied properties, a Relocation Assistance Plan will be formulated. Information on the needs of homeowners and renters will then be gathered by conducting personal interviews. Attempting to acquire such information during the EIR process before the preferred route has been selected would raise unnecessary concerns and fears among residents.

III-313 Economics

Comment 1:

The commission should consider an active policy of joint development and seek opportunities at light rail stations and electrical substation sites as an effective measure for mitigating some impacts. (SCRTD, NAACP, CRT)

Response:

The LACTC adopted a policy regarding economic development on May 30, 1984. This policy calls for the commission to work actively with the private and public sectors to promote economic revitalization through a variety of means, including potential joint development on excess property, wherever feasible. During later phases of the project, the commission will solicit joint development proposals for mid-corridor stations and appropriate electrical substation locations. Stations in downtown Los Angeles and Long Beach are located in city streets and are, therefore, not appropriate for joint development (except the LB-3 modified alternative). Due to restrictions set forth in Proposition A, the LACTC cannot assemble excess land solely for purposes of promoting joint development. It must therefore promote such activities through cooperation with appropriate public agencies, including redevelopment authorities.

Comment 2:

The use of Atlantic Avenue looks suspiciously like an excuse to force unnecessary redevelopment. To what degree and in what way will LB-2 provide economic revitalization of Atlantic Avenue and Long Beach Boulevard? (CRT, LB Citizens)

Response:

The City of Long Beach requested the LACTC to include Atlantic Avenue as a route alternative in EIR studies for the project. Orienting rail transit projects to urban redevelopment objectives has been applied in many cities and is a valid use of such projects. The DEIR reviewed the potential redevelopment of Atlantic Avenue in connection with construction of the light rail project without addressing the question of the source of funds for redevelopment of private properties along Atlantic Avenue. The concern expressed by the Long Beach Citizens for Responsible Light Rail was also a concern of the LACTC.

The rail transit project would provide support to businesses located along Atlantic Avenue and Long Beach Boulevard by increasing their visibility and accessibility to users of the system and the general public. Due to the level of project definition at this time, an accurate forecast of shoppers diverted to specific geographic areas cannot be provided.

Comment 3:

The aerial alignment would have a negative effect on downtown Los Angeles development. The subway route along Flower Street would have an equally damaging effect on property values. (Blomert)

Response:

Although an aerial alignment would change the existing visual environment and some people will perceive this as a negative change, there is no evidence to indicate that there would be a negative effect on downtown Los Angeles development (note that Miami and Vancouver are completing modern aerial rail systems intended to benefit urban development.) Similarly, there is no evidence to indicate a potential reduction in property values associated with a subway configuration. On the contrary, the presence of a permanent public transit facility is normally regarded by developers and businesses as having a positive effect on both property values and the downtown economic environment in general.

Comment 4:

Jobs are much needed for the young people in south central Los Angeles. What will the project do for this? (Freeman, Morgan, Sims)

Response:

Public works projects on the scale of the light rail system have a significant positive effect on construction employment in the area. It is estimated that the project would create between 8,280 and 12,435 person-years of employment during the course of its construction. This represents a contribution of slightly less than one percent of Los Angeles County construction employment. Although many of the jobs created involve skilled trades, others would be of entry-level and helper grades which would be suitable for younger people not having prior experience. In addition to direct construction labor, due to multiplier effects other employment would be created for related services and materials. When the system is completed, it would have a positive effect on the local economy of the areas through which it passes, translating into permanent employment (retail, service, etc.) increases. The project's most important effect relative to jobs for young people will be the means it will provide for reliable, affordable transportation to employment concentrations. As a result, opportunities for young people would become available.

Comment 5:

Massive redevelopment along Atlantic Avenue is the wrong urban strategy. Only some of the properties on Atlantic are in sufficiently bad condition to require demolition. Others are capable of rehabilitation. The pertinent issue is whether a rail line through a distressed neighborhood is reasonable, given the mission of the rail line. (Allen, Washington)

Response:

The question regarding the advisability of redevelopment strategies for Atlantic Avenue is more appropriately addressed to the City of Long Beach, because it is the city that develops and applies such strategies. (See also the response to Comment 2, above.)

With regard to the reasonableness of the rail line being placed in a distressed area, it should be noted that study of the Atlantic Avenue alternative was made for many reasons, including those which are transportation-related. Appropriate right-of-way engineering feasibility, operational considerations, and service are some of these reasons. The alternative was not identified solely for reasons of contributing to rehabilitation of the area, although it does present an opportunity for this. Locating a fixed rail line in one area of needed rehabilitation can assist in this effort, but in order to be realized many other economic factors must also be operating to the same end.

III-314 Fare Collection

Comment 1:

Alternative fare collection methods should be discussed. (SCRTD)

Response:

A barrier-free fare collection system is the preferred approach for the light rail system. It must, however, be convenient for patrons to use and must also provide for adequate fare enforcement. Studies to determine the feasibility of this approach are currently underway between the LACTC and the SCRTD. The results of these studies will determine if a barrier-free system is ultimately selected.

Comment 2:

What will be the average ticket price? (Porter)

Response:

The fare structure to be used on the system is a policy matter to be determined by the project's operator, the Southern California Rapid Transit District, in collaboration with the LACTC. For purposes of revenue estimation, a conceptual zone fare structure has been postulated as follows: a) travel within one zone (base fare) = $0.60, b) travel between adjacent zones (2nd tier fare) = $1.10, c) travel between end zones (3rd tier fare) = $1.50 (see Table I-42A, page I-58 of the DEIR).

III-315 Financial

Comment 1:

For both capital and operating costs, identification of funding sources has not been provided. (LBT)

Response:

Funding sources for operation of the system, should there be a net subsidy requirement, are anticipated to be the same mix of sources currently used to support the net costs of transit in Los Angeles County, namely Proposition A rail transit funds (see Section I-425.1 of the DEIR).

Primary capital funding is anticipated to come from Proposition A sales tax, 35 percent of which is earmarked for such uses.

Comment 2:

The total cost of the project should be disclosed in both present and future dollars. (SCRTD)

Response:

Project costs presented in the DEIR are expressed in constant 1983 dollars with the exception of costs associated with right-of-way acquisition, relocation, and mitigation, all of which are dependent upon selection of a preferred route. Constant dollar estimates

have been used throughout the environmental review process to provide a consistent frame of reference for evaluation of project definition and design. Project costs, including escalation, will be carefully described before the LACTC authorizes the project.

Comment 3:

Table I-62A and Section I-620 should be expanded to provide a more detailed explanation of operation and maintenance costs. Unit costs and fixed/variable costs should be shown. Page I-79 should add the costs of system components such as fare collection, train control, communications, traction power, trackwork, and automatic crossing gates. (SCRTD)

Response:

Operations costs shown in Table I-62A include: 1) labor and overhead, 2) traction and station power energy, 3) materials, and 4) liability insurance. Labor costs were derived using information contained in the Operation Plan (Table 5-19) for the project and current SCRTD labor wage rates. Administration and security costs were estimated using factors developed by Booz, Allen, Hamilton, Inc. for the Metro Rail Project. Energy costs were estimated using project energy consumption forecasts and current Southern California Edison and Department of Water and Power user rates. Costs of materials and liability insurance were estimated from data taken from the above-mentioned Booz, Allen, Hamilton study. Maintenance costs were developed using labor force estimates in the operations plan according to the following categories: labor and overhead, maintenance-of-way structures, and vehicle maintenance. Also included were costs of vehicle materials, right-of-way, fringe benefits, and contract costs. Salary scales were obtained from the Booz, Allen, Hamilton study.

Comment 4:

In order for decision-makers to be fully informed, a combination of capital and net operating cost, over the life of the project, should be provided. (City Engineering)

Response:

Cost information (as required by CEQA) is found in Section I-600 of the DEIR and Section I-400 of the SEIR. The combination of capital and net operating costs annualized over the life of the project is beyond that which would reasonably be required for a California environmental review document.

Comment 5:

The project description should include the total cost of the project in each of its alternative alignments. Specifically omitted are land acquisition costs and relocation costs. The project cost should include the full cost of mitigation measures. (Long Beach)

Response:

Acquisition of right-of-way in the mid-corridor segment is currently under negotiation with the Southern Pacific Transportation Company and therefore the particulars cannot be specifically stated at this time. The cost of right-of-way acquisition along Atlantic Avenue cannot be estimated without appraisals of the properties involved. Such appraisals will be prepared only if that alternative is selected. The full cost of the proposed mitigation measures will not be known until final design is completed. The project costs shown in the DEIR represented the full range of costs of the route alternatives presented in that document. The costs of the supplemental alternatives are presented in the Supplement to the DEIR. Variations among alternatives which are not shown are considered to be minor. (Also refer to the response to Comment 2.)

Comment 6:

On page IV-164, a retail sales tax gain of $813,000 should be attributed to LB-3 in Table IV-321. LB-3 should have as great an impact on downtown retail sales as LB-1. (Long Beach)

Response:

As described in the DEIR, the major portion of the original river route alternative (LB-3) lies along relatively inaccessible reaches of the Los Angeles River and fronts the Long Beach Freeway, utility easements, and industrial property. The LB-3 alignment traverses a small area in downtown Long Beach, providing only a fraction of the exposure to retail establishments offered by the remaining Long Beach alternatives. The potential benefit of LB-3, compared with the other alternatives, is therefore so small as to be judged effectively zero.

Comment 7:

The EIR reports the expected loss in patronage for Long Beach Transit but fails to estimate the impact of the resultant revenue loss on transit services throughout the city. (Long Beach)

Response:

Table IV-33D in the DEIR reports a potential loss of local transit patronage crossing a given screenline for both the SCRTD and Long Beach Transit (LBT), but these figures do not indicate what proportion of this loss is to be experienced by either operator. However, it is likely that the vast majority would be felt by the SCRTD on line haul routes which parallel the rail transit line (and which would be discontinued concurrent with SCRTD's initiation of LRT operations). Some modification to LBT routes developed in consultation with LBT staff has been proposed to more effectively match existing LBT bus service with the proposed line haul rail service. These modifications could well result in increased ridership (and hence revenues) to Long Beach Transit. A thorough study of service, ridership, and revenue will be conducted after a final alignment has been chosen. It is not the intention of LACTC to worsen the financial viability of LBT operations as a result of the LRT project.

Comment 8:

The use of Proposition A funds for property acquisition, relocation payments, and to fulfill the city's redevelopment interests on Atlantic Avenue is inappropriate and not within the letter or spirit of Proposition A. (LB Citizens)

Response:

Although the DEIR does not identify Proposition A as a funding source for property acquisition and relocation costs that could be required under Options A and B for project alternatives LB-1 and LB-4, Proposition A funds can be used for the acquisition of rights-of-way and property for rail transit guideways, including related relocation costs. The LACTC would prefer route alternatives that do not involve extensive property acquisition and relocation, but some partial and complete takes may be unavoidable.

Comment 9:

In Table I-61A, how does agency cost differ from engineering and management, and what does contingency cover? This table should be expanded to include the following: station spacing, and cost per segment between stations for right-of-way acquisition and for construction. Each station cost should also be added. (Schiffer)

Response:

"Agency Cost" is the cost associated with direct involvement in the project by the staff of the LACTC and other public agencies involved with the design and construction of the project. "Engineering and Management" includes the fees paid to consultants charged with the responsibility of designing the project and managing its construction. "Contingency" is an estimate of cost uncertainty and it refers to all cost components stated above it, including construction, labor and materials, vehicle procurement, engineering and management, and agency costs. The detailed cost estimate, which includes those items referred to in the comment, is far too lengthy to be included in the DEIR. Detailed cost breakdowns by segment, including stations, trackwork, power and communications, etc., are available for inspection at the LACTC offices.

Comment 10:

What do you gain by issuing revenue bonds when you already have the money? (Huss)

Response:

Issuing revenue bonds facilitates more rapid construction of the Long Beach-Los Angeles Rail Transit Project and other projects in the countywide rail transit system. The use of revenue bonds does not significantly increase the cost of the project, because such use permits future costs of inflation to be avoided.

III-316 Freight Operations

Comment 1:

Consideration should be given the MC-4 alternative, which diverts freight traffic from the Wilmington Branch to the San Pedro Branch, and a supplemental EIR should be done on this alternative. (Flores, SCAG, Huntington Park, City DOT, CRA, Port of LA, Bell, Compton, AAA, Haagen, Swan, CDAC, Woods, Curry, Stromme)

Response:

Consideration was given to development of the (so-called) MC-4 alternative. Conceptual engineering plans were developed and presented to the Southern Pacific railroad. After study the railroad determined that the plans were not operationally feasible without extensive rail freight grade separations, which are beyond the scope of the Proposition A rail transit program.

The City of Compton's comment on this issue refers to a) simultaneous traffic delays on Alameda and Willowbrook, b) vehicle queuing from Alameda westbound, c) vehicle intrusion onto residential streets, d) potential effects on emergency vehicle access, and e) effects on average daily traffic. It should be noted that the traffic impacts described for the year 2000 would exist with or without the LRT project, as freight operations are projected to increase substantially by the year 2000. The inclusion of the LRT does not increase either queuing lengths or traffic delays over and above that projected for rail freight.

Simultaneous traffic delays on Alameda and Willowbrook due to freight train blockages are an occasional problem which could be controlled by restricted scheduling of train runs on the part of the Southern Pacific railroad, or by future improvements separating ports access rail freight lines from roadways.

Vehicle queue lengths on Rosecrans from Alameda (SP San Pedro Branch) westerly (the worst case in the City of Compton) following the passage of a freight train would be approximately 1,056 feet in the year 2000 during the PM peak hour; however, with the intersection mitigation measures recommended in the Traffic Impacts Report (July 1984), this queue length could be reduced to about 700 feet, which would not block the intersection of Willowbrook and Rosecrans unless a second freight train were to arrive just as the first was clearing the intersection.

Intrusion of vehicles attempting to circumvent freight blockages would not likely be a serious problem because adjacent streets would also be blocked to east-west traffic, and because there are few east-west streets in the City of Compton which cross the railroad tracks.

Emergency vehicles can be equipped to have priority (by means of signal preemption with sensor device) over vehicle traffic and LRT operations. LRT movements would not block any crossing for more than 32 seconds at any time.

The impacts to vehicular traffic from LRT and freight rail impacts are summarized in the DEIR and outlined in detail with recommended mitigation measures in the Traffic Impacts Reports (July 1984 and January 1985) for both the SP Wilmington and San Pedro Branches.

Comment 2:

In reference to Section IV-234, local freight switching operation requires an amount of time sufficient to delay LRT operation if done during peak service hours. (SCRTD)

Response:

The instances of local freight crossings of the LRT are sufficiently few and infrequent in occurrence as to indicate an insignificant effect on LRT operations (18 such potential conflicts initially identified have been reduced to four-six infrequent freight moves through design development). However, the LACTC is seeking to eliminate as many of the currently identified four-six local freight crossings of the LRT as possible, and the SPTC has expressed a willingness to consider scheduling switching operations outside peak periods.

Comment 3:

With regard to shared freight/passenger use of trackage, reasonable anticipated conditions for freight operations should be assumed, and an evaluation made of the transit service caused impacts as freight traffic increases. (County Road, Caltrans, Port of LA)

Response:

There is no shared freight/passenger trackage proposed for the LRT project. See also the response to Comment 2, above.

Comment 4:

City staff recommends that the MC-3 alternative be rewritten to include consideration of a depressed trainway for freight traffic along Alameda Street within Compton. (Compton)

Response:

A depressed trainway for Alternative MC-3 on Alameda Street in Compton is not a part of the Long Beach-Los Angeles Rail Transit Project. Such a refinement of MC-3 would far exceed any legally required level of mitigation, and the approximately $135 million added cost would be extremely cost-ineffective.

Comment 5:

Under "Impact of Rail Activity," was consideration given to the impact that the SPTC/ATSF merger will have on freight operations? Also, the report indicates that certain roadways will be widened. Will these widenings involve existing railroad crossings? (PUC)

Response:

When the DEIR was written, the SCAG Ports Access Study did not include the proposed SPTC/ATSF merger. At the time merger plans were announced, SCAG did an operations analysis and concluded that the range of freight operations levels shown in the DEIR (Section II-330) encompassed the probable levels of combined freight operations on the Willowbrook branch. Desirable improvements to some major east-west cross-street intersections in the vicinity of the mid-corridor rail alignment were identified in the DEIR (see Section IV-230). These improvements would reduce the lengths of queues at critical intersections, as well as reduce delay time for vehicular traffic. Additionally, critical intersections immediately adjacent to the rail alignment would have improvements at major arterials in conjunction with improved reconstruction of the railroad crossings under the LRT project.

Comment 6:

Further study is needed to resolve the freight and safety issues regarding the 103rd Street station. Main east-west streets could be blocked for significant periods of time and the Martin Luther King Jr. Shopping Center could be adversely affected. (Haagen, CDAC)

Response:

The affect on the shopping center due to the LRT project will be a positive one in terms of area redevelopment and transportation access. The incremental impact on vehicular traffic of the LRT operations, beyond that of freight rail operations, would be insignificant.

Comment 7:

Freight traffic ought to be permanently moved to the industrial part of town. (Karstensen)

Response:

The LACTC agrees that the impacts of future growth in ports-related rail traffic (unrelated to the LRT project) would be best alleviated by establishing a consolidated ports rail access corridor along the Alameda Street industrial corridor. The LACTC is committed to working with other regional transportation agencies and the private railroads, as well as the cities along the corridor, to achieve proper design and implementation of the freight consolidation concept.

III-317 General Impacts

Comment 1:

We believe the Draft EIR seriously underestimates the major adverse impacts of the Broadway/Spring alignment alternative. Some of the impact areas of particular concern include reduction of street capacity, vehicular congestion, pedestrian impacts, loss of on-street parking, automobile/bus conflicts, and business impacts. (CRA)

Response:

The impact analyses for all alternatives were performed using accepted standards and professional planning practices.

There would be very little change in traffic volumes on downtown Los Angeles streets associated with the LA-1 alternative. Minor adverse impacts would result from operating 10 trains during the peak hour in mixed traffic on Broadway, but sections of Broadway are expected to be operating at or over capacity by the year 2000 with or without the project. The overall congestion which will exist is thus primarily the result of growth in traffic volumes, only a small portion of which should be attributed to the light rail project.

A two-foot reduction in sidewalk width on Broadway would be required to maintain the existing through-traffic lanes in each direction. Although there are heavy pedestrian volumes along Broadway, introduction of the light rail will not add significantly to these volumes, although the negative effect on pedestrian capacities has been considered in the evaluation of this alternative. There will be some temporary effects on businesses during construction; however, since construction at-grade is the least complicated, such effects should be of short duration.

Comment 2:

The report should describe more fully the long-term impact of the project alternatives in supporting adopted land use objectives for focusing growth into centers. (SCRTD)

Response:

Sections IV-120, IV-220, and IV-320 in the DEIR specifically address each alternative route's impact on activity/growth centers, commercial development, population concentrations, and revitalization efforts for Los Angeles, the mid-corridor, and Long Beach respectively. These were four of ten factors used to evaluate conformance with adopted plans. Generally, a light rail project does not have the same growth-inducing or growth-concentrating effect as a heavy rail rapid transit project because patronage volumes are lower. Table IV-12A summarizes the growth expected with or without the transit project between 1980 and 2000. The transit project is expected to increase population and employment by about one percent over that expected without the project (page IV-12, last sentence).

Comment 3:

Section IV-140 should not be limited to only transportation impacts, but should consider other induced and direct impacts such as land use patterns and level of development. (SCRTD)

Response:

The first sentence in Section IV-140 (page IV-76) states: "The only potentially significant cumulative impact of the project on downtown Los Angeles is in the area of transportation." The reason for not including potential land use and development changes in this section is found in Section IV-120, particularly page IV-12 and Table IV-12A, which supports the conclusion that the project would increase population and employment levels by about one percent over that expected without the project. The project is not expected to have significant cumulative impacts on land use in downtown Los Angeles.

Comment 4:

Caltrans does not agree with the assertion in Section IV-140 that there will be no significant cumulative impacts in downtown Los Angeles. (Caltrans)

Response:

As noted above, the cumulative impacts section of the DEIR (IV-140) starts with the statement: "The only potentially significant cumulative impact of the project in downtown Los Angeles is in the area of transportation." The section then goes on to

discuss impacts on freeway transit lines, Metro Rail, development at Union Station, and small reductions in traffic congestion, energy consumption, and air quality. If the comment relates to potential cumulative traffic impacts, the commenter is referred to Section IV-131 of the DEIR which identifies how year 2000 traffic volumes without the project were obtained. All known and anticipated growth projections were incorporated into the traffic analysis to define the year 2000 no project condition. Tables IV-13B and IV-13C indicate that the project will have little net adverse traffic impact. In addition, growth induced by the project is anticipated to be minimal, as noted in Table IV-12A of the DEIR and discussed in Section IV-120.

The only place in Section IV-140 where the statement of "no cumulative effect" is made is with reference to the Bullet Train and to through-routed freeway transit lines such as the Harbor Freeway Transitway and the El Monte Busway extension. Caltrans' FEIS for the El Monte Busway states: "In summary, the various urban development studies investigating the busway's cumulative and growth-inducing potential support the theory that transportation improvements in and of themselves rarely cause more than minimal increases in development activity within urbanized areas..." (FEIS, page 61). The DEIS for the Harbor Freeway Transitway refers to the Downtown People Mover (DPM) DEIR's discussion of cumulative impacts on the Los Angeles CBD which stated: "...transit improvements are rarely sufficient in and of themselves to cause more than minimal increases in development activity. Rather, such transportation improvements are one of many factors, such as long-range economic trends, land availability, public policy and plans, image and financing practices, which determine the course of urban development." (DPM DEIR, page VI-11).

Comment 5:

The environmental setting and impact discussion for Long Beach does not adequately deal with the close proximity of the project to Signal Hill. In particular, the following information should be included: noise and vibration, land use, police and fire response, traffic, and growth-inducing impacts. (Signal Hill)

Response:

While it is true that the City of Signal Hill is in close proximity to the proposed project in the vicinity of Atlantic Avenue and Willow Street, the nearest station (in alignments LB-1, LB-2, and LB-4) is located at the intersection of Atlantic Avenue and Hill Street.

At this point, the boundary of Signal Hill is beyond the one-quarter mile, established as the study boundary for purposes of impact analysis.

As the impacts to property from noise and vibration were found to be significant only when directly adjacent to a light rail line, the City of Signal Hill would not experience significant noise or vibrational effects.

The same criterion applies regarding land use impacts, along with the added considerations of property acquired and residents or businesses displaced. Since none of these impacts would be experienced by the City of Signal Hill, effects would be minimal or non-existent.

Regarding police and fire response, the following should be inserted between the first and second paragraphs of Section II-422.6:

> "Los Angeles County Fire Station No. 154, located in Signal Hill and housing one three-man engine company, has a joint agreement with the City of Long Beach to respond to emergencies occurring within Long Beach near the Signal Hill/Long Beach municipal boundary. Station No. 154 would, therefore, in some situations be called upon to serve segments of the proposed LB-1, LB-2, and LB-4 alignments between Spring and Hill Streets should an emergency occur."

Traffic in Signal Hill is not expected to be significantly affected. The DEIR points out in Section IV-331.1 that both eastbound and westbound auto traffic would be reduced with the project in place for a screenline drawn between Atlantic and Orange Avenues. Also, as shown in Table IV-33C, level of service at the intersections of Atlantic/Hill and Atlantic/PCH are not expected to change with any of the proposed alignment alternatives.

As is the case with other types of impacts, growth-inducing impacts are not discussed beyond one-quarter mile from a station. The City of Signal Hill does not extend into any of these analysis areas.

Comment 6:

The EIR analysis of the two-way Atlantic Avenue alignments (LB-1 and LB-4) implies that the public must choose among a significant amount of relocation, removal of parking, and traffic conflicts. It is more likely that a combination of options would be used, and the EIR should reflect this. (Long Beach)

Response:

The discussion in the DEIR implies not that a choice must be made between types and severity of impacts, but rather that there are particular impacts which would occur depending upon the option (or blend of options) selected. If either LB-1 or LB-4 were implemented, the potential impacts that could occur encompass the variations possible under Options A, B, and C. Relocation impacts associated with Option A are judged to be the most serious, whereas the traffic impacts of Option C are most potentially significant. A combination of options would then have a degree of impact somewhere between these two.

Comment 7:

If one of the Atlantic Avenue alternatives is selected, our ability to care for our patients would be adversely affected. Specific concerns include a) reduced accessibility during construction, b) reduced accessibility during system operation from congestion, and c) impeded ambulance access to the St. Mary Trauma Center. We further support the idea of construction during nighttime hours and during holiday seasons and weekends. (Bauer, St. Mary)

Response:

There will be a minor amount of reduced accessibility to all residences, businesses, and community service facilities during the construction of the rail project. This will be mitigated by keeping walkways and entrances to parking lots and structures open. At no time will the entrance to the emergency facility of the hospital be closed. Whichever alternative is chosen for the Long Beach segment, the LACTC will work with businesses and community service facilities to coordinate alternate routes to be used by patrons, patients, and emergency vehicles. The Noise Ordinance of the City of Long Beach does not allow construction during nighttime hours. If construction were to take place only during holiday seasons and weekends, the duration of construction would be multiplied greatly and the cost of the project would become prohibitive.

Comment 8:

Alternative LA-2 would have a direct negative effect on the Skyline Condominium project as well as potentially damaging impacts upon residential development along Flower Street. (Forest City, Ruonale)

Response:

Alternative LA-2, the Flower Street Subway, will go underground to become a subway between 12th and 11th Streets. There will be temporary inconveniences during construction which will be mitigated to the extent possible. After construction is completed, there should be very little or no impact to the Skyline project as the rail will be underground at that site. Construction of the rail transit project will be coordinated with other proposed development along Flower Street to minimize impacts. See also the response to Comment 4, Section III-308.

Comment 9:

The EIR needs to summarize clearly all the significant adverse impacts, the mitigation measures proposed, and the net impacts after mitigation. (LB Citizens)

Response:

The Draft EIR states both the nature and extent of significant adverse impacts discovered during its preparation (see Table S-3, pages S-18 to S-26). A Supplement to the Draft EIR, discussing additional Long Beach alternatives, identifies the significant adverse effects associated with these alternatives (see Table S-2, pages S-10 to S-18). The Final EIR specifically identifies proposed mitigation measures together with their assigned responsibility (see Section II-600) and the net residual impacts to be expected subsequent to their implementation.

Comment 10:

We are very concerned about the potential impacts of alternatives LB-1, LB-2, and LB-4 on residences, businesses, and churches in the community. The EIR should also include an in-depth discussion of potential social and psychological impacts. (UMA)

Response:

The DEIR does not include an in-depth discussion of potential social and psychological impacts of LB-1, LB-2, and LB-4 because it is not required to by law and would, at best, be a very subjective exercise. The DEIR does, however, present a demographic and economic profile of residents potentially displaced by Options A and B of LB-1 or LB-4 (Section III-321). For LB-2 there would not be significant relocation impacts. The DEIR also presents detailed information on traffic impacts, noise, and land use changes. None of these is judged significant, except for the dislocation required by Options A or B for LB-1 and LB-4. If the chosen alternative involves relocation, a Relocation Assistance Plan will be formulated by the LACTC. The implementation of the plan will ameliorate the potentially negative impacts of relocation.

Comment 11:

The problems of the adverse impact of LA-3 from the aerial structure on 9th Street need to be carefully considered. (Cameron)

Response:

The relationship of the LA-3 aerial guideway to the 9th Street environment is being carefully considered, and the impacts have been documented in the DEIR (see page IV-53). As the DEIR points out, the elevated guideway would alter the visual setting of the 9th Street/Olympic Boulevard corridor. Pedestrian views of historic mid-rise buildings would be altered and obscured. The aerial structure on the north side of the street between Hope and Spring Streets would visually restrict the street space for pedestrians and would screen the view of the street for building occupants. The guideway would shade the street and building facades. Other effects are noted as well. These impacts will be considered before selection of a preferred route is made.

Comment 12:

The system would create a physically divided community in the mid-corridor. (CDAC)

Response:

Active rail freight lines already divide the mid-corridor communities, as illustrated by the number of lines traversing the area in Figure II-33B of the DEIR. Despite the fact that rail freight traffic already divides the mid-corridor communities, the DEIR

(page IV-102) does acknowledge some effects on separation due to the project. Specifically, the DEIR states that "the fenced rail line could restrict pedestrian access to public facilities and local circulation patterns where it would create a barrier between residential neighborhoods." This is the case for presently unpermitted (but unenforced) pedestrian crossings of the rail corridor. Other features associated with the project are also illustrated. For example, the Compton cut of MC-2 would become a prominent element in the streetscape, dividing the north-south sections of Willowbrook Avenue from each other. Similarly, aerial components of MC-3 are described as being visually prominent, impinging on the community's views. These impacts, however, would not create a physical separation, but rather reinforce an existing condition. The rail transit project will maintain all existing legal pedestrian crossings.

Comment 13:

For LB-2, a broader treatment of potential localized impacts is needed, particularly with regard to land use, traffic, and economic factors. (LB Blvd. Assn.)

Response:

Section IV-320 and Table IV-32E differentially assess each of the Long Beach alternatives on 10 measures of compatibility with local plans and policies. Section IV-323.2 addresses impacts on local businesses and concludes that the effects of any of the alignments would be minimal because of modest station volumes. Section IV-331.2 reports a two percent reduction in traffic volumes with construction of LB-2 in comparison to the no project condition.

III-318 Goals and Objectives

Comment 1:

All of the alternatives evaluated in the DEIR will have little impact in moving toward regional corridor goals. (SCAG)

Response:

The LACTC does not dispute that, given the economically distressed environment of the project alignment, the alternatives evaluated in the DEIR are but a small step in moving toward SCAG's corridor goals for people movement. However, all rail alternatives contribute significantly to the corridor goal of

improved accessibility of transit dependents to places of employment. They also will help to promote redevelopment in blighted areas and are a first step toward developing a regional rail system through the use of existing rights-of-way.

Comment 2:

The LACTC should describe and analyze each option and suboption as to how well it meets the goals and objectives listed on page I-2. (LB Citizens)

Response:

In making a final route selection, the LACTC will include as part of its consideration how well the various alternatives and combinations of alternatives meet the adopted goals and objectives of the project. This is a comment on policy-making, not on environmental impacts.

Comment 3:

The following LACTC objectives are not met by LB-1 or LB-4: a) low cost construction, b) acceptable environmental impacts, c) minimum capital and operating costs, and d) minimal implementation difficulties. (LB Citizens)

Response:

See the response to Comment 2, above.

Comment 4:

The following LACTC objectives are not best met by LB-2: a) improved public transportation, b) speed competitive with automobile, c) have acceptable environmental impacts, and d) provide attractive level of service. (LB Citizens)

Response:

See the response to Comment 2, above.

Comment 5:

Regional policy advises that shorter travel needs should be encouraged both within subregions and to nearby outlying regional multi-purpose centers, of which downtown Long Beach is one example. Transit facility planning should encourage people near

downtown Long Beach to travel to their own center in preference to distant centers. The Long Beach-Los Angeles project should have fewer stations, mainly oriented to the proper subregional market. (Allen, Washington)

Response:

It is true that regional policy, as developed by the Southern California Association of Governments (SCAG), does advocate encouraging travel within subregions. It is also true, however, that regional policy is supportive of alternative modes of transportation at all levels of trip making. SCAG has found the Long Beach-Los Angeles Rail Transit Project to be consistent with the Regional Transportation Plan and the goals and policies contained therein. Because the LRT system focuses on both the Long Beach and Los Angeles central business districts, it will enable people to travel to each of these centers and make it easier for them to do so. Therefore, one function of the LRT will be to directly support the subregional policy discussed in the comment. If the system were to have fewer stations, it would foster longer distance trips rather than the shorter, subregional trips with which the comment is concerned.

III-319 Historic Issues

Comment 1:

The Watts Station is historically significant and should be integrated into the light rail project. (Dymally, CRA, City DOT, Waters, Haagen, Flores, CDAC, WNA, ERC)

Response:

The LACTC is coordinating design development for the station at 103rd Street/Watts Junction with a rehabilitation and reuse program for the Watts Station currently under study by the station owner, Los Angeles CRA. It is the mutual intent of the CRA and LACTC that upon completion of the two projects, the transit user will perceive a single, integrated facility in the 103rd Street area.

The DEIR discusses visual impacts of the project on sensitive segments of the alignment, of which the Watts Station is one component. The effect of the MC-3 aerial guideway is illustrated in Figure IV-22A. To present an accurate picture of these impacts, the DEIR points out circumstances which would lessen the impact of the guideway. Specifically, site conditions such as the

building's distance from the right-of-way, its orientation, and the presence of mature landscaping and vegetation are identified. Additional land use impacts are discussed in Chapter IV, pages 97-104. Pages 101-103 of Chapter IV specifically address compatibility impacts with adjacent land uses.

Comment 2:

We object to any project that will block the south side of Union Station, making it impossible in the future to turn the station into a run-through operation with a bridge over the Hollywood Freeway. The LA-1 alternative allows this future conversion. (RRPA)

Response:

Any extension of the Long Beach-Los Angeles Rail Transit Project, be it Alternative LA-1 or the future extensions of LA-2 or LA-3, will be integrated to allow the maximum usage of Union Station as a multi-modal transportation center. The current coordination effort between Caltrans, LACTC, SCRTD, and other agencies concerned with the creation and utilization of the proposed multi-modal center will continue through the design and implementation of the rail transit project to insure that no options for full utilization of the facility are overlooked.

Comment 3:

Both LA-1 and LA-3 severely alter the visual and land use environments at Union Station. (LAC, Stromme)

Response:

As noted in the DEIR (pages IV-41 and IV-48), the LA-1 and LA-3 (future extension) alternatives in the vicinity of Union Station would consist of an elevated guideway structure, 20 to 40 feet above the depressed Hollywood Freeway, 24 to 26 feet in width, and supported by seven-foot-wide columns at 80-foot intervals. A sketch showing the relationship of the guideway to Union Station is shown in Figure IV-21C. As is the case in the vicinity of El Pueblo de Los Angeles State Historic Park, the guideway would intermittently block views of the buildings on the Union Station grounds. This would affect primary views from the south and east. A definite alteration of the visual environment would occur, as the comment points out, but the question of severity is subject

to interpretation. As the DEIR points out, for project patrons there would be increased exposure to the Union Station historic area which could be considered a positive effect. With regard to land use, the proposed rail system is consistent with the present use of the Union Station property.

Comment 4:

Construction of the aerial guideway and the placement of support columns in El Pueblo State Historic Park will change the entire nature of the park. The visual intrusion will diminish the historic character of the park. (CRA)

Response:

The adverse visual impact of the aerial section of the guideway structure to El Pueblo State Historic Park is documented in the DEIR on page IV-41 and in the Summary of the DEIR in Table S-3 ("Summary of Project Impacts"). It was the conclusion of the historic analysis that the aerial portion of the guideway would have "significant adverse" visual impacts but would not change the entire nature of the park.

Comment 5:

Impacts of the at-grade alignment on the Broadway/Spring Street National Register Historic Districts have been underestimated in the DEIR. There is significant disruption to the terrazo sidewalks and historic street lights on Broadway. (CRA, LAC)

Response:

The adverse effects to the terrazzo sidewalks and street lights on Broadway are documented in the DEIR on pages III-16, IV-62, and in the Summary on page S-24. The determination was made that the impact of LA-1 on the historic sidewalks and streetlights would be adverse. As a mitigation measure, the lamp standards would be replaced; however, it is unlikely that there is a viable mitigation for the sidewalks. The net impact of the project on historic resources would be minor and adverse.

Comment 6:

The City of Long Beach provided the LACTC with a list of historically and architecturally significant structures. It appears as though this information was not used. (Long Beach)

Response:

In a letter dated June 14, 1983, the City of Long Beach provided a list of 14 historically and architecturally significant structures from the then unpublished Downtown Historic Survey. This list formed the basis of the historic structures table in the DEIR. As the city's survey area did not extend north of Anaheim Street, it was necessary to resurvey the areas where alternative alignments had been placed. For this reason the list of historic structures in the DEIR is different from the list provided by the city.

Comment 7:

Our main concerns are over potential environmental impacts to El Pueblo State Historic Park from LA-1, and to the Watts Towers from MC-3. (Parks, Stromme)

Response:

The potential impacts to El Pueblo State Historic Park if LA-1 were to be implemented are found in the DEIR on pages III-15, IV-41, and IV-62. The potential impacts to the Watts Towers (with MC-3) are located on pages III-29 and IV-118. The mitigation measures to be employed to minimize impacts are also discussed. In the Summary, on pages S-24 and S-25, the document states that even with mitigation measures implemented there will remain some minor adverse impacts, but they have not been judged to be significant.

Comment 8:

The Pacific Electric overpass at Manchester and Firestone is an important landmark and should be protected. (ERHA)

Response:

The Pacific Electric right-of-way from Olympic Boulevard south has been designated a local historic resource by the Los Angeles Chapter of the Society of Engineers. All the bridges along the Wilmington Branch of the Southern Pacific were surveyed by Caltrans and evaluated for historic significance using the National Register criteria. The Firestone Bridge was found not to meet the criteria for listing on the National Register. There are, therefore, no legal protections for the bridge precluding the single-track expansion which will be a part of the rail transit project.

Comment 9:

We would like to express strong opposition to the LA-3 alternative. The impacts on historic resources are serious. The suggested mitigation of photography is inadequate. The modern design of the light rail system exacerbates the adverse impacts due to incompatibility with historic buildings. (LAC, Cameron)

Response:

LACTC agrees that the visual impacts to historic structures are adverse. The suggested mitigation measure of photo documentation will not ameliorate these impacts significantly and it would not be possible to change the design of the guideway structure in the historic area. Short of not selecting the LA-3 alternative, there are no other feasible mitigation measures which can be applied.

Comment 10:

Consideration should be given to resurrecting the Pacific Electric Terminal on Main Street as part of the interurban system. (Stromme)

Response:

While the notion of resurrecting the Pacific Electric Terminal building for rail passenger use is attractive for historic reasons, none of the downtown Los Angeles alignment alternatives which are oriented to current centers of activity are in close enough proximity to make this a viable option.

III-320 Impacts on Churches

Comment 1:

Alternatives LB-1, LB-2, and LB-4 would greatly impact our present plans for church expansion and possibly eliminate our church. Access into church parking lots would be impacted. Pedestrian access would be impaired. Both construction and operational noise have not been addressed. (1st Lutheran)

Response:

Even if alternative LB-1 or LB-4, Option A (maximum takes) were to be the chosen alignment, First Lutheran Church property is not planned to be acquired. During the construction phase of the project (assuming Atlantic Avenue), both vehicular and pedestrian

traffic would be temporarily inconvenienced. This would be mitigated by coordination with all the businesses and community services to maintain access routes as much as feasible. Construction and operational noise impacts are addressed in the DEIR on pages III-38, 39 and IV-140, 142, and 143.

Comment 2:

The church is concerned with the safety of children and is worried about being displaced. We may lose our child care center and also our community multi-purpose center. We would prefer that we share the responsibility of this light rail system and not let Atlantic Avenue take the full responsibility. (Gospel Memorial)

Response:

If the selection of the preferred alternative in Long Beach requires the acquisition of property, the LACTC will prepare a Relocation Assistance Plan in accordance with state law. The implementation of this plan will provide for financial and advisory assistance for residents, businesses, and community services such as churches. Although this assistance cannot mitigate all the impacts of relocation, it does reduce them.

Comment 3:

We are concerned that our church will be displaced and that our services will be seriously disrupted, both during construction and operations. (St. Luke's Episcopal)

Response:

None of the church structures are proposed to be acquired; therefore, there will be no displacement. Because the majority of church services are held Sundays or evenings and construction activities will be mainly during weekdays, disruption to St. Luke's Episcopal should be limited to minor temporary inconveniences associated with reduced access. Once the system is in operation, there should be no adverse impacts, as noise is predicted to be minimal. There will, however, be some loss of on-street parking under certain LB-1 and LB-4 configurations.

Comment 4:

Parking for all churches in Long Beach is at a premium. We request the LACTC to identify all churches along the various alignments and to select that alignment which preserves the most

on-street parking. (Note: St. Luke's Episcopal identified LB-4 as preferred, Covenant Presbyterian identified LB-2.) (St. Luke's Episcopal, Covenant Presbyterian)

Response:

There are many different factors which will be weighed when the LACTC adopts a preferred alignment. The loss of on-street parking is just one of many factors which will enter into the decision.

Comment 5:

Should church relocation be necessary, who will pay the cost? (1st Lutheran)

Response:

If relocation of any residents, businesses, or community services becomes necessary, the costs will be paid by or through the LACTC as prescribed by the State of California Uniform Relocation Assistance Act.

Comment 6:

Why did the Summary EIR stop at Anaheim when there are so many businesses, churches, and houses below? (1st Lutheran)

Response:

None of the alternatives call for any major acquisitions south of Anaheim Street; therefore, acquisition and relocation is not discussed in the DEIR Summary.

III-321 Impacts on Schools

Comment 1:

LB-1, LB-2, and LB-4 would be taking away area currently used for both parking, playground, and classroom space. (LBPTA)

Response:

Not all of the alternatives noted in the comment would require space currently used for parking, playgrounds, and classrooms at Long Beach schools along Atlantic Avenue. Alternatives LB-1 and

LB-4 would require the taking of some parking and playground area at one or more schools on Atlantic Avenue, but only if the street were widened to maintain on-street parking (Option A).

Comment 2:

The Atlantic Avenue route will add to traffic congestion and contribute to potentially dangerous situations for children attending our schools. School district bus schedules would also be adversely affected. (LBUSD)

Response:

Rail transit operations along Atlantic Avenue under route alternatives LB-1 and LB-4 would not add significantly to traffic congestion, nor would they contribute to increased danger to school children because of the safety features which are being designed and because light rail vehicle operations would be required to observe all motor vehicle rules. The presence of the light rail system is not expected to impede the effective operation of school transportation services. However, Option C for LB-1 or LB-4 would reduce curb parking spaces and require relocating some bus loading zones to adjacent cross-streets.

Comment 3:

LB-1 and LB-4 alternatives are opposed by the school district due to collective and several impacts affecting the following schools: Long Beach Polytechnic High School, Roosevelt High School, Burnett Elementary School, Roosevelt Elementary School, and Stevenson Elementary School. (LBUSD)

Response:

In defining Long Beach alignment alternatives LB-1 and LB-4, and Options A, B, and C for those alternatives, the LACTC has strived to minimize the need for acquisition of school property and other impacts of the project along Altantic Avenue.

Comment 4:

Acquisition of school district property in general, and from Poly High School in particular, is not acceptable and will be resisted to the fullest extent. (LBUSD, Ellis)

Response:

See the response to Comment 3, above.

III-322 Implementation/Construction Methods

Comment 1:

The time to build grade separations is at the time of the rail transit construction, not afterwards. The overall cumulative effects of this and other projects may have a significant effect on cross-street traffic. (County Road)

Response:

When the LRT signal system is coordinated with the street signal system at major arterials in the mid-corridor, and when the other mitigation measures for mid-corridor traffic impacts (as discussed in Section II-600 of this document) are included, there would be no significant adverse effects on cross-street traffic. The grade separations discussed in conjunction with freight rail are unrelated to the LRT project. As far as cumulative impacts are concerned, LACTC is working with the local jurisdictions, the railroads, ports, and regional authorities to evolve a program of grade separations to help alleviate the effects of additional freight traffic.

When all necessary agreements have been reached and funding for grade separation has been acquired, such construction can proceed. Although it would be desirable to accomplish this at the time of light rail construction, the satisfaction of the above conditions may not be possible at the same time.

Comment 2:

The agency should consider using a construction method like that shown in Exhibit A. [Exhibit A, which was attached to Mr. Zimmerman's letter, dealt with a pre-cast, pre-stressed segmental concrete bridge construction technique as used by the Metropolitan Atlanta Transit Authority.] Significant savings are likely with the speed of construction as well as the reduced disturbance to traffic. (Zimmerman)

Response:

As described on pages I-72 and I-73, construction of the aerial guideway sections could allow the use of precast columns and box girders. Precise structural requirements and installation techniques will be determined during final design. All viable construction techniques will be considered, and the most appropriate methods will be used.

Comment 3:

Have you considered building the project in phases? The first phase could be to temporarily terminate the project at Willow. (Palmer)

Response:

As part of a Supplement to the DEIR, one alternative which has been examined is the termination of the light rail line at Willow Street. However, the objectives of the project for a significant start on a communitywide system have not led to the LACTC's consideration of phasing other than as noted.

III-323 Land Use

Comment 1:

The EIR should provide additional analysis on land use impacts associated with the project. Of particular concern are stations where interfacing with bus transit or other systems occur. Specifically, the Washington/Flower station in LA-2 may experience land use impacts due to the potential interface between the rail project and the I-105 busway. (City Planning)

Response:

There is some possibility that the rail project would have an effect on land uses in downtown Los Angeles, but the extent of these impacts is somewhat a matter of conjecture and, therefore, is not presented in detail. They are, however, acknowledged in cumulative impact discussions (pages IV-31 to 34, 76, and 137) which point out that improved accessibility would be a beneficial effect but that light rail transit projects tend to accommodate planned growth rather than induce it.

Growth with alternative LA-2 could consist of infill retail and apparel manufacturing south of Pico Boulevard and on Washington Boulevard, with new office development around the 7th Street station. This alternative includes a station near Washington and Flower at 18th and Flower. The development potential of this area is modest, either with or without the project. Consequently, significant land use impacts in this station vicinity are not anticipated.

Comment 2:

Page IV-155, second paragraph -- A general comparison of land use compatibility is presented. Such comparisons are dangerous, because they are highly subjective. If the comparison is to be made, the paragraph should be revised (in accordance with necessary revisions to Table IV-32E) to read as follows: "LB-4 would appear to be the most compatible with land use patterns, LB-3 and LB-2 offer reasonable compatibility, and LB-1 provides the least compatibility." (Long Beach)

Response:

The referenced paragraph is only a summary of a more detailed analysis that evaluates land use compatibility on the basis of 10 different categories (Section IV-321.12). The changes proposed by the City of Long Beach for the summary comparison table for Measures 1 (population concentrations with pedestrian access), 4 (transportation systems connected), and 5 (revitalization areas served) are appropriate. The proposed changes for Measures 7 (neighborhoods affected by traffic), 8 (neighborhoods affected by parking), and 9 (safety and pedestrian patterns affected) are also appropriate. The proposed changes for Measure 3 (activity/growth centers served), however, do not seem to reflect the reality of centers served by virtue of physical alignments. Table IV-32E, following, reflects the above revisions.

Regarding the City of Long Beach's suggested revision to the second paragraph on page IV-155, based on the changes detailed in the table following, such a statement appears reasonable.

REVISED TABLE IV-32E

SUMMARY COMPARISON OF ALTERNATIVES

LAND USE IMPACTS

Measures	Alternatives* LB-1	LB-2	LB-3	LB-4
1. Residential Development Patterns: Total Population with pedestrian access	3	1	4	2
Population concentrations with pedestrian access	4	2	1	3
2. Nonresidential Development Patterns: Total employees/shoppers with pedestrian access	3	2	4	1
Employee/shopper concentrations with pedestrian access	4	3	1	2
3. Activity/Growth Centers Served	2	1	3	1
4. Transportation Systems Connected	2	2	1	1
5. Revitalization Areas Served	3	2	2	1
6. Public Facilities Served	2	1	3	2
7. Neighborhoods Affected by Traffic	3	3	1	3
8. Neighborhoods Affected by Parking	2	3	1	2
9. Safety and Pedestrian Patterns Affected	2	2	1	2
10. Opportunities for Joint Development Available	3	2	4	1

* A "1" identifies the alternative with the most positive or least negative impact. A "2" identifies the alternative with the second most positive or least negative impact, and so forth. If two or more alternatives have comparable impacts, they are given the same rank.

Source: Sedway Cook Associates, 1984.

Comment 3:

The ridership market of a rail line is also the market to which new land uses developing around rail stations should be oriented. (Allen, Washington)

Response:

Land use policy is under the control of the appropriate municipal jurisdiction, in this case the City of Long Beach. Decisions regarding changes in land use around rail stations are therefore

within the city's purview and not that of the LACTC. However, as the comment notes, the presence of a fixed rail facility in an area implies a market consisting of LRT patrons which would not otherwise be present. Private sector ecomomic interests will recognize this fact and will likely act to create ecomomic opportunities which take advantage of this new market. It is therefore quite likely that the marketplace itself will create the land use changes discussed in the comment.

Comment 4:

The predominant land uses along Atlantic Avenue are inherently more sensitive to the impacts of rail transit. Where a reasonable choice exists between locating a rail transit line along a commercial or residential street, commercial streets should be almost always preferred. (Allen, Washington)

Response:

Existing land use along Atlantic Avenue is a mix of residential and commercial, and thus cannot be clearly classified as either. Alternative alignments for the LRT project have been postulated based on many considerations, including engineering feasibility, availability of right-of-way, operational considerations, service, environmental considerations, and others. Tradeoffs among all these considerations must be evaluated before a specific alignment is selected. Sensitivity to the imposition of a rail line will certainly play a prominent role in the selection process. The concern expressed in the comment will thus be taken into account.

III-324 Mitigation

Comment 1:

Under provisions of the California Administrative Code, agencies must provide (but not necessarily build) replacement housing. Before constructing new housing, LACTC should consider other measures such as increased housing payments, broadening the replacement area boundaries, or rehabilitating existing housing. (SCRTD)

Response:

The LACTC will consider increased housing payments, broadening the replacement area boundaries, or rehabilitating existing housing to mitigate relocation impacts prior to constructing new housing.

The LACTC expects and intends that, possibly except for the maximum relocation case (Option A of alternatives LB-1 and LB-4), replacement housing can be provided within the existing housing market.

Comment 2:

The mitigation measures shown in the Draft EIR are general statements. CEQA guidelines require that specific mitigation measures must be identified, that responsible agencies must be identified, and that specific language committing those agencies to the mitigation measures must be provided. (SCRTD, City Engineering, County Planning, Long Beach, AAA)

Response:

Mitigation measures proposed for the Long Beach-Los Angeles Rail Transit Project are presented in Section II-600 of the FEIR. These are specific measures which are proposed by the LACTC for implementation by the commission as part of the project, as well as measures which should be considered for adoption by the various Responsible Agencies which have jurisdiction over portions of the project. LACTC's resolution adopting the project will consist of conditions of project approval and statements of commitment regarding measures to be considered by other agencies.

Comment 3:

The council concurs with the Draft EIR findings that there is a need for substantial mitigation for the Del Amo station and park-and-ride lot. Maximum mitigation efforts should be expended during both construction and operations and should include traffic, landscaping, terminal design, and access improvements. (Carson)

Response:

With regard to construction and operations impacts in the mid-corridor, mitigation measures have been proposed which include the Del Amo Boulevard station. When station design plans are advanced in the project's design phase, the LACTC will coordinate with the local jurisdictions regarding landscaping, design, and access.

Comment 4:

The Final EIR should include additional measures to mitigate adverse traffic impacts and expand the number of alternatives to at-grade operation in downtown Los Angeles. Grade separations as mitigation are also advisable at the following mid-corridor intersections: Imperial/Wilmington, Del Amo/Santa Fe, Long Beach Boulevard/Willow, Willow/Atlantic, and Gage/Holmes. (AAA)

Response:

Alternatives LA-2 and LA-3 both provide grade separation in downtown Los Angeles.

The DEIR presents alternative mitigation measures to the grade separations suggested in the mid-corridor. The intersections of Imperial/Wilmington, Del Amo/Santa Fe, Long Beach Boulevard/Willow, Florence/Holmes, and Gage/Holmes have been recommended for at-grade improvements (see pages IV-131, 132 of the DEIR). These improvements, in conjunction with improved major arterial crossings of the rail corridor to be provided under the LRT project, would reduce congestion at the intersections and allow acceptable levels of service. If the affected jurisdictions wish to add grade separations and contribute costs, the LACTC will coordinate with them.

Comment 5:

We do not consider the mitigation measure "relocation assistance" to be adequate to lessen the impacts on residential housing. One-for-one replacement of low- and moderate-income housing units is required. Also, the mitigation measures in Section III-331 relating to traffic (during construction) need to be specifically stated as they relate to Long Beach. (LB Citizens)

Response:

The implementation of a relocation program, if necessary, will not fully mitigate the effects to those residents and businesses displaced. However, the financial and other assistance will ameliorate the burden. One-to-one replacement of units is not required

unless no other method can be found of providing those relocating with decent, safe, and sanitary housing. Regarding traffic, specific mitigation measures during construction for Long Beach are as follows:

- Construction activity on moving traffic lanes would be restricted to off-peak hours and to nights and weekends wherever feasible.

- Construction would be phased so that all line sections and station areas are not affected at the same time.

- On-street curb parking would be temporarily eliminated to accommodate construction operations and traffic flow on streets where construction is ongoing, and on adjacent parallel streets if additional travel lanes would be required to accommodate the diverted traffic.

- Contractors would be required to control traffic during construction in accordance with the work area traffic control procedures prepared by the City of Long Beach and "Standard Specifications for Public Works Construction" prepared by the State of California.

- During final design, traffic control plans, including detour plans, would be formulated in cooperation with all affected jurisdictions. Traffic signs would be developed to alert motorists to the location and duration of the project construction activities.

- Unless unforeseen circumstances dictate, no designated major or secondary highway would be completely closed to vehicular or pedestrian traffic. No local street or alley would be completely closed, preventing vehicular or pedestrial access to residences, business, or other establishments.

- Where pedestrian activities are affected during construction, appropriate warning regulatory signs would be installed and pedestrians would be diverted. Pedestrian access to residences and business would be maintained during construction.

Comment 6:

Mitigation of impacts in El Pueblo and Union Station would be better achieved by restricting any elevated structure to the south side of the Hollywood Freeway. (Cameron)

Response:

The existing placement of the elevated guideway structure along the freeway was incorporated into the project so as to minimize the impacts to El Pueblo and Union Station. However, engineering and operational constraints of the system do not allow placement of the structure entirely on the south side of the Hollywood Freeway.

Comment 7:

The mitigation measures proposed in the DEIR do not fully reduce the impacts on housing associated with LB-1 or LB-4. (UMA)

Response:

Chapter III, Section 321.1 states: "These services and payments are partial mitigation for the effects of acquisition of these properties by LACTC." That is why the summary of impacts, Table S-3, characterizes the displacement impacts of LB-1 and LB-4 as significant even after mitigation.

Comment 8:

During construction, the following mitigation measures should be considered: a) reserve one lane access for emergency vehicles to St. Mary Medical Center, b) provide unimpeded access to 11th Street, and c) restrict parking in front of St. Mary's Professional Building to elderly and handicapped. (St. Mary)

Response:

Access for emergency vehicles and emergency centers will be maintained at all times during the construction period. Specific details will be developed during the design phase in consultation with the city staff and all affected parties, including St. Mary Medical Center, if it is adjacent to the adopted alignment.

Comment 9:

An additional mitigation measure is warranted, namely a city amendment to the Building Code to permit developers in proximity to downtown rail stations to contribute to a fund for peripheral parking in exchange for reduction of on-site requirements. (Allen, Washington)

Response:

The concept identified in the comment has been implemented by the City of Los Angeles in the form of a parking substitution ordinance. It is therefore presumed that the reference is to the implementation of a similar ordinance in the City of Long Beach. While this is an idea worthy of consideration, it would be the responsibility of the City of Long Beach to implement it.

III-325 Neighborhood Impacts

Comment 1:

We are deeply concerned with improving the quality of life in the neighborhoods along the Los Angeles-Long Beach corridor. We feel that the DEIR has not completely analyzed the impacts of the project on the neighborhoods. (County Planning)

Response:

For those areas adjacent to the proposed alignment, Section IV-220 discusses impacts on land uses, community services, economics, and visual environment in some detail. As an existing transportation corridor that has been in such use for over 70 years, the project does not require more than minimal takings for substations and parking lots. Implementation of this project would not change neighborhood circulation patterns or generally understood neighborhood boundaries. The level of disruption to existing neighborhoods is consequently minor. The improvement in access to Long Beach and Los Angeles employment centers could assist in improving the quality of life in mid-corridor neighborhoods where the unemployment rate was 11 percent in 1980 (Section II-323.3 and Section IV-221.22).

III-326 Noise and Vibration

Comment 1:

Noise data in Table II-21A is outdated for downtown Los Angeles. This information should be updated. (SCRTD)

Response:

In Table II-21A (pages II-38 and 39 of the DEIR), noise data are reported for downtown Los Angeles. Of this data, field measurements were taken specifically for this project at sites 1 and 2

(24-hour measurements) and at sites 17 and 18 (20-minute samples). The additional data reported in the table were used to supplement the recently acquired data. Despite the growth that has occurred over the last several years, traffic volumes throughout downtown Los Angeles have not changed significantly from the perspective of noise. (A doubling of traffic volume would be required to increase noise levels by 3 dBA.) Thus, the noise data acquired in 1978 and 1982 are believed to adequately represent current ambient levels within acceptable limits of accuracy.

Comment 2:

LA-1 and LA-3 would increase noise and vibration during system operation. Potential noise impacts on pedestrians should be documented. (City Planning)

Response:

As shown in Table IV-11C (page IV-8 of the DEIR), maximum noise levels for the light rail train are comparable to that of typical city buses. Table IV-11D shows average noise exposure to be well below current levels for downtown traffic. Based on these two comparisons, increases in noise levels attributable to the light rail would be insignificant and pedestrians should experience no net adverse impact.

Comment 3:

The daily production of noise during construction of the system will be significant -- close to 90 dBA over a 12-30 month period. The mitigation measures listed on page III-10 will not significantly reduce these noise levels. (CRA)

Response:

Community Noise Equivalent Levels (CNEL) up to 90 dBA for noise-sensitive land uses are deemed acceptable if construction activities occur for a short period of time. Although the entire construction time frame will be 12-30 months, the duration of construction activities at any one location will be far less. Accordingly, the mitigation measures listed on page III-10 will indeed significantly reduce noise associated with such construction.

Comment 4:

Referring to page IV-9, we find that the discussion of rail vibration is inadequate regarding the light rail's impact on residential land uses. The impact on the Skyline Condominiums and Embassy Hotel is not documented. What is the cost to insure no vibration impacts? (CRA, Forest City)

Response:

The DEIR discussion of potential vibration impacts on residential land use is of necessity general because exact details are not yet known regarding vehicle type, track structure, and other pertinent design features. However, based on information which is known at this time, for typical distances between rail tracks and residential development and for typical operating speeds, no adverse vibration impacts are expected. A station is planned quite close to the Embassy Hotel and Skyline Condominiums. This means that operating speeds would be very low, and vibration levels would likely be even lower than described in the DEIR.

Comment 5:

The diversion of freight traffic from Wilmington Branch onto San Pedro Branch (MC-3) will have a significant noise increase on surrounding communities. The mitigation measures listed will not sufficiently mitigate this. (CRA, Filer, CDAC)

Response:

The mitigation measures described on page IV-95 of the DEIR can be used to alleviate the potential noise impact for residences along the West Santa Ana Branch (MC-3). As the DEIR states (Table S-3), even after implementation of all reasonable and practicable mitigation measures, there might still be an adverse impact. A Statement of Overriding Considerations will therefore have to be adopted by the LACTC if this alternative is chosen.

Comment 6:

How do anticipated noise levels during construction and operation compare with present ambient noise levels? What are the physiological impacts on people? (LB Citizens)

Response:

During construction, anticipated noise levels may be significantly higher than those encountered during system operation. As shown in Table III-11B, the A-weighted noise levels at 50 feet from typical construction equipment range from a low of 76 dBA (concrete vibrator) to a high of 101 dBA (pile driver). While the proper specification of noise limits in construction documents combined with the use of mitigation measures may keep construction noise to a minimum, it is likely that for periods of time, the maximum noise levels generated by construction equipment would exceed existing ambient noise levels for all alternatives and for LB-3 in particular. These increases above ambient levels may cause feelings of annoyance and, depending upon level, may interfere with speech communication. However, the levels that are expected would be well below the thresholds of physiological effects such as hearing loss and nervous tension. Furthermore, since construction activities are not expected during evening and nighttime hours, no loss of sleep is expected (also see the response to Comment 7, below).

Comment 7:

While CNEL is a useful concept, single event noise levels should also be reported in comparison with ambient levels at various times of the day. The noise impact of yard operations on nearby residential uses should be reported. Noise impacts with the barrier wall (page IV-142) in place should be reported. (Long Beach)

Response:

Table IV-11C of the DEIR lists a maximum passby noise level (analogous to single event noise level) of 72 dBA for a light rail train traveling 30 mph at 50 feet and compares this to other types of transportation vehicles at comparable distances and speeds. Also, Table IV of the Noise and Vibration Technical Report lists measured maximum A-levels at Long Beach noise measurement sites 3, 4, and 5 (locations A, B, and C in the technical report) ranging from 80 to 92 dBA. These measurement locations were on Atlantic and Pacific Avenues, six to 12 feet from the curb. At similar distances, the maximum passby noise level for the rail transit train would be 86 dBA. Thus, for the alternatives through downtown Long Beach, maximum light rail transit noise is comparable to ambient levels. Along LB-3, where no traffic now occurs,

except at some distance, maximum light rail transit noise from train passby would be well above existing levels, so the mitigation measures proposed are in order. (See also the response to Comment 2, Section III-412 of this chapter.)

With regard to yard operations, Sections IV-215.1 and IV-115.3 of the DEIR conclude that there would be no adverse noise and vibration impacts at either the main or satellite maintenance facilities since both sites are well removed from noise-sensitive locations and already experience a high ambient noise level.

III-327 Operations

Comment 1:

The LA-1 alignment would add light rail vehicles in mixed traffic on Broadway. Operation of the light rail in the manner described on page IV-69 may pose safety and reliability problems. (SCRTD)

Response:

We agree that there is the potential for safety and reliability problems with mixed traffic operation on Broadway. As the DEIR indicates, there could be delays and potential conflicts between light rail vehicles and buses, trucks, and autos. However, the Broadway/Spring couplet (LA-1) was selected for inclusion in the EIR because it was the most acceptable of all the at-grade alternatives initially reviewed by LACTC and other planning and transportation authorities.

Comment 2:

The provision of reversing loops at the end of all at-grade alignments should be examined for the implications on operational costs and schedule adherence. If reversing loops are present at both ends, serious consideration should be given to single-ended vehicles. (SCRTD)

Response:

LACTC agrees that reversing loops are desirable at the ends of rail transit alignments. However, alignment constraints do not permit installation of reversing loops at any of the ends of the alignment alternatives identified for the project. Accordingly, double-ended LRVs are intended.

Comment 3:

Consider an adequate number of track crossovers at key locations along the line. This will provide added operational flexibility. (SCRTD)

Response:

A number of crossovers will be incorporated in the final design at strategic locations to provide operational flexibility.

Comment 4:

The future cost-effectiveness of LA-2 would be increased by providing for future surface level track switches allowing a junction to be made with a possible future branch line to USC (SCRTD)

Response:

Funds permitting, switches could be installed on the LA-2 alignment to allow for future extension of the system to other destinations, such as the USC area.

Comment 5:

The Final EIR should justify the Compton grade separation on the basis of light rail operations. (SCRTD)

Response:

The Alternatives Evaluation Report (November, 1984), summarized in Chapter II, concluded that Alternative MC-2 (Compton Grade Separation) is not justified on the basis of light rail operations.

Comment 6:

Additional service information should be provided in Section I-311, such as the extent of the AM and PM peak periods and specific frequencies and consist lengths by time of day and day of week. (SCRTD)

Response:

The weekday AM peak period is from 6:30 AM to 9:30 AM; the PM peak period is from 3:30 PM to 6:30 PM. The system would operate seven days per week, 20 hours per day, from 5:30 AM to 1:30 AM.

Service would be less frequent on weekends and holidays. Vehicles would run singly or in two-car trains, and headways would be six minutes in peak periods, 12-15 minutes during other weekday periods, and 15-20 minutes on weekends and holidays. Station dwells would be 20 seconds and turnaround time would not exceed one headway. See the table below for headways by time of day and day of week.

HEADWAYS BY TIME OF DAY AND DAY OF WEEK

	Time Period	Headways (Minutes)
Weekdays:	5:30 AM - 6:30 AM	8
	6:30 AM - 9:00 AM	6
	9:00 AM - 3:30 PM	12
	3:30 PM - 6:30 PM	6
	6:30 PM - 1:30 AM	15
Saturdays:	5:30 AM - 7:30 AM	20
	7:30 AM - 7:30 PM	15
	7:30 PM - 1:30 AM	20
Sundays/Holidays:	5:30 AM - 1:30 AM	20

Note: This information is preliminary and will be further refined with the SCRTD; less service may be provided initially with growth in service over a period of months or years as ridership grows.

Source: PB/KE, 1984.

Comment 7:

Section I-312 suggests that under LA-3, train length would be changed in mid-corridor on each run. This would complicate operations and increase safety and security problems. This proposal should be reconsidered. (SCRTD, Long Beach)

Response:

The reason for changing train length at the boundary between the mid-corridor and Long Beach segments of the system was to provide for at-grade LRT operations which are consistent with the short block spacing of the street system in Long Beach. Current plans call for two-car operation when the system starts up, which would not require a change in train length. If three-car operation becomes necessary, however, the operational constraints will have to be analyzed, as well as the need for storing a third car in a safe and secured area.

Comment 8:

Section I-312 should include a discussion of reducing train lengths during off-peak, low demand hours. (SCRTD)

Response:

The LACTC agrees that train lengths should be reduced during off-peak, low-demand hours. It is technically feasible to operate single cars, and current plans do call for single-car operation during low demand hours.

Comment 9:

The basis for determining average operating speeds should be explained in sufficient detail to assure achievability. Major elements of the conceptual operations plan, such as vehicle miles, fleet size, etc., should be included. (SCRTD)

Response:

Average operating speeds were determined using performance data for a typical six-axle, articulated LRV operating over the proposed route. This data included traction and braking performance characteristics as well as civil and PUC speed limit requirements. Station dwell and turnaround times were also included. For the Los Angeles Broadway/Spring couplet, bus schedule data was used to determine run times. For all other downtown routes, the operating speeds were determined based on an evaluation of traffic conditions and stop light data collected during a two-day field trip conducted in Los Angeles and Long Beach. The three following tables show fleet size, annual vehicle miles, and energy consumption for alternatives 1, 13, 25, and 28 as defined in Table I-23A of the DEIR.

FLEET SIZE

Alternative	Roundtrip Time (Minutes)	Requirement To Support Patronage	Relay	Maintenance Spares	Fleet Size
1) LA-1/MC-2/LB-4	132	44	4	9	57
13) LA-2/MC-1/LB-4	108	36	4	7	47
25) LA-3/MC-1/LB-4	108	54	4	10	68
28) LA-3/MC-1/LB-3	96	48	4	10	62

ANNUAL VEHICLE MILES

Alternative	Revenue	Nonrevenue	Total
1) LA-1/MC-1/LB-4	3,493,541	34,935	3,528,476
13) LA-2/MC-1/LB-4	3,334,406	33,344	3,367,750
25) LA-3/MC-1/LB-4	3,894,676	38,947	3,933,623
28) LA-3/MC-1/LB-3	3,733,356	37,334	3,770,690

ENERGY CONSUMPTION

Alternative	Inbound + Outbound Distance (Mi)	Average Energy Consumption (kWh/Car)	Average Energy Consumption (kWh/Car Mi)	Average Energy Consumption (kWh)
1) LA-1/MC-1/LB-4				
Broadway/Spring Couplet	8.341	56.245	6.743	
Mid-Corridor to Willow	30.612	148.623	4.855	
Atlantic with Pacific Avenue Loop	6.389	42.120	6.593	
	45.342	246.988	5.447	19,220,000
13) LA-2/MC-1/LB-4				
Flower St. Subway to 7th	6.276	40.414	6.439	
Mid-Corridor to Willow	30.612	148.623	4.855	
Atlantic with Pacific Avenue Loop	6.389	42.120	6.593	
	43.277	231.157	5.341	17,787,000
25) LA-3/MC-1/LB-4				
Olympic Aerial to 3rd	6.053	52.983	8.753	
Mid-Corridor to Willow	30.612	148.623	4.855	
Atlantic with Pacific Avenue Loop	6.389	42.120	6.593	
	43.054	243.726	5.661	22,268,000
28) LA-3/MC-1/LB-3				
Olympic Aerial to 3rd	6.053	52.983	8.753	
Mid-Corridor to Del Amo	24.515	117.085	4.776	
River Route	11.639	45.064	3.871	
	42.207	215.132	5.097	19,219,000

Source: PB/KE, 1984.

Comment 10:

The 25 mph maximum speed limit for in-street operation should be discussed as to a) basis for selection, b) how to be implemented, and c) compatibility with street traffic speeds. (SCRTD)

Response:

The maximum speed limit of 25 mph for in-street operation was established because that is the posted legal speed along most of the street portions of the various alternatives and is the maximum allowable speed under PUC regulations for LRV operation in a non-exclusive right-of-way. In practice, the operator is responsible for maintaining the proper speed during street traffic operation. For design year 2000, it has been assumed that the 25 mph posted speed limit will not change.

Comment 11:

The LRT should use reasonable headways so as to maximize convenience. (Swan, Stromme)

Response:

Operating headways have been established for various times of the day and days of the week which provide for convenient and frequent use by system patrons and promote the operating efficiency of the system. See also the response to Comment 6 above for more detail.

Comment 12:

Where else in the world has the couplet concept been used successfully? How do these situations compare with the Los Angeles-Long Beach project? (LB Citizens)

Response:

The couplet concept has been used in New Orleans on the St. Charles line for many years and is planned for the downtown Sacramento segment of their light rail system. A couplet is not the best configuration; however it does make sense for cities with narrow streets (New Orleans), where there would be a contra-flow lane on one-way streets (Sacramento), or in order to divide the impacts between two areas (Long Beach). It is more desirable from an operational basis to have a two-way system side-by-side.

Comment 13:

It is not clear from the map on page 1-18 how the tracks on 1st Street, from Pacific Avenue to Long Beach Boulevard, would be used. Is it intended that there would be one or two tracks? Would these tracks be used for regular service or only rail car storage? (LB Citizens)

Response:

Under the original LB-3 alternative, it is intended that double tracks be placed on 1st Street between Pacific Avenue and Long Beach Boulevard. This is illustrated in Figure 64 of the DEIR Design Appendix. These tracks would be used for vehicle storage as well as for crossover (turnaround) movements. The terminal station would be at 1st and Pacific.

Comment 14:

Maximum operating speed should be increased from 55 mph to 80 mph. (Stromme)

Response:

The maximum speed projected for trains of the rail transit project is based on speeds which are associated with candidate light rail vehicles currently in operation. Speeds in excess of 55 miles per hour are more typically associated with heavy rail technology, which is not contemplated for use on this project.

III-328 **Parking**

Comment 1:

The proposal not to provide a parking facility at the junction of the light rail project with the San Diego Freeway should be reexamined. (SCRTD, Signal Hill)

Response:

The parking facility intended for use by San Diego Freeway traffic is the Del Amo station park-and-ride. This decision was made after an extensive review of park-and-ride site opportunities in the vicinity of the San Diego and Long Beach Freeway interchange. Within the funding prospects available for the light rail project, the Del Amo site is the most feasible to fulfill this function.

Comment 2:

More specific station concept detail should be provided for Wardlow and Willow. The proposed size of the park-and-ride lot at Willow seems small, particularly with anticipated development along Atlantic Avenue and Willow Street. (Signal Hill, Blossom)

Response:

Proposed parking at the Willow Street and Wardlow Road stations is intended to serve neighborhood park-and-ride and kiss-and-ride needs. Larger regional park-and-ride facilities will be located at the Del Amo, Artesia, and Imperial Highway stations. The amount of proposed parking at the Willow Street station (100 spaces) and Wardlow Road station (50 spaces) was intentionally kept small because of limited land availability and a desire to minimize the intrusion to built-up areas of Long Beach. In final design or subsequent to initial operation of the project, these parking lots could be expanded if desired by the community.

Comment 3:

Is adequate parking provided for commuters at station stops? (Schwinnerer)

Response:

Parking facilities have been established at several points along the route for access to the system by automobile. All-day park-and-ride and kiss-and-ride accommodations have been made. Parking capacity at these facilities has been established based on the dual considerations of demand and available space.

Comment 4:

The DEIR fails to note the opportunity for a large fringe parking facility in the LB-3 route between 5th and 6th Streets in the Long Beach Freeway right-of-way. (Allen, Washington)

Response:

Although there seems to be a large open space which could be used for parking, it is located between on- and off-ramps for the freeway and does not have the proper clearances for access. Portions of the remaining right-of-way are also proposed to be used by the City of Long Beach to improve access to and from the freeway.

III-329 Patronage

Comment 1:

The Final EIR should contain a summary table presenting annual passengers carried, passenger miles traveled, operating costs, and cost per passenger mile for a representative set of combinations of alternatives. (SCRTD)

Response:

The information requested in the comment is already provided in the DEIR but in a slightly different format. Table I-24A presents passengers carried on a daily basis for the alternatives which were evaluated in this document, as well as estimated annual revenues and annual operating and maintenance costs. Table V-23A presents typical daily passenger miles of travel on the light rail system. As the discussion which precedes this table points out, only two system alternatives were presented, because they bound the range of energy consumption, which was the purpose of the table.

Using the above-referenced information and an annualization factor of 300 (a typical industry multiplier to convert daily figures to annual ones), the following table can be constructed.

SUMMARY OF PATRONAGE, REVENUE MILES, AND COSTS

FOR SELECTED SYSTEM ALTERNATIVES

	Baseline LA-1/MC-1/LB-4	LA-2/MC-1/LB-4	LA-3/MC-1/LB-4	LA-3/MC-1/LB-3
TOTAL DAILY PASSENGERS	54,446	54,702	76,303	70,444
TOTAL DAILY PASSENGER MILES	601,743	N/A	N/A	787,282
ANNUAL GROSS OPERATING COST	$13,230,000	$12,540,000	$13,540,000	$12,900,000
ANNUAL REVENUE	$8,330,000	$8,370,000	$11,670,000	$10,780,000
ANNUAL NET OPERATING COST	$4,900,000	$4,170,000	$1,870,000	$2,120,000
ANNUAL PASSENGERS (1)	16,333,800	16,410,600	22,890,900	21,133,200
ANNUAL PASSENGER-MILES (1)	180,522,900	N/A	N/A	236,184,600
ANNUAL NET OPERATING COST PER PASSENGER	$0.29	$0.25	$0.08	$0.10
ANNUAL NET OPERATING COST PER PASSENGER MILE	$0.03	N/A	N/A	$0.008

(1) Calculated at 300x daily.

Source: SCAG, PB/KE - 1984.

Comment 2:

We question the highly optimistic patronage projections. (City Planning, NAACP)

Response:

With regard to assumptions used in the modeling of patronage, the fare structure and service characteristics are described in the DEIR in Chapter I, pages 43-44 and 55-60. The regionally-adopted growth forecast policy for year 2000 (SCAG 82) was used for socioeconomic data and supplemented from other sources for further detail. The corridor from Los Angeles to Long Beach is about three miles wide and is composed of 40-50 transportation analysis zones. Each station has a separate zone. The complementary bus system is described on pages I-45 and 46. Mode change information is shown on page I-24.

The increased patronage projections for the project are the result of the following: 1) the use of computer-assisted modeling techniques that consider many more travel behavior factors than were possible in earlier calculations, which were based on inferences from existing corridor bus ridership; and 2) substantially upgraded performance characteristics of the proposed system compared with those characteristics which were considered at the time of earlier ridership estimates (pertains to the clearance of legal challenges to Proposition A, which made it possible to provide a level of funding that would permit higher performance).

Comment 3:

The alignment is also important in determining the social/economic mix of the ridership. There should be an analysis of the potential ridership and their destinations along the route. (City Planning)

Response:

The DEIR already addresses potential ridership and destinations. See, for example, Chapter II, pages 15-30 and 40-60; Chapter IV, pages 12-36; and Chapter I, pages 24-26 and 86-87. The alignments in the DEIR, combined with ridership and destination analysis, provide a sufficient range of information to make policy choices on alignments. The transportation modeling process takes into account variables such as household income, number of licensed drivers per household, workers per household, and job locations.

Comment 4:

The projected boardings at Pacific Coast Highway are consistently higher than at the 1st Street Transit Mall. The heavy concentration of bus routes on 1st Street should generate a higher transfer rate. (Long Beach)

Response:

The transit network which was used in the patronage analysis to project boardings included a node on the transit mall that would capture trips resulting from the transit lines which converge at the mall. Ridership on Pacific Coast Highway (PCH) is higher than ridership at the mall because the time needed to reach northerly destinations of the rail line is less from PCH than from the mall.

Comment 5:

The methodology of the patronage estimates is not clear. What are the assumptions regarding future land use and demographics? (Long Beach, NAACP, Allen, Seal)

Response:

Forecasting patronage on each of the Los Angeles-Long Beach LRT alternatives was performed by application of the SCAG regional transportation modeling system. Other data directly related to patronage includes: passenger loadings and boardings on each transit line in the regional system as well as the LRT; percent of transit and highway usage by corridor or subregion; vehicle trips, vehicle passengers, vehicle miles traveled; and peak hour and average daily traffic on each link of the highway network. Application of the Direct Travel Impact Model to highway link volumes output by the transportation model yielded estimates of on-road emissions and fuel consumption.

SCAG's transportation model is typical of most such transportation models in that it is a sequential, aggregate model. The prediction of travel flows is accomplished in four steps, i.e., by four submodels of the transportation model:

1) Trip Generation - The total trips made by a particular market segment are estimated for each zone of the region being studied.

2) Trip Distribution - The total trips originating at each zone are distributed among possible destinations.

3) Modal Split - The volume of person trips going from a particular zone to a particular destination are split among the possible modes.

4) Network Assignment - The trips for each origin-destination-mode combination are assigned to paths in the network.

The basic demographic data incorporated into the model comes from the regionally-adopted growth forecast policy (SCAG 82), year 2000 population, housing, and employment estimates, and policies for the City of Long Beach communicated by the City of Long Beach to the LACTC in a letter dated August 12, 1983.

Comment 6:

The patronage model should be validated. The Draft EIR does not indicate if the model has been tested on an actual operation, such as the El Monte Busway. (AAA)

Response:

The transportation model was validated. Model values were compared with observed values for 1980 in the Los Angeles-Long Beach corridor and in Los Angeles County. Sources for observed data were the 1980 census, transit boardings (as taken by the SCRTD and Long Beach Transit), and transit schedules. Adjustments were made in the network to be consistent with observed data.

Comment 7:

How many people will ride the system? (Porter)

Response:

Ridership estimates for the project, prepared by the Southern California Association of Governments, are shown in Table I-24A of the DEIR. Four different system alternatives are shown, three with different downtown Los Angeles alternatives, and one with a different downtown Long Beach alternative. Total daily patronage on the system for these four modeled systems is as follows:

LA-1/MC-1/LB-4 = 54,446
LA-2/MC-1/LB-4 = 54,702
LA-3/MC-1/LB-4 = 76,303
LA-3/MC-1/LB-3 = 70,444

From the SEIR the patronage figures are as follows:

LA-2/MC-1/LB-3 (Broadway Aerial) = 54,326
LA-2/MC-1/LB-5 = 54,702
LA-2/MC-1/LB-6 = 50,300

III-330 Pedestrian Issues

Comment 1:

The design of the transit station should allow pedestrian traffic to access our shopping center, Martin Luther King, Jr. General Hospital, Drew Medical School, and other proposed improvements without causing people to walk on the railroad tracks. (CDC)

Response:

LACTC agrees with the comment and intends to coordinate the designs for the Imperial Highway/Century Freeway light rail stations to safely and conveniently accommodate pedestrian traffic to the King Triangle Shopping Center. At least one pedestrian crossing of the transit and rail freight tracks will likely be required, however.

Comment 2:

The Final EIR should examine the significant impacts on bus stop sidewalk capacity, particularly in the case of the Broadway/Spring Street couplet. In general, the effects on sidewalk capacity should be addressed. (SCRTD, CRA, Spillman-Boatman)

Response:

As discussed on page IV-69, the 7th Street station (under LA-1) would have the maximum boarding and alighting passenger volumes in downtown Los Angeles. With a two-car train, an average of 56 passengers would alight the train between subsequent train

arrivals during the AM peak hour. The 4th Street station would have an average of less than eight passengers alighting per exit. The added pedestrian volumes at station areas on Broadway and Spring are therefore minimal and would not have a significant impact on the existing crowded sidewalk conditions. However, the narrowing of sidewalks on Broadway under LA-1 would adversely affect sidewalk capacity, and this has been considered in evaluation of this alternative.

Comment 3:

The chain link fence along the mid-corridor would be a safety feature, but would severely reduce pedestrian access to shopping facilities, schools, etc. Pedestrian overpasses would be necessary in Compton between the following crossings: a) Alondra and Greenleaf, b) Alondra and Myrrh, c) Elm and Compton Boulevard, and d) Stockwell and Rosecrans. (Compton)

Response:

The installation of a safety fence along the mid-corridor would serve to restrict the pedestrian access to existing legal crossings of the right-of-way, but it would also preclude the continued illegal jaywalking across the right-of-way. A pedestrian overpass or gated at-grade pedestrian crossing is to be installed near Caldwell Street, an existing legally permitted crossing of the right-of-way. There are no existing legal crossings between the crossings listed in the comment.

Comment 4:

On page IV-176, the discussion of pedestrian activity fails to include a discussion of pedestrian safety in situations where the station consists of a platform area in the center of the street. (Long Beach)

Response:

In the Long Beach alternatives where LRT stations are located in the center of a street, pedestrian crossings would be accommodated at adjacent intersection crosswalks. Adequate pedestrian crossing signal time and signage would be provided at these intersections.

III-331 Presentation

Comment 1:

The description on page II-63 of the Figueroa Street environment is misleading. Pedestrian bridges are now confined to the northernmost portion. Plans nearing implementation tend toward a strong street orientation, rather than having a focus away from the street, as noted in the EIR. (CRA)

Response:

On page II-63 the pedways are described as being north of 7th Street and the area south of 7th as more open. Plans nearing completion for a more pedestrian-oriented development south of 7th are noted.

Comment 2:

The Urban Form Policy and Population Characteristics maps on pages II-16 and II-19 would be more useful if the rail line were superimposed over them to show the areas of greatest impact. (SCRTD)

Response:

Putting the alignments on these maps was considered. However, because they already contain so much information and because there are so many alternative alignments, it was felt that the maps would become too cluttered and thereby less comprehensible to the reader.

Comment 3:

The EIR fails to specifically document the data sources utilized in the environmental analysis and the findings of significance. (Long Beach)

Response:

The DEIR documents data sources in Appendix 3 (Bibliography). In addition, there are numerous references in the text to specific documents used, both in the analysis and in the assessments of significance; also every table contains a source reference.

Comment 4:

In order to assist decision-makers in the consideration of the preferred alternative, a comparison chart should be included in the Summary. That chart should array the various alternatives with their relative benefits and impacts. The chart should also include net operating costs and total system costs. (City Engineering)

Response:

The Summary does contain a chart showing environmental impacts and mitigation measures (Table S-3) as they pertain to various alternatives. In addition, Table S-2 in the Summary shows total daily boardings and cost estimates for selected system alternatives, including annual operations and maintenance costs. Further, an Alternatives Evaluation Report for the Los Angeles and mid-corridor alternatives was circulated in November, 1984. A similar report for the Long Beach alternatives is to be issued concurrently with consideration of this FEIR. The Alternatives Evaluation Reports array the benefits and impacts of all the proposed alternatives. Information in these reports summarizes environmental impacts as presented in the EIR. These reports present an array of transportation effectiveness evaluation measures to assist decision-makers in the consideration of a preferred alternative.

Comment 5:

Existing independent rights-of-way and existing bus routes should be clearly shown on Figure S-4, Baseline System Map. (Schiffer)

Response:

The scale and size of Figure S-4, the Baseline System Map, do not allow depiction of all independent rights-of-way or existing bus routes without the map becoming too cluttered and, therefore, less comprehensible.

III-332 Procedure

Comment 1:

A preferred project should be identified before the Final EIR is published. (SCRTD)

Response:

Chapter II of this document identifies the LACTC staff recommendations for the preferred alignment in downtown Los Angeles and the mid-corridor. A Long Beach recommendation will be made when this FEIR is circulated to the commission.

Comment 2:

The EIR should have a discussion of the coordination process with responsible agencies and jurisdictional agencies, and the results of that coordination process should be included in the Final EIR. (SCRTD)

Response:

The alternatives under study are the result of ongoing coordination between the LACTC and the jurisdictions involved. Both Long Beach and Los Angeles approved the selection of the alternatives to be studied in their respective jurisdictions. In October 1983, the Concept Design Report was discussed in a series of public meetings with both officials and the public.

Coordination among responsible agencies in the environmental process is also accomplished through circulation of an Alternatives Evaluation Report which includes the results of the environmental/public review process and a technical evaluation of alternatives, leading toward a recommended alignment in each of the project's three segments.

Comment 3:

In accordance with CEQA guidelines, the EIR Appendix 3 should have a section on documents such as technical reports which are incorporated by reference. (SCRTD)

Response:

Appendix 3 (Bibliography) does list the technical reports and other documents used as references. The information was summarized and incorporated into the DEIR. The Final EIR will incorporate by reference the DEIR and the Supplement to the DEIR.

Comment 4:

The Del Amo station should be named after the City of Carson. (Carson)

Response:

Station names for the project will be assigned during final design. Consideration will be given to naming each station for the community in which it is located. It is desirable that station names reflect either the names of the communities or the names of cross-streets at the stations.

Comment 5:

The LACTC should not select a preferred route until the EIR has been certified. (LB Citizens)

Response:

It is the intention of the LACTC not to adopt a preferred alternative for the project until all comments on the Draft and Supplemental EIR have been fully considered and the Final EIR is certified.

Comment 6:

I attended the first two hearings in Long Beach. I requested notice of further hearings, but was not given same. (Norris)

Response:

Although Ms. Norris was not given personal notice of public hearings, there was ample opportunity for her to be aware of them. An extensive public notice campaign was conducted, consisting of the following items:

a) 18 days of newspaper advertising;

b) 1,500 fliers announcing the first Long Beach hearing, distributed over a two-day period at the Long Beach Shopping Plaza;

c) 200,000 fliers included in the Los Angeles Times on Wednesday, June 13;

d) 500 fliers distributed door-to-door in Long Beach announcing the June 27th Long Beach hearing;

e) 1,500 letters distributed door-to-door announcing the July 24th Long Beach meeting;

f) 195 letters announcing the July 24th Long Beach meeting distributed through the mail to groups and individuals;

g) fliers announcing both Long Beach hearings made available at the Long Beach City Hall.

Since receiving her comment, Ms. Norris was placed on the mailing list and will, therefore, receive direct notice of further hearings and meetings.

Comment 7:

Recommend that Spanish/English interpretation be provided at all hearings. (LB Citizens)

Response:

Spanish/English interpretation was made available at all public hearings.

Comment 8:

I would like to request that announcements for future meetings be sent to local banks and markets for posting. (Woods)

Response:

The suggestion was incorporated into the measures by which the LACTC publicized the hearing for the Supplemental EIR. See the response to Comment 1, Section III-415 for details.

Comment 9:

The commission authorized staff to prepare a Supplemental EIR on MC-4. When was this authorization withdrawn? (Allen)

Response:

On March 28, 1984, the commission authorized a supplement to the Draft EIR to study a further alternative in the mid-corridor (MC-4). This work was suspended when it became clear that the

alternative had a number of feasibility problems. The commission formally retracted authorization on August 15, 1984 due to the LACTC's determination that required SPTC approval of such a route could not be obtained.

Comment 10:

We have conducted a survey of local Long Beach residents regarding their preference and objections for/to the LRT project, and we would like this information included in the FEIR. (Allen, Washington)

Response:

The survey referred to in the comment is an accounting of local residents' familiarity with various aspects of the Long Beach-Los Angeles Rail Transit Project and certain preferences regarding the routing of that project. The results of this survey have been noted by the commission's staff. In addition, similar information has been independently collected by the LACTC staff through its own public information program, as well as through the public review process for the project's environmental documents. The survey thus represents a duplication of information previously gathered. The commenter is referred to Chapters II and IV of the FEIR for the compilation of route preferences expressed by the public.

III-333 Rail Coordination

Comment 1:

The EIR should include discussion of the relationships and possible connections with other rail projects currently being planned, such as the I-105 Transitway and Harbor Freeway Transitway. (SCRTD, City Planning, City DOT, Caltrans, County Planning, Long Beach, Zimmerman, Knox, Curry, Stromme)

Response:

Appendix 1 of the DEIR discusses each such related project. Specific design consideration is envisioned for integration with Metro Rail at its 7th Street station and/or at Union Station; for connection of the Harbor Transitway into either alternative LA-2 or LA-3; and for non-revenue service connection of light rail with with the I-105 Transitway (design will not preclude a passenger service connection with I-105).

Comment 2:

Section I-212 of the Draft EIR should state that candidate light rail vehicles would be compatible with the Metro Rail system. (SCRTD)

Response:

Every effort will be made to provide for candidate light rail vehicles compatible with the tracks and tunnels of the Metro Rail system. However, further rail system planning for Los Angeles County appears to indicate that connection between the two systems may not be available either at North Hollywood or in downtown Los Angeles. This is a matter for further discussion between the LACTC and the SCRTD.

Comment 3:

The American High Speed Rail Corporation is currently studying alternatives for interface in the vicinity of Slauson. The DEIR should be cognizant of this and consider engineering options for such an interface. (AHSR, Nelson)

Response:

The LACTC and the American High Speed Rail Corporation were engaged in design coordination for a "flyover" separation of the rail transit tracks and the bullet train tracks in the vicinity of Slauson Avenue. However, the high speed rail project has been canceled.

Comment 4:

At Union Station, the proposed location of the light rail platform conflicts with the platforms and tracks of the high speed rail line. (AHSR)

Response:

It is the understanding of the LACTC from Caltrans that the location of the light rail aerial platform at Union Station would not have conflicted with the proposed platforms and tracks for the high speed rail project, nor with intercity train baggage handling movements. However, the high speed rail project has been canceled.

Comment 5:

I would suggest that the easy access to the Metro Rail on existing industrial and yard tracks either north or south of 7th Street might be seriously considered. (RAILPAC)

Response:

The rail tracks referred to in the comment do not exist. The area north of the project's satellite yard has been redeveloped by the City of Los Angeles as a new central produce market.

Comment 6:

My concern about routes LA-2 and LA-3 is that they don't get to Union Station, so you lose those intermodal connections. (Cameron)

Response:

Alternatives LA-2 and LA-3 use the proposed connections with the Metro Rail project as a means to reach Union Station.

III-334 Residential Housing Impacts

Comment 1:

Residents of the Skyline Condominiums are appalled at the 9th Street elevated route. The view and noise factors would be disastrous. (Traub)

Response:

The visual impacts of LA-3 (Olympic/9th Aerial) are discussed in the DEIR on pages IV-48 through IV-56. These impacts are discussed as being significant and adverse with very little mitigation available. However, noise from the elevated guideway after the installation of a sound barrier wall is projected not to exceed the accepted American Public Transit Association guidelines for a non-significant impact. The net impact after mitigation is listed in the Summary (page S-24) as being "minor adverse."

Comment 2:

The only mitigation measures indicated for housing loss are relocation services. This will not mitigate the loss of low-income housing, and the final EIR needs to fully discuss this. A one-to-one replacement policy should be considered. Also, the cumulative impacts of other projects affecting housing should also be included, such as downtown redevelopment, private development, and the World Trade Center. (LB Housing)

Response:

If the preferred alignment adopted by the LACTC requires the acquisition of residential units, a Relocation Assistance Plan will be formulated and adopted by the commission. This plan must evaluate the needs of the residents to be displaced by the project and the stock of both rental and "for sale" property in the area of the potential displacements. Only if there is not an adequate stock of housing readily available will construction of replacement housing be considered. The plan will evaluate the cumulative impacts that other public and private projects have had on the supply of housing stock in the community.

Comment 3:

The Final EIR must address consistency of the light rail project with the Long Beach General Plan, Housing and Land Use Elements. (LB Housing)

Response:

Among the goals of the Long Beach General Plan are 1) to promote and support the revitalization of downtown Long Beach as a regional multi-purpose center, and 2) to reduce the per capita consumption of energy and minimize the necessary use of private automobiles where achievable by arrangements of land use. The Long Beach-Los Angeles Rail Transit Project is consistent with both of these goals.

The Land Use Element of the General Plan has two principles which are fostered by the LRT project. Principle 4.14 states that along major arterial streets, there should be parallel strips of buffered denser residential development, thereby putting the occupants within walking distance of public transportation. This, the principle notes, should especially be done in the west-central-south section of the city, where persons could travel to daily activities by public transportation. Principle 4.16 states that conservation of human activities should be formed into nodes and that the major nodes should be linked by energy-efficient public transportation. Examples of such nodes are the areas nearby Long Beach Boulevard and the San Diego Freeway, the Los Alamitos traffic circle, and the intersection of Anaheim Street with Atlantic Avenue and Long Beach Boulevard. The LRT project would improve the linkages between these areas and thus would be supportive of these land use principles.

The Transportation Element of the General Plan contains a number of references that support implementation of the LRT. The funding situation for streets and highway improvements is noted as being bleak. Downtown Long Beach, it is stated, is the focus of an ambitious revitalization program. In order to be successful, the plan states, the program must be supported by improved transportation facilities, leading to and located within downtown.

Several transportation goals are stated which reference improvements similar in concept to the LRT. These are paraphrased as follows: 1) provide for efficient circulation without degrading local community environments, 2) develop a balanced transportation system that will provide for limited growth in private auto use

while emphasizing transit, 3) develop a transit system that will increase mobility and provide a visible alternative to the auto, and 4) develop a balanced public transit system that will improve regional access.

The General Plan identifies several current and future transportation problems which can be improved by the LRT, such as roadway congestion, particularly on the Long Beach Freeway south of I-405; and the absence of a major transit alternative to intercity private automobile use.

Although the Long Beach-Los Angeles Rail Transit Project was not defined at the time of the plan's writing, it was anticipated in two of the plan's recommendations. One of the plan's goals was to increase average weekday transit ridership to six percent. Also, the plan recommended reserving the Pacific Electric right-of-way for possible future transit use, noting that any future use of this corridor would likely focus on connecting downtown Long Beach with points to the north and west, such as downtown Los Angeles.

It can therefore be seen that the concept of the LRT project is called for, both explicitly and implicitly, in various parts of the Long Beach General Plan. While the merits and liabilities of one or more specific alignment options can be argued, the need for a project such as the proposed Long Beach-Los Angeles Rail Transit Project is clearly recognized.

III-335 Right-of-Way

Comment 1:

We are very concerned about the potential selling off of the Pacific Electric (PE) right-of-way this year for residential development. The EIR should discuss the potential of using Proposition A funds to purchase those portions of PE right-of-way which are privately owned. (LB Citizens, RAILPAC, Stromme)

Response:

The LACTC does not intend to acquire portions of the East Long Beach branch right-of-way which are not needed for the Long Beach-Los Angeles rail transit project. This matter is currently being considered jointly by the City of Long Beach and the LACTC.

Comment 2:

The depth of information is inadequate regarding property acquisition associated with LB-1 and LB-4, sub-options A, B, and C. (Allen)

Response:

Section III-321.1 of the DEIR describes the amount of property acquisition needed for alternatives LB-1 and LB-4. Both land acquisition and displacement are described for residential, commercial, and vacant land uses. Figure III-32A provides a pictorial representation of the property acquisition. This level of discussion is considered adequate for purposes of planning and impact disclosure.

Comment 3:

Whatever alternative is chosen, I would advocate an alternative which gives you a dedicated right-of-way. (Wimmergren)

Response:

An exclusive right-of-way for LRT operation, while desirable from an operation point of view, may not be possible with available funds in some or all segments of the system. To the extent that it is feasible, an exclusive right-of-way will be sought.

Comment 4:

There should be a reserved median for the light rail system down Long Beach Boulevard. (Karstensen)

Response:

As part of the Supplement to the DEIR, an alternative has been proposed for Long Beach (LB-5) which would have two-way operation on Long Beach Boulevard in a reserved median. This alternative has been evaluated in light of a full range of analytical factors in the Supplement.

Comment 5:

Broadway must have an exclusive lane or the operation of the system will be severely compromised. (Norton)

Response:

Only under the assumption that Broadway and Hill Street be converted into a one-way couplet would LRT vehicles operate on Broadway southbound in a contraflow bus/transit lane. Current planning for the LRT, reached in coordination with the Los Angeles city staff, indicates that successful operation can be achieved without a dedicated right-of-way on Broadway.

Comment 6:

Broadway should be closed off to all private vehicles. (Osuna, Cameron)

Response:

See the response to Comment 5, above. The City of Los Angeles does not contemplate conversion of Broadway to a transit mall.

III-336 Safety and Security

Comment 1:

In addition to the security design concepts, station design should include emergency phones to the control center or public phones for "911" use, and self-service fare vending machines with local intrusion alarms. (County Sheriff)

Response:

Design of security features for the Long Beach-Los Angeles project will be accomplished in consultation with all affected police and security forces in all areas through which the project would pass. The design comments offered by the Los Angeles County Sheriff will be helpful in this process and are, therefore, appreciated. It is expected that an increase in manpower would be required for the SCRTD transit police. This would be part of the overall operating budget for the project.

Comment 2:

With regard to right-of-way fencing, the planting of low-level, thorny or prickly shrubbery can serve as an additional deterrent to unauthorized entry. Fence lines should be a minimum height of eight feet. (County Sheriff)

Response:

See the response to Comment 1, above.

Comment 3:

With regard to park-and-ride facilities, no mention was made of the need for patrol. Costs to provide such a service would be significant. Various design measures can mitigate the criminal impact, however. (County Sheriff)

Response:

See the response to Comment 1, above.

Comment 4:

The draft indicates that enforcement responsibility would be assigned to the SCRTD transit police. If this is so, additional manpower would be needed. (County Sheriff)

Response:

See the response to Comment 1, above.

Comment 5:

A Fire/Life Safety Committee should be formed for the specific purpose of developing Fire/Life Safety Criteria to be used during preliminary engineering, final design, construction, and operations of the system. (City Fire)

Response:

Before the preliminary engineering phase of the project, the LACTC and SCRTD will jointly determine whether to contract with the Metro Rail Fire/Life Safety Committee (augmented by a representative from the City of Long Beach) to perform Fire/Life services for the project or to charter an independent committee. In either case, the membership of the committee will include representatives of LACTC/SCRTD and each of the fire districts through which the system will be built. The functions of this committee will include review and agreement on Fire/Life Safety Design Criteria; review of designs against that criteria; and input and comment on life/safety and emergency preparedness plans. A security subcommittee, to be composed of LACTC, General Consultant, and appropriate law enforcement agency personnel, will perform similar functions with regard to security.

Comment 6:

Staff should review and adopt the recommendations of the Metro Rail Methane Gas Study, for the subway portion of the light rail system. (City Fire)

Response:

The requirements of Metro Rail with regard to methane gase will be adopted for the subway portion of the light rail system.

Comment 7:

We sincerely believe that the Imperial Highway transit station park-and-ride facility must be a full-security operation with 24-hour surveillance. (CDC)

Response:

The LACTC is considering the creation of a security center at the Imperial Highway light rail station housing the field operations of the RTD police, security guards, and fare inspectors for both the Long Beach-Los Angeles and Century Freeway light rail transit lines.

Comment 8:

Referring to Section IV-222, fencing the right-of-way should be reconsidered. Cost and public access route considerations should be balanced against safety and ease of operations. (SCRTD)

Response:

Fencing of the mid-corridor railroad right-of-way is a requirement of both the Southern Pacific Transportation Company and the Public Utilities Commission. All existing permitted crossings will be maintained, however.

Comment 9:

The current conditions in Sections II-222, 11-322, and 11-422 do not include ambient crime levels. The Final EIR should include this and provide an analysis of crime potential. (SCRTD)

Response:

Mitigation measures proposed for dealing with crime would not be affected by either ambient or projected crime levels. The proposed program consists of a coordinated security force using existing jurisdictional security forces and hardware elements to provide effective surveillance and emergency response.

Comment 10:

The station concept shown under I-252, page I-38, should be changed. The configuration of the facilities is such that patrons are not prevented from traversing the railroad tracks at any point. (PUC)

Response:

There are existing site requirements at a number of locations along the project resulting in situations where the SPTC railroad tracks would be between a park-and-ride ride lot and the light rail station platform. Pedestrian movements between the park-and-ride lot and the transit platform would be controlled by means of clearly-defined walkways and restrictive fencing. These features will be developed in detail during the final design phase of the project and will be reviewed with the PUC.

Comment 11:

Will the cars that are dropped off from three-car trains be kept in a secure area? (PUC)

Response:

The LACTC is not now planning operation of three-car trains. If three-car trains were to be used, temporary storage of a third car would be at the Willow Street station. This storage area would be appropriately secured and monitored by transit operating personnel.

Comment 12:

Clarification and/or further description is needed regarding the following safety considerations: a) the nature of fail-safe devices to be used at minor railroad crossings, b) the preemption fea-

tures to be employed with automatic warning devices, c) the use of preemption techniques for traffic control, d) clearance between fences and railroad tracks, e) relationship of transit lines and parking lots to railroad tracks and the implications for fencing. (PUC)

Response:

Clearances between transit tracks, fence lines, and railroad tracks would conform to SPTC and PUC standards and requirements. Fences would be used to direct passenger movement toward gated rail crossings and would prevent trespassing on the railroad right-of-way from the direction of the light rail transit facility.

The actual nature of fail-safe devices, preemption features, automatic warning devices, clearances, and the actual relationship of transit lines to parking lots, fencing, and railroad tracks are all items which will be determined at the time of final design. They will be designed to meet the requirements of the PUC (the commenting organization).

Comment 13:

What decisions have been made regarding the allowance or prohibition of automobile turning movements in front of transit vehicles. (PUC)

Response:

Automobile turning conflicts with the light rail system would be controlled in the mid-corridor by gated grade crossing protection and, in the at-grade portions outside the mid-corridor, by traffic signal protection.

Comment 14:

The EIR should consider and address potential accidents and impacts to safety, particularly at at-grade crossings. (Port of LA, AAA)

Response:

Pedestrian and traffic accident hazards exist in the Los Angeles area; however, pedestrian and passenger safety associated with rail transit operations would be significantly improved as compared with typical motor vehicle traffic. As indicated in the DEIR, the

project would incorporate such safety measures as are necessary for grade crossing protection, both in the mid-corridor (through gated crossings) and outside the mid-corridor (through traffic control devices). Safety would be further enhanced by the high performance stopping characteristics of light rail vehicles.

Comment 15:

The Vernon and Slauson Avenue stations are in our area. At least one of the stops should have secured provisions for automobile parking. Both of the stations should have adequate security and shelter from the weather. (AGNA)

Response:

Project studies to date have indicated that sufficient land is not available for off-street parking at the Vernon and Slauson Avenue stations. However, opportunities for off-street parking would be sought as part of the effort to locate traction power substations at these two locations. High risk stations, selected in consultation with local law enforcement officials, would be equipped with weather protection, closed-circuit television surveillance, and appropriate other security.

Comment 16:

What assurance is there that the transit system will be adequately secure from crimes against persons and property? (Bauer, CDAC, Freeman, Sims, Clifford, Haagen)

Response:

Public safety has been an important issue in the development of the project and a number of security features have been incorporated, including closed-circuit television surveillance at transit stations, alarm systems in both the stations and vehicles, deployment of transit police and security guards, and participation of other public safety jurisdictions. Every effort would be made to insure that the system is safe for the general public.

Comment 17:

The 103rd Street station, under the MC-3 alternative, would be 30 feet from the ground, visually removed from street activity. Without transit security, this would create an unsafe condition for Watts users of the system. (Haagen, NAACP)

Response:

See the response to Comment 16, above.

Comment 18:

I would like to know what proposed safety system is planned in the event of a major disaster such as fire or earthquake. (Haynes)

Response:

In the event of a major disaster such as an earthquake or fire, trains would come to a safe stop by means of fail-safe devices, and operating personnel would act according to established procedures to evacuate patrons from the system. All personnel are to be trained in procedures to ensure the safety of all system patrons. Both the training of personnel and the procedures to be followed are to be enumerated in a Safety and Security Plan, to be prepared during final design. A Safety and Security Officer would be engaged and assigned the responsibility of preparing this plan.

Comment 19:

Section IV-124.22 (LA-2) describes the use of a chain link fence at the subway portal. In order to be an adequate deflector for motor vehicles, the barrier should be a concrete structure, similar to a "Jersey" barrier. (City Engineering)

Response:

The LACTC agrees with the Bureau of Engineering that concrete or similar strength structures should be used to channel traffic away from the subway portal. The cost estimates for the project assume a concrete barrier at this location.

III-337 Seismic

Comment 1:

Further assurance is needed that the system will be adequately safe in light of the seismic event potential of the area. These concerns extend to the design of the elevated guideway. (CRA, Ness, Freeman)

Response:

Geotechnical consultants and structural engineers have recommended that LRT aerial structures within downtown Los Angeles be supported by widespread footings and deep-set piles, 25 piles for each foundation (DEIR pages I-72 and III-6). Site-specific techniques for areas subject to liquefaction are also described on page IV-2. All aerial structures would be designed to withstand a maximum credible earthquake of Richter magnitude 7.0 on the Newport-Inglewood Fault. Other faults having the potential for greater magnitudes exist at greater distances from the project corridor, but these are not expected to affect the project as much as a major quake on the Newport-Inglewood Fault.

Widespread footings with deep-set piles are a stronger method of constructing foundations for aerial columns. Caltrans geotechnical investigations have indicated that drilled caissons would provide adequate support and the widespread footing/deep pile technique provides additional support. Additional techniques are available and will be considered in final design.

Comment 2:

Page IV-138 of the Draft EIR states that no construction mitigation is planned in the event of an earthquake. Recognizing that the Cherry Hill Fault is potentially active, every effort should be made to protect the public. Geotechnical analysis should be conducted at major station locations within an Alquist-Priolo zone. (Signal Hill)

Response:

The exact statement on page IV-138 is as follows: "No specific mitigation is proposed for fault rupture; however, project design provides for system shut-down and evacuation measures should conditions occur that make vehicle operation hazardous." The reference is directly related to fault rupture only. Mitigation measures are provided for groundshaking and liquefaction. There is no practical method to avoid damage to buildings, structures, streets, and railroads if they are located over a fault line and fault rupture occurs. However, the potential for fault rupture on the Cherry Hill Fault is low. Nonetheless, geotechnical investigations would be conducted to determine the precise location of the fault line, and, if feasible, all structures would be placed away from the fault trace. Should a fault line be crossed, it would be done at grade. (See also the response to Comment 1, above.)

Comment 3:

The project should review the Seismological Investigation and Design Report prepared by Converse Consultants for the Metro Rail Project. (City Fire)

Response:

Several reports prepared by Converse Consultants were reviewed for preparation of the DEIR. These included Metro Rail Geotechnical Investigation Report (Volumes I and II) and Metro Rail Geotechnical Reports for Design Units A135 (Union Station) and A165 (7th and Flower Street station). In addition, the U.S.G.S. report entitled "Geotechnical Aspects of Tunneling in the Los Angeles Area" was also used. These sources were considered to provide sufficient seismic information for purposes of the DEIR.

III-338 Service

Comment 1:

The bus alternative seems to negate the necessity of a fixed rail system in this location. (City Planning)

Response:

The bus alternative does not adequately perform the function of linehaul transit service, nor does it accrue any of the benefits of urban development associated with rail transit capital investment. In addition, development of the Long Beach-Los Angeles light rail system would provide an important link within the emerging regional system of rail transit lines -- a link which cannot be effectively provided by the bus alternative.

Comment 2:

While none of the Long Beach alternatives serve visitor facilities south of the Convention Center, it is the Convention Center which is the major facility. LB-1, LB-3, and LB-4 all provide access within one-quarter mile. (Long Beach)

Response:

The Convention Center was not included in the discussion of major activity centers and should be so included. The correction should be made, and the phrase "However, access within one-quarter mile is provided to the Convention Center itself by LB-1, LB-3, and LB-4" is included in Chapter V (Corrections and Additions) of this FEIR.

Comment 3:

The northern portion of the proposed line does not adequately serve the main black population center of south central Los Angeles, and it is not capable of much redevelopment. (CRT)

Response:

It is true that the south central Los Angeles communities of Adams, Exposition, and South Vermont would not be well served by the proposed line, nor would the Hoover or Adams-Normandie redevelopment projects. However, there is a large proportion of Hispanics and Blacks in the project corridor. Hispanics account for 30 percent of total corridor population and Blacks for 40 percent. Thus, transit service is available to a significant portion of the Black community. It should also be noted that portions of south central Los Angeles not served by the Long Beach-Los Angeles project do lie in the Harbor Freeway corridor where a bus or rail guideway system is planned.

Comment 4:

The project does not provide transit access to major regional centers in this area such as the Coliseum, Sports Arena, museums, and the University of Southern California. (HRC)

Response:

The process of defining routes and assessing their ability to serve regional centers was conducted in early 1983. This process included a series of workshops with representation from members of public agencies.

Although the proposed alignment alternatives do not directly serve the centers identified in the comment, direct transit access would be provided by the proposed Harbor Freeway Transitway and a possible Exposition Boulevard LRT line. Both the LA-2 and LA-3 alignment alternatives would include design considerations to provide for future connection to these transitways.

Comment 5:

Alternative LB-1 does not directly serve the following centers: City Hall, County Courthouse, Long Beach Plaza, the new State Building, the Long Beach Farmer's Market, and the main library. (LB Citizens)

Response:

Transit access to the centers identified in the comment, although not directly provided by LRT alternative LB-1, would be available through transfers to and from the Complementary Bus Network.

Comment 6:

Los Angeles Trade Tech College has no convenient station, and the station at 18th Street could be eliminated. (Nelson)

Response:

Users of the system who are destined for Los Angeles Trade Technical College could use either the 18th Street or Broadway stations under alternative LA-2. Because Washington Boulevard is a major arterial, it is the desire of both the City of Los Angeles and the LACTC to minimize the number of stations located there. This is why, under alternative LA-2, stations are located at Broadway and San Pedro Street. However, during final design of the project, in the event the LA-2 alternative is adopted, considerations will include location of a station on Washington Boulevard at Flower Street rather than at 18th and Flower, if feasible.

Comment 7:

The plan is too slow and inflexible to serve both express and local service needs. (Perlman)

Response:

The light rail project is being designed to incorporate high performance rapid transit features so as to serve both local and interurban riders in a cost-effective manner without requiring separate dedicated express service. This approach is consistent with modern rail transit design.

Comment 8:

The project is a 22-mile linear rail line that a) seeks to link two regional centers, b) provides suburban commuter service to each of these centers, c) serves local trips within the corridor, and d) functions as a people mover within the two downtowns. We do not believe one system can meet all these specialized needs. (City Planning)

Response:

Light rail transit has been demonstrated in many settings to satisfy multiple functions, including linkage of regional centers, line haul service to a regional center, local service, and collection/distribution service within a central business district. Prime examples of such applications are in San Francisco, Boston, Philadelphia, and Pittsburgh, and there are many further examples in Western Europe.

III-339 Socioeconomics

Comment 1:

For the Census Tract descriptions of the Atlantic Avenue impact areas on pages III-42 and III-45, more detailed information is needed regarding demographic information. Block-level data should be used to address the following questions: a) Regarding people to be displaced under each of the Atlantic Avenue options, what is the ethnicity, special relocation problems, age distribution, psychological impacts, family size category, and family income? b) Regarding business displacement, what are the types of businesses, current longevity, geographic service area, existence of other businesses meeting the same needs, effects on viability of marginal businesses, allocation efforts regarding businesses displaced, effects on employees, and effects on minorities? c) Regarding the displacement of churches, would there be guaranteed relocation in the same neighborhood, is adequate land available, and what are the special impacts? d) Regarding housing displacements, what will be the total cost of all aspects of relocation, what funds will be used to pay for these costs, how many housing units are low- and moderate-income, and why is one-for-one replacement not a mitigation measure? (LB Citizens)

Response:

The information on potential residential and business displacement provided in the DEIR is sufficient and adequate for purposes of informed decision-making by the LACTC and the City of Long Beach, and it further meets all requirements set forth under the California Environmental Quality Act (CEQA). If an alternative is selected which would require the displacement of residents or business enterprises, full information would be obtained and full assistance rendered pursuant to the provisions of the California Uniform Relocation Assistance Act. Under this act, employees of displaced businesses are not offered direct compensation but are free to remain with the displaced business following relocation. In the event that displaced businesses elect not to resume operation elsewhere, employees are eligible for all standard unemployment assistance programs, including insurance payments and job placement assistance. None of the businesses along Atlantic Avenue use employees with unusual or hard-to-place skills. Alternative employment is available in the metropolitan area.

Relocation assistance will also be provided to residents if their homes are to be acquired. A full Relocation Assistance Plan will be developed by the LACTC. This plan will discuss such items as age and income distribution as well as family size and ethnicity. The cost of relocation becomes a cost of the project and is paid for with project funds which are from the local one-half-cent sales tax for transit. (However, note that LACTC has never specifically advocated the extent of relocation requirements under LB-1 and LB-4, Options A and B, for sponsorship under the rail transit project using Proposition A funds.)

Comment 2:

The DEIR states that it is likely that the displaced residents will be White, as 40 percent of the surrounding census tract is White. How can this conclusion be reached when Whites do not constitute a majority? (LB Citizens)

Response:

The ethnic composition of the area in question is 63 percent White, 21 percent Hispanic, nine percent Asian, and seven percent Black. Therefore the sentence in the DEIR on page III-45 is herewith corrected to read: "It is likely that the displaced residents would be White, as 40 percent of the population within the surrounding census tract are minorities" (change is underlined).

Comment 3:

The DEIR mentions the loss of a basketball court in Willmore Park but does not discuss its replacement. (LB Citizens)

Response:

There is sufficient land within the present boundaries of Willmore Park to accommodate relocation of the basketball court (original Alternative LB-3). Relocation of the court within the park would result in elimination of passive recreational space and the removal of several trees.

Comment 4:

The adverse impacts on residents due to relocation fall disproportionately on senior citizens, the young, renters, minorities, and low-income families. (LB Citizens)

Response:

Until selection of a preferred alternative in Long Beach, it cannot be determined exactly who would be displaced. If relocation becomes necessary, a Relocation Assistance Plan will be formulated. Those displaced would most likely be of the same ethnic composition as the census tracts within the route corridor, i.e., those identified in the comment (see Section III-321.1). In such case, we agree that relocation would be a significant, unavoidable adverse impact.

III-340 Soils and Geology

Comment 1:

Clarification is needed regarding statements about the geology in Bunker Hill on page VI-5. One statement suggests that blasting would be necessary while the description of the geology would indicate that it is not necessary. (SCRTD)

Response:

The reference cited by the comment includes a typographic error. The last sentence in the second paragraph is herewith corrected to read "... and blasting would not be required."

III-341 Stations

Comment 1:

We request that the Los Angeles River route, LB-3, be redefined to include a station at Willow Street with adjacent bus line focused on that station, and that a station be added on 1st Street just east of Long Beach Boulevard. (RAILPAC)

Response:

The LACTC has examined, in a December 1984 Supplemental DEIR, several modifications to the LB-3 Long Beach River Route. These modifications provide for additional stations and alignments in Long Beach, including a Willow Street station with connecting bus service.

Comment 2:

Why aren't stations proposed at the following locations: Willow, Anaheim, Pacific Coast Highway, Pacific Avenue and 4th, and Long Beach Boulevard and 1st? (LB Citizens)

Response:

The modified LB-3 and LB-5 alternatives identified in the Supplement to the DEIR include stations at the locations identified in the comment. Also included are cost estimates for these stations. The reader is referred to the Supplement for additional detail.

Comment 3:

Should the Harbor Freeway be initially a busway, there should be a discussion of a station at Washington and Flower Street. (Caltrans)

Response:

Under Alternative LA-2, a station is provided near the Washington/Flower Street intersection, at 18th and Flower Streets. Bus-to-rail transfer would be available at this station at least by means of pedestrian crosswalks from bus stops to the rail platform along

the centerline of Flower Street. If LA-2 is selected, the LACTC expects to include a study in final design of the physical means for connections to the Harbor Freeway Transitway, whether as a busway, or initially as a busway and as a rail guideway in the future.

Comment 4:

The proposed location of a station south of Anaheim on Atlantic will further impede access to St. Mary Medical Center and to the professional building and garage. We request that the station be located north of Anaheim. (St. Mary)

Response:

The proposed location of a station south of Anaheim Street on Atlantic Avenue for Alternatives LB-1 and LB-4 responds to site-specific engineering conditions. It appears that the vehicular access needs of the St. Mary Medical Center can be accommodated and would be carefully examined during final design of this facility.

Comment 5:

Stations must be constructed closer together to better serve the public. Local cars should stop about every one-half mile or less in the suburbs and every two-three blocks in the urban areas. (Stromme)

Response:

Station spacing is a compromise between factors of local access and line speed. Station spacing currently proposed for the project reflects denser station spacing in the central business districts and more distant station spacings between these areas. The station spacings suggested by the comment would be potentially too restrictive of LRT speed and are not justified on the basis of patronage generation that could be expected from such close spacing of such a large number of stations.

III-342 Technology

Comment 1:

The needs of all projected rail transit lines can be met advantageously with one common basic car type collecting power from an overhead electrical conductor. (CRC)

Response:

It is the intention of the LACTC that all light rail transit lines use one common light rail vehicle. However, the operating environment and requirements for a heavy rail transit vehicle such as would be used on the Metro Rail are substantially different from those requirements pertaining to light rail. There are many service, performance, and reliability factors which argue against use of a single vehicle for both light and heavy rail lines.

Comment 2:

We take exception to the claim that light rail transit is more versatile than traditional trolley car systems. Both the San Francisco Municipal Railway and the San Diego Trolley system are very similar to traditional systems. (ERHA)

Response:

The LACTC does not disagree with the statement; however, more recent applications of the light rail technology, such as that proposed for the Long Beach-Los Angeles project, have emphasized separate right-of-way more heavily than traditional streetcar operation.

The first paragraph on page I-5 states that light rail is often referred to as a modern, more versatile version of former trolley car systems. The reasons stated in support of this position are: a) light rail can run in existing street rights-of-way; b) light rail has the flexibility to be adapted to exclusive rights-of-way, be they in railroad rights-of-way, street medians, subways or aerial structures; c) light rail vehicles have a greater carrying capacity; and (d) they can operate as single cars or in trains.

Comment 3:

The proposal that rail transit share its right-of-way with vehicular operations utterly fails to conform with contemporary standards in the transit industry. This might be resolved by two-way dedicated rail right-of-way on Spring Street. (ERHA)

Response:

The optimal arrangement for rail transit is to have all separated or dedicated rights-of-way; however, this is not always possible. One of the many attractive aspects of light rail is its ability to run in a variety of situations.

The comment regarding a two-way alignment on Spring Street is valid; however, the City of Los Angeles is opposed to the creation of an exclusive transit mall for the light rail project because of the need of local businesses for unrestricted vehicular access.

Comment 4:

On the extension of route LA-2 to Union Station, Design Appendix Figures 7 and 8 show radii of curvature of 150 and 300 feet in the tunnel. Curves of this short radius preclude future conversion to full rapid transit. Also, wheel wear is greater on sharp curves. (Nelson)

Response:

Both the presence of existing structures and desired passenger station locations prevented a design which would allow larger turning radii. The radii which are used satisfy the criteria needed for LRT operation. It is also true that wheel wear is greater on sharper curves, but not materially so.

Comment 5:

The current plan does not allow flexibility to use transit vehicles on non-electrified streets. It would be less costly to put buses on rail wheels, thus allowing dual-mode operation. (Perlman)

Response:

The Long Beach-Los Angeles LRT project has been designed as a fixed guideway project operating in a corridor of established demand. This concept attempts to further establish the chosen travel corridor as time goes on, rather than to go off the main route in search of additional patrons. This latter mode of operation is more typical of conventional bus operation. Both approaches can be used effectively. The dual-mode method of operation suggested by the comment attempts to merge both the fixed and flexible routing concepts. It has not as yet been found to be operationally feasible on a large scale. Because the current project is not intended to be a vehicle for research and development, the dual-mode technology is not considered appropriate.

Comment 6:

The following information should be added to the Vehicle Description section: a) the minimum radius around which car wheels can roll without flange scraping, b) the operating speed for which rail cars will be banked, and c) the allowable acceleration limit to avoid people being thrown off their feet. (Schiffer)

Response:

The minimum turning radius for the system, dictated by street geometry, is 82 feet. Flange contact will occur with this radius, and therefore mitigation measures are needed to reduce flange noise. These will consist of reduced vehicle speeds; acoustically insulated wheels, on which the tire portion is insulated from the wheel center; in extreme cases, flange lubrication may be considered.

In banked sections, the guideway will be superelevated, allowing for a maximum operating speed of 55 miles per hour.

Maximum allowable acceleration, as dictated by passenger safety considerations, will be between 3.0 and 3.5 miles per hour per second.

Comment 7:

I would like to suggest as an alternative a national standard monorail. (Ness)

Response:

One of the first steps taken in the development of the Long Beach-Los Angeles LRT project was an evaluation of available technologies. Monorail systems were included in this evaluation and eliminated from further consideration because they require a continuous elevated guideway, which is not appropriate in all portions of the route, nor are they sufficiently proven in revenue service. Conventional light rail technology, on the other hand, is not subject to either of these constraints.

III-343 **Traffic**

Comment 1:

On Figueroa Street, the department recommends changing the column design from a seven-foot-wide rectangular cross section to a circular cross section of four-five feet in diameter. Doing so

would allow space for three through lanes and left turn pockets in each direction when the right-of-way becomes fully dedicated at 100 feet. (City DOT)

Response:

The actual physical design of columns will take place during the final design phase of the project. Every effort will be made to design the column cross section to be as thin as practical; the shape could be square, rectangular, round, hexagonal, or some combination. In the segments between stations, the columns will be no more than four-five feet in diameter. At elevated stations, the columns will have to be larger to support platforms that are cantilevered beyond the rail guideway.

Comment 2:

With an aerial guideway in the center median, portions of Olympic Boulevard and 9th Street east of Santee would require widening to maintain two through lanes and left turn pockets in each direction. This should be discussed in the EIR. (City DOT)

Response:

The aerial guideway on Olympic/9th Street, east of Santee Street, would not be located in a center median but rather in the parking lane on the north side of the street. Thus, the existing travel lanes would be maintained.

Comment 3:

Widening of the rail reservation along Long Beach Avenue between Washington and Slauson is noted in the DEIR as a committed improvement. The EIR should discuss the impacts of this and the construction of the Vernon and Slauson stations on roadway and sidewalk widths on either side of the rail reservation. (City DOT)

Response:

The improvements along Long Beach Avenue between Washington Boulevard and Slauson Avenue include reconstructed sidewalks on either side of Long Beach Avenue; relocated curbs between Santa Barbara Street and Slauson Avenue; and a widened rail lane at Vernon Avenue to accommodate the station platform. This widening would require about a six-and-a-half-foot right-of-way take

on the west side of Long Beach Avenue, approximately 375 feet north and 650 feet south of Vernon Street. The preliminary right-of-way acquisition report shows a total of between 17 and 20 properties involved, some residential and some commercial or vacant parcels. For further information, please see Chapter 1, Addendum: Optional Elements and Revisions to the Project, of this FEIR. As an alternative to taking properties, during final design coordination with the City of Los Angeles, the possibility of maintaining the existing street curbs and sidewalks will be explored. Widening the rail reservation, except at Vernon Station by either eliminating some or all parking on Long Beach Avenue will maintain two travel lanes in each direction, or if parking is required one wide single lane in each direction could be maintained.

Comment 4:

An alternative or mitigation measure for the grade separation of the rail crossings at Wilmington Avenue and Imperial Highway should be considered. (City DOT)

Response:

The Imperial/Wilmington intersection will be rebuilt as part of the Century Freeway project. Projected year 2000 traffic will require separate left turn traffic signal phases at this intersection. The current plan is to operate the traffic signal at the Imperial/Wilmington intersection at a fixed cycle length. The southbound light rail trains will be held at the 103rd Street station, thereby arriving at the Wilmington/Imperial crossing at the optimum point in the signal cycle and not interfering with the cross traffic. Similarly, the northbound light rail trains will be held at the Imperial Station adjacent to the crossing until the appropriate signal phase occurs at the intersection. Using this system a window of time is created where the light rail train can cross without adversely affecting the traffic flow. Therefore, grade separation is not necessary. Details of the proposed signal phasing and operation during LRV passage can be found in the "Mid-Corridor LRT and Street Traffic Control System" report by DKS Associates and Louis T. Klauder Engineering Services, Inc. (LTK), dated January 1985.

Comment 5:

The EIR should have an expanded discussion of the traffic impacts of at-grade operation in downtown Los Angeles. (City DOT)

Response:

The DEIR contains a thorough discussion of the likely impacts of at-grade operation in downtown Los Angeles for purposes of evaluation of alignment alternatives (Section III-130 and IV-130). Should an at-grade configuration be selected for implementation in downtown Los Angeles, additional traffic information would be prepared as needed to ensure the efficient joint operations of the transit and automobile systems. It is not expected that the traffic impacts in downtown Los Angeles would be significant.

Comment 6:

There should be a traffic signal priority system used on Broadway if light rail vehicles are to operate at-grade. A suggestion would be to make Broadway and Hill Street matched one-way streets to allow part of Broadway to be dedicated to transit. (RRPA)

Response:

It is not anticipated that there would be a need for a traffic signal priority system on Broadway in downtown Los Angeles. Efficient operation could be maintained using the present signalization system. The City of Los Angeles is currently evaluating the Broadway-Hill Couplet suggested in the comment, and this is not as yet completed (see also the responses to Comments 22 and 34).

Comment 7:

Traffic impacts of all alternatives in downtown Los Angeles may be understated. Apparently, if it is necessary to remove a parking lane on a given street, only the impacts on parking were considered. Because parking is now restricted during peak periods, removal of a curb parking lane could cause a severe reduction in peak hour capacity. The FEIR should describe traffic impacts reflecting the use of curb lanes as travel lanes in the LACBD. (City Engineering)

Response:

On Olympic and 9th Streets, the existing four through-travel lanes would be maintained for vehicular traffic; however, future use of the curb lane (presently used for parking) as a travel lane would be eliminated. Based on traffic projections, however, volume/capacity (V/C) ratios indicate that key intersections (i.e.,

Olympic at Los Angeles and Central, 9th at Olive, and others) would operate at an acceptable level of service in the year 2000. Thus, using the curb lane for the aerial structure, with parking between the columns, would be feasible.

Along Washington Boulevard the two through lanes and the left turn lanes will be maintained at all signalized intersections. The elimination of a parking lane from future use would cause a reduction in peak hour roadway capacity. The Summary of the DEIR stated on page S-26 that with the project there would be some minor adverse impacts to traffic in Los Angeles. The intersection of Washington Boulevard and San Pedro shows no change in either V/C ratio or level of service (LOS) with or without the project. The intersection will be at LOS "F" (frequent delays and interrupted service). At Main and Washington the LOS would again be the same, with or without the project. The project itself does not affect the LOS, which is a result of overall demand.

Comment 8:

The intersection of Wilmington Avenue and Imperial Highway will be improved to major highway standards in conjunction with construction of the Century Freeway. The level of service indicated in Table IV-23D for the No Project alternative does not seem to reflect this change in geometrics. The DEIR further indicates that widening by one lane is to be a mitigation measure at all approaches. It is not clear whether this is to be beyond the improvements already planned in conjunction with the Century Freeway. (City Engineering)

Response:

To accommodate year 2000 traffic projections for the intersection of Imperial Highway and Wilmington Avenue, widening is recommended so that the intersection would operate at an acceptable level of service. The intersection improvements at Imperial and Washington Avenue are included as part of the Century Freeway Project. As a part of the light rail project, the grade crossing between the railroad and Imperial Highway will be improved.

Comment 9:

Page IV-130 states that the AM arrival of park-and-ride vehicles will not significantly change level of service at the intersection of Imperial Highway and Wilmington Avenue. This does not consider

the PM departure of the same vehicles, which will have to enter Imperial between the rail transit tracks and the hook ramps to the Century Freeway. (City Engineering)

Response:

The arrival of vehicles in the AM peak hour was considered because home/work trips tend to be more concentrated in the morning. The departure of these same park-and-ride and kiss-and-ride vehicles in the evening would be more spread out and would, therefore, be less than the AM peak range of 181 to 380 vehicles. Peak hour traffic volumes on Imperial Highway do include park-and-ride and kiss-and-ride vehicles.

Comment 10:

Analysis should be done to determine if motor vehicles queuing at the gates across eastbound Imperial Highway would impact the operation of the Imperial/Wilmington intersection. (City Engineering)

Response:

The Imperial/Wilmington intersection currently has unacceptable queuing characteristics and will be rebuilt as part of the Century Freeway project to include separate left turn phases and additional right turn lanes. Recent traffic analysis indicates that at Imperial Highway, freeway-bound traffic turning right from Wilmington northbound onto Imperial eastbound will be delayed at the crossing when an LRT is present. The resulting queue may back up to the intersection but will not interfere with the operation of the intersection because it is a right turn movement. Northbound traffic may be delayed at the Wilmington crossing, but the addition of a third lane will ensure it does not queue back into the intersection. (DKS/LTK, "Mid-Corridor LRT and Street Traffic Control System," January, 1985, pages 22 and 24). The light rail signaling system will be coordinated with the traffic signals so that when the rail crossing gate is lowered for an LRT passby, the small amount of time (32 seconds) will neccessitate stopping only a few cars, thereby keeping the intersection clear.

Comment 11:

The following traffic mitigation measures should be considered:

a) grade separation by open trenching of the Imperial Highway crossing;

b) relocating the freeway interchange at Wilmington to Alameda, with Caltrans approval;

c) dedicated right-of-way and improvement to current standards of the streets surrounding the parking facilities at 103rd Street and Imperial Highway.

(City Engineering)

Response:

a) When in operation the LRT movements will be coordinated with the traffic signal system. This will create a "window" of time for the LRT to pass. Therefore, a grade separation is not required for the LRT operations.

b) Relocating the Century Freeway interchange from Wilmington to Alameda would only result in a redistribution of traffic from the area of Wilmington and Imperial to Alameda and Imperial, which would result in an increased deterioration of the latter intersection. The current location of the interchanges was designed by Caltrans with review by city and county transportation departments and is unlikely to be changed.

c) Access to the parking facility is shown in the Design Appendix, Figure 14. Local improvements to the adjacent street system, if needed, would be designed in the final design phase of the project.

Comment 12:

The EIR assumes traffic signals to be operating on a 90-second cycle. Since most signals now operate at either a 60-second or 80-second cycle, a change to 90 seconds would adversely affect traffic flow at all signals in the network. The EIR should discuss the impacts on signalization in the surrounding network. (County Road, Long Beach)

Response:

After consultation with traffic engineering personnel from each local jurisdiction, existing signal timing has been utilized as a basis for design of the LRT signal system in the year 2000, except at the following locations:

- On Gage Avenue, the county provided details of the planned future timing.

- On Florence Avenue, existing signal timing was modified slightly to take advantage of new signal controllers planned for some intersections.

- At Imperial/Wilmington, new signal phasing and timing were developed in consultation with the City of Los Angeles.

- At the Rosecrans and Alondra crossing, existing signal phasing will be simplified as part of the intersection reconstruction.

Details of signal timing at major crossings can be found in the "Mid-Corridor LRT and Street Traffic Control System" report by DKS/LTK, dated January 1985.

Comment 13:

We are concerned about the feasibility of controlling transit trains to arrive during the north-south green phase at heavily traveled east-west arterials. Your report should include time-space diagrams and modeling data to illustrate the feasibility of this. We further believe that signal preemption will be necessary. (County Road)

Response:

The arrival time of a light rail vehicle at a crossing, relative to the traffic signal cycle, can be controlled in several different ways. One method is to synchronize the traffic signals at adjacent crossings in relation to the LRV's speed of approach. Another method is to have the train wait in a stopped condition in advance of the crossing, then proceed at full speed at the appropriate time.

The third and most practical means of controlling the time of arrival of an LRV at the majority of major crossings is to hold it at the preceding station. At the few crossings where this method alone is inadequate, various combinations of the above-described alternatives can be used to minimize delays to street traffic.

Details of the Controlled Arrival Time Concept, including a time space diagram, are presented in the "Mid-Corridor LRT and Street Traffic Control System" report prepared by DKS/LTK in coordination with traffic engineering personnel from each local jurisdiction.

Comment 14:

On pages S-22 and S-26, it is stated that train operations could block intersections to emergency vehicles and this is characterized as a very minor adverse impact. We would rate this impact higher. (County Road, CDAC)

Response:

See the response to Comment 1, Freight Operations, Section III-316.

Comment 15:

Details of the signalization program should not remain to be specified during final design. (County Road)

Response:

Since the preparation of the DEIR, detailed studies of the signalization program have been conducted by DKS/LTK in consultation with traffic engineering personnel from each of the affected local jurisdictions. The report "Mid-Corridor LRT and Street Traffic Control System", dated January 1985, presents LRT operating strategy in the mid-corridor which is both technically feasible and acceptable to the local jurisdictions, especially in terms of its impact on street traffic. See the response to Comment 13 for a discussion of the Controlled Arrival Time Concept.

Comment 16:

If the station at Washington Boulevard and San Pedro Street is built as shown in Design Appendix Figure 9, left turn phasing will be required because of reduced sight distance. (County Road)

Response:

Left turn phasing would be required for the following reasons: 1) sight distance, 2) safety, and 3) heavy projected traffic volumes. Actual determination, however, will be made in the final design phase of the project.

Comment 17:

Regarding the Century Freeway-Willowbrook Avenue Station Concept (Figure 14), how will buses get to and from the bus stop? Is Willowbrook to be signalized? (County Road)

Response:

As part of the Century Freeway construction, the intersection of Imperial Highway and Wilmington Avenue is being upgraded. This upgrading, in addition to a new signal phasing and timing plan, is being developed in consultation with the City of Los Angeles. Bus access to the Century Freeway-Willowbrook Avenue Station will also be developed in detail during the final design phase of the project.

Comment 18:

Pages IV-86 and IV-88 do not show exits for the parking lots or buses. Also, the driveway on Wilmington Avenue should not be too close to the intersection if it is to be used as an exit, or if left turns in or out are to be allowed. (County Road)

Response:

Details on parking and access to the Century Freeway-Willowbrook Avenue station will be developed in the final design stage of the project (see the response to Comment 17, above).

Comment 19:

Widening of both the east and west approaches of the Florence/ Holmes Avenue intersection (page IV-131) will be required to provide an extra through lane in each direction, and parking restrictions will be necessary on Florence Avenue. Local businesses may strongly object. (County Road)

Response:

Subsequent traffic analysis has indicated that restriping at the Florence/Gage intersection may not be necessary. If it were, it would not require widening intersection approaches but could be achieved within the existing intersection geometry. The DKS/LTK report "Mid-Corridor LRT and Street Traffic Control System," January, 1985 (p. 25) discusses projected impacts at the Florence/Holmes intersection as follows:

The LRT tracks cross Florence Avenue more than 600 feet from the nearest traffic signals at Holmes Avenue and Miramonte Boulevard. Those signals operate at an 80-second cycle length. LRVs will be timed to arrive at the crossing between platoons of street traffic arriving from the signals. Platoons of traffic traveling along Florence Avenue in the signal progression band will not be

affected by LRT. An LRV will cross the street, on average, about every three minutes during the peak hour. When this occurs, most of the traffic not traveling in the through progression band will be stopped at the crossing when the gates are lowered. As these vehicles are traveling outside of the progression band, they would eventually be stopped by a downstream traffic signal in any case, unless they are turning off Florence before then. Therefore most of these vehicles will not experience any increase in total travel time.

The longest queue expected on Florence Avenue between the crossing and the adjacent traffic signals is 13 vehicles on the eastbound approach to the Holmes Avenue intersection. Since the intersection is over 600 feet from the crossing, there is ample storage space for this queue.

Comment 20:

Dual left turn lanes on Del Amo Boulevard may require lead/lag phasing, which is inefficient (page IV-132). Also, the south approach of the Del Amo/Santa Fe intersection should be restriped to provide an exclusive right turn lane and an optional right turn/through lane to accommodate the anticipated heavy northbound right turn movement. (County Road)

Response:

Dual left turn lanes may be needed, with or without the LRT, because of the heavy left turn traffic projected for the year 2000. If dual left turn lanes are installed, the cycle will have to be changed to accommodate them. The current cycle ranges from 60-100 seconds and could accommodate an extra phase within the 100-second cycle.

Comment 21:

It is not practical to provide coordinated north-south traffic/light rail train system control because of variations in boarding times, traffic demand, preemption requirements, and east-west traffic demand. (County Road)

Response:

See the response to Comment 15, above.

Comment 22:

The at-grade alignment in downtown Los Angeles conflicts with the city's proposal to change Broadway and Hill Street into a one-way couplet. (CRA)

Response:

If the Broadway/Hill couplet is implemented by the City of Los Angeles, the LRT operation on Broadway would be similar to the Spring Street contraflow lane. The LRT would operate southbound in the west curb lane; however, up to four traffic lanes could be provided for northbound vehicular traffic, which would improve traffic operations along Broadway.

Comment 23:

Elimination of a traffic lane and station sidewalk widenings will reduce the vehicular capacity of Broadway and Figueroa. Both current and projected conditions should be discussed in the EIR. (CRA)

Response:

Both current and projected conditions were discussed in the DEIR (see Sections II-230 and IV-130). The LRT operation is designed for mixed traffic use (LA-1). It does not eliminate one traffic lane from automobile use, but rather it provides for an LRT vehicle every six minutes during peak travel periods, or 10 LRT vehicles during the peak hour. Throughout the rest of the day, the mixed use lane would be used as it is presently, by bus and auto travel. The sidewalk widenings for stations on Broadway would be located so as to not conflict with through traffic or turning movements.

The construction of a median to support an elevated guideway in the middle of Figueroa Street would reduce (not widen) sidewalks in some areas. Such a median would be coordinated with already planned widenings of Figueroa and restriping to maintain the existing number of travel lanes.

Comment 24:

The EIR should address impacts on at-grade crossings on Pacific Coast Highway at Atlantic Avenue and Long Beach Boulevard in Long Beach. (Caltrans)

Response:

The impacts on at-grade crossings at Pacific Coast Highway, Atlantic Avenue, and Long Beach Boulevard are summarized in Section IV-331.2 of the DEIR.

Comment 25:

The EIR should address impacts on local streets at stations where parking is not provided. Data is needed on mode of access to stations to give a clear idea of parking needs. (Caltrans)

Response:

Mode of arrival, by station, has been summarized by SCAG for representative LRT system alternatives. See the following tables.

STATION MODE OF ARRIVAL - WORK TRIPS (1)

LA-1/MC-1/LB-4
BROADWAY/SPRING-
PACIFIC LOOP

Station	% Walk	% Bus	% Auto	% Rail
Union Station	94	-	-	6
Temple	0	-	-	-
1st/Spring	-	94		6
4th/Spring	100	-	-	-
7th/Spring	2	98	-	-
Olympic	2	98	-	-
18th/Main	11	89	-	-
San Pedro	59	41	-	-
Washington	95	5	-	-
Vernon	43	57	-	-
Slauson	77	23	-	-
Florence	40	60	-	-
Firestone	76	24	-	-
103rd St.	67	33	-	-
Imperial	-	76	24	-
Compton	81	19	-	-
Artesia	-	24	76	-
Del Amo	-	19	81	-
Wardlow	58	42	-	-
27th	85	15	-	-
Hill	100	-	-	-
PCH	17	83	-	-
Anaheim	39	61	-	-
7th	70	30	-	-
Transit Mall	40	60	-	-

Source: SCAG, 1984.

STATION MODE OF ARRIVAL - WORK TRIPS (2)

LA-2/MC-1/LB-4
FLOWER SUBWAY TO
7th STREET

Station	% Walk	% Bus	% Auto	% Rail
7th/Flower	9	-	-	91
12th/Flower	2	98	-	-
18th/Flower	5	98	-	-
Broadway	29	71	-	-
San Pedro	15	85	-	-
Washington	95	5	-	-
Vernon	62	38	-	-
Slauson	71	29	-	-
Florence	38	62	-	-
Firestone	81	19	-	-
103rd	71	29	-	-
Imperial	-	76	-	-
Compton	82	18	-	-
Artesia	-	26	74	-
Del Amo	-	18	82	-
Wardlow	58	42	-	-
27th	85	15	-	-
Hill	100	-	-	-
PCH	18	82	-	-
Anaheim	39	61	-	-
7th	70	30	-	-
3rd	0	0	-	-
Transit Mall	40	60	-	-

Source: SCAG, 1984.

STATION MODE OF ARRIVAL - WORK TRIPS (3)

LA-3/MC-1/LB-4
OLYMPIC/9th AERIAL-
3rd

Station	% Walk	% Bus	% Auto	% Rail
7th/Figueroa	35	-	65	-
9th/Olive	-	100	-	-
Maple	5	95	-	-
Central	-	100	-	-
Washington	91	9	-	-
Vernon	63	37	-	-
Slauson	52	48	-	-
Florence	20	80	-	-
Firestone	60	40	-	-
103rd	54	46	-	-
Imperial	-	67	33	-
Compton	86	14	-	-
Artesia	-	20	80	-
Del Amo	-	20	80	-
Wardlow	58	42	-	-
27th	85	15	-	-
Hill	100	-	-	-
PCH	16	84	-	-
Anaheim	38	62	-	-
7th	69	31	-	-
3rd	0	0	-	-
Transit Mall	40	60	-	-

Source: SCAG, 1984.

STATION MODE OF ARRIVAL - WORK TRIPS (4)

LA-3/MC-1/LB-3
OLYMPIC/9th AERIAL WITH
LA RIVER ROUTE

Station	% Walk	% Bus	% Auto	% Rail
3rd	-	100	-	-
7th	36	-	-	64
Olive	-	100	-	-
Maple	5	95	-	-
Central	-	100	-	-
Washington	92	8	-	-
Vernon	63	37	-	-
Slauson	52	48	-	-
Florence	20	80	-	-
Firestone	60	40	-	-
103rd St.	54	46	-	-
Imperial	-	67	33	-
Compton	87	13	-	-
Artesia		19	81	-
Del Amo		43	57	-
Maine/4th	32	68	-	-
Transit Mall	12	88	-	-

Source: SCAG, 1984.

Comment 26:

The EIR should address traffic impacts on state highway facilities from traffic generated by all stations. (Caltrans)

Response:

Traffic generated by LRT stations which affect state highway facilities in Long Beach (Pacific Coast Highway) and in the mid-corridor (Century Freeway) are included in the analysis of the facilities (Chapter IV of the DEIR) and the discussion of the relationship to the LRT impacts on transitway facilities (Chapter V). See also the response to Comment 24, above.

Comment 27:

The EIR should have more discussion of the project's impact on traffic on cross-streets. We recommend that it include a preliminary discussion of signal systems and other controls, and the location of major traffic control systems should be shown. (County Planning)

Response:

See the response to Comment 15, above.

Comment 28:

There appear to be discrepancies between traffic data shown in the EIR and our recently completed Downtown Circulation and Traffic Study. For example, year 2000 no project data on page IV-174 do not agree with ours. (Long Beach)

Response:

The Downtown Circulation Study referred to in the comment presented volume/capacity ratios for roadway link sections in downtown Long Beach which were based on a comparison of average daily traffic volumes with the potential capacity of a given roadway section. The DEIR, on the other hand, presents volume/capacity ratios at specific intersections, based on a comparison of peak hour traffic volumes with the existing geometry of intersection approaches. Thus, the two methods of analysis are different, resulting in different sets of numbers. For the DEIR, the intersection capacity analysis was based on methodology presented in Transportation Research Circular No. 212 (Transportation Research Board).

Comment 29:

The potential problems of significant vehicle queuing at major intersections is treated too lightly. In particular, the potential impacts are severe at the crossings of Willow Street and Long Beach Boulevard. Also, interface problems at locations somewhat remote from the rail line should be discussed. (Long Beach)

Response:

At Willow Street and Long Beach Boulevard (under LB-2 or LB-5), the LRT would utilize the intersection signal north/south green phase for crossing Willow Street. Detailed design coordination with the City of Long Beach for refinements in traffic control and lane configurations at this location will reduce traffic impacts attributable to the LRT to non-significance.

Comment 30:

The EIR fails to consider the potential disruption by the overhead wiring of the existing oversize load truck route between the Port of Long Beach and the McDonnell Douglas plant. (Long Beach)

Response:

The McDonnell Douglas oversized truck route could affect Alternative LB-3 via 4th Street and Pacific Avenue. The maximum clearance that is possible by the overhead wire is 22½ feet above the top of rail or street. If this alternative were built, solutions either in LRT design or alternative oversize truck routing would be developed.

Comment 31:

The discussion of traffic impacts of the Atlantic/Long Beach Boulevard couplet (LB-2) fails to identify the impact of the rail vehicles in mixed traffic. Furthermore, the extension of the sidewalk out to the travel lane will necessitate loading of buses and light rail vehicles from the moving lane. A mitigation measure which should be evaluated is to locate the rail line in the curb lane. (Long Beach)

Response:

The extension of the sidewalk out to the travel lane will necessitate loading/unloading of LRT vehicles from the moving lane as stated, although specific designs could provide for continued bus loading/unloading from the curb lane. Also, relocating the rail line in the curb lane would improve travel conditions, but would eliminate parking, and would create interference with LRT operations due to inevitable, occasional curb lane blockages. However, the LRT operation (six-minute headway) southbound in mixed traffic on Long Beach Boulevard north of 7th Street, and northbound on Atlantic Avenue, would not have a significant impact on vehicular traffic along these roadways.

Comment 32:

It is not clear in which travel lane the transit will run along Pacific Avenue under LB-4. If it is the #2 lane, the same comment as above applies. (Long Beach)

Response:

The light rail system will be operated in the #1 lane in mixed traffic, as shown on Section O, Figure 65, in the Design Appendix. There will be two through lanes in each direction, plus left turn lanes. Light rail vehicles will pass at six-minute intervals during the peak traffic period. Therefore, there will be no significant impact on traffic.

Comment 33:

Revised signal phasing as a mitigation measure introduces other impacts which may have to be mitigated, namely reduced intersection capacities. These capacity reductions do not appear to be reflected in level of service calculations in Table IV-33C. Concern is greatest at the Atlantic/PCH and Atlantic/Anaheim intersections. It is also deserving of attention at locations where multiple-phasing is proposed, as well as at proximate locations where the progressive character of traffic flow may be impeded. (Long Beach)

Response:

Separate signal phasing would be provided only at intersections where LRT vehicles would turn onto another street, such as 1st, 4th, and 8th. These intersections operate at very good levels of service, and by providing a separate phase to accommodate the LRT turns, the intersections would not be significantly affected. For details regarding signalization on Long Beach Boulevard, see Section III-426, Comments 6, 7, and 8.

Comment 34:

The Broadway/Spring at-grade alternative would result in intermittent obstruction of east-west traffic. The more successful the light rail, the more serious this obstruction will become. (CRT)

Response:

The volume/capacity ratios and level of service at key intersections in downtown Los Angeles under Alternative LA-1 are presented on page IV-67 of the DEIR. Two intersections on Washington Boulevard show increased volume/capacity ratios due to modified signal phasing required to allow for a separate left turn phase for the LRT. The remainder of the intersections would maintain essentially the same level of service as with the No Project alternative.

Comment 35:

The LA-3 route would be a traffic horror with its elevated structures added to relatively narrow streets. (CRT)

Response:

With the LA-3 alternative, the through lane configuration on Figueroa Street and Olympic/9th Street would be maintained. However, curb parking, vehicular turning movements, and sight distances would be affected.

Comment 36:

We suggest further traffic studies to determine the feasibility of locating the subway line to a more desirable location such as Figueroa, where it would be more compatible with proposed high-density commercial use. (Forest City)

Response:

Working Paper 7.4 (PB/KE, 1983) considered Figueroa Street subway alternatives via Washington Boulevard as well as Olympic/9th Street. These were evaluated, along with others, by the staffs of the Los Angeles DOT, LACRA, LA City Planning, Caltrans, LACTC, and consultants. The subway option adopted was Flower Street via Washington Boulevard (surface). Flower was selected over Figueroa because it was considered more central to the west side of downtown, and also because of its connection with the Metro Rail station at 7th Street.

Comment 37:

We are quite concerned about the potential impact on the Freeway Business Center of motor vehicles entering and leaving the main light rail yard, particularly during the morning and evening peak periods. (Upland)

Response:

Several options for vehicular access to the yard are being investigated. Most of the yard employees (approximately 75-135 per shift) would arrive at the yard prior to the peak traffic period. The traffic along Santa Fe Avenue and Carson Street and the Santa Fe/Carson intersection would operate at acceptable levels of service during peak hours, even when LRT employees are added to projected traffic volumes.

Comment 38:

LB-1 (Option B or C) and LB-4 (Option B or C) would result in too much concentration of transportation activity in a given space, since Atlantic Avenue is rather narrow. Traffic will be slowed by drivers trying to find parking spaces. The extent of this slowing will affect the transit system and should be investigated. (LB Citizens)

Response:

With the project, the intersection volume/capacity ratios and levels of service for Atlantic Avenue show no change over the No Project alternative. The impact on traffic operations with the LRT operating at six-minute headways during the peak hour is compensated for by a reduction in overall traffic volumes with implementation of the LRT. As a result, impacts on traffic operations due to the loss of parking spaces would not be significant.

Comment 39:

Figures I-25A and I-25G show left turns for road vehicles being permitted from lanes adjacent to the LRT median and station platform. These turning movements should be prohibited to avoid degrading LRT service and creating hazards. (Nelson)

Response:

The potential conflict between LRT and left-turning vehicular traffic would occur once every six cycles (based on a 60-second cycle length and six-minute headways). Using a separate left turn phase at these intersections, vehicular traffic could be cleared, providing unobstructed through-movement for the LRT.

Comment 40:

Traffic will be congested in north-south and east-west directions during the course of development of this program. This, and reduced on-street parking, will significantly impact property values along the boulevard. (LB Blvd. Assn.)

Response:

It is true that there would be some increases in localized traffic congestion at specific times during the construction of the project. There would also be some temporary loss of on-street parking along some portions of Long Beach Boulevard. It should be noted, however, that these impacts would be temporary and, further, that there is no evidence to indicate a potential negative impact on property values.

Comment 41:

If light rail cars will be running in mixed traffic on Broadway, then there is a high probability that they will have significant delays due to congestion. (Seal)

Response:

Current analysis indicates that the LRT system can operate successfully in mixed traffic on Broadway and that there would not be significant delays due to congestion. See also the response to Comment 34, above.

Comment 42:

Our concern is your stops. How much traffic are they going to tie up? (Clifford)

Response:

The impacts of the proposed system on local traffic depend upon the alternative selected in each of the three route segments. The following sections discuss these traffic impacts in detail: IV-130 (downtown Los Angeles), IV-230 (the mid-corridor), and IV-330 (Long Beach). The probable adverse traffic impacts which cannot be avoided are documented in Section VII-220.

Comment 43:

The following street improvements should be considered as part of the LRT project.

a) A right turn lane on Pacific Coast Highway, enabled by acquiring a 10-12 foot strip from the bank parking lot.

b) A northbound right turn lane on Long Beach Boulevard might be constructed by narrowing the sidewalk width to five feet and taking an easement in the gas station property.

c) A bus bay, sufficient for two buses, should be constructed on the east side of Long Beach Boulevard, north of Pacific Coast Highway, by acquiring another 10-foot-wide strip from the bank.

d) Another bus bay should be constructed on the west side of Long Beach Boulevard, south of Pacific Coast Highway, adjacent to the restaurant parking lot.

e) The feasibility of taking front and side yard space from the auto repair garage northwest of the intersection should be explored, for purposes of constructing an additional right turn lane southbound on Long Beach Boulevard.

f) Another possibility worth considering would be to taper the transitway width approaching Pacific Coast Highway and to flare it receding, without a station, and without lowering design speed.

(Allen, Washington)

Response:

Table IV-33C of the DEIR indicates that there are three intersections with a level of service "F" (forced flow conditions), as follows: 1) Long Beach Boulevard/Pacific Coast Highway, 2) Long Beach Boulevard/Willow Street, and 3) Broadway/Magnolia. Level of service "F" is expected at these intersections, with or without the project.

The traffic analysis conducted for the DEIR found that the impacts on traffic attributable to LRT operations would be minimal at key intersections along Long Beach Boulevard. This is because light rail trains would adhere to traffic signals along the boulevard in the same manner as buses and general traffic.

Therefore, any necessary street improvements would be required as a response to natural growth in traffic, rather than being a mitigation measure for traffic impacts associated with the LRT project. The specific improvements noted in the comment are, therefore, not contemplated as part of this project.

Comment 44:

Will the EIR consider and recommend needed substantial redesign of the Long Beach Boulevard/Pacific Coast Highway intersection, for LB-2. (Allen, Washington)

Response:

As shown in Table IV-33C, the volume/capacity ratios for the intersection in question improve slightly with the project (1.01) over the no project condition (1.03). Either with or without the project the intersection of Pacific Coast Highway and Long Beach Boulevard is projected to be operating at level of service "F" (forced flow) by the year 2000. If reconstruction and redesign of the intersection is needed, it would be due to normal traffic growth and not attributable to the project. Redesign and reconstruction would be the responsibility of the City of Long Beach.

III-344 Travel Times

Comment 1:

The Final EIR should include a listing of projected end-to-end trip times for a representative sample of alternatives as well as some representative trip times between intermediate major destinations. (SCRTD)

Response:

This is a good suggestion. A table including representative trip times between destinations in the Long Beach, mid-corridor and Los Angeles segments is presented below.

REPRESENTATIVE TRIP TIMES

Number	From	To	Elapsed Times (Minutes)
LA-1/MC-1/LB-4 (outbound)	7th/Broadway	103rd	20.3
	103rd	6th/Long Beach	22.6
	7th/Broadway	6th/Long Beach	42.9
LA-2/MC-1/LB-4 (outbound)	18th/Flower	103rd	13.8
	103rd	Anaheim/Atlantic	20.9
	18th/Flower	Anaheim/Atlantic	34.7
LA-3/MC-1/LB-4 (inbound)	Anaheim/Atlantic	103rd	20.6
	103rd	Olive/9th	12.5
	Anaheim/Atlantic	Olive/9th	33.1
LA-3/MC-1/LB-3 (inbound)	Main/4th	103rd	20.3
	103rd	San Pedro/9th	8.1
	Main/4th	San Pedro/9th	28.4

Source: Kaiser Engineers, 1984.

Comment 2:

Section IV-332 states that bus service in Long Beach will have reduced speed during rush hour. This implies that rail transit will not be affected in the same manner. The EIR should show how travel times for the LRT and bus differ. (SCRTD)

Response:

The reference to reduced bus speeds in this section refers to increased auto traffic in year 2000 without the LRT project. With implementation of the LRT in Long Beach, overall reductions in automobile traffic in the downtown area of up to two percent are expected, depending upon the alternative selected. In addition, the complementary bus network would change service frequencies and eliminate bus routes in the Long Beach area. The combined result would be an improvement in transit operations, although speeds for all vehicles in mixed traffic would be lower in the peak hour than in non-peak hours.

Comment 3:

The travel times listed in the table on page I-21 seem to vary with the alternative selected for downtown Los Angeles, with the Long Beach alternative having little or no effect. This seems strange, as one alternative (LB-3) has less mileage, fewer stations, and nearly twice the average travel speed of all other alternatives. (Long Beach)

Response:

The end-to-end travel times shown in Table I-23A are meant to be representative examples of the slowest, middle, and fastest combinations of alternatives. Detailed travel times do vary. Some representative travel times between intermediate points for different alternatives are shown in the response to Comment 1, above.

Comment 4:

From each of the Long Beach Boulevard stations, how much longer would it take a rider wishing to go to north Long Beach, the mid-corridor or Los Angeles to board a train going southbound, go around the couplet and then northbound, compared with the travel time if both tracks were placed either on Atlantic Avenue or Long Beach Boulevard? (LB Citizens)

Response:

Below is an estimate of the additional travel time required from each of the Long Beach Boulevard stations to travel south and then north around the LB-2 couplet to the Willow Street station and other points north (mid-corridor and Los Angeles).

Station	Additional Travel Time
Hill Street	18 minutes
Pacific Coast Highway	14 minutes
Anaheim Street	10 minutes
3rd Street	6 minutes
1st Street	2 minutes

If a passenger did not wish to detrain, there would be an additional six-minute layover before the train left the station. In all probability, passengers would walk the three-block distance between the Long Beach Boulevard and Atlantic Avenue split rather than incur the additional riding time.

III-345 Vegetation

Comment 1:

The subject of street trees in the Los Angeles Central Business District is very sensitive. The DEIR only briefly discusses this and the analysis should be expanded regarding the need for removal and replacement. (City Engineer, CRA) Particular attention should be paid to the South Park area, for which a distinguished street treescape is being planned. (CRA)

Response:

From six to 118 trees would be affected by the project in downtown Los Angeles depending upon the alternative selected (DEIR page III-7). Ranges are specified because a precise number is not known at this time. The types of trees to be removed are described on page II-36. It is also stated on page III-7 that "these trees would be replaced in locations near where they were removed, except in those areas with too limited space. Other permanent landscaping in the form of small trees, shrubs, and ground cover is proposed for the rail corridor, stations, and maintenance facilities where deemed desirable or appropriate." The treescape planned for the South Park area would be included, and the nature of tree replacement (number and type) would be decided with the approval of the City of Los Angeles.

III-346 Vehicles

Comment 1:

The Final EIR should include a discussion of the possibility of providing doors between vehicles which would be available to fare inspectors, operators, and security personnel. (SCRTD)

Response:

To the best of our knowledge, there are no light rail vehicles available in revenue service which provide for doors between vehicles.

Comment 2:

The concept of a high-low vehicle should be clarified in the Final EIR. (SCRTD)

Response:

See the response to Comment 1, Section III-301 (Accessibility).

Comment 3:

The total life-cycle costs of two-truck versus articulated light rail vehicles should be examined. (SCRTD)

Response:

During the preliminary engineering phase of the project and prior to final design, a life-cycle cost analysis will be performed as part of an overall evaluation of four-axle versus six-axle articulated light rail vehicle selection.

Comment 4:

Are the rail cars going to have windows that open from the top? (Gusky)

Response:

The specific light rail vehicle design has not yet been selected. Most likely, the vehicle design chosen will be similar to vehicles in operation on existing systems. A number of manufacturers fabricate light rail vehicles. Two of these are pictured in Figure I-21A of the DEIR. General descriptions of light rail vehicles are provided on pages I-5 through I-7 of the DEIR.

Whichever vehicle design is eventually selected, operating vehicles in the Long Beach-Los Angeles LRT system would be air-conditioned; thus the windows would be kept closed to prevent unnecessary loss of heat or cool air.

Comment 5:

Will the vehicles have buttons for patrons to operate the doors? (Gusky)

Response:

The method of door operation has not yet been decided. Either automatically-controlled or patron-operated doors are possible.

III-347 Visual Quality

Comment 1:

LA-2 appears to have the least visual impact on the downtown visual environment. LA-3 would shadow the ground level environment due to the aerial structures. LA-1 would impact the at-grade visual environment from the overhead pantograph wires. The EIR should explore feasibility and costs associated with a subway configuration for the 9th Street segment of LA-3 to continue north on Flower. Graphic models should also be made to show the impacts. (City Planning)

Response:

The 9th Street and Flower Street alignments were examined during the formulation of alternatives in early 1983. Alternative 11B (as designated at that time) contains the design options suggested in the comment: subway north along Flower via Olympic/9th. For comparative purposes, Alternative 12 (all aerial on the same alignment) was included. Of the 13 alternatives considered, 11B had the second highest construction cost ($403 million for the downtown Los Angeles segment alone). Alternative 12 had a construction cost of $252 million, but would have disrupted 2,580 businesses, more than any other alternative.

Comment 2:

Additional mitigation measures should be considered for these visual impacts.

a) Aerial structures should have architectural treatment to alleviate the impacts depicted in Figures IV-12B through 12M.

b) In LA-3, a smaller radius for the curve at the intersection of 9th and Figueroa should be considered. This may allow the guideway to remain on the north side of 9th Street.

c) Figures depicting the substations should be included in the FEIR to allow assessment of attendant impacts.

d) The DEIR does not fully describe the visual impacts of the wire net necessary to support the catenary system. A figure should be added.

(City Engineering)

Response:

a) To address the Engineering Bureau's suggestions, a new section, IV-124.3, combines all the visual mitigation measures together as follows:

IV-124.3 Mitigation Measures

To eliminate visual impacts of the overhead wires and support poles on the aerial structures, the system could incorporate a third rail in the aerial portion of the line. However, this would require that vehicles be equipped for both overhead and third-rail electrical connections at an additional cost to the project and a small increase in travel time.

The removal of street trees along Broadway under LA-1 could be mitigated by replacing them. In fact, the streetscape could be enhanced by replacing the trees with a single species appropriate to the character of the street. The removal of historic paving, however, would be an unavoidable impact. Similarly, the replacement of street trees along the portal under LA-2 would mitigate the impact of their removal and could improve the character of the street by selecting species which are more appropriate visually and functionally. The proposed chain link fence could be replaced by a low concrete wall or decorative metal fence (see Figure IV-12F).

Integration of the substations into larger development projects to mitigate their visual impact would require the acquisition of larger parcels and/or coordination with private developers. The Los Angeles Zoning Ordinances require that facilities such as these be enclosed by a solid wall when located in commercial zones. Fencing and facades could be designed to

complement surrounding structures and to minimize visual incompatibilities. As an example, the substation at Flower and 18th Streets (Santa Monica Freeway) under LA-2 could be located under or near the freeway structure to minimize visual impacts.

Under LA-3, there is no vacant parcel at which the 4th and Figueroa substation could be located; however, it could be sited on unused public right-of-way and screened by landscaping. The impact of the other two substations could be mitigated through integration with larger development projects, as indicated earlier.

The major adverse impacts of the LA-3 guideway on the visual setting and visual privacy along 9th Street/Olympic Boulevard could be mitigated by selecting a less sensitive corridor and by not locating the guideway directly in front of a series of mid-rise buildings. The street trees could not be replaced, although the mature Indian Laurel figs could possibly be transplanted. However, the cost and time requirements for such locations would be significant. Minor cosmetic measures, such as decorative lighting on the shaded underside of stations, could be employed to soften the effect of the guideway. Such measures would not significantly mitigate the adverse visual impacts.

b) There are two reasons why a smaller curve cannot be used at the 9th and Figueroa corner. First, the design criteria of the system do not allow that small a turning radius, and secondly, the construction of the 888 International Tower building has precluded such placement.

c) Traction power substations would occupy an area generally 50 feet by 100 feet. The substation, a box-like structure, would occupy one-half of the site. The remaining portion would be an open yard enclosed by a fence. Illustrations of these structures would not portray the nature or magnitude of potential adverse impacts because the visual impacts of these system components are only relevant in the context of the surrounding visual setting and the actual layout of each substation. These details are to be specified during final design.

d) The additional wire net necessary to support the catenary system would have a visual impact; however, the net is required only where the alignment turns a corner. Given the minimal number of turns associated with the alternative alignments, the visual impacts are not considered to be significant.

Comment 3:

The aerial alternative noted on page IV-39 would have significant visual impacts, affecting the future of development of the South Park area, which cannot be substantially mitigated. The guideway structure is of a scale that will dominate other architectural features. The elevated stations would almost completely obstruct the view of surrounding buildings from the street. These effects would be most felt in South Park and along Figueroa where the DEIR states there would be no significant impact. (CRA)

Response:

The DEIR states that the aerial structure would be a dominant visual element whose impact would vary according to its context. The document then goes on to discuss the various contexts which would be found along the alignment. The summary table on page S-23 states that the visual impacts of the aerial portions of LA-3 would be a significant adverse impact even after mitigation measures are implemented.

The DEIR statement that the Figueroa Street aerial guideway would not be considered a significant adverse effect has been taken out of context by the commenter. The DEIR states that the segment of the guideway between 3rd and 6th Streets would have an adverse effect, but it would not be significant. Four reasons are subsequently provided as support for this statement. Everywhere else along the aerial alignment, the DEIR documents significant adverse effects of the guideway. It is believed that the discussion of impacts fairly portrays the extent and nature of potential effects and does not need to be revised.

Comment 4:

We disagree with statements suggesting that catenary support poles, electrical overhead wires, and trackway on city streets would have a relatively insignificant adverse impact on the visual setting. We suggest that these impacts be listed as adverse impacts which cannot be avoided. We also recommend that wire supported from only one pole be used where the guideway is close to one side of the street. (Long Beach)

Response:

The comment is noted; however, the determination of significance of visual impacts is subjective and can differ depending on the viewer. Section IV-324 of the DEIR identifies those measures used in the determination of impact. The conclusions stated in the DEIR are based upon the existing character of the line segments described and vary according to the judged intrusiveness of the transit project's fixed facilities.

Comment 5:

The EIR fails to consider the potential negative visual impact of raised platforms in a street environment. (Long Beach)

Response:

Visual impacts pertinent to Long Beach are discussed in Section IV-324 of the DEIR. As this discussion points out, because all of the original Long Beach alignment alternatives are at-grade, the visual impacts would be relatively insignificant. The discussion does identify, however, those portions of the Long Beach alternatives which are visually sensitive by virtue of the presence of certain elements such as trees, commercial street facades, or certain other streetscape improvements. Visual impacts relating to elevated guideways and raised platform stations are discussed in the Supplement to the DEIR as they pertain to Long Beach.

Comment 6:

The paragraph beginning at the bottom of page IV-165 lists six adverse visual impacts of LB-3. We believe that three of these should be eliminated or included under other sections, namely: a) the displacement of the pump station is not a negative visual impact; b) the displacement of several homes and horse stables is not a negative visual impact, but rather a socioeconomic impact; and c) the relocation of Ocean Park Boulevard and San Francisco Avenue is not a negative visual impact. (Long Beach)

Response:

In the above-referenced paragraph, displacements and relocations are described as adverse visual impacts because they change the existing visual setting. The Hill Street pump station is a large physical element in that neighborhood and is a well-designed utilitarian structure. Changing the pump station will change the

current visual setting. The displacement of homes is described under Land Use and Population impacts in Chapter III, Section 321.14. The relocation of streets will change the visual relationship between street uses and residential/industrial uses. For these reasons, the changes were characterized as visual, as well as being discussed in other appropriate sections of the document.

Comment 7:

Design the aerial guideway so it does not become a barrier. (Haagen)

Response:

As the project proceeds into final design, many more detailed considerations will be taken into account. This is so because a preferred route will be selected allowing specific design considerations and mitigation measures to be employed on specific segments of the route. One of those considerations will be the appearance of the guideway, particularly with regard to its potential for being a visual barrier.

Comment 8:

The NAACP is in agreement with the many community organizations and area residents about the unattractive elevated structures and the negative visual impacts that this will produce. (NAACP, Norton, Blomert, CDAC)

Response:

The opinions expressed in the comment are noted. As the DEIR points out, opinions regarding the visual appearance of such structures as elevated transit guideways are subject to interpretation.

The proposed elevated guideway structure to be constructed with the MC-3 alternative would cross over freight rail traffic at Watts Junction. The guideway would be a visually prominent feature in this area. The aerial segment, however, is to be limited to 500 feet in length and would not totally dominate the landscape. Spaces between support columns would be 80 feet, providing opportunities for views of the community.

The elevated guideway would also be designed in the most aesthetically pleasing manner possible, taking into account the surrounding neighborhood. Structure heights and appurtenances would be kept to minimum feasible dimensions and the guideway would not be a physical barrier. Vehicle, bicycle, and pedestrian traffic would continue to travel across the right-of-way beneath the guideway.

III-348 Miscellaneous

Comment 1:

The project goals assume that a substantial number of trips made by residents in the corridor can be captured by a fixed rail system and that a major focus of these trips is the Long Beach and Los Angeles downtowns. We question this assumption. (City Planning)

Response:

The assumption questioned by the City Planning Department is validated by the presence of existing SCRTD bus routes in South Central Los Angeles oriented in the north-south direction (i.e., lines 55, 56, 57) and other RTD local or express bus routes (i.e., 60, 360, 456, 457) connecting Long Beach with downtown Los Angeles as replacements for the former Red Car line. It is true that the LAX/El Segundo area, for example, is becoming an important focus for employment, and this area is a destination of the Century Freeway Transitway. While the effectiveness of the Long Beach-Los Angeles project in providing access to employment is good in isolation, in the context of a regional system (including Metro Rail and the Century Freeway) it appears even better.

Comment 2:

Choose the route which will have the least displacement and which costs the least amount of money. (LB 1st Christian)

Response:

Both projected displacement of businesses and residents and total system capital costs are prime considerations to be taken into account before a decision to implement a project of this type. These two factors together with many others will be carefully considered before a preferred project is selected.

Comment 3:

We certainly cannot envision coming south on Long Beach Boulevard if there is a possibility of destroying the center islands. (LB Business Assn.)

Response:

As described in the December 1984 Supplemental EIR, it is possible to use Long Beach Boulevard for a two-way light rail alignment (LB-5), either with center landscaping only at stations, or, if the boulevard is widened, with center landscaping along the length of the boulevard. In either case, the existing landscaping north of 7th Street must be removed to construct the LB-5 alternative.

Comment 4:

I strongly advocate large numbers of park-and-ride lots. (Wimmergren)

Response:

The use of park-and-ride lots in conjunction with a public transit system that has a major focus on capturing home/work trips is very important to its ultimate success. The LACTC and its consultants are well aware of this importance, and the final design of the system will have an adequate number of park-and-ride opportunities to facilitate the system's successful operation.

Comment 5:

Station stops, parking areas, and connecting bus lines should be considered from the river route at Willow, PCH, and Anaheim. (Ross)

Response:

The LACTC has considered station stops, parking areas, and connecting bus lines at Willow Street, Pacific Coast Highway, and Anaheim Street. These are presented as modifications to the LB-3 river route in the December 1984 Supplemental EIR.

Comment 6:

I have not heard who is to be the operator of the system. (Seal)

Response:

The intended operator of the system is the Southern California Rapid Transit District.

Comment 7:

Is the project affected by the Coastal Zone Management Act? (Filer)

Response:

The proposed project does not lie within the coastal zone and therefore is not affected by the Coastal Zone Management Act.

Comment 8:

The railroad should be forced to negotiate and bring something to the table. (Filer)

Response:

Councilman Filer's specific concerns (briefly paraphrased above) were elaborated in a written correspondence. These concerns, together with responses, are provided below.

1) - The City of Compton received notices from Caltrans that the Willowbrook track will be abandoned when the Century Freeway is constructed, and the city understands that the Southern Pacific Railroad was a party to this proposal. The city relied on these statements and built a shopping center between the Willowbrook and the Alameda rail freight rights-of-way.

LACTC response: - It is true that as part of an effort to minimize cost during construction of the Century Freeway, Caltrans sought an agreement with the Southern Pacific Railroad whereby if certain rail freight connections and improvements were made along the Southern Pacific Alameda Street route (San Pedro branch), the Southern Pacific could then abandon its Wilmington branch along Willowbrook Avenue in Compton, resulting in reduced costs for Century Freeway construction in the area of the intersection of Imperial Highway and Wilmington Avenue. In 1981 and 1982, Southern Pacific and Caltrans reached a preliminary understanding with respect to this proposal. However, in mid-1982, Southern Pacific determined that the proposal, if implemented, could substantially restrict its ability to provide rail freight service to the

Ports of Long Beach and Los Angeles in the future, since at that time, the initial prospects for substantial growth in such ports-related rail freight traffic began to be indicated. For this reason, the Southern Pacific notified Caltrans that it could not execute an agreement with respect to this proposal, and, therefore, that it could not support abandonment of its Wilmington branch along Willowbrook Avenue. Such an agreement was a precondition to the furnishing of funds by the California Transportation Commission which would have provided for implementation of the agreement. Since the agreement between the railroad and Caltrans was not executed, the California Transportation Commission did not make available such funds, rendering ineffective a Memorandum of Understanding executed between Caltrans and the City of Compton which could only be effective if the California Transportation Commission actually provided the funds to implement the prospective agreement between the Southern Pacific Railroad and Caltrans. Accordingly, there never was an agreement between the Southern Pacific and Caltrans for abandonment of the Wilmington Branch. The Southern Pacific has never filed for such abandonment. LACTC understands that at one time, the Southern Pacific contemplated abandonment of its team track siding in central Compton along the Wilmington Branch, but the railroad never actually received approval for abandoning the Compton team track siding and the siding remains in active use today. In fact, under the rail transit project, it would be relocated and maintained for continued use by local shippers in the City of Compton.

2) - If an increase in train traffic is permitted, shoppers will be discouraged from using the Compton Shopping Center and the city is going to lose sales tax revenues. The merchants affected will lose their investment capital.

LACTC response: - There is no connection between LACTC's sponsorship of the rail transit project and the potential growth in rail freight traffic to and from the port of Los Angeles. Nonetheless, LACTC desires that ports-related rail freight be consolidated in an at least partially grade-separated corridor along Alameda Street, resulting in transportation and circulation benefits to a wide area which includes the City of Compton. To this end, the LACTC has committed to working with the cities in the south central part of the county, within the Alameda Corridor Task Force, to define the means for such consolidation, both in engineering and in funding terms.

As described in the DEIR, due to the coordination of light rail vehicle movements with traffic flows on major arterials through the mid-corridor and in Compton, the light rail operations will not

cause any significant adverse effects on traffic. Moreover, the light rail project will serve to increase the flow of shoppers to and from the Compton Shopping Center and the overall vitality of Compton with respect to its adjacent areas.

3) - The proposal to put a fence along Willowbrook Avenue would divide the City of Compton and cause a great emotional scar.

LACTC response: - Installation of a fence along the rail transit tracks is a requirement of the State Public Utilities Commission for rail transit operations along such a right-of-way and is a necessary safety feature. It will not reduce pedestrian crossings of the right-of-way to any extent over those which now legally exist. The fence will only enforce permitted pedestrian crossings of the right-of-way. All existing legal crossings of the railroad right-of-way will be maintained under the improvements provided by the light rail project.

Comment 9:

How will connections and planning be done related to Greyhound and Continental Trailways? (Compton Merchants)

Response:

The LACTC is planning to coordinate with the City of Compton so that the LRT station can be integrated into the city's plans for a Transit Center which would include the relocated Greyhound and Trailways bus services.

III-349 Corrections and Additions

Comment 1:

Table II-14A summarizes air quality in the South Coast Air Basin. Data for 1981, 1982, and 1983 are enclosed and should be used to revise this table. (SCAQMD)

Response:

Data for 1981, 1982, and 1983 is herewith included in Table II-14A, page II-10 as follows:

REPLACEMENT TABLE II-14A

ANNUAL SUMMARY OF DAYS NOT MEETING THE STATE STANDARD

FOR VARIOUS POLLUTANTS IN SOUTH COAST AIR BASIN

Year	SO_2 (1 hr. avg.)	SO_2 (24 hr. avg.)	NO_2 (1 hr. avg.)	CO (12 hr. avg.)	Oxidant (1 hr. avg.)
1955	1	96	-	-	-
1956	9	284	71	195	-
1957	15	323	99	359	305
1958	2	287	96	343	322
1959	6	109	113	340	316
1960	0	60	112	354	286
1961	1	63	101	360	283
1962	2	60	85	363	267
1963	2	35	78	365	258
1964	1	28	78	366	232
1965	0	86	100	365	236
1966	2	124	89	365	271
1967	1	100	113	363	259
1968	2	114	132	185[a]	152
1969	1	68	102	171	246
1970	1	95	115	203	241
1971	2	68	125	146	218
1972	1	115	96	137	211
1973	0	84	59	116	185
1974	0	51	69	128	215
1975	0	62	78	123	201
1976	0	22	93	116	220
1977	0	16	65	55	193
1978	0	0	38	44	185
1979	0	4	27	38	197
1980	0	0	23	43	181
1981[b]	0	0	38	52	226
1982[b]	0	0	8	50	160
1983[b]	0	0	5	46	159

[a] In April 1968, the instrumentation used to measure carbon monoxide was modified. Data taken prior to that month cannot be related exactly to later data as previous standards were slightly different and resulting values were approximately 5 ppm higher, but varying with time.

[b] At site with highest number of exceedances. Other sites may have had violations on different days, so the number of violations throughout the basin could be higher.

Source: Southern California Association of Governments Air Quality Management Planning Program (AQMP), Description of Existing Air Quality in the South Coast Area, 208-20a, b, October 1977; South Coast Air Quality Management District, Summary of Air Quality in the South Coast Air Basin, May 1978, July 1979, June 1980, May 1981, July 1982, June 1983, May 1984.

Comment 2:

Section II-141 discusses air quality planning in the South Coast Air Basin. It refers to oxidants as reactive organic gases. This terminology is not correct. (SCAQMD)

Response:

In Section II-141, page II-9, the reference to oxidants as "reactive organic gases, or ROG" should be highly reactive secondary pollutants.

Comment 3:

Table II-14D shows only 1980 data. The enclosed 1983 data should be substituted and the discussion revised. (SCAQMD)

Response:

The data for Table II-14D is herewith substituted with the 1983 data as follows:

REPLACEMENT TABLE II-14D

1983 VIOLATIONS OF FEDERAL AND STATE

AIR QUALITY STANDARDS IN SOUTH COAST AIR BASIN

Pollutant by Monitoring Site	Times Exceeding Standards State	Federal	Annual Max. Con.	State Standard	Federal Standard
Ozone					
Downtown Los Angeles	114	69	0.26 ppm	0.10 ppm	0.12 ppm
Lynwood	57	27	0.23 ppm	1 hr.	1 hr.
Long Beach	35	16	0.30 ppm		
Nitrogen Dioxide					
Downtown Los Angeles	5		0.33 ppm	0.25 ppm	0.05 ppm
Lynwood	1		0.27 ppm	1 hr.	Annual Avg.
Long Beach	3		0.37 ppm		
Carbon Monoxide					
Downtown Los Angeles	0	0	17 ppm	20.0 ppm	35.0 ppm
Lynwood	5	0	24 ppm	1 hr.	1 hr.
Long Beach	0	0	14 ppm		
Sulfur Dioxide					
Downtown Los Angeles	0	0	0.07 ppm	0.05 ppm	0.14 ppm
Lynwood	0	0	0.06 ppm	24 hrs.	24 hrs.
Long Beach	0	0	0.12 ppm		
Particulate Matter					
Downtown Los Angeles	4	0	173 ug/m^3	100 ug/m^3	260 ug/m^3
Lynwood	22	0	232 ug/m^3		
Long Beach	16	0	212 ug/m^3		
Lead					
Downtown Los Angeles	0	0	1.88 ug/m^3	1.5 ug/m^3	1.5 ug/m^3
Lynwood	0	0	2.48 ug/m^3	Mo. Avg.	Qrtrly. Avg.
Long Beach	0	0	1.81 ug/m^3		

Note: ppm - parts per million
ug - micrograms
m^3 - cubic meters

Source: South Coast Air Quality Management District, "Air Quality Data", Rev. 5/84 and Air Reserve Board, "Guidelines for Air Quality Impact Assessments: General Development and Transportation Projects", May 4, 1983.

Comment 4:

Paragraph 2 of the Transit Operations section (II-172) should be corrected to state that Long Beach Transit operates ". . . approximately 180 buses on 18 bus lines and carries over 60,000 passengers on an average weekday." (LBT)

Response:

In Section II-172, page II-32, the second paragraph which states that Long Beach Transit operates ". . . approximately 180 buses on 19 bus lines, carries over 11,000 passengers on an average weekday" is herewith corrected to: on 18 bus lines, carrying over 60,000 passengers.

Comment 5:

Throughout the DEIR, this agency is referred to as Long Beach Transit Company. The company's preferred name is Long Beach Transit, or LBT. (LBT)

Response:

Throughout the DEIR, references to the "Long Beach Transit Company" are herewith corrected to: Long Beach Transit or LBT.

Comment 6:

Aerial and subway mileages do not appear to be consistent with alternatives as described. A listing of exclusive right-of-way mileage should be included for each alternative. The importance of travel times to system patronage warrants substantial discussion of their derivations and underlying assumptions. (SCRTD)

Response:

Inconsistencies were found in the aerial mileages in Table I-23A of the DEIR. The necessary corrections have been made. In addition, Table I-23A has been amended to include exclusive at-grade right-of-way mileage. A discussion of the derivations and underlying assumptions of travel time calculations can be found in the Concept Design Operations and Maintenance Plan (PB/KE, June 1984).

REPLACEMENT TABLE I-23A

CHARACTERISTICS OF SYSTEM ALTERNATIVES

	Distance (Miles)		End-to-End Travel Time[1] (Minutes)		Number of Stations	Number of Miles Grade Separated		Number of Miles in Exclusive At Grade Right-of-Way[2]	Number of Grade Separated Crossings
	South Bound	North Bound	South Bound	North Bound		Aerial	Subway		
1) LA-1, MC-1, LB-4	22.7	22.6	68	67	32	2.1	0	16.8	3
2) LA-1, MC-2, LB-4	22.7	22.6	-	-	32	2.1		15.8	8
3) LA-1, MC-3, LB-4	22.7	22.6	-	-	32	2.7	0	16.2	4
4) LA-1, MC-1, LB-3	22.3	22.2			24	2.1	0	19.5	9
5) LA-1, MC-2, LB-3	22.3	22.2	-	-	24	2.1	1.0	18.5	14
6) LA-1, MC-3, LB-3	22.3	22.2	-	-	24	2.7	0	18.9	10
7) LA-1, MC-1, LB-2	22.4	22.6	-	-	36	2.1	0	15.4	3
8) LA-1, MC-2, LB-2	22.4	22.6	-	-	36	2.1	1.0	14.4	8
9) LA-1, MC-3, LB-2	22.4	22.6	-	-	36	2.7	0	14.8	4
10) LA-1, MC-1, LB-1	22.7	22.8			30	2.1	0	16.8	3
11) LA-1, MC-2, LB-1	22.7	22.8	-	-	30	2.1	1.0	15.8	8
12) LA-1, MC-3, LB-1	22.7	22.8	-	-	30	2.7	0	16.2	4
13) LA-2, MC-1, LB-4	21.6	21.7	57	57	24	2.1	.7	16.8	3
14) LA-2, MC-2, LB-4	21.6	21.7	-	-	24	2.1	1.7	15.8	8
15) LA-2, MC-3, LB-4	21.6	21.7	-	-	24	2.7	.7	16.2	4
16) LA-2, MC-1, LB-3	21.2	21.2			17	2.1	.7	20.7	9
17) LA-2, MC-2, LB-3	21.2	21.2	-	-	17	2.1	1.7	19.7	14
18) LA-2, MC-3, LB-3	21.2	21.2	-	-	17	2.7	.7	20.1	10
19) LA-2, MC-1, LB-2	21.5	21.7	-	-	27	2.1	.7	16.6	3
20) LA-2, MC-2, LB-2	21.5	21.7	-	-	27	2.1	1.7	15.6	8
21) LA-2, MC-3, LB-2	21.5	21.7	-	-	27	2.7	.7	16.0	4
22) LA-2, MC-1, LB-1	21.8	21.9			22	2.1	.7	18.0	3
23) LA-2, MC-2, LB-1	21.8	21.9	-	-	22	2.7	1.7	17.0	8
24) LA-2, MC-3, LB-1	21.8	21.9	-	-	22	2.0	.7	17.4	4
25) LA-3, MC-1, LB-4	21.5	21.5	49	48	23	4.2	0	15.8	3
26) LA-3, MC-2, LB-4	21.5	21.5	-	-	23	4.2	1.0	14.8	8
27) LA-3, MC-3, LB-4	21.5	21.5	-	-	23	4.6	0	15.2	4
28) LA-3, MC-1, LB-3	21.1	21.1	42	42	18	4.2	0	18.5	9
29) LA-3, MC-2, LB-3	21.1	21.1	-	-	18	4.2	1.0	17.5	14
30) LA-3, MC-3, LB-3	21.1	21.1	-	-	18	4.6	0	17.9	10
31) LA-3, MC-1, LB-2	21.2	21.4	-	-	26	4.2	0	14.4	3
32) LA-3, MC-2, LB-2	21.2	21.4	-	-	26	4.2	1.0	13.4	8
33) LA-3, MC-3, LB-2	21.2	21.4	-	-	26	4.6	0	13.8	4
34) LA-3, MC-1, LB-1	21.5	21.6			20	4.2	0	15.7	3
35) LA-3, MC-2, LB-1	21.5	21.6	-	-	20	4.2	1.0	14.7	8
36) LA-3, MC-3, LB-1	21.5	21.6	-	-	20	4.6	0	15.2	4

[1] These are end-to-end travel times used in patronage modeling; figures include 20-second station dwell times.

[2] System alternatives using LB-1 or LB-4 assume operation in a reserved median between the SPTC right-of-way and Anaheim Street (Options A or B). Under Option C, however, the rail transit tracks would run in mixed traffic between these two points.

Source: PB/KE, 1983.

Comment 7:

The term "minimum passenger capacity" needs explanation to clarify whether it is in reference to structural capacity or peak hour load standard and what passenger density is involved. (SCRTD)

Response:

The term is in reference to the peak hour loading standard typical of contemporary LRT systems. The crush-load capacity (structural capacity) of an articulated LRV is approximately 220, compared to a peak load standard of 174.

Comment 8:

Slauson Avenue is not under the jurisdiction of Caltrans but under the jurisdiction of the County and City of Los Angeles. (County Road)

Response:

On page II-104, third paragraph, the sentence should read as follows: Of the major east-west arterials, Firestone Boulevard (Route 42) is a state facility and Slauson Avenue (Route 90) is under the jurisdiction of the County and City of Los Angeles.

Comment 9:

Nadeau Street/Maie Avenue runs on a 60-second cycle, not 80 seconds as the DEIR indicates. (County Road)

Response:

The comment is correct. On page IV-123 the cycle length for Nadeau Street/Maie Avenue should be 60 seconds rather than 80.

Comment 10:

The 3rd paragraph, page II-82, incorrectly names the street under Compton land uses. Compton Avenue should be shown as Compton Boulevard. (Compton)

Response:

In Section II-321.1, page II-82, 3rd paragraph, "Compton Avenue" is herewith corrected to: Compton Boulevard.

Comment 11:

The Commission does not have any knowledge or record to indicate that the Southern Pacific Transportation Company is abandoning its East Long Beach Branch. (PUC)

Response:

The SPTC has stated to the LACTC that south of the Cota Crossing, they intend to abandon the East Long Beach Branch. They filed such intention with the PUC in January, 1985.

Comment 12:

Page IV-136 indicates that rail transit and freight branch line tracks will be fully segregated at all points throughout the corridor. This seems incorrect, as we count 50 railroad grade-crossings and 2 rail-rail crossings that will be affected. (PUC)

Response:

In Section IV-234, page IV-136, what is meant by the phrase "fully segregated" is that the light rail vehicle will not run in the same tracks used for freight, but parallel to the freight line. The paragraph goes on to state that "crossings of the two systems would be grade separated. In a few cases, at-grade crossings of rail transit tracks and SPTC spur tracks would be required."

Comment 13:

The DEIR assumes the Century Freeway Transitway to be bus/HOV; however, the LACTC has made a decision to fund light rail on this facility. The EIR should therefore be revised. (Caltrans)

Response:

In Section IV-240, page IV-137, references to the Century Freeway transitway as a bus/HOV are herewith changed to reflect the fact that the LACTC has made the decision to fund light rail on this facility. The Supplemental EIR revised this description in Section I-500, Related Projects.

Comment 14:

Page II-30, last line -- There is no gap in the Foothill Freeway in the Sunland/Tunjunga area. (Caltrans)

Response:

In Section II-171, page II-30, the last line should be deleted.

Comment 15:

Page I-26 -- Stations between Washington Boulevard and Firestone Boulevard are missing from the list. (Caltrans, Allen)

Response:

Please see Chapter V (Corrections and Additions) which shows the corrected Table I-24C.

Comment 16:

Page I-40 -- Despite a disclaimer, the station plan shows a high-level platform. (Caltrans)

Response:

The comment is correct. In Section I-254, page I-40, it should be noted that this station plan is not the final design and is indicative only of the overall configuration of the station.

Comment 17:

Page II-18, Table II-15A -- "1980" and "percent" over 5th and 6th columns should be moved one column to the left. (Caltrans)

Response:

In Section II-152, page II-18, Table II-15A "1980" and "percent" should each be moved one column to the left.

Comment 18:

Page II-66, Table II-22H -- "Union Building" should be "Union Station". (Caltrans)

Response:

In Section II-225, page II-66, Table II-22H, #1 "Union Building" is herewith changed to Union Station.

Comment 19:

On page I-91 and in Appendix 1, no mention is made of the proposed Los Angeles Harbor Department project, the Terminal Island Coal Facility. This proposed project should be listed as a related project and should be included when the EIR considers cumulative impacts. (Port of LA)

Response:

Appendix 1 of the SEIR was modified to reflect this change. Appendix 1 (page 1-7) in the DEIR is herewith changed to include a description of the Terminal Island Coal Facility as follows:

NAME: Terminal Island Coal Facility

RESPONSIBLE AGENCIES: Los Angeles Harbor Department, Army Corps of Engineers

DESCRIPTION/LOCATION: This 150-acre transshipment facility would be located on the southern part of Terminal Island immediately to the east of Earl Street. The function of this facility would be to transfer coal, or possibly other dry bulk items, from unit trains to cargo ships. When completed, the terminal would be capable of transferring 15 million tons of coal annually.

RELATIONSHIP TO LB-LA RAIL TRANSIT PROJECT:
A number of alternative access routes are being considered to accommodate the additional coal train passages expected as a result of the proposed facility. The preferred alternative is a consolidation plan proposed by SCAG which would route all SPTC, UP, and ATSF rail traffic along the current SPTC San Pedro Branch. If such consolidation is not effected, then according to the SCAG studies 70 percent to 80 percent of the traffic would be routed on the Union Pacific. However, some trains (approximately two to four per day in the year 2000) could be expected to use the Southern Pacific Wilmington Branch adjacent to the LRT tracks.

STATUS: A draft EIS/EIR is being prepared and should be ready for distribution in early 1985.

Comment 20:

On page 1-6 of Appendix 1, the current status of the ICTF should read "The first phase of construction is scheduled from late 1984." (Port of LA)

Response:

Appendix 1, page 1-6, under "STATUS" the sentence should read as follows: "The first phase of construction is scheduled from late 1984 to 1990."

Comment 21:

On page I-21 in the table, the grade-separations at Wardlow, Willow, Pacific Coast Highway, and Anaheim should be corrected for LB-3 in the "number of grade-separated crossings." (Long Beach)

Response:

In Section I-230, page I-21, Table I-23A has been amended to include grade-separated crossings at Wardlow Road, Willow Street, Pacific Coast Highway, Anaheim Street, 6th Street and 7th Street in Long Beach (see the response to Comment 6 for the corrected table).

Comment 22:

Page II-118 -- Long Beach Plaza is anchored by Wards, not Sears. (Long Beach)

Response:

In Section II-421.1, page II-118, paragraph 4, "Sears" is herewith corrected to: Wards.

Comment 23:

Page IV-148 -- In the far right-hand column of Table IV-32B, the rankings of "1" and "2" should be reversed. (Long Beach)

Response:

The comment is correct. In Section IV-321.12, page IV-148, Table IV-32B, the rankings of "1" and "2" should be reversed.

Comment 24:

Page IV-149 -- In the 3rd column of Table IV-32C, the rankings of "3" and "4" should be reversed (although addition of 1st Street and Long Beach Boulevard station to LB-3 will alter this number). (Long Beach)

Response:

In Section IV-321.12, page IV-149, Table IV-32C, the rankings of "3" and "4" should be reversed.

Comment 25:

Page IV-150 -- The statements at the end of the 3rd paragraph regarding transit transfers are incorrect. LB-3 and LB-4, with stations on the transit mall, provide for direct transfers with major bus routes. LB-1 and LB-2 would have stations within one block of the transit mall. (Long Beach)

Response:

In Section IV-321.12, page IV-150, the last sentence is herewith corrected to read as follows: LB-3 and LB-4 would have stations on the transit mall and would provide for direct transfers with major bus routes. LB-1 and LB-2 would have stations within one block of the transit mall.

Comment 26:

Page IV-150 -- The fourth paragraph should be corrected to read ". . . somewhat less centrally by LB-2 and LB-3, and peripherally by LB-1. Except for the Convention Center, the tidelands . . ." (Long Beach)

Response:

In Section IV-321.12, page IV-150, fourth paragraph, "most centrally" should be somewhat less centrally.

Comment 27:

Page IV-151 -- The first paragraph under "compatibility" contains incorrect information regarding the General Plan and zoning. North of Anaheim, the Los Angeles County Flood Control land is designated in the General Plan as "Land Use District 11, Open

Space and Parks," and it is zoned "PR (public right-of-way)." The Flood Control land is similarly designated south of Anaheim. (Long Beach)

Response:

On page IV-151, sentences 3 and 4 of the first paragraph under "Compatibility" should be deleted and replaced as follows: The Los Angeles River Corridor, owned by the Los Angeles County Flood Control District, is designated "Land Use District 11, Open Space and Parks" in the General Plan and is zoned "PR (public right-of-way)." The Flood Control land is similarly designated south of Anaheim.

Comment 28:

Page IV-156 -- Based on the above-cited corrections and our own evaluation of traffic and parking impacts, Table IV-32E should be revised. (Long Beach)

Response:

See Section III-323, Land Use, the response to Comment 2, which includes a replacement table for page IV-156.

Comment 29:

Pages IV-163 and 164 -- The first paragraph should be corrected to say that only LB-3 would provide direct connections with the World Trade Center. (Long Beach)

Response:

In Section IV-323.2, page IV-163, line 4 of the DEIR, the reference to "LB-4" providing direct connection to the World Trade Center should be LB-3.

Comment 30:

The DEIR portrays the LB-LA project as being on an elevated guideway over Slauson and states that "to clear both the SPTC freight tracks and the elevated light rail guideway and station, the Bullet Train would require even greater elevation, possibly as high as 232 feet." This statement makes it appear that the high speed line would be 232 feet high. The statement probably actually means at elevation 232 feet. If we were to cross over the LB-LA on a viaduct, our minimum height would be approximately 23 feet above the LB-LA top-of-rail. (AHSR)

Response:

Appendix 1, page 1-2, the last sentence of the first paragraph should read as follows: The Bullet Train would require approximately 23 feet above the LB-LA top of rail.

Comment 31:

On page IV-62, the statement that "Pacific Electric Railway cars ran on both Broadway and Spring" is erroneous. Cars of the Los Angeles Railway (the "yellow cars") ran on Broadway until 1963 and on Spring until 1955. Pacific Electric cars ran on Main and Hill until 1950. (ERHA)

Response:

In Section IV-125, page IV-62, 2nd paragraph, "Pacific Electric rail cars ran on both Broadway and Spring Street" is herewith corrected to read: Los Angeles Railway cars ran on Broadway until 1963 and on Spring Street until 1955.

Comment 32:

In Table I-24C, in the columns for the LA-3/MC-1/LB-4 option, all station boardings between Central and 103rd were omitted. (Allen)

Response:

See the response to Comment 15, above.

Comment 33:

Page II-61, Item II-224.1 -- The reference to "the historic plaza and Olvera Street" is too narrow. You should substitute "buildings, landscaping and other features of the El Pueblo de Los Angeles State Historic Park." In the second paragraph, the reference to "Union Station/plaza complex" should be changed to "Union Station/El Pueblo Historic Park Complex." (Cameron)

Response:

In Section II-224.1, page II-61, paragraph 1, line 6, "historic plaza and Olvera Street" is herewith corrected to read: buildings, landscaping, and other features of the El Pueblo de Los Angeles State Historic Park. In the second paragraph, the "Union Station/Plaza Complex" reference is corrected to: Union Station/El Pueblo Historic Park Complex.

Comment 34:

Page II-64 -- The official name of El Pueblo is "The Los Angeles Plaza Historic District." (Cameron)

Response:

In Section II-225, page II-64, the first bullet, "El Pueblo de Los Angeles" is herewith corrected to: The Los Angeles Plaza Historic District (El Pueblo de Los Angeles)."

Comment 35:

Pages II-66 and 67, Table II-22H -- Several errors should be corrected, as follows:

a) No. 1 should read "Los Angeles Union Passenger Terminal (Union Station) Buildings and Grounds."

b) Address is 800 North Alameda Street.

c) No. 5 is Alexandria Hotel.

d) No. 26 was the Los Angeles Railway Building.

(Cameron)

Response:

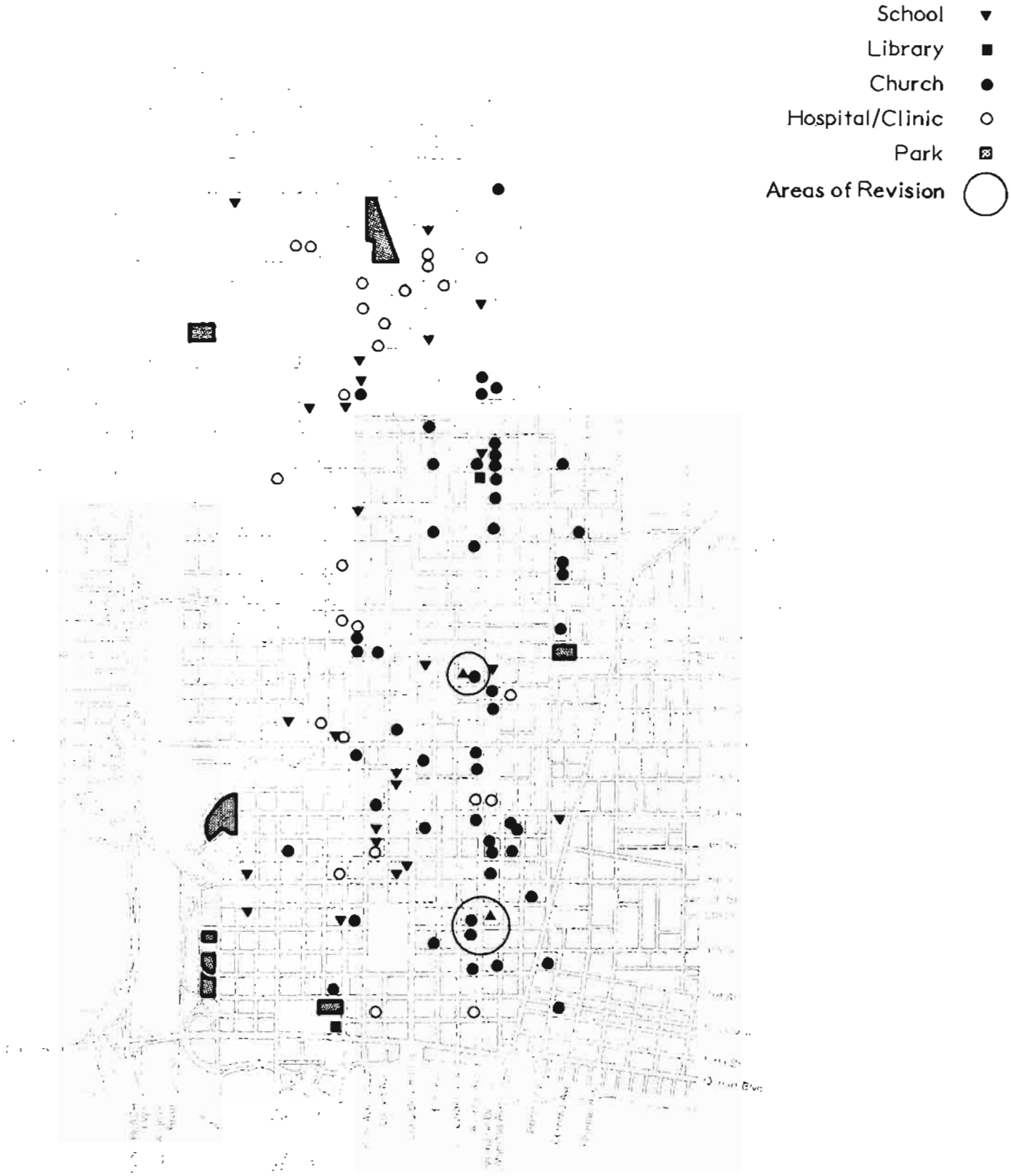
On pages II-66 and II-67, in Table II-22H, the corrections are herewith made as detailed above in the comment.

Comment 36:

Figure 42-B shows an incorrect placement of one of the schools, thereby implying no impact. (LBPTA)

Response:

On page II-123, Figure II-42B, the placement of schools and churches is herewith corrected and the replacement Figure II-42B is reprinted on page III-176. The circled areas contain changes in the locations of schools and churches.



REVISED

Figure II-22A

Long Beach - Los Angeles
RAIL TRANSIT PROJECT
LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Long Beach
Community Facilities
PARSONS BRINCKERHOFF / KAISER ENGINEERS

III-400 COMMENTS AND RESPONSES BY TOPIC - SEIR

The public review period for the SEIR commenced on December 3, 1984, and the close of comments occurred on January 9, 1985. A public hearing was held on January 9, 1985 at the Long Beach City Hall.

During the course of the public review period, some 46 written communications (comprising 122 pages) were received: four in the form of official city comments, six from public agencies, 14 from private groups or organizations, and 22 from individuals.

At the public hearing, 45 pieces of testimony (144 pages transcribed) were taken before the hearing officers. Several of these comments were duplicated in written form.

In addition to the written and oral comments which were received during the SEIR public review period, additional communications were received in August 1984 subsequent to the comment period on the DEIR, yet prior to publication of the SEIR. These communications were authored by residents of the Wrigley district in Long Beach and took the form of a petition (with some 1,500 signatures) and over 1,000 form letters, some of which had additional comments. Because all of this material has bearing on the SEIR alternatives, it is herein responded to. The singular purpose of these collective petitions and letters was opposition to any river route option.

Even excluding the 1,500-signature petition opposing the river route option, Route Preference was still the topic commented on most, with 60 written and oral comments. Other topics having a high frequency of comments included: Traffic - 25; Economic Activity - 13; and Noise and Vibration - 9.

III-401 Adequacy

Comment 1:

> The Draft Supplemental EIR is inadequate and deficient in many respects. [Note: The commenter is an attorney who was retained by Citizens for Responsible Transit, a Wrigley residents' group. His comments pertain to LB-3 (Modified River Route)].
>
> a) The format isn't clear and understandable.
>
> b) Proposed mitigation measures are insufficient. The format should have the measures broken down into those measures which are a condition for project approval and those which are optional.

c) Of the 20 typical impact categories, only five have a mitigation section following them.

d) The document glosses over questions concerning utility relocation, condemnation of structures, displacement of residents, and public safety.

e) The document talks about preserving the power stations, but there is no assessment of the impact on residents if LB-3 is chosen.

f) The document is self-conflicting concerning noise and vibration impacts on residences, both the occupants and the structures.

g) The document acknowledges a problem with flooding every seven years, then glosses over this known flooding hazard.

h) The project conflicts with residential land use, but no solution is offered.

i) There is no assessment of the impacts on existing inadequate neighborhood street parking.

(Reed)

Response:

a) The Supplemental EIR was prepared as an addition to the Draft EIR circulated in May, 1984. In order to reduce the size of the Supplement, it was necessary to cross-reference the DEIR. However, the Supplement was organized in the same fashion as the DEIR; an attempt was made to keep chapter and section numbers consistent between the two documents to aid in cross-referencing. In combination, the Draft and the Supplement assess seven alternatives and their variations in Long Beach, three alternatives in the mid-corridor, and three alternatives with two possible extensions in downtown Los Angeles. With this number of alternatives and variations along with system combinations, cross-referencing was vital.

The document was organized by segment (Los Angeles, Mid-Corridor, and Long Beach) to assist the communities and the decision-makers along the proposed alignments in their assessment of the project. Further, since an EIR is a multi-discplinary study of direct and indirect impacts, it is

obviously necessary to cross-reference between impact areas in order for the reader to understand the interrelationships. An extensive Table of Contents is readily available to assist the reader in finding his/her way through each document.

b) Section S-320 summarizes impacts and includes the following statement: "The following summary of project impacts outlines anticipated impacts in each impact category, the alternative alignment to which the impact applies, a brief description of the impact (and a determination of whether it is significant or minor), mitigation that has been incorporated into the project or that the LACTC is prepared to undertake if that alternative is selected, and a determination whether the net remaining impact would be significantly adverse." Following that statement is Table S-3 which presents such information.

The information in the SEIR goes further than CEQA requires in identifying mitigation measures for both significant and minor adverse impacts. In addition, the Final EIR contains a list of mitigation measures reflecting comments on the project and additional studies that have been completed since the DEIR and SEIR were prepared (see Section II-600 of this document which identifies the implementing agencies other than LACTC where appropriate).

c) Mitigation measures are identified as separately numbered sections 12 times in the Table of Contents. In most instances, for topics without such a separate section, there is no significant impact and mitigation is not necessary. The only section that discusses mitigation for a potentially significant impact where the mitigation discussion is not separate is noise. That has been corrected with the creation of a new Section IV-153. See Section III-431 (Corrections and Additions), the response to Comment 10.

d) Section I-321 and Section III-223 discuss utility relocation. Section III-224 discusses mitigation measures for utility relocation. To some extent, utility relocation is self-mitigating because utility owners must give permission for temporary or permanent relocation before the project can proceed.

Table III-21A summarizes full and partial property acquisitions for the three river route options. Among the 30 pieces of property to be acquired are one duplex (two residential units), three storage sheds, and one industrial property. Otherwise, property acquisitions involve unimproved land. Mitigation measures for such acquisition are discussed in Section III-210.

Section IV-220 discusses the potential for increased crime with regard to transit passengers and the possible need for the Long Beach Police Department to expand its law enforcement activities.

e) Section IV-151 discusses adverse noise impacts on residents and characterizes them as significantly adverse unless mitigated. Section IV-210 discusses land use, service to population concentrations, and land use compatibility. Section IV-212 analyzes changes in mobility and accessibility patterns, particularly for transit dependents. Section IV-220 summarizes impacts on community facilities and recreational resources; Section IV-242 describes changes in the visual environment likely to occur if the project is built. Traffic and parking impacts are discussed in Section IV-312. Potential displacement of residents and businesses is outlined in Section III-210 and mitigation is proposed. All of these impact areas address the way people could be affected by the project.

f) See Section III-412, Noise and Vibration, the responses to Comments 2, 3, and 4.

g) The SEIR states that the area is not an officially designated floodplain (as identified in Flood Insurance Rate Maps, U.S. Department of Housing and Urban Development) but that local residents have reported instances of flooding. A reference to a seven-year flooding cycle does not occur in the document.

The project will change water runoff patterns insignificantly, if at all. The track will be constructed at the toe of the existing embankment on ballast, a highly permeable material. The track will not act as any more of a dike than the existing flood control embankment. Proposed parking lots will add some impermeable surface, but the lots will be drained to meet the Los Angeles Flood Control and Sanita-

tion District standards. The project will not increase the likelihood or danger of flooding to existing residents. Drainage at the parking lots may actually improve the existing situation if there are ponding or accumulation problems.

The proposed water/flooding study is to clarify the existing situation in order to design the drainage system required for the project. In the absence of a defined 100-year floodplain, the proposed study was incorporated into project plans to respond to the comments raised by residents during preparation of the SEIR.

h) North of Anaheim the land owned by the Los Angeles County Flood Control District is designated Open Space and Parks in the General Plan and zoned "PR" (public right-of-way). The SEIR does propose mitigation measures such as a noise wall and landscaping to reduce noise and visual impacts (see Sections IV-151 and IV-243) in predominantly residential areas.

i) A major park-and-ride facility at the PCH station is planned only under the Option B LB-3 (Modified River Route) alternative. The supply of parking to be provided there would be commensurate with indicated demand. Along with the enforcement measures designed to discourage spillover onto residential streets, adverse impacts should be minimized or eliminated.

III-402 **Bus Service**

Comment 1:

While new feeder bus lines are mentioned in the document, specific headways, route alignment, or daily capacity information are not mentioned. This information is needed to assess circulation impacts to Signal Hill. The use of park-and-ride facilities will be higher than the EIR estimates, particularly at the Willow Street station. The traffic impacts of anticipated office development along Willow and Atlantic need to be assessed (LB-5 and LB-6). (Signal Hill)

Response:

The impacts from arrivals at the Willow Street station to the intersection of Willow Street and Long Beach Boulevard are discussed in the response to Comment 4, Section III-426

(Traffic). The traffic projections for the year 2000 take into account all projects associated with the city's capital improvement programs and private development projects.

Specific information on the Complementary Bus Network, including headways, is listed below. These modifications to existing service were carefully reviewed with Long Beach Transit and SCRTD before incorporation into the Complementary Bus Network. Patronage estimates were prepared based on this information.

The proposed bus route modifications associated with each of the Supplemental alternatives are as follows:

(LB-3) River Route with Three Additional Stations and an Aerial Section

- LB-3 (Downtown to East 10th Street) - increase peak period service frequency from 30- to 20-minute headways.

- LB-10A (New Service) - maintain LB-10 service as is; provide a new route (LB-10A) serving the Willow corridor between the Willow Street LRT station to the west and Los Altos to the east. This new feeder service would operate during the peak period at a frequency of 15-minute headways.

- LB-15 (Del Amo Boulevard) - increase peak period service from 30- to 15-minute headways.

- LB-16 (Downtown to Los Cerritos Center) - terminate route at Del Amo station to eliminate north/south service to downtown; increase peak period service from 30- to 20-minute headways.

- LB-17A (New Service) - maintain LB-17 service as is; provide a new route (LB-17A) serving the PCH corridor between the PCH LRT station to the west and Studebaker Road to the east. This new feeder service would operate during the peak period at a frequency of 15-minute headways.

- RTD-360 (Long Beach Boulevard - Santa Fe Avenue) - eliminate service.

- RTD-456 (Long Beach-Los Angeles Express Service) - eliminate service.

- RTD-457 (East Long Beach Park-and-Ride Express) - eliminate service.

(LB-5) Long Beach Boulevard, Two-Way

- LB-5 (Long Beach Boulevard to Seal Beach) - reduce peak period service frequency along Long Beach Boulevard from 15- to 30-minute headways.

- LB-8 (Downtown to East 10th Street) - increase peak period service frequency from 30- to 20-minute headways.

- LB-15 (Del Amo Boulevard) - increase peak period service frequency from 30- to 15-minute headways.

- LB-16 (South Street to Cerritos Center) - terminate route at Del Amo Station to eliminate north-south service to downtown; increase peak period service from 30- to 20-minute headways.

- RTD 360 (Long Beach Boulevard - Sante Fe Avenue) - eliminate service.

- RTD 456 (Long Beach Boulevard-Los Angeles Express) - eliminate service.

- RTD 457 (East Long Beach Park-and-Ride Express) - terminate route at Del Amo station; eliminate service north of Del Amo Boulevard.

(LB-6) Terminate LRT at Willow Street

- LB-5 (Long Beach Boulevard to Seal Beach) - increase service frequency during peak period from 15- to 10-minute headways. In addition, provide a new limited stop shuttle service between the Willow Street LRT Station and the Transit Mall at a peak period service frequency of six-minute headways.

- LB-6 (Atlantic Avenue) - Redirect route to interface with LRT at Willow Street station. Increase peak period service frequency from 15- to 10-minute headways.

- LB-10A (New Service) - Maintain LB-10 service as is; provide a new route (LB-10A) serving the Willow corridor between the Willow Street LRT station to the west and

Los Altos to the east. This new feeder service would operate during the peak period at a frequency of 10-minute headways.

- LB-15 (Del Amo Boulevard) - Increase peak period service frequency from 30- to 15-minute headways.

- LB-16 (South Street to Cerritos Center) - Increase peak period service from 30- to 20-minute headways.

- RTD 360 (Long Beach Boulevard - Sante Fe Avenue) - eliminate service.

- RTD 456 (Long Beach Boulevard-Los Angeles Express) - eliminate service.

- RTD 457 (East Long Beach Park-and-Ride Express) - terminate route at Del Amo station; eliminate service north of Del Amo Boulevard.

Comment 2:

Tradeoffs between a full-fledged shuttle system and light rail on Long Beach Boulevard as to reduced congestion and costs should be addressed. (LB Blvd. Assn.)

Response:

The differences in congestion on Long Beach Boulevard between LB-5 and LB-6 would be minimal. The tradeoff would be between LRT in the reserved median (LB-5) and a bus every five or six minutes in mixed traffic during the peak hour (LB-6).

Operating costs for the peak hour shuttle are estimated to be $600,000 to $1,000,000 per year. In addition non-peak hour costs for bus service may be higher because of increased demand for local service by LRT transfers. Operating costs for the LRT on the same stretch are estimated to be to be approximately $1.2 million per year.

The other tradeoff to be considered is a probable reduction in patronage because of the need to transfer to the LRT for LB-6. LB-5 would also provide a reduction in competing bus service

whereas LB-6 would require a feeder bus service to Willow Street, maintenance of existing bus lines, and the addition of the shuttle service. The overall level of service to transit patrons would be reduced with LB-6 in comparison to LB-5.

Comment 3:

The Willow Street Terminus alternative would require a costly shuttle bus service from downtown Long Beach as well as a significant route restructuring on Long Beach Transit's part. (LBT)

Response:

It is true that route restructuring would be necessary on the part of Long Beach Transit. The proposed bus route and frequency modifications for local and express bus services are summarized on page IV-52 in the SEIR.

Comment 4:

The Long Beach Boulevard alternative provides some duplication of service on top of our existing local service. In addition, with the light rail train operating in the left lane south of 7th Street, the integrity of our bus-only curb lane will be compromised. The nearest park-and-ride facility is at Del Amo Boulevard. This may result in further traffic or parking problems for those rail patrons who choose to drive to a station, but not as far as Del Amo. There may also be congestion problems in the neighborhoods surrounding some of the other stations. (LBT)

Response:

Under the Long Beach Boulevard (LB-5) alternative, the bus-only lane south of 7th Street will be maintained as is. Even with the LB-5 "refined" alternative (see Chapter I of this FEIR), where the LRT would operate in a reserved median, the bus-only lane will be maintained.

Passengers boarding at LRT stations along Long Beach Boulevard would arrive primarily via bus transit (transfer) and walk trips. No significant increase in vehicular traffic or parking is anticipated around Long Beach Boulevard station areas.

Comment 5:

The river route would require some significant bus route restructuring to serve the Anaheim, PCH, and Willow Street stations. (LBT)

Response:

New feeder bus service has been proposed to serve the LRT stations along the modified river route. The proposed bus route and frequency modifications for local and express bus services are summarized on pages IV-51 and IV-52 in the SEIR. (Also see the response to Comment 1, above.)

III-403 Community Services

Comment 1:

The termination of the rail line in Lincoln Park for the river route alternative constitutes a significant adverse impact rather than a minor one. However, if the station design is integrated with the proposed redevelopment of the park, the impact will be reduced to minor adverse or even minor beneficial. (Long Beach)

Response:

We appreciate the view of the City of Long Beach, the Responsible Agency under CEQA for the possible integration of the project with Lincoln Park. The assessment presented in the comment, both as to severity of impact and the effects of the proposed mitigation, is accepted as a substitute for language currently contained in the document.

III-404 Cumulative Impacts

Comment 1:

In Section II-400, the part on cumulative impacts only mentions two projects that are related to the project. A broader approach should be taken according to recent case law. (SCRTD)

Response:

Section I-500 of the SEIR notes that the related projects identified in Appendix 1 of the DEIR apply also to the SEIR. The DEIR discussed 10 major related projects. The SEIR added the

Terminal Island Coal Facility to this list. The discussion in Section III-400 of the SEIR focuses on those related projects specific to the Long Beach alternatives evaluated in that document.

Comment 2:

Section V-140 on cumulative impacts of related projects does not list any other projects. Such projects should be listed to the extent they are known. (SCRTD)

Response:

A discussion of related projects and an itemized listing are provided in the DEIR. Because the DEIR has been incorporated by reference, this discussion has not been brought forward into the SEIR. Section I-800 (DEIR) identifies related projects as being those major developments scheduled for completion before the year 2000. Figure I-80A (DEIR) shows the location of these projects. Appendix 1 to the DEIR provides a listing of the most prominent related projects. It should further be noted that significant projects (planned and proposed), both public and private, have been incorporated into the underlying socioeconomic data upon which the patronage analysis has been based. Related projects have thus been included in all areas of the environmental analysis where they have bearing.

III-405 Data Request

Comment 1:

The Supplemental EIR should contain travel times for the three new alternatives so as to update page I-21 of the original EIR. (Long Beach)

Response:

The following table provides the information requested in the comment.

TRAVEL TIME - SELECTED LONG BEACH ALTERNATIVES

	From Del Amo Station to Long Beach Transit Mall	From Downtown Los Angeles to Long Beach Transit Mall
River Route - Broadway Aerial with PCH Park-and-Ride Station	9.1 minutes	48.7 minutes
Long Beach Blvd. Two-Way	14.5	54.1
Atlantic Avenue - Two-Way with Pacific Loop	16.7	56.3
Atlantic Avenue - Long Beach Blvd. Couplet	15.6	55.2
Willow St. Terminus	18.4 (including rail/bus transfer)	58.0 (including rail/bus transfer

III-406 Displacement

Comment 1:

Displacement of people in the river corridor was roughly equated with displacement of trees in the Long Beach Boulevard corridor. (Quinby)

Response:

The LACTC does not intend to equate the removal of the median landscaping along Long Beach Boulevard with the displacement of people along the river route. Both are discussed as adverse impacts of the placement of the light rail route along the respective alignments, but the displacement of people is a significant adverse impact which, arguably, can never be fully mitigated, as can the removal of vegetation. While relocation assistance does compensate residents and businesses financially for a mandated move, it is recognized that there may be additional potential psychological and emotional impacts associated with such a move.

III-407 Economic Activity

Comment 1:

Disruption to businesses along Long Beach Boulevard during construction will be significant adverse, and the proposed mitigation will not substantially reduce this impact. (Long Beach)

Response:

Construction of LB-5 (Long Beach Boulevard, Two-Way) would undoubtedly cause some adverse impact to adjacent businesses. Recent experience with similar construction methods in other cities indicates that this impact can be kept to a minimum through appropriate staging of activities, containment of lane or street closures to one block at a time, and provision of temporary assistance such as special signing, advertising, etc. While there is potential for a significant adverse impact on marginal business operations (severe loss of sales or failure), properly managed construction activity should produce no long-term effects on the great majority of Long Beach Boulevard establishments.

Comment 2:

The beneficial impacts of increased property and sales tax bases should be attributed only to the Long Beach Boulevard and river route alternatives, since the Willow Street Terminus generates an insignificant amount of new development. (Long Beach)

Response:

As shown in Table IV-23B (page IV-31) in the SEIR, the Modified River Route alternative and the Long Beach Boulevard alternative are shown to have respective impacts five and nine times greater than that for the Willow Street Terminus alternative. The amount of beneficial impact attributed to the Willow Street Terminus option is insignificant, and the figures shown in the SEIR support the position expressed in this comment.

Comment 3:

Moving the alignment onto the World Trade Center site could significantly delay this important project currently scheduled to break ground in January, 1986. (Long Beach)

Response:

Regardless of the alignment chosen, all construction activity will be closely coordinated with other public and private construction activity to identify and resolve potential conflicts before they occur.

Comment 4:

Table IV-21A shows no retail development and only minor residential development generated by the river route alternatives. We believe that the line will generate retail development at its terminus, and that it will also stimulate market demand for high density residential uses in the area north of Broadway and west of Magnolia. (Long Beach)

Response:

There are no studies available which set out procedures or guidelines for quantifying development inducement by a new light rail system. Therefore, the assumptions used in projecting the amount of induced development, while conservative, are valid according to sound planning practice and principles. The projections of induced development for each alternative were based on the amount of vacant land available for development, the zoning and permitted uses, the amount of land which could reasonably be expected to develop and redevelop by the year 2000 (based on population and employment projections from SCAG), and a modest incremental factor for development as a result of the light rail project.

The only such light rail system to be instituted in California within the last 40 years was in San Diego (July, 1981). Not enough time has elapsed since the start-up of that system to accumulate data which would allow conclusions regarding development inducement to be drawn. This was verified by consultation with the San Diego Regional Planning Agency (SANDAG), which is tracking land use and development changes as a result of the light rail. Their work shows that there has not yet been enough activity to come to any conclusions (phone conversation 1/30/85 with G. Franck).

If the river route is chosen as the preferred alternative, the City of Long Beach may prove to be correct in its belief that the light rail line will generate greater retail development and stimulate market demand for high density residential uses in the above-identified areas. However, the LACTC does not wish to claim benefits for the light rail which cannot yet be proven.

Comment 5:

The SEIR states in the third paragraph on page IV-21 that the river route should stimulate less new development than the Long Beach Boulevard route because it traverses a smaller amount of developable land. This overlooks the permitted densities and latent market demand in the two areas. (Long Beach)

Response:

The assumptions used in the projection of induced development for the Long Beach alternatives are discussed in Comment 4, above. The permitted densities were included in the calculations; however, latent market demand is not a quantifiable number and was, therefore, not included.

Comment 6:

The last paragraph of page IV-30 indicates that all three alternatives would have a positive fiscal impact within the CBD. Since the Willow Street Terminus does not serve the CBD, it is highly unlikely that any such impact can be measured in the downtown area as a result of its implementation. (Long Beach)

Response:

The assertion that the Willow Street Terminus alternative would have negligible impact on the Long Beach CBD is correct. The sentence referred to in the comment should read "the City of Long Beach" rather than "Long Beach CBD."

Comment 7:

The Long Beach Boulevard route would negatively impact downtown both in construction and in operation. There are 222 businesses along this route. Construction activities will negatively affect them all, not only in the 60 days or more during which the street is closed to traffic, but also throughout the entire 24-month construction period. (DLBA)

Response:

See the response to Comment 1, above.

Comment 8:

We are requesting that construction be phased to minimize disruption of access to the Plaza. (Long Beach Plaza)

Response:

Where considered appropriate or necessary, construction will be phased to minimize disruption.

Comment 9:

The Long Beach Boulevard corridor is experiencing a trend away from the historical dominance of automobile dealerships. It seems clear that the potential for large-scale condominium/retail development would be greatly enhanced. (Zimmerman)

Response:

The comment supports the discussion of land use impacts which is presented in Section IV-210 of the SEIR.

Comment 10:

If the Long Beach Boulevard alternative is selected, it would mean that the street would be shut down for construction, block-by-block, for up to two years, and when completed traffic congestion would be horrendous. (LB Blvd. Assn.)

Response:

A discussion of traffic impacts during construction and their effect on Long Beach Boulevard businesses can be found in the response to Comment 1, above. The analysis of traffic impacts after the light rail system is operational is presented on pages IV-48 and IV-49 of the SEIR. That discussion demonstrates that, with the exception of a limited number of left turn movements, traffic impacts on Long Beach Boulevard attributable to the light rail project would be minimal or nonexistent.

Comment 11:

In the LB-5 Long Beach Boulevard alternative, what specific densities as measured in floor area ratios are anticipated? What specific measures will be taken to encourage joint development opportunities in the LB-5 alternative? Will there be density bonus allowances for participation in station construction? When will station specific plans be issued for each alternative alignment? (Signal Hill)

Response:

Specific development plans, including encouragement of joint development projects, have not been formulated at this early stage. In the event that the LB-5 alternative is adopted for implementation, extensive coordination between the Los Angeles County Transportation Commission, the Southern California Rapid Transit District, and the City of Long Beach will be maintained to address the issues raised in the comment. Joint development incentives, if and when used, will conform with all applicable City of Long Beach zoning laws, land use controls, and development objectives.

Comment 12:

The Signal Hill Town Center Project and the Atlantic Avenue Redevelopment Project areas will add in excess of 250,000 square feet of new office space within one mile of the LB-5 and LB-6 alternatives. To what measurable degree will this affect office market potential and absorption rates in the LB-5 alternative? Conversely, to what measurable degree will the commercial development on Long Beach Boulevard affect the market potential and absorption rates for office development in the City of Signal Hill? (Signal Hill)

Response:

To the extent that the light rail project stimulates or otherwise influences development activity (along Long Beach Boulevard or elsewhere), this activity will necessarily represent a shift from some other location within the region. In the short term, it may represent a diversion of activity from one or both of the two locations indicated. The final disposition of development pressure in Long Beach and Signal Hill cannot be forecast with precision and, therefore, no attempt is made to do so in the SEIR.

Comment 13:

The economic impacts on Long Beach Boulevard and nearby businesses in terms of reduced sales, tax revenues, and loss of employment need to be addressed. (LB Blvd. Assn.)

Response:

The local impacts on Long Beach Boulevard businesses resulting from LRT construction activities are described in Section III-230 (pages III-15 to III-19) of the SEIR. As stated there, the most significant economic impact resulting from construction of the project in Long Beach would be the potential disruption to local businesses. Specific impacts associated with construction of the Long Beach Boulevard alternative (LB-5) are partial or entire street closures, noisy conditions, and the fact that the LB-5 alternative would potentially affect the most number of businesses (222). In the table which accompanies the discussion, the degree of disruption is identified as moderate. The potential losses to local businesses, in terms of reduced sales and loss of employment, cannot be accurately predicted. However, with implementation of the appropriate mitigation measures and active coordination with the local business community, these potential effects can be minimized.

Additionally, once the system becomes operational, positive economic effects are expected. As shown in Section IV-233 of the SEIR, the LB-5 alternative is estimated to result in an annual gain in property tax revenues of $1,135,000 and an annual sales increase of $10,000,000, which would yield an annual sales tax revenue of $650,000. There is an expected loss of annual property tax of only $1,800, however, resulting from necessary property acquisition for the alignment, maintenance yard, and substations. So while it is true that there will be some negative effects on businesses during the construction period, there are substantial and permanent benefits to be realized after the system becomes operational.

III-408 Financial

Comment 1:

The separate capital costs of alternatives LB-3 (Option D) and LB-3 (Option E) should be included in Tables S-1 and I-41A (or their equivalent) in the Final EIR. If their costs are identical, a brief statement to that effect should be included. (SCRTD)

Response:

The capital costs shown in Tables S-1 and I-41A reflect the "primary" alternative LB-3 (Option D). The capital costs for LB-3 (Option E) would be slightly higher (approximately $175,000).

Comment 2:

The subject Draft EIR is deficient in its time estimates (for Long Beach Boulevard travel times); it fails to point out the traffic impacts on such parallel north-south streets as Maine, Daisy, and San Francisco in the year 2000, and neglects to point out the "short-fall", after initial capital costs, of interest and maintenance for the project. (LB Blvd. Assn.)

Response:

For a discussion of Long Beach Boulevard travel times, please see the response to Comment 21 in Section III-426. For additional discussion of the traffic impacts of LB-5, see Section III-426, the responses to Comments 6 through 15. As pointed out in Section I-425.1 of the DEIR, a high percentage of operating cost recovery is indicated for the Long Beach-Los Angeles light rail project. The revenue performance figures suggest that existing transit subsidy sources, including Proposition A, will support the project's net costs of operation.

III-409 Impacts on Schools

Comment 1:

The EIR has not taken into consideration that we have three elementary schools, and those boundaries are on the east and west side of the tracks. (Filer)

Response:

Section II-332.1 in the DEIR describes the location of schools, libraries, and churches in the mid-corridor. Figures II-32B(1) and II-32B(2) show the location of the those facilities. Section IV-222 discusses impacts on community services in the mid-corridor and notes that fencing would reduce presently unpermitted but unenforeced cross-track pedestrian access and improve safety. Installing fencing would require pedestrians to use crossings controlled by gates and signals.

III-410 Joint Development

Comment 1:

Perhaps some of the higher construction and procurement costs of the Broadway Aerial-Modified River Route alternatives (LB-3, Options A, B, and C) shown in Table I-41A could be recovered through joint development projects in the downtown Long Beach portion of this alignment. (SCRTD)

Response:

It is possible that the construction costs of some alternatives have more potential than other alternatives for partial recovery through joint development projects; however, to date, no such sources have been identified with confidence. On the contrary, the interests involved have indicated that there is little potential of this nature. Therefore, for purposes of alternative evaluation, LACTC is not considering potential cost recovery of this nature.

Comment 2:

The station plans shown in Figures I-13I and I-13J for the Long Beach Civic Center station (Options D -- Primary and E -- Secondary) represent relatively low intensity land uses for the southern terminus of a regional rail transit facility in a major urban area. The station as shown has limited all-weather protection and is surrounded by single-story retail. Consideration should be given in the Final EIR to the integration of this station into a major office structure at this or an adjacent site which would offer the possibility of offsetting some of the higher capital costs of this alignment through the sale of development rights. (SCRTD)

Response:

The LACTC appreciates and supports SCRTD's comments calling for more intensive joint development at the Long Beach terminus station for Alternative LB-3, Option D or E; however, the station concept calling for a terminus in a redeveloped Lincoln Park is per coordination with the involved Long Beach City departments and is reflective of the density desired by the city for that site. Further design development of the facility will seek maximum joint development potential consistent with the city's overall planning for the area.

Comment 3:

If the full development of Alternative LB-3 (Option D or E) results in loss of park land, it is possible that replacement open space could be purchased as part of a joint development process. (SCRTD)

Response:

LACTC agrees with this suggestion by SCRTD as a potential mitigation for loss of park land at Lincoln Park under Alternative LB-3, Option D or E.

III-411 Mitigation Measures

Comment 1:

The district recommends that the Los Angeles County Transportation Commission adopt the "Mitigation Measures" listed in Sections III-141, III-211, III-224, III-231, III-320, IV-100, IV-213.2, IV-243, IV-313, IV-332, V-112 and V-122 of the Supplemental EIR, as well as such other mitigation measures as further investigation proves warranted as part of the Final EIR. (SCRTD)

Response:

The LACTC is committed to adopting those mitigation measures which are appropriate for the system finally selected for implementation. These are specified in Section II-600 of this FEIR.

Comment 2:

The noise and vibration mitigation measures contained in Section III-141 should be more specific and tied to the criteria. (SCRTD).

Response:

We agree that specific noise and vibration criteria must be clearly defined for construction activities so that the public is adequately protected; noise and vibration mitigation measures can be more clearly defined. Such specific standards will be prepared during the preliminary engineering phase of the project and will be included in a formal set of construction specifications.

Comment 3:

The mitigation measures contained in Section IV-150 for noise and vibration should be clearly spelled out and firmly committed to in the final report. (SCRTD)

Response:

See the response to Comment 2, above.

Comment 4:

Section IV-332 should indicate who the responsible agency is for the parking mitigation measures which are described in the report. It should also show what mechanisms will be established to carry out the necessary coordination of mitigation measures that are the responsibility of other agencies. (SCRTD)

Response:

The City of Long Beach, in its overall parking management program, would be responsible for the parking mitigation measures identified. Operation of the complementary bus system would be the responsibility of the local bus operators involved; for these arrangements, as well as any other mitigation measures which are the functional responsibility of other agencies, the LACTC will seek agreements for such measures to include LACTC assistance as reasonable and necessary.

III-412 Noise and Vibration

Comment 1:

Although the light rail vehicles are extremely quiet, they will make a noticeable noise in an area of very low ambient noise levels, such as along the residential stretch of the river route. (Long Beach)

Response:

See the response to Comment 2, below.

Comment 2:

As stated in our prior testimony, we believe that noise impacts should be measured as single events as well as cumulative averages (Community Noise Equivalent Level - CNEL), and that these measures should be estimated both before and after mitigation. (Long Beach)

Response:

Comments 1 and 2 concern the potential noise impact of the light rail system on residences along the river route and the effect of the proposed noise barrier wall in that area. The SEIR lists maximum A-weighted noise levels for single light rail events of 72 dB to 79 dB for a speed range of 30 to 50 mph. For the operating speed along the river route of 40 mph or less, the maximum single event level would be approximately 76 dB. Limits on the maximum single event level for rail vehicle passbys are contained in American Public Transit Association (APTA) guidelines. The guidelines indicate that for an average density, single-family residential community, the maximum noise level for train operations should not exceed 75 dB, applied to outdoor noise levels at night, no closer than 50 feet from the track centerline. The proposed noise barrier will reduce the vehicle noise levels by at least 5 dB, bringing the maximum light rail passby level well below the 75 dB limit. According to the APTA guidelines, community acceptance should be expected if these guidelines are met.

As an indication of the impact of this maximum passby level of 71 dB, Table 1 lists the maximum noise levels measured each hour of the day during the field survey at Long Beach Location 2, a residence on the 900 block of 21st Street (where the measured CNEL was 57 dB). As the table shows, during most of the hours of operation of the light rail system, current maximum noise levels exceed the expected light rail passby level, even in this relatively quiet area. During the hours of 5:30 to 6:00 AM and 10:00 PM to 1:30 AM, however, the current maximum levels are well below the expected light rail level of 71 dB (which would occur for approximately 10 seconds during each of these hours).

TABLE 1

MEASURED NOISE LEVELS AT LONG BEACH LOCATION 2

Hour of Day	Maximum Measured Noise Level, dBA
9:00 AM	72
10:00	78
11:00	78
12:00 PM	74
1:00	68
2:00	75
3:00	78
4:00	74
5:00	69
6:00	71
7:00	73
8:00	66
9:00	70
10:00	61
11:00	53
12:00 AM	62
1:00	57
2:00*	54
3:00*	54
4:00*	53
5:00*	61
6:00	73
7:00	73
8:00	70
9:00	73
10:00	76

* Note that the LRT system will not be in operation between 1:30 AM and 5:30 AM.

Source: Bolt Beranek & Newman, 1984.

In comparison, Table 2 lists the maximum noise levels measured each hour of the day during the field survey at Long Beach Location 9, the trailer park on Willow Street (where the measured CNEL was 62 dB). In terms of single event levels, the light rail system coming into the Willow Street station will

generate a maximum level of 72 dB. The table shows that maximum levels at this location currently exceed the expected light rail level during most of the hours of operation of the system; the lowest maximum level measured during operating hours is 66 dB.

With regard to cumulative measures, the light rail CNEL at 50 feet will be about 58 dB, 4 dB below current measured levels.

TABLE 2

MEASURED NOISE LEVELS AT LONG BEACH LOCATION 9

Hour of Day	Maximum Measured Noise Level, dBA
3:00 PM	76
4:00	78
5:00	72
6:00	72
7:00	70
8:00	70
9:00	78
10:00	79
11:00	68
12:00 AM	63
1:00	67
2:00*	61
3:00*	58
4:00*	64
5:00*	66
6:00	73
7:00	82
8:00	79
9:00	76
10:00	73
11:00	77
12:00 PM	85
1:00	75
2:00	74
3:00	76

* Note that: the LRT system will not be in operation between 1:30 AM and 5:30 AM.

Source: Bolt Beranek & Newman, 1984.

On a cumulative noise basis, the Supplement to the DEIR indicates that the CNEL at 50 feet from the tracks for a 45 mph at-grade system will produce 61 dB. For a 40 mph speed, the CNEL would be approximately 60 dB. Measurement of the existing CNEL at three locations along the river route showed a range of 57 to 63 dB, with the 57 dB measured at a location away from any major streets. Thus, the addition of the light rail system will increase the total noise environment at the most quiet locations to approximately 62 dB, a 5 dB increase. With a noise barrier wall which reduces the light rail system levels by at least 5 dB, the total noise environment would then be approximately 59 dB (57 dB for background sources and 55 dB for the light rail system), representing an insignificant increase in levels over those occurring at the present time.

Comment 3:

We believe that the noise impacts on residential uses should be estimated along the SPTC right-of-way for the Willow Terminus and Long Beach Boulevard alternatives. There are approximately 290 residential units facing the SPTC right-of-way in Long Beach, compared to 240 residential units facing the river alignment. (Long Beach)

Response:

This comment requests information on the noise impacts along the SPTC right-of-way for Long Beach alternatives LB-5 and LB-6. In our analysis of all Long Beach alternatives except the river route, impact was estimated starting at the Willow Street station and proceeding south. The noise impact estimates for Long Beach along the SPTC right-of-way north of the Willow Street station were included in the noise impact estimates for the mid-corridor. Table IV-21E on page IV-91 of the DEIR shows the noise impact analysis results for the mid-corridor including the portion of the mid-corridor in Long Beach, which in fact represents this portion of the SPTC right-of-way. The relevant portion of this table is reproduced below, and should be added to the corresponding number in Table IV-15C of the Supplemental EIR for alternatives LB-1, LB-2, LB-4, and LB-5, and should be the sole numbers for Alternative LB-6.

Addition to Table IV-15C

NOISE IMPACT ANALYSIS RESULTS FOR LONG BEACH

Year 2000: 29 Freight Trains/Day

Alternative	Total No. People[1]	Existing			No Build			Project		
		65+[2]	LWP[3]	NII[4]	65+[2]	LWP[3]	NII[4]	65+[2]	LWP[3]	NII[4]
MC-1										
Long Beach	1598	998	774	.48	1069	814	.51	1090	843	.53

[1] People living within 500 feet of route

[2] 65+ - No. People with CNEL greater than 65 dBA

[3] LWP - Level Weighted Population

[4] NII - Noise Impact Index = LWP divided by Total No. People

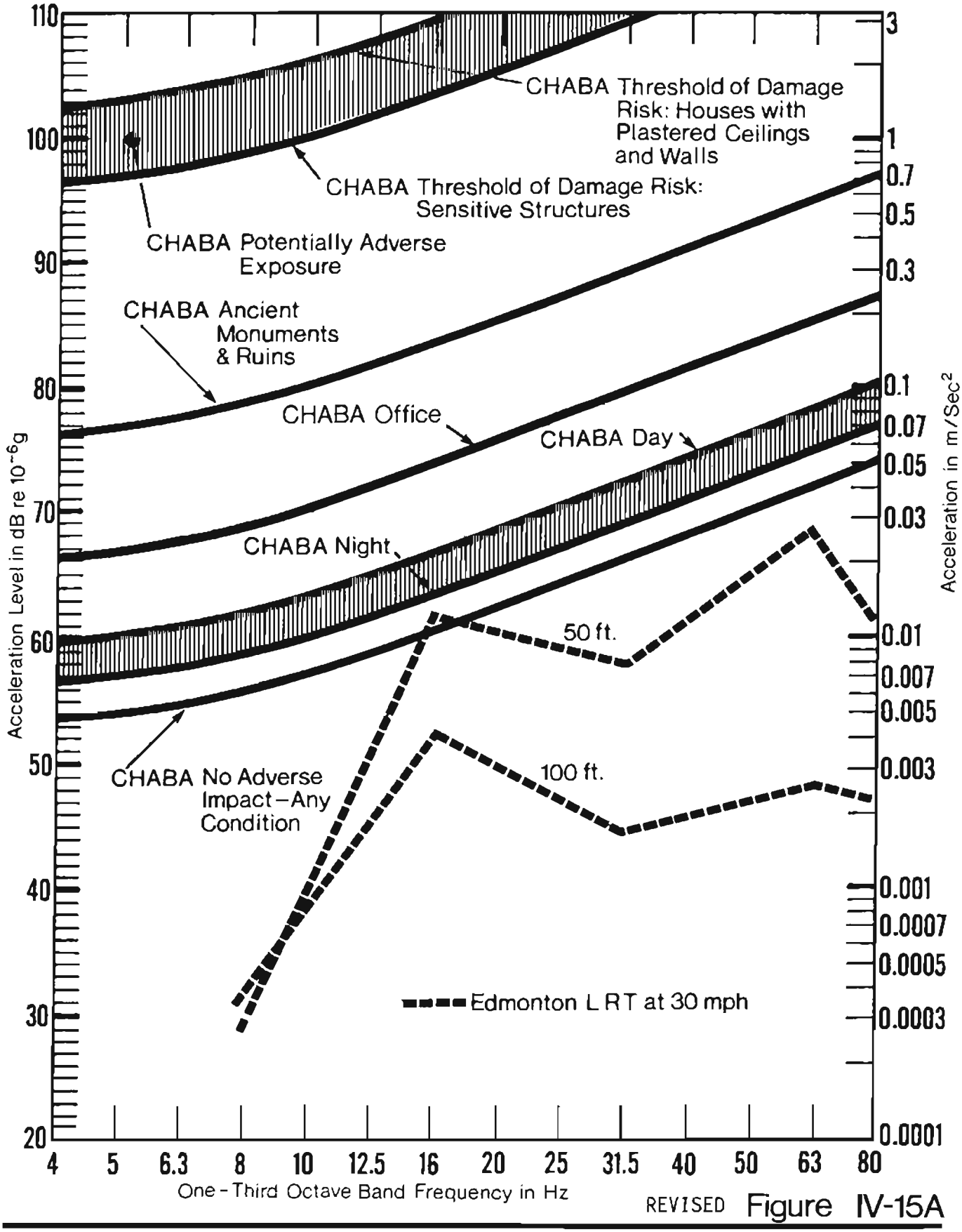
Source: Bolt Beranek & Newman, 1984.

Comment 4:

On page IV-10, the discussion of vibration addresses development at distances of 50 feet and 100 feet from the transit line, but does not deal with a situation wherein the transit line is integrated into a development, such as proposed in one of the variations of the river route at the World Trade Center. This section of the EIR should be enlarged to discuss this potential adverse impact and to propose any necessary mitigation measures. (Long Beach)

Response:

The accompanying figure is a reproduction of Figure IV-15A from the Supplemental EIR, with one additional curve labeled "CHABA Office." (The curves labeled "CHABA Day" and "CHABA Night" refer to daytime and nighttime vibration criteria for residential uses, while the "CHABA Office" curve refers to vibration criteria for office and/or commercial use.) The figure also shows measured vibration levels at two distances from the Edmonton



REVISED Figure IV-15A

Long Beach - Los Angeles RAIL TRANSIT PROJECT

LOS ANGELES COUNTY TRANSPORTATION COMMISSION

Comparison of Measured Light Rail Train Vibration Levels Using CHABA Criteria

PARSONS BRINCKERHOFF/KAISER ENGINEERS

Light Rail System for a speed of 30 mph. For the Modified River Route alternative in which the light rail system terminates in the vicinity of the World Trade Center, the distance from the tracks to the World Trade Center will be much less than 50 feet, resulting in an increase of vibration levels over those shown in the figure. However, the greatly reduced operating speeds, diminishing to a speed of zero at the station, will tend to counterbalance this increase. Our preliminary analysis would therefore indicate that under conditions of much closer distances and much slower speeds, projected vibration levels at the World Trade Center will still lie below the criterion curve labeled "CHABA Office."

It should be recognized that this preliminary analysis must be refined in subsequent phases of this study. The exact vibration levels generated by a light rail system will depend upon a number of factors related to the specific vehicle, track structure, and aerial structure design. Further, the vibration levels experienced within the World Trade Center will be dependent on the building foundation design, floor supports, etc. During the preliminary engineering phase, more detailed estimates of vibration levels will be prepared. If, after such detailed analysis is undertaken, a vibration impact is expected, there are a number of vibration control techniques which can be utilized to mitigate these impacts. These techniques are all related to the propagation of vibration from the track structure to the building and would likely be relatively inexpensive because of their site-specific nature and the relatively short distance within which they would be implemented. Following is a list of such available measures and their estimated effectiveness. Selection of the specific measure, if needed, would be based upon more detailed assessment of the vibration impact.

MITIGATION MEASURE	ESTIMATED EFFECTIVENESS
Resilient rail fasteners	0 - 10 dB
Ballast mat	0 - 10 dB
Floating ties	5 - 10 dB
Floating slab	15 - 25 dB

Comment 5:

A primary advantage of the Modified River Route is its ability to maintain a high rate of speed. This advantage may be negated, however, if speeds must be reduced to avoid any adverse vibration impacts to nearby residents. (Zimmerman)

Response:

Should the Modified River Route be chosen, during preliminary engineering phases a more detailed estimate of vibration levels at residential structures along the river route will be made. If projected vibration levels exceed vibration criteria for residences, there are a variety of vibration control techniques that can be implemented over and above a reduction in planned speed of operation. These techniques are the same as those listed previously in the response to Comment 4 above, with the addition of a trench/buried wall. Thus, because of the availability of such mitigation measures, speeds along the river route are not expected to be restricted for the purpose of controlling vibration.

Comment 6:

Noise and vibration impacts at the SPTC right-of-way need to be assessed and mitigation measures adopted. (Signal Hill)

Response:

Please refer to the response to Comment 3, above.

Comment 7:

The criteria for noise and vibration described in Section III-140 need to be more clearly defined so as to set adequate standards against which to design and construct the system. (SCRTD)

Response:

See Section III-411 (Mitigation Measures), the response to Comment 2.

Comment 8:

The noise on the Altantic Avenue route would be far too much for the types of places there, including St. Mary's hospital and private homes. (Robinson)

Response:

Noise measurements were taken at various sites in Long Beach and entered into a computer modeling program to establish not only the baseline for existing noise levels, but also to project estimates for various non-residential, noise-sensitive receptors such as St. Mary Medical Center. The estimated future noise level without the project is 67.8 dBA. The projected sound level for the light rail in this area is 52.3 dBA. The future noise environment with the project included is 67.9 dBA; therefore the project contribution to the Community Noise Equivalent Level of the St. Mary's neighborhood is 0.1 dBA. The same low contribution is projected for the residential areas along Atlantic. According to guidelines, increases of less than 3 dBA are generally considered not significant.

Comment 9:

I taught in an area underneath the L.A. International flight path. I can attest that there are many educational studies showing that periodic high volume noise of this kind is not only a nuisance, but it results in disruptive thought processes, lack of attention span, and comprehension problems in children. This would be the case along the river route. (Quinby)

Response:

The existing Community Noise Equivalent Level (CNEL) along the river route has been measured as 57 dBA. The addition of the project to the river route area would raise the CNEL at the most quiet locations to 63 dBA before mitigation. The addition of the sound barrier wall will reduce the CNEL level by 5 dBA to approximately 58 dBA. The studies noted in the comment have focused on airport noise. As shown in the DEIR, page II-40, the typical CNEL level under the flight path at a major airport (one-half to one mile from the runway) will range between 78 and 85 dBA. The light rail trains are not comparable to such a situation.

III-413 Operations

Comment 1:

The ability of all five of the Long Beach alternatives presented in the SEIR to run three-car trains is operationally advantageous. The possible necessity to change train lengths with alternatives allowing only two-car trains could add significantly to operating costs. (SCRTD)

Response:

The LACTC generally concurs with this observation raised by SCRTD. It is operationally advantageous to maintain one train configuration throughout the route. Changes in the length from three cars to two cars would add to operating costs. The system is now being designed for two-car trains throughout.

Comment 2:

The district recommends that every effort should be made to design the light rail system to permit flexibility in train scheduling and train length based on actual operating experience. (SCRTD)

Response:

The LACTC intends to offer a public transit system that is dependable and convenient. For this reason, standardized service hours and a reasonably frequent running schedule, consistent with expected demand, are proposed. Actual operating experience will, of course, be employed to develop and refine the operating plan so as to optimize the dual concerns of efficiency and service to the public. LACTC agrees with the need to provide for flexibility in train scheduling and length.

III-414 Patronage

Comment 1:

The projected growth in housing units and population for the river route alternatives is considerably lower than figures generated by the City of Long Beach and concurred in by SCAG. Tables IV-21A, 21B, 21D, and 21E should be corrected, and, if these figures were used to generate patronage projections, those projections should be adjusted accordingly. (Long Beach)

Response:

Corrected housing and population figures for the tables mentioned in the comment appear in Chapter V (Corrections and Additions) on pages V-29 through V-36.

Comment 2:

Has the commission obtained statistics from the bus system to determine how many buses now travel from Long Beach to Los Angeles in peak hours? What is the passenger capacity of each bus? What is the average number of Long Beach passengers per bus who get on or off between Willow Street and 4th Street downtown? (Kimball)

Response:

For the DEIR, the commission obtained ridership checks for corridor buses from the Southern California Rapid Transit District (SCRTD) in order to perform model validation checks for 1980. In 1980 three lines provided service from Long Beach to Los Angeles. The available data provided an approximation of ridership as described below, but not complete information on the total number of passengers going to Los Angeles.

Line	Route	Peak Hours 6:00 - 9:00 A.M. Departures	Total Boardings on Buses to Los Angeles
755	E. Long Beach Park-and-Ride	13	501
36N	Long Beach Boulevard/ Long Beach Freeway Express	14	534
841*	Long Beach Boulevard/ Pacific Avenue	*	3,603* (All Day)

* The 841 operated all day in local service on Long Beach Boulevard and Pacific to 56th Street in Huntington Park. Transfers were available to Los Angeles, but data are not available on total number of passengers traveling to Los Angeles.

Passenger data was not available for persons getting on and off buses at Willow Street and 4th Street.

Source: PB/KE, 1984.

Comment 3:

With the significant impact to circulation patterns in the Long Beach-Signal Hill area, mode-split calculations for each station in all alternatives should be included in the EIR. (Signal Hill)

Response:

Please see the response to Comment 3, Section III-329 of this chapter, for the information requested.

Comment 4:

Table IV-21E on page IV-25 shows by far the largest number of transit-dependent residents living near LB-5 stations. For the park-and-ride patron, Table II-33A on page II-37 tabulates an overwhelmingly larger number of parking spaces for LB-5. These data seem to be at odds with the projected boardings shown in Tables I-12A and IV-31A on pages I-7 and IV-45, respectively; here, boarding totals for all supplemental options do not differ greatly from each other, but LB-3 Option A comes out slightly higher than LB-5, the next highest. (Nelson)

Response:

It is true that a larger number of transit dependent residents live near the LB-5 stations than either the LB-3 (modified) or LB-6 stations. This is not inconsistent with the projected boardings shown in Tables I-12A and IV-31A, however, because access to light rail stations is also available by means of auto and local bus service. The patronage projections reflect the use of the system by all patrons, not just those who are transit dependent (a significant but smaller portion of all system users). It should be noted that the figure for total daily project boardings under LB-3 (Option A) in Table IV-31A (page IV-45) is in error. It should read 54,750, not 55,750.

Comment 5:

More detail is needed as to the current bus patronage that would be diverted to the project so that the net increase in patronage can be measured. (LB Blvd. Assn.)

Response:

See the response to Comment 2, above, for information on Long Beach to Los Angeles ridership on SCRTD routes. To obtain comparable figures for current bus patronage, both the SCRTD and LBT would have had to conduct on-board, origin-destination surveys of all their routes serving Long Beach and the corridor. No such surveys were done.

However, patronage forecasts have been performed and are contained in the DEIR and SEIR. They are based on conditions forecast for the year 2000. Any attempt to estimate the net increase in patronage (over current levels) must take into account growth in population, employment, and housing as well as distribution of this growth in Long Beach, in the corridor, and in the region. The travel forecasting in the DEIR takes these factors into account.

Another component of increased patronage was due to the improved transit service as represented by the light rail alternatives and the changes in SCRTD and LBT municipal lines to complement them. Considering the year 2000 alternatives that utilize the Long Beach Boulevard alignment, the following table shows projected origin and destination information.

YEAR 2000 PROJECTED PATRONAGE ORIGINS AND DESTINATIONS

		Trips destined to or via, and later returning from or via:			
Trips Originating in or via:		Downtown Los Angeles	Mid-Corridor	Long Beach	Totals
	Downtown L.A.	1,762	2,939	1,262	5,963
	Mid-Corridor	11,668	16,274	5,078	33,020
	Long Beach	4,372	8,406	2,941	15,719
		17,802	27,619	9,231	54,702

Source: SCAG, 1984.

As shown above, of the 54,702 projected total average weekday boardings in the year 2000, 15,719, or 8.6 percent are trips that originate in or via Long Beach and later that same day return to or through Long Beach. Of this number of Long Beach area people served, 4,372 or 28 percent travel to or through downtown Los Angeles and return to Long Beach later in the day; 8,406 or 53 percent travel to or through the mid-corridor communities (such as to LAX via the Century Freeway Transitway) and return to Long Beach later in the day; and 2,941 or 19 percent travel within the Long Beach area, both going and returning on the LRT.

Of 54,702 projected total average weekday boardings in the year 2000, 9,281, or 17 percent are trips that come to or through Long Beach and later that same day return to their origin. Of this number of people coming to Long Beach, 1,262, or 13.6 percent are coming from or via downtown Los Angeles, and return later that same day; 5,078, or 55 percent are coming from or via the mid-corridor communities (such as via the Century Freeway Transitway) and return later that same day; and 2,941 or 32 percent originate within Long Beach and are using the LRT for local travel in Long Beach, both going and returning.

Comment 6:

There is a discrepancy of 2,500 people in the daily boarding calculation. This relates to stations located at the World Trade Center, 1st Street/Long Beach Boulevard, and the Civic Center. (Maitino)

Response:

There are a number of variables built into the model used for patronage projections. The number of stations, location of stations, bus feeder system, run time, mode of access, population within walking distance, wait time at stations, and distance to be traveled to access the stations are the major factors. These are each different for each route analyzed.

According to Table I-12B of the SEIR, LB-3 (Modified River Route, no river stations) is projected to have 11,476 total daily boardings in Long Beach at two stations, Civic Center and World Trade Center. LB-5 (Long Beach Boulevard, Two way) is projected to have 14,989 boardings in Long Beach spread out

over seven stations. If the commenter is referring to the difference between the boardings at the Civic Center for LB-3 (no river stations) and the 1st Street Transit Mall for LB-5, there is a difference, a part of which is due to the larger number of stations along LB-5 which allow people more choice of where to board.

III-415 Procedure

Comment 1:

Certain groups were not properly notified about the public hearing on the DEIR, and equestrian groups did not receive notification of the SEIR hearing. (Sam)

Response:

The process for notifying the public about the hearings on the DEIR for the Long Beach-Los Angeles Rail Transit Project was as follows:

- LACTC contracted with the Los Angeles Times' Selective Marketing Coverage to target residents along the entire project corridor affected by the light rail project. This Selective Marketing Coverage service consists of insertion of fliers announcing the hearings into newspapers delivered in that area. Those residents not having home delivery of the Los Angeles Times receive the fliers through the mail at their homes. This target campaign began June 13, 1984, two weeks before the Long Beach hearing on the DEIR which was held on June 27, 1984. Over 177,000 fliers were distributed through this means.

- LACTC contracted with a distribution company to deliver fliers door-to-door in the Long Beach area.

- Advertisements were placed in the Long Beach Press Telegram on two separate occasions prior to the Long Beach hearing on June 27, 1984.

- When the SEIR was distributed for public review, each copy had a letter from the chairperson of the LACTC announcing the public hearing. Two advertisements were placed in the Long Beach Press Telegram announcing the January 9th public hearing. In addition, one advertisement was placed in the Long Beach edition of the Los Angeles Times.

Regarding notification of equestrian groups, specifically, it should be noted that the Long Beach Mounted Police informed the commission of their opposition to the river route in Long Beach prior to the release of the SEIR. Upon release of the SEIR, a copy was transmitted to the Long Beach Police, including the date, time, and location of the public hearing on January 9, 1985.

In an effort to reach the homeowners in the area, including those who own horses and utilize the LARIO Trail, members of the LACTC staff canvassed San Francisco and De Forrest Avenues on January 3, distributing fliers announcing the January 9th public hearing on the light rail project.

III-416 **Recreational Impacts**

Comment 1:

The existing bicycle and horse tracks in the Wrigley district will either be eliminated or altered in such a way as to permanently impair the quality of their usefulness. (Sutton, Bovee, Borton, Byrne, Helsley)

Response:

There is no question that the construction and operation of the rail transit project would adversely affect the quality of recreational usefulness of the portion of the Los Angeles River Rio Hondo bike/equestrian trail that runs adjacent to the proposed LB-3 (Modified River Route) alignment. The quiet and relatively undeveloped setting now enjoyed by users of the trail would be disrupted by construction activities and subsequent periodic passings of rail transit vehicles.

To partially mitigate these adverse effects, the following measures would be incorporated into the project.

1. Noise abatement methods would be used during the construction phase of the project. These methods might include: use of low-noise-generating construction equipment, use of acoustical barriers, and avoidance of construction during noise-sensitive hours.

2. A sound absorption wall would be constructed along the east edge of the guideway between the track and the equestrian trail. This wall would significantly reduce noise impacts.

3. The track structure as well as the light rail vehicle wheels would include resilient materials to minimize vibration and noise; the rails would be continuously welded to eliminate any "clickety clack" effect.

4. An eight-foot-high fence would be constructed on both sides of the rail transit tracks to partially mitigate visual intrusion and to ensure the safety of equestrian and bike trail users.

5. The rail alignment and stations along LB-3 (Modified River Route) would be landscaped with aesthetically compatible vegetation.

III-417 **Regional Rail Connections**

Comment 1:

The Willow Street Terminus alternative does not serve the most densely developed areas of Long Beach and thus does not appear to satisfy the demands of a regional transit project. (LBT)

Response:

If "the demands of a regional transit project" mean the goals and objectives of the project (see Chapter 1, page 1-2 of the DEIR), then the comment is correct in suggesting that the Willow Street Terminus (LB-6) does not satisfy all the criteria as well as other Long Beach alternatives proposed.

III-418 **Related Projects**

Comment 1:

Related projects, including the Ports 2020 Plan's corollary impacts on traffic flow on major area east-west streets, and the increased patronage for the LRT generated by the Century Freeway project, as between LB-5 and LB-3, need to be addressed. (LB Blvd. Assn.)

Response:

Related projects and their impacts such as traffic are built into the model assumptions and are thereby included in the model runs. These model runs, the results of which are included in the SEIR as the patronage projections, included both growth and

a transitway for the Century Freeway. There were no significant patronage differences between a bus or rail system on that facility. The patronage figures in the document, therefore, already reflect the Century operation and related growth projects.

Comment 2:

We can't possibly see how you could consider the light rail when in essence you aren't even talking about the freight traffic. What we are talking about is on Willowbrook Avenue, where you are talking about two lines; we have only one in place at the present. And also there will be a freight line proposed on Willowbrook Avenue. (Filer)

Response:

The DEIR analysis fully considered rail freight traffic. Within the corporate boundaries of Compton, there is currently one rail freight main track. After the light rail project is constructed, there will be one rail freight main track, and two light rail tracks. There will not be any additional rail freight tracks on Willowbrook Avenue in Compton after the project is built.

Comment 3:

We also want you to look into the aspect of the downtown Compton area, which we have just spent $20 million to build. That's between the proposed light rail line and the freight line. This particular shopping center would be adversely impacted. (Filer)

Response:

The Compton shopping center is located between the Willowbrook and San Pedro freight branches. The DEIR does discuss potential future freight traffic on both of these lines (Section II-334) and grade crossing impacts at Compton Boulevard in the year 2000 (Tables IV-23C, 23D, 23E). The traffic impact analysis concluded that the light rail project would have little or no impact on auto traffic at the intersection of Compton Boulevard and the Willowbrook line. Consequently, no adverse traffic impacts on the Compton shopping center were attributed to the

light rail project. The DEIR notes that the Compton shopping center would be accessible to light rail passengers. It also notes that there is underutilized land in the vicinity of the Compton light rail station suitable for park-and-ride development if demand warrants.

III-419 **Residential Impacts**

Comment 1:

We believe that the unmitigated construction of a transit line along the river could have an adverse impact on property values of homes facing the right-of-way, due to negative noise and visual impacts. However, if these noise and visual impacts are mitigated through construction of a sound wall and heavy landscaping between the homes and the transit line, any potential adverse impact on property values could be fully mitigated. (Long Beach)

Response:

It does not appear likely that the impacts of construction activities, which are temporary in duration, will have an adverse impact on residential property values. There will be temporary inconvenience, however, in the form of noise, visual impact, and other impacts typically associated with construction activities. Construction of a sound wall and replacement landscaping can significantly, if not totally, mitigate longer-term noise and visual impacts of system operation.

Comment 2:

The last sentence on page IV-44 indicates that lots along the river route could be limited to "neighborhood type parking". What steps could possibly be taken to limit park-and-ride demand to the supply of spaces provided, so that overflow parking on residential streets would not occur? (Long Beach)

Response:

A Complementary Bus Network has been proposed that would provide additional east-west feeder bus service to the LRT stations (see SEIR pages IV-51 and IV-52) along the Modified River Route. The mode of arrivals at these stations (SCAG) show that arrivals are predominantly via bus transit (transfer) or walk trips.

The mitigation measures (SEIR page IV-55) indicate steps that would limit park-and-ride demands and discourage parking on residential streets. Non-resident parking on residential streets may need to be controlled via law enforcement measures.

Comment 3:

We would plead with LACTC and the city to pave the streets, to construct an aesthetic soundwall, to use heavy landscaping to create a linear park so that any adverse impact on property values would be fully mitigated, and to construct safe overhead entrances to the river bank for horse and bike trails for the benefit of the Wrigley area residents. (DLBA)

Response:

If in building the light rail project any work such as utility relocation is done in city streets, those streets will be repaired and repaved. A soundwall will be constructed to be as unobstrusive and aesthetically pleasing as practicable. As a part of the project replacement landscaping will be installed. The horse trail will be fully separated from the light rail tracks. The access points for the bike trail will be maintained. If there is a station at the access point, then the bike crossing will be at-grade at the station with signs and lights. If there is no station then the access will be grade-separated. It is felt that these measures will significantly mitigate the impacts to the Wrigley residents.

Comment 4:

Implementation of the light rail project along the river route alignment would have the following unacceptable impacts on the Wrigley district:

1) safety and security of the neighborhood would be negatively affected (intrusion of strangers, increased crime, children's safety);

2) area residential property values will depreciate;

3) there would be increased noise and vibration to neighborhood residences (during and after the construction period); and

4) there would be increased traffic and intrusion from park-and-ride patrons into the residential streets.

(Various Wrigley district residents)

Response:

1) The Long Beach-Los Angeles Rail Transit Project is being planned with high regard for the concerns of public safety and security. A detailed Safety and Security Plan will be prepared during the project's final design phase, and this plan will incorporate effective safety provisions to insure the safety of the system's patrons and the areas through which the system will pass. If the modified LB-3 alternative is selected for implementation, particular attention will be paid to the safety and security needs of the residential areas that the system will traverse. Security forces, continuous surveillance and adequate protection of the system from unwarranted or unsafe entry are all part of the contemplated safety provisions. A concerted effort will be made to prevent any threat to the safety of residents in proximity to the system. (See the response to Comment 4, Section III-421.)

2) As stated above, the project is being planned with a sensitivity to the concerns of the areas through which the system will pass. In the case of the modified LB-3 alternative, this sensitivity is particularly acute because of the predominance of residential uses along a significant portion of the route. The design of the system will incorporate such provisions as to separate it (both visually and in terms of noise) as much as possible from the residential uses adjacent to it. It is believed that these provisions will substantially, if not entirely, mitigate any adverse effects which may otherwise be expected. Thus, it is not anticipated that there will be a residual negative effect upon area property values. This conclusion is supported by studies conducted subsequent to implementation of the Bay Area Rapid Transit system. These studies have found an insignificant correlation (positive or negative) between residential property values and the close proximity of a public transit facility.

3) Noise and vibration are both of concern in the planning of a fixed rail public transit facility such as the Long Beach-Los Angeles Rail Transit Project. Recognizing this concern, a significant analytical effort has been expended to define potential noise and vibration impacts and, subsequently, to provide adequately for their mitigation.

As pointed out in Section III-314 of the DEIR, and again in Section III-140 of the SEIR, expected noise levels from construction activities (measured in terms of CNEL at 50 feet) will range from 78 dBA to 88 dBA on a daily basis. Compared to an existing 24-hour CNEL reading of 57 dBA, it may thus be expected that an increase of between 21 dBA and 31 dBA will be experienced during construction. While this is considered to be a significant increase, it will occur only during the construction period, and a number of migitation measures are proposed to lessen the effects as discussed in Section III-141 of the SEIR. There will be periods of inconvenience to residents near the actual construction sites, but these will be temporary.

As pointed out on page IV-142 of the DEIR, and again on pages IV-7 and IV-8 of the SEIR, the presence of an operating light rail system on the river route would increase CNEL noise levels by 5 dBA over existing levels. This is considered a significant adverse effect and, therefore, a soundwall is planned as a mitigation measure, the effect of which will be to virtually eliminate the problem.

With regard to vibration effects, Section IV-152 of the SEIR points out that an acceptable band of vibration has been developed for residential areas by the National Academy of Sciences' Committee on Hearing and Bioacoustics (CHABA). Using this criterion and the Edmonton Transit System (DeWag RTE 1 light rail vehicles) as an example technology, the acceptable range of vibrations is not expected to be exceeded, even at a distance of 50 feet from the track. At distances of even slightly greater than 50 feet, "no adverse impact -- any condition" is anticipated. It is not, therefore, expected that vibration impacts will be associated with the river route. If there are any residences closer than 50 feet to the track, a vibration analysis will be performed and the appropriate mitigation measures applied.

4) A major park-and-ride facility for the LB-3 alternative would only be provided at the PCH station. The supply of parking to be provided there would be adequate to accommodate the park-and-ride demand, eliminating the need

for any overflow parking onto residential streets. The area surrounding this site is industrial (not residential) and has excellent street capacity. The parking provisions at Willow Street and Anaheim Street stations are small neighborhood-type facilities (less than 100 spaces) with access to these stations being virtually all via bus transit (transfer) or walk trips.

The mitigation measures (SEIR page IV-55) indicate steps that would limit park-and-ride demands and discourage parking on residential streets. Non-resident parking on residential streets may need to be controlled via strict law enforcement measures.

A Complementary Bus Network will accompany institution of the LRT service. It will provide additional east-west feeder bus service to the LRT stations along the river route (SEIR pages IV-51 and IV-52), thereby facilitating transit mode of arrivals at these LRT stations.

III-420 Right-of-Way

Comment 1:

Tracks on Long Beach Boulevard between 1st and 7th Streets should be in a reserved center median. Possibly buses could share the median between 1st and 7th. Public transit should not be impeded by mixing with other street traffic; it should receive priority in downtown areas. With a nominal reduction in the 15-foot sidewalk width, space would be available for traffic lanes and possibly a narrow strip of landscaping. (Nelson)

Response:

It is agreed that placement of the LRT in a reserved median enhances the operational effectiveness of the system. An optional configuration, identified in Chapter I of the FEIR, would place the LRT in a reserved median between 1st and 7th Streets. However, this particular stretch of Long Beach Boulevard currently has extensive street tree planting and street funiture, which would have to be substantially modified in order to use the median for LRT purposes. A tradeoff thus exists between enhanced LRT operations and visual quality.

Comment 2:

Page S-19 of the SEIR (regarding LB-3) states that only one duplex would be acquired and demolished. That is understated. There would be several homes with property that butts up to the river embankment and they would have to be cut up to provide required right-of-way. (Petrusak)

Response:

As stated in the SEIR on page S-19 and page III-11, one duplex, three storage sheds, and one industrial property would be acquired if LB-3 (modified) were chosen. Other partial takes of land would be required but only the above-mentioned duplex would be demolished. No other homes would be displaced.

III-421 Safety and Security

Comment 1:

We believe that one additional category of environmental impact should be evaluated -- safety and security. As presently designed, all three alternatives present some safety and security problems. Pedestrians, particularly children, can rather easily gain access to the right-of-way reserved for transit. A particular hazard exists along the river route, where transit cars will be moving at higher speeds than on the other alternatives. As presently designed, the river route is fully secured except at four locations where bicycle trail access lanes and a station platform pedestrian access cross the right-of-way. This significant adverse impact on safety and security can be fully mitigated by eliminating these four at-grade crossings and replacing them with access ramps to the bicycle trail and station platform from the overhead street bridges. The river route would then be completely secured by fencing and completely grade-separated along its entire length in the City of Long Beach. (Long Beach)

Response:

In LB-3 (Modified River Route) Option A, three of the four at-grade bicycle crossings will occur at stations where trains will be traveling at slow speeds. These crossings will have signs and warning lights to warn bicyclists of approaching trains. Grade separation is not necessary at these locations. With Option B, the bike trail access shown at Willow Street would be replaced by grade-separated access via an overpass and no access via Anaheim Street would be provided. (There is no

access via Anaheim Street today.) With regard to the remaining at-grade bike trail access near the Long Beach Freeway, this crossing would have warning signs and lights. Because of the railroad crossing here, light rail trains will be operating slowly through this crossing area.

The at-grade pedestrian access to the station platforms along the river route is fully consistent with modern light rail design standards.

Comment 2:

We believe that significant adverse impacts on safety and security also exist on the Long Beach Boulevard alternative at station locations. All passengers will have to cross one direction of Long Beach Boulevard to reach the station platforms which will be located in the middle of the street. The station platforms will be nearly a full city block in length, but only one end of the platform will relate to a pedestrian crosswalk protected by traffic signals. Those exiting the transit vehicles at the other end of the station platform will have a tendency to try to cross Long Beach Boulevard at this unprotected location, posing serious safety hazards. These impacts can be partially mitigated by introducing a walk phase to the traffic signals at the pedestrian crossings protected by a traffic signal, and by fencing the remainder of the station area. Such fencing could have a secondary but less severe negative impact upon visual quality. (Long Beach)

Response:

Station platforms along Long Beach Boulevard would lead to crosswalks at both ends of the platform at the 6th/7th Street station and the 1st/Broadway station. A railing would be installed at the far end of the high level platforms at the Hill Street, Pacific Coast Highway, and Anaheim Street stations to discourage passengers from crossing at unprotected locations.

Comment 3:

What safety and system assurance plans have been formulated to reduce hazards from earthquakes and fires? Has an emergency response system similar to the Bay Area Rapid Transit System been considered? The system, upon notification from a train operator or patron, notifies all official response agencies for the designated emergency. (Signal Hill)

Response:

Emergency response procedures will be developed in consultation with local emergency response agencies. Existing plans, including those from BART, will be investigated for procedures appropriate to the LRT.

Comment 4:

What effect will alignment alternatives LB-5 and LB-6 have on crime rates in station areas? What measures will be taken to mitigate negative impacts? (Signal Hill)

Response:

Crime rates for some future year cannot be predicted with an adequate degree of certainty and they were, therefore, not included in either the DEIR or SEIR. It is, however, reasonable to assume that certain public areas such as LRT stations may attract some individuals prone to commit crimes against persons and property. This is well-recognized by the LACTC and, therefore, an aggressive, thorough public safety program is planned for the proposed system. This program will consist of transit security officers, technical safety features, such as continuous audio-visual surveillance, two-way communications, and an ongoing working relationship with local law enforcement officers. Given the level of effort that will be put into this program, project patrons can be assured that they will receive as much protection as is feasible. These safety and security provisions will be applied to whichever alignment is selected for implementation.

Comment 5:

If on-street or at-grade alignments are adopted in the Final EIR (either LB-5 or any other alignment presented earlier in the Draft EIR, e.g., LA-1, MC-1, MC-3, LB-1, LB-2, or LB-4), special attention should be paid to providing adequate rail vehicle side skirting and safety fenders to help minimize pedestrian collision injury risk. (SCRTD)

Response:

Vehicles will be equipped with deflectors at each end to prevent persons or objects in the path of the train from coming in contact with the wheels. In addition, side skirts or other means will be provided to prevent access to the vehicle undercarriages from the sides.

Comment 6:

In Section IV-220, crime is dealt with in a conclusionary fashion. No material is offered on existing conditions or conditions at similar facilities, and there is no reference to the DEIR. (SCRTD)

Response:

The SEIR incorporates the DEIR by reference; that is why there is no specific reference to the DEIR sections discussing community services. The statement in the SEIR points out the potential for additional Long Beach Police Department surveillance to prevent crimes against persons traveling to and from the transit facility. It does not reach a conclusion. Specific information regarding crimes associated with similar facilities is not available.

III-422 Socioeconomics

Comment 1:

The second paragraph utilizes a one-half-mile walking distance with regard to Long Beach Boulevard stations but only a one-quarter-mile walking distance with regard to river route stations. Unless a specific justification is expressed, the same service radius should be used for all alternative alignments. (Long Beach)

Response:

The one-half-mile walking distance referred to in the comment is used in a descriptive context. Where walking distance is used as a criterion for comparing alternatives, a consistent distance of one-quarter mile is used across all alternatives being compared.

Comment 2:

The SEIR states that the two downtown aerial stations of the Modified River Route would serve especially high population densities. But not covered in that report is the fact that a

substantial portion of the areas around these stations could be served by light rail using the Long Beach Boulevard corridor. If the "Pacific Loop" section of the LB-4 alternative were combined with the section of LB-5 north of 8th Street, the LRT would directly serve the Civic Center and be within reasonable walking distance (one-quarter mile) of the World Trade Center and other high density land uses. (Zimmerman)

Response:

The Pacific Avenue Loop was studied as part of the DEIR, but has subsequently been found not to be a desirable option for several reasons. First, it presents operational difficulties which hamper the operating efficiency of the overall system. It can only be configured as a "figure eight" in order to negotiate the appropriate turning movements required to place it back on the main north-south alignment. This could not be accomplished in the configuration suggested in the comment. Second, the southernmost part of the loop running west on 1st Street produces significant operating conflicts with the heavy bus volumes existing at the transit mall, reducing the effectiveness of both modes. Third, if this southernmost leg were to be moved north so as to avoid the LRT/bus conflicts, neither of the two logical choices (Broadway or 3rd Street) would be feasible because of conflicts with heavy volumes of automobile traffic, or in the case of Broadway, because the LRT would be running opposite the flow of traffic, which has additional safety hazards. For these reasons, a loop configuration was not studied as a part of the Long Beach Boulevard (LB-5) alternative.

Comment 3:

The projections presented on page II-26 are not based on reality. (Huss)

Response:

Table II-23D, shown on page II-26 of the SEIR, contains figures which are taken from the two previous tables (II-23B and II-23C). As pointed out in the footnotes to these latter tables, 1980 employment estimates were based on an actual field survey of existing development using standard employment per square foot conversion factors. The estimates for year 2000 employment were derived in the same manner, assuming developments which are ongoing, planned, or proposed. Both city and county planning departments were involved in this definition. The estimates are therefore based on the most current information available.

Comment 4:

A discussion of land use, population, housing, and economic impact to Signal Hill needs to be included in the EIR for each of the project alternatives, particularly in proximity to Willow Street and Atlantic Avenue. (Signal Hill)

Response:

Because the Signal Hill boundary does not extend to within one-quarter mile of the transit system alignment, it is not reasonably anticipated that specific, significant impacts in the areas of land use, population, housing, and economics will occur in the City of Signal Hill.

III-423 **Soils and Hydrology**

Comment 1:

In its study of the river route, the commission seems not to have been informed that when there is heavy rain, the area between Wardlow and Willow where the tracks would be laid is flooded -- up to three feet under water. You also may not have been informed that a flood control pumping station, very recently completed at considerable expense, extends over the area where tracks are proposed to be laid.

What will be the added cost to demolish this building and rebuild it elsewhere, and the added cost to condemn more homes for a new site? These costs, and the cost to condemn homes and industries for bus turnarounds and park-and-ride areas at Pacific Coast Highway and Anaheim, were not included in the EIR. (Fahe, Petrusak)

Response:

On page IV-2 of the SEIR the following statement acknowledges the potential for flooding along the proposed river route:

"Residents along the LB-3 (Broadway Aerial) river alignment have reported flooding incidents. Detailed flood studies would be performed if this route were selected, and if warranted, pumping capacity would be increased through modification to existing pump facilities or construction of additional pump facilities."

The existence of the Hill Street pumping station was also acknowledged on page I-33 in the following statement:

"Various pipelines and flood control fixtures cross perpendicularly to the modified LB-3 alignment. These facilities will need to remain in service during the construction phase. If it is necessary to relocate flood control pipelines or fixtures because of the rail transit guideway, then these modifications would be conducted during the dry summer months. The Hill Street pumping station would similarly be modified during the non-rainy season."

The actual modification of the pumping station would involve relocating a portion of the existing structure and reconstructing it essentially on the same site away from the proposed rail facility. Therefore, the modification of the pump station would not require additional land or condemnation of any homes. The cost of this modification is estimated at $200,000 and was included in the summary of capital cost estimates for LB-3 (Broadway Aerial-Modified River Route) as presented in Table I-41A of the SEIR.

As stated on page IV-3 of the SEIR:

"Mitigation for impacts to drainage and water quality could include improvements to existing culverts, gutters, catch basins, and settling ponds, and construction of all such elements, as needed."

Implementation of these aforementioned measures would alleviate any potential flooding problems.

The cost to acquire property for the LB-3 (Modified River Route) is discussed in the SEIR on page I-58. Preliminary estimates of right-of-way for the river route range from $2 to $4 million.

III-424 Stations

Comment 1:

In reviewing the proposed station location for LB-5, we would strenously object to the following station locations:

1. Hill Street
2. Anaheim Street
3. Between 6th and 7th Streets

What was the origin of choosing these locations? We would suggest the following locations so as to maximize pedestrian coverage:

1. 10th Street (St. Mary Medical Center)
2. Between 4th and 5th Streets (main entrance to the Plaza)
3. Between 1st and Broadway

Would our proposed station locations provide the maximum amount of pedestrian coverage? (Long Beach Plaza)

Response:

Station locations were chosen to: 1) provide reasonable station spacing for balancing service coverage with light rail operating speed; 2) provide cross-corridor bus connections; 3) serve major generators; and 4) be in locations that are highly visible to passing motorists so that waiting passengers feel secure. The station locations proposed by Long Beach Plaza are too close to one another for efficient light rail operations and would not be convenient to cross-corridor bus service. However, the optional LB-5 design discussed in Chapter I of this document, does relocate the 6th/7th Street station to 5th/6th Street. Such a location would provide better access to the plaza and would minimize conflicts between autos turning westbound on 7th Street and the LRT.

Comment 2:

If Alternative LB-5 is chosen, consideration should be given to physically integrating an LB-5 station with the existing Long Beach Plaza shopping mall. If the plaza is extended east of Long Beach Boulevard via a pedway, an opportunity might exist for an integrated off-street light rail stop. (SCRTD)

Response:

If the shopping mall is extended to the east, consideration of incorporating access to the proposed station via an overcrossing can be included at that time. There is nothing inherent in the proposed station plan which would preclude this possibility at a future date.

III-425 Technology

Comment 1:

Alternative technologies should be considered, such as an elevated monorail. (Donald, Graber, Frank, Gribbin)

Response:

One of the first steps taken in the development of the Long Beach-Los Angeles light rail project was an evaluation of available technologies. Monorail systems were included in this evaluation and eliminated from further consideration because they require a continuous elevated guideway, which is not appropriate in all portions of the route, nor are they sufficiently proven in revenue service. Conventional light rail technology, on the other hand, is not subject to either of these constraints.

III-426 Traffic

Comment 1:

A further quantitative examination of the impacts on auto traffic flow at Pacific Coast Highway during and after construction is needed. The study should include the additional traffic generated at the intersection due to the proposed transportation center at Pacific Coast Highway and mitigation measures to reduce the impact on traffic flow and parking. (Caltrans)

Response:

The construction of the Pacific Coast Highway station (LB-5) and transfer facilities would occur off-street, with access to the construction site via existing industrial/local streets. The park-and-ride, kiss-and-ride, and bus parking facilities would have a minor impact on traffic along Pacific Coast Highway, since all construction activities would be restricted to off-street. An extended structure on both sides of the existing bridge would be constructed to accommodate bus turnouts. Existing bus service and vehicular traffic would be affected due to this construction. However, with at least two travel lanes in each direction kept open, and major construction activity being undertaken during off-peak hours, the adverse impact would be minor.

Impact to vehicular traffic during operation of the station facilities would also be minor for the following reasons.

1) All access and transfer facilities would be off-street, with access via existing local/industrial streets.

2) Approximately 200 vehicles would utilize the station facilities during the peak hour, when the maximum number of park-and-ride and kiss-and-ride passengers is expected to arrive. This is minor in comparison to the projected daily traffic volumes of up to 40,000, or peak hour traffic volumes of about 3,600 on Pacific Coast Highway at the river. Further, the project itself, with the added feeder bus service proposed, will reduce the overall auto traffic in the Long Beach corridor.

Comment 2:

Building the parking areas prior to any construction that might involve the elimination of curb parking will facilitate traffic flow and solve the parking problem during construction. (Caltrans)

Response:

Off-street parking is proposed for the river route stations and at the Willow Street Terminus station. There will be no curb parking eliminated at these stations.

Comment 3:

We believe that the traffic impact on Long Beach Boulevard is seriously underestimated and that the rail transit line constitutes a significant adverse impact upon traffic. Although there is no reasonable way to fully mitigate this significant adverse impact, we believe that it could be partially mitigated by reconstructing Long Beach Boulevard south of 7th Street to place the transit in an exclusive lane and to add a travel lane in each direction by removing an equivalent amount of sidewalk on each side. (Long Beach)

Response:

A refined LB-5 alternative is being proposed which would place the light rail tracks in a reserved median south of 7th Street. In addition, the station originally proposed between 6th and 7th Streets is now being proposed between 5th and 6th Streets in order to minimize the impact on left turn traffic volumes at 6th and 7th Streets. For further information, see responses to Comments 4-15, following, and Section I-410 of this document.

Comment 4:

If the Willow Street Terminus alternative is selected, the end of the light rail line would be located immediately north of the intersection of Willow and Long Beach Boulevard. It is likely that the provision of bus, park-and-ride, and kiss-and-ride activities will tend to adversely impact this intersection even further. The report suggests that almost 7,500 boardings will take place at this location per day and, further, that a one-way circulation system within the station area would be implemented. All traffic would enter the station area on Willow Street and leave by way of Long Beach Boulevard. While this circulation pattern would minimize vehicular impacts at the access points as pointed out in the Draft Supplemental EIR (SEIR), it would likely increase the impacts on this major intersection. We believe the impact on this intersection should be investigated in the afternoon peak hour as well as the morning peak hour. (Long Beach)

Response:

Based on the mode of arrival at the Willow Street Terminus station of the 7,500 boardings per day, 70 percent would be bus trips (transfers) from feeder bus and existing bus networks; 11 percent would be walk trips; and the remaining 19 percent would be arrivals by auto, which would include park-and-ride and kiss-and-ride. Table IV-33B in the SEIR (page IV-56) shows the auto-related arrivals during the AM peak hour. The total number of auto arrivals would be about 160. The total traffic per day expected to utilize the intersection in the year 2000 is projected at 64,000 (36,000 on Willow Street and 28,000 on Long Beach Boulevard) or 5,760 during the peak hour (peak hour = 9% of Average Daily Traffic or ADT). The 160 vehicles arriving at the LRT station would comprise only 2.8 percent of the total traffic. Considering the overall reduction in traffic (0.8 percent to 2 percent) resulting from the implementation of the LRT, the net increase in auto traffic would be significantly less than the 160 vehicles shown. This minor increase in traffic would increase the V/C ratio by only about one percent.

It should be noted that the intersection of Willow Street and Long Beach Boulevard will operate at "F" level of service in the year 2000 (1.25 V/C ratio) without the project, unless mitigation measures are adopted by the City of Long Beach.

Further, due to the addition of shuttle service, the increase in the bus frequency discussed in the Complementary Bus Network would largely be offset by the reduction and elimination of the RTD bus routes.

Finally, access to the Willow Street station for park-and-ride, kiss-and-ride, and shuttle buses would be on a right-in/right-out circulation pattern. All loading/unloading will be provided off-street.

Comment 5:

Within the central business district, the traffic impacts depend on the option selected for the Modified River Route. One option tested puts the alignment through the World Trade Center parking structures. This alternative indeed has no adverse traffic impacts on the downtown street system. A second option places the alignment over the sidewalk area and the curb lane along Broadway. Some of the columns supporting the elevated LRT structure encroach upon the curb lane of Broadway. The Draft Supplemental EIR calls this encroachment a "minor adverse impact" because some curb parking is lost.

Barton-Aschman disagrees with this conclusion. Our previous work clearly shows the need for four through lanes from the freeway to Pacific in the morning peak hour in order to handle the traffic generated by the full buildout of downtown. The placement of LRT columns in the curb lane would preclude the use of four lanes in the morning peak hours and therefore this option would have significant impacts on central business district traffic. The only acceptable option from a traffic standpoint is the elevated option through the World Trade Center parking structures. (Long Beach)

Response:

The existing curb-to-curb width along Broadway is 52 feet. Where the LRT alignment encroaches on the south curb lane by three-and-a-half feet, there would still be a clear roadway width of 47 feet, which would accommodate the four through lanes indicated by Barton-Aschman. In addition, the approach lanes at the signalized intersection of Broadway and Magnolia will be maintained so as not to restrict capacity in any way. As this is a design issue, alternatives to correct the situation would be reviewed in the design phase.

Comment 6:

The Draft Supplemental EIR concluded that after mitigation both sections of Long Beach Boulevard would experience some minor adverse impacts. We disagree with this conclusion. North of 7th Street, there is potential for significant adverse impacts. South of 7th Street, we believe there most assuredly will be significant adverse impacts that cannot be mitigated.

In order to allow the LRT to function, it is likely that some of the existing left turn and U-turn slots will have to be closed. This physical change will have an impact on circulation patterns within the area. The number of left turns at the remaining key intersections will increase -- resulting in the following impacts:

1) The increased numbers of left turns could easily require the addition of left turn arrows for north-south traffic. This will decrease the capacity of the intersections along Long Beach Boulevard.

2) The increased turns will also increase the chance that left-turning vehicles will back out into the through lanes thereby reducing the overall capacity of the street system.

The closure of the median openings would also decrease access to the existing 222 businesses along the Long Beach Boulevard route. (Long Beach, DLBA)

Response:

The commenter is referred to Comment 15, below, which indicates that a heavy volume of left turn movements already exists on Long Beach Boulevard. Further projections regarding traffic along Long Beach Boulevard in the absence of the project indicate that key intersections would be operating at or above capacity. Where this occurs, a left turn phase would be necessary. This is considered to be part of the year 2000 setting rather than part of the project.

The left turn volume, where it results in a queue, could be mitigated by two measures: 1) increasing the length of left turn storage to the maximum allowable length, and 2) providing a lagged green phase for left turn traffic. This green time could be part of the overall green time allocated to north/south traffic on Long Beach Boulevard so as not to adversely affect the east/west flow.

Access to businesses would be affected by the closure of medians at several locations along Long Beach Boulevard; however, access would be made via left turns at adjacent signalized intersections. This would result in added safety at the mid-block crossings where the left turn vehicles must wait for an appropriate gap in the oncoming traffic, possibly backing up the traffic on the through travel lanes.

Comment 7:

As presently planned, the left turn automobile traffic will line up immediately adjacent to the LRT tracks. In our opinion, this arrangement will force the modification of the signal phasing to add left turn arrows to the existing signals. Without left turn arrows, it will not be clear who would have the right-of-way -- the left-turning automobile or the LRT vehicle moving in the same direction as the automobile traffic. Thus auto/LRT vehicle accident potential will force the addition of the left turn phases. (Long Beach)

Response:

Given projected growth in traffic without the project, a left turn phase (arrow) will be required (part of the environmental setting) at all key signalized intersections on Long Beach Boulevard. This requirement will exist with or without the LRT operation. In some cases where the traffic will not reach a critical level of service until year 2000 or beyond, the LRT operation at start-up would simply accelerate the left turn phase process. LACTC would share in the installation costs at these locations.

Comment 8:

The changes in the signal phasing described above will result in changes to the overall signal timing at each intersection. This change will impact the signal progression which now favors east/west traffic. (Long Beach)

Response:

The changes in signal phasing would be the result of the traffic growth and the change in the year 2000 traffic pattern, not because of the LRT operation. (See the responses to Comments 6 and 15.) The City of Long Beach would have to deal with the traffic growth and provide mitigation measures with or without the light rail project at all key signalized intersections along Long Beach Boulevard.

Comment 9:

We believe that the length of the LRT vehicles (270 feet) will also require signal preemption equipment to be used in order to maintain LRT schedules and in order to minimize the number of times that these long vehicles block the east-west cross streets. If any signal preemption equipment is used to give the LRT vehicles travel priority in the corridor, this would also change signal timings which in turn would again impact the existing signal progression priorities established within Long Beach. (Long Beach)

Response:

1. Due to a recent LACTC decision relating to civil design and cost constraints at several locations along the project corridor, there are no three-car trains proposed, only two-car trains with a total length of 180 feet.

2. No signal preemption is proposed.

A two-car light rail train operation between 6th and 7th Streets in mixed traffic would be feasible with proper signing and signal operation, with minor/moderate impacts. South of 6th Street, the impacts would be even less due to the significant drop in traffic demands.

A refined LB-5 alternative alignment has been developed which would provide for LRT operation in a reserved median, south of 7th Street. Also, the LRT station between 6th and 7th Streets would be relocated between 5th and 6th Streets. These refinements would further reduce impacts to vehicular traffic south of 7th Street. See Section I-410 of this document for a description of this refinement.

Comment 10:

Our studies of downtown Long Beach showed that the east-west travel was the most critical to the success of downtown Long Beach. The Long Beach Boulevard alternative has the potential to result in a significant adverse impact to downtown traffic by destroying the east-west progression signal system. (Long Beach)

Response:

Light rail operation on Long Beach Boulevard would utilize the existing signal timing for the projected travel pattern. No change in signal timing for east-west and north-south is proposed for the LRT operation. The addition of the left turn green phase (arrow) at critical intersections could be part of the overall green time allocated for the north-south traffic movements along Long Beach Boulevard, unless the City of Long Beach determines a more efficient east-west/north-south split.

Comment 11:

The travel lanes immediately adjacent to the median in both the northbound and southbound direction will have to accommodate both the LRT vehicle and automobile traffic south of 7th Street. We believe that the effectiveness of these inside lanes as automobile travel lanes will be dramatically reduced. Motorists will tend to avoid travel in these mixed-use lanes and we would point to Market Street, California Street, and other streets in San Francisco where motorists avoid traveling on the cable car or LRT tracks.

The portion of Long Beach Boulevard between 6th and 7th is projected to experience a daily demand of almost 26,000 vehicles. If indeed the mixed-use lanes are not as effective as the remaining two automobile-only lanes, then there will not be enough capacity in this street section to accommodate the projected demands.

The commuters who drive Long Beach Boulevard day after day will avoid the mixed-use lanes because it will be less comfortable to drive on the tracks and because they will not want to get caught behind the LRT vehicle. The infrequent visitors to downtown will find themselves trapped behind an LRT vehicle, pull out from behind the vehicle and cause accidents.

It is clear to us that the portion of Long Beach Boulevard south of 7th Street simply will not work the same as a four-lane street and we question whether the capacity is available to make this proposed operation acceptable. (Long Beach)

Response:

The LRT traveling in mixed traffic south of 7th Street would affect the capacity of the roadway (at six-minute headway operation). The section of roadway most affected would be Long Beach Boulevard between 6th and 7th Streets, where heavy traffic is

projected, and also where the LRT leaves the reserved median and operates in the travel lane. South of 6th Street there is adequate capacity on the roadway to accommodate the 10 trains per hour and the projected auto traffic, which will be substantially less than that north of 7th Street. The level of service projected for this area is an acceptable level of "C".

Autos tend to avoid traveling on LRT tracks only when the lane or roadway is poorly maintained. Also, the sight distance on Long Beach Boulevard is excellent. Commuters could be able to see the LRT vehicles way in advance and would adjust to the situation.

Traffic impacts due to LRT operation south of 7th Street, particularly between 6th and 7th Streets, could be further mitigated by the refined LB-5 alternative alignment which would: 1) move the station to between 5th and 6th Streets, and 2) provide a reserved median between 7th and 1st Streets for LRT operation.

Comment 12:

At the present time, a station is proposed between 6th and 7th Streets. This will result in the elimination of left turns from Long Beach Boulevard to these cross-streets at both ends of both stations.

Westbound 7th Street and eastbound 6th Street are key east-west distributors across the north side of downtown. The loss of left turns from Long Beach Boulevard to these streets will have a significant impact on circulation in the area. This problem is further complicated by the location of Long Beach Plaza which already blocks some east-west streets south of 6th Street. (Long Beach)

Response:

There will be some impacts on left turn movements at 6th and 7th Streets. However, with two-car light rail trains, there will be storage capacity at each of these intersections for left-turning vehicles similar to existing capacity. Comment 7 above discusses the need for left turn arrows because of traffic growth. For these reasons, LRT impacts on left turn movements are not characterized as significantly adverse. The proposed refined LB-5 alternative, as described in the response to Comments 9 and 11 above, would mitigate impacts on left turns by moving the station south to 5th/6th Streets.

Comment 13:

The elimination of southbound Long Beach Boulevard to eastbound 1st Street left turn will also have significant impacts on downtown. At the present time, a new development is being planned for the block bounded by 1st Street, Ocean, Long Beach Boulevard, and Elm Avenue. Access to this development from Long Beach Boulevard and from Ocean Boulevard will be discouraged. Major access to the project is now being planned from 1st Street. The elimination of the southbound Long Beach to eastbound 1st Street left turn is totally inconsistent with the city's recent decisions regarding access to this parcel. (Long Beach)

Response:

Left turns would not be eliminated from southbound Long Beach Boulevard to eastbound 1st Street. The analysis on page IV-49 of the SEIR does point out the potential for conflicts between LRT/auto turning movements at this location. The problem arises not from left turns being prohibited (see previous response) but from the possible blockage of the access with layover trains on 1st Street tail tracks. The possible options to mitigate this situation are: 1) extend tail tracks on Long Beach Boulevard between 1st Street and Ocean Boulevard, and 2) extend tail tracks on 1st Street to the east of the new development.

Comment 14:

As presently designed, the left turn lanes for automobiles will be located in the center median between the two sets of LRT tracks. If we are correct and the travel lanes with the tracks in them tend to be less used by motorists, then there will be vehicles weaving from the curb lane across the track lane and into the left turn lane. This maneuver will result in weaving and safety problems along Long Beach Boulevard. (Long Beach)

Response:

As discussed in the response to Comment 11 above, autos will tend to avoid travel lanes with tracks in them if the tracks are poorly maintained, or if there is a heavy frequency of train operations in those lanes. With a train arriving only once every six minutes, with proper maintenance of tracks and roadway, and with the excellent sight distance available on Long Beach

Boulevard, commuter traffic should utilize the mixed travel lanes, thereby changing only one lane to get into the left turn lane. The refined LB-5 alternative alignment would further mitigate the above concern by providing a reserved median between 7th and 1st Streets for LRT operation.

Comment 15:

The instances of cross-street blockages in the section of Long Beach Boulevard south of 7th Street will be significant. Any auto or any queue of autos stopped in the mixed-use lane will result in delays to the LRT vehicle. More importantly, any queue that has an LRT vehicle in it will most assuredly block at least one east-west street because the train itself will be 270 feet long, or as long as 12-15 automobiles.

Under existing Long Beach Boulevard traffic conditions, vehicles in the left turn lanes back out into the through travel lane. There is simply more left turn demand today than can be accommodated within the left turn storage lengths available along the boulevard. When this occurs in the future, the mixed-use lane will be blocked and the LRT vehicle will be forced to wait behind the row of left-turning vehicles. Again, this will result in the east-west streets being blocked by the LRT vehicle. (Long Beach)

Response:

The average length of blocks (curb-to-curb) south of 7th Street on Long Beach Boulevard is approximately 375 feet. A two-car train should have no problem. A three-car train would at times block the adjacent east-west street depending on the queue lengths. However, due to civil design and cost constraints at several locations, it has recently been determined that three-car trains will not be proposed.

Regarding left turn lanes, see the response to Comment 6, above.

Comment 16:

The proposed river route extension, with stations at Willow Street, Pacific Coast Highway, and Anaheim, would impact our major crosstown east-west arteries, which are already overloaded at peak hours. Bus-to-train and park-and-ride lots attempting to break into traffic would overload an already bad condition. (Nelson)

Response:

Please refer to Table IV-33B, page IV-56 of the SEIR. The number of parking spaces provided at the above stations is minimal, except with the LB-3 one-station option at PCH. Based on a mode of arrival at this latter PCH station, only about 200 vehicles would utilize the park-and-ride and kiss-and-ride facility during the AM peak hours; therefore, the impact on through traffic on PCH would be minimal because: 1) park-and-ride, kiss-and-ride, and bus transfer facilities are provided off-street with access via local industrial streets, and 2) there would be a slight reduction in overall existing traffic on PCH due to the LRT operation.

Comment 17:

Page S-15 "Mitigation." This, among various reasons would make it desirable to study the potentials of routing the tracks south of 7th Street (or perhaps from Anaheim Road) to approximately Ocean Avenue, then easterly to Magnolia. The adverse impact is not minor because it will restrict the flow of emergency vehicles daily. (Huss)

Response:

The reference to page S-15 in the SEIR does not correspond to the latter portion of the comment that refers to access by emergency vehicles. Emergency vehicle access and travel lanes will be continuously provided both during and after the construction period. The remainder of the comment is noted as a route preference.

Comment 18:

Due to the major impact to Signal Hill's circulation system, what specific measures will the City of Long Beach take to include Signal Hill in the transportation system management program (IV-313) and traffic management related to the light rail project? (Signal Hill)

Response:

Major impacts to Signal Hill's circulation system have not been identified, nor are they presently anticipated; however, as the SEIR states, transportation systems management techniques will be employed in such project segments as needed to effectively

mitigate potential traffic impacts. Should there be impacts that are not presently known and that significantly affect the circulation system in the City of Signal Hill, these types of mitigation measures would be extended to the affected street segments.

Comment 19:

In order to reduce traffic impacts, the Final EIR should include consideration of locating the LB-5 tail tracks off-street, either on the vacant parcel at the southeast corner of 1st and Broadway as part of a joint development on that site, or alternatively in the alley one-half block to the south. (SCRTD)

Response:

This entire block (assuming what is referred to is the block southeast of the corner at 1st Street and Long Beach Boulevard) has already been approved for development by the City of Long Beach as the Shoreline Square project. The approved development does not include the proposed tail track(s), nor would a tail track be compatible on-site with this major office/hotel development.

Comment 20:

Analysis of traffic congestion on Long Beach Boulevard during construction and afterwards needs to be based on a greater degree of specificity than that shown in the SEIR. (LB Blvd. Assn.)

Response:

The DEIR and SEIR both acknowledge that there will be temporary traffic impacts in construction zones. Vehicle travel times will be increased and speeds reduced. However, there will be at least one travel lane in each direction available at all times on Long Beach Boulevard. The use of alternate routes for through traffic, staged construction, and scheduling of major construction activities during non-peak hours will further minimize traffic impacts.

When the light rail facility becomes operational, traffic congestion will be minor, virtually no more than what is currently forecast for Long Beach Boulevard without the proposed project. Traffic impacts for operations of the refined LB-5 alternative are discussed in Section I-410 of this FEIR.

Comment 21:

The SEIR states that the average speed on Long Beach Boulevard from Del Amo Avenue to 1st Street, a distance of 2.7 miles, is 23.8 mph. Our measurements indicate an average speed of between 17 and 14.57 mph, for off-peak and peak hour conditions, respectively. (LB Blvd. Assn.)

Response:

Table I-21A shows the average peak hour operating speeds measured from the Del Amo station to 1st Street, a distance of 5.52 miles. For the first 2.9 miles of this distance (to the Willow Street station) the light rail would travel in exclusive right-of-way (the existing SPTC line) at a high rate of speed (between 40 and 45 mph) so that this distance could be covered in less than four minutes.

From the Willow Street station to 1st Street, a distance of 2.62 miles, there are four station stops. The light rail vehicles would travel in an exclusive median and have an average speed of 18.7 mph, covering the distance in approximately 8.34 minutes including station dwell times. Because the LRT would travel in an exclusive median, the issue of peak versus off-peak conditions does not really apply.

However, it should be noted that a recent time/distance study indicates that an auto can travel from Willow Street to 1st Street on Long Beach Boulevard in traffic during the peak hour (4:30 to 5:30 PM) and cover the distance in approximately eight minutes with an average speed of 20.3 mph.

Comment 22:

There don't appear to have been any traffic studies of the traffic impacts on Pacific Coast Highway and Willow Street as part of LB-3. (Newby)

Response:

Traffic analysis was performed for streets adjacent to the stations and can be found in the SEIR on pages III-19 to III-20 and IV-44 to IV-50. Additional information on construction and operational effects is stated below. The construction of the Pacific Coast Highway station and transfer facilities would occur off-street, with access to the construction site via existing industrial/local streets. The park-and-ride, kiss-and-ride, and

bus parking facilities would have a minor impact on traffic along Pacific Coast Highway, since all construction activities would be restricted to off-street. An extended structure on both sides of the existing bridge would be constructed to accommodate bus turnouts. Existing bus service and vehicular traffic would be affected due to this construction. However, with two travel lanes in each direction kept open in peak hours, and major construction activity being undertaken during off-peak hours, the adverse effects during construction would be minor.

Impacts to vehicular traffic during operation of the station facilities would also be minor for the following reasons.

1) All access and transfer facilities would be off-street with access via existing local/industrial streets.

2) Approximately 200 vehicles would utilize the station facilities during the peak hour when the maximum number of park-and-ride and kiss-and-ride passengers are expected to arrive (with the one, major PCH park-and-ride facility). This is minor in comparison to the projected daily traffic volumes of up to 40,000, or peak hour traffic volumes of about 3,600 on Pacific Coast Highway at the river. Further, the LRT project in itself, with added feeder bus service proposed, will reduce the overall auto traffic in the Long Beach corridor.

   With a relatively small park-and-ride facility proposed for the Willow Street LRT station, the impacts during construction and operation would be even less adverse than at PCH. Boarding passengers will arrive predominantly via bus transit and walk trip.

Comment 23:

The system will cause Golden Avenue to become a freeway. (Bovee)

Response:

Passengers will arrive at the LRT stations along the river route primarily via bus transit and walk trips with the exception of the LB-3 (Modified River Route), Option B, whereby approximately 200 vehicles will arrive at the PCH station during the AM

peak hour. Feeder bus lines will operate along Willow Street, Pacific Coast Highway, and Anaheim Street and would not affect Golden Avenue.

At PCH the majority of park-and-ride passengers would arrive at the LRT station from PCH, with access to the parking via local/ industrial streets. Golden Avenue is not a through street and terminates south of Anaheim Street. The effect to Golden Avenue from additional traffic approaching the LRT station will, therefore, be insignificant.

III-427 Utility Relocation

Comment 1:

The Modified River Route is plagued with uncertainly about soil stability, hydrological conditions, ultimate noise abatement and visual mitigation requirements, utility relocation (the LRT is very close to a number of high pressure gasoline pipelines), and costs related to replacing or modifying pump stations of the Los Angeles County Flood Control District.

The cost ramifications for these uncertainties were not fully addressed. For example, the utility relocation costs for segment 6B (Modified River Route, Option A) work out to $67.20 per route foot, or $1,236,500 for the 18,400-foot segment. Actual site inspection revealed no less than two pump stations which would require major rebuilding or substantial modifications; and, depending on the hydrological study, one or more additional pump stations may be required. Furthermore, utility research revealed that no less than 27 high pressure gasoline or oil lines would cross the LRT path, and numerous others between Burnett Street and 28th Street would parallel very close to the LRT right-of-way. (Zimmerman, CITRT)

Response:

The information mentioned in the comment came to the attention of the LACTC after issuance of the SEIR. It is true that along the Modified River Route, the LRT would be in close proximity to a number of high pressure gas lines. There are some 20 or more pipelines that would have to be buried deeper, and/or have casings put on them where they cross the alignment. It is also true that two pump stations would require substantial modification. However, no additional pump stations would be

required. These matters have already been recognized and included in current project cost estimates. The costs associated with utility relocation, for both the LB-5 and LB-3 (Modified River Route) alternatives, are about the same -- approximately $37 million.

III-428 Vegetation and Wildlife

Comment 1:

The river route alternative would adversely impact wildlife in the river, including fishhawks, pigeons, doves, coots, sparrows, falcons, pelicans, seagulls, owls, and herons. (Bryce, Wass-Schmidt)

Response:

Because the LB-3 (Modified River Route) alternative would not be located in the Los Angeles River, nor would construction take place in the river, no impact to wildlife in the river is expected. Wildlife adjacent to the river along the embankment would be displaced during construction but, as stated on page III-6 of the SEIR, "Displaced wildlife, such as birds and rodents, would return of its own accord after the construction phase."

III-429 Visual Impacts

Comment 1:

We believe that the operation of a rail transit line along the river route can have a significant adverse impact upon the residential properties facing the right-of-way due to the removal of vegetation, existence of overhead wires and chain link fence, and passage of rail cars. This impact could be fully mitigated through the placement of heavy landscaping between the rail line and the homes, thus creating a linear park which could become a real amenity in the neighborhood. (Long Beach)

Response:

The SEIR, on page IV-31, acknowledges that the most severe visual impacts would be those associated with Alternative LB-3 (Modified River Route). However, the SEIR associates the most severe impacts with the aerial portion of the alignment which occurs to the south of the residential area referred to in the comment. The SEIR characterizes the impacts associated with the at-grade portion as being relatively insignificant. It states,

on page IV-32, that negligible impacts are associated with the catenary support poles because of the presence of existing utility poles and overhead wires along the river bank. Other impacts are identified which relate to changes in access provisions for the bicycle and horse trails. The SEIR does propose mitigation measures consisting of replacement landscaping. Thus, the minor visual impacts in this area will be partially mitigated.

Comment 2:

We also strongly believe that the construction of the aerial section of the river route over a portion of the Broadway right-of-way will have a significant adverse impact. As noted in the document, it would create a "visual tunnel" along this major access street to downtown. We believe that this adverse impact can be fully mitigated by moving the alignment onto the site of the World Trade Center, where the rails and station could be totally integrated into the parking structure. (Long Beach)

Response:

The Broadway portion of the LB-3 (Modified River Route) alternative would have the most severe visual impacts. However, the SEIR does point out that these visual impacts could be significantly mitigated by integrating the alignment with the World Trade Center development as stated in the comment.

Comment 3:

We concur with the conclusion of the EIR that the removal of the median landscaping on Long Beach Boulevard north of 7th Street would have a significant adverse impact. Contrary to a statement in the EIR (page IV-39), we believe that a similar impact would occur south of 7th Street, since landscaping would be removed in two out of seven blocks in order to construct the center platform stations. The elevated station platforms should also be considered a negative visual impact, as well as the overhead wires which would be strung curb-to-curb to support the electrical wires. North of 7th Street, these negative impacts can be significantly mitigated by utilizing the optional design which would widen the cartway into the existing extra-wide sidewalks. This would preserve and enhance median landscaping and eliminate the necessity to string wires over the automobile lanes. (Long Beach)

Response:

While street trees would be removed in two out of seven blocks south of 7th Street for the construction of the station, as stated in the SEIR, landscaping would be installed after station construction is completed. The station on Broadway between Maine and Daisy is high platform, and the comment is therefore correct in pointing out its contribution to the overall visual impacts of the alignment.

Comment 4:

The third paragraph on page IV-37 indicates an adverse impact of the aerial structure on 270 linear feet of office frontage of the World Trade Center. It is more correctly stated that the entire 1200-foot frontage on Broadway would be visually affected unless the transit line is fully integrated into the design of the World Trade Center. The latest design for the World Trade Center calls for office or retail uses at the ground level, oriented toward Broadway. (Long Beach)

Response:

The reference which is cited in the comment refers to intrusion upon visual privacy of office occupants. That is to say, passing LRT riders will, in some cases, have the ability to look into office windows as the vehicles pass by. Visual impact, on the other hand, refers to the external effects of the system as perceived by office workers, passing motorists, and pedestrians. This effect extends to all areas where the system is visible to the general public, which in the case of the World Trade Center, would include the length of the right-of-way in the vicinity of the World Trade Center project. We would agree, however, that if the LRT is physically integrated with this project, the visual impacts could be substantially reduced.

Comment 5:

The second paragraph on page IV-42 states that the shading of the sidewalk and street would be an unavoidable impact, even if the transit line is integrated into the World Trade Center development. Full design integration would place the transit line over (at the roof level) two levels of parking or one level of commercial space. Thus, the transit would cast no shadow in addition to that already produced by the World Trade Center structure. (Long Beach)

Response:

Depending upon the precise placement of the guideway and station in relation to the World Trade Center project, it is possible that no additional shading solely attributable to the LRT would occur. It is therefore possible, as the comment suggests, that in the immediate confines of the World Trade Center projects, LRT shading impacts could be effectively eliminated.

Comment 6:

What will we have if we survive the construction period? Instead of a beautifully landscaped boulevard, we are promised a street devoid of median landscaping. Palm trees will be replaced with poles stringing electric wires, and grass and bushes will be replaced with raised concrete station platforms and an ugly eight-foot chain link fence. (DLBA)

Response:

It is true that the visual environment of Long Beach Boulevard will be altered if alternative LB-5 is implemented. There would be changes in street landscaping, the presence of catenary cables and pole supports, and raised station platforms. However, when the LRT operates at-grade in a public right-of-way, there would not be an accompanying chain link fence.

III-430 **Miscellaneous**

Comment 1:

The second paragraph on page IV-43 suggests that the Long Beach Redevelopment Agency could coordinate streetscape improvements with construction of the transit line. The agency has already allocated over $600,000 to such improvements, which are now being constructed. The agency would not be able to allocate additional funds for similar improvements to this same street segment. (Long Beach)

Response:

The discussion presented in the SEIR suggests that an opportunity exists for the coordination of streetscape improvements with construction of the transit line. It does not address funding capability, which is a separate issue.

Comment 2:

When voters gave general approval to the concept of a rail system, they were given no data regarding how it would impact areas it passed through. That is manifestly unjust, and the people affected should be given the opportunity to come together and try to arrive at a consensus as to where the system should be constructed. (Kimball)

Response:

Proposition A, as it appeared on the ballot on November 4, 1980, called for a one-half-cent sales tax increase in Los Angeles County. It was passed by the voters with 54.2 percent.

Proposition A called for the development of a rail transit system to serve Los Angeles County. Included on the ballot was a rail map giving general locations of planned rail lines. Those rail lines have been studied for the past three years and have since been refined to determine where the planned systems will go.

As the Los Angeles County Transportation Commission (LACTC) is a public entity, funded by the taxpayers through the one-half-cent sales tax increase, the LACTC has followed all necessary requirements, including the California Environmental Quality Act (CEQA) for developing this project, including the release of the Draft Environmental Impact Report and the subsequent Supplement, which list all impacts the project will have on the area, both construction or short-term impacts, and long-term impacts, those which will continue to exist during operation of the system.

Comment 3:

The site of the abandoned Sears store hasn't been considered for whatever purposeful transportation mode. (Huss)

Response:

It is our understanding that the abandoned Sears store referred to in the comment is located on the east side of Long Beach Boulevard in the vicinity of 4th Street, across from Long Beach Plaza. The LRT alignment has been established in the center

median of the street on Long Beach Boulevard (LB-5), and the nearest station is located just to the north of 1st Street. Neither the placement of the alignment nor the siting of the station are conducive to using the abandoned Sears store for transportation purposes relating to the light rail project.

Comment 4:

Page I-30. Usable backfill should be sold to the Long Beach Harbor Department for port extension purposes. This would offset some of the cost of the subway construction (approximately 1,500,000 cubic yards). (Huss)

Response:

The DEIR points out that usable fill material will indeed be disposed of at the Los Angeles Harbor for reclamation purposes. Since this information had already been stated, it was not repeated in the SEIR.

Comment 5:

Sell commercial space and advertising space in subway stations. (Huss)

Response:

The comment is appreciated. All feasible means of defraying operating costs will be sought, including the sale or lease of advertising space.

Comment 6:

The Municipal Parking facility under the Terrace Theatre fountains is seldom used and could perhaps be purchased from the city to be used as a transit terminal and park-and-ride location. (Huss)

Response:

The Terrace Theatre is located south of Ocean Boulevard well to the south of either the LB-3 (Broadway Aerial) or LB-5 alignments. The use of this facility for LRT terminal purposes has not been advanced by the City of Long Beach and has not therefore been contemplated for the project. Actual use of the parking facility and the city's position on the use for purposes other than to serve as parking for the theater are not known.

Comment 7:

Referring to The Rail Way, Issue No. 7, January 1985, page 3, second set of photographs, I can only conclude that the photographer was instructed to find the worst-looking area to photograph, so as to adversely portray the area along the river route. (Villani)

Response:

The photograph in question was used in the January 1985 issue of The Rail Way as part of a series of before-and-after shots which illustrated various aspects of the different alternatives. The location was chosen because it shows how the horse trail and bike path would be relocated if the rail line is built along the river. The photograph and rendering are located on page IV-33 of the SEIR.

Comment 8:

The distance between stations should be longer. (Robinson)

Response:

Station locations have been based upon industrywide standards of approximately 1.5 miles apart in mid-corridor, and approximately one-half mile apart in Long Beach and the Los Angeles CBD.

Comment 9:

I am a developer of a proposed project on the block bounded by Long Beach Boulevard, Ocean Boulevard, 1st, and Elm known as "Shoreline Square." Primary ingress/egress to this project has been planned on 1st Street. This aspect of the project would be seriously jeopardized by the imposition of rail transit on that street. (Cohen)

Response:

Two alternatives for the tail track are being analyzed for the LB-5 alternative which would relocate the tail tracks away from 1st Street in front of the Shoreline Square project. The options being considered are: 1) relocating the tail track to the block between Elm and Linden Avenue on 1st Street; and 2) locating the tail on Long Beach Boulevard between 1st Street and Ocean Boulevard. These are discussed in Section I-410, design refinement of LB-5.

Comment 10:

Any route selected should deliver rail rapid transit. If this cannot be done, there is an obligation to return to the voters for confirmation and approval to spend that money on public transportation. (Frank)

Response:

The Long Beach-Los Angeles light rail project will provide rapid transit service between Long Beach and downtown Los Angeles. Trains will travel up to 55 mph between stations in the mid-corridor, and the service will be faster than automobiles or bus transit during rush hours between downtown Los Angeles and Long Beach.

III-431 Corrections and Additions

Comment 1:

On page S-12, noise and vibration impact of operation should read ". . . increase of 5 CNEL . . " (Long Beach)

Response:

In the Summary of Project Impacts, the reference cited by the City of Long Beach above for LB-3 is herewith corrected to read: "Noise increase of 5 dBA (CNEL) at some residences".

Comment 2:

Figure II-21B, showing General Plan land uses in station areas, incorrectly shows open space along the east side of the Long Beach Freeway between Broadway and 5th Street. A General Plan amendment has changed this to multi-family residential based upon the recently approved Downtown West Neighborhood Development Strategy. (Long Beach)

Response:

On page II-15 of the Supplement, the map is herewith corrected to show that the land use for the space between Broadway and 5th Street has been changed to multi-family residential, based on recent amendment to the General Plan.

Comment 3:

The present open area identified as Willmore Park is intended to be sold off and developed as multi-family residential, the proceeds of which would be used to purchase land for a park within the adjacent Downtown West community. (Long Beach)

Response:

The Final EIR herewith reflects the fact that Willmore Park (shown on page II-19, Figure II-22A and discussed on page II-21 of the SEIR) will be sold off and developed as a multi-family residential area. Also, the first paragraph on page IV-35, which deals with visual impacts on Willmore Park, should be deleted.

Comment 4:

The temporary removal of curb parking should be included in Table III-23A as an impact on businesses during construction. The removal of parking during construction is discussed on page III-20. (Long Beach)

Response:

Table III-23A, page III-17 of the SEIR, is herewith corrected by adding the following information regarding the temporary removal of curb parking to Footnote 1: Curb parking would be eliminated in blocks where there are lane closures. For LB-3 (river portion only) and LB-6, there would be no significant impact. For LB-3 (Broadway Aerial portion) and LB-5, maintenance of traffic flow would necessitate the loss of curb parking on both sides of Broadway and along Long Beach Boulevard, and its cross-street approaches, respectively. The impacts would be temporary, but possibly significant to marginal businesses.

Comment 5:

The fourth line on page III-22 indicates that "redevelopment" is planned along the north side of Broadway. This term normally describes a process of public acquisition and recycling through the use of the power of eminent domain. No such program is anticipated in this area. This statement should be corrected by replacing the word "redevelopment" with the phrase "private recycling at higher densities". (Long Beach)

Response:

The end of the above-mentioned sentence on page III-22 of the SEIR is herewith changed to read as follows: In addition, private recycling at higher densities is planned along the north side of Broadway in this area.

Comment 6:

On page IV-29, there is an apparent error in the first sentence where values for land and improvements are reported at $.0-$.25 per square foot. (Long Beach)

Response:

The City of Long Beach is correct. The paragraph in question is herewith corrected to read as follows: "Assessed values for the random sample of properties ranged from $1 to $25 per square foot in 1983 with most parcels ranging between $10 and $15 per square foot. Using an average assessed value of $12 per square foot, the assessed value of the property acquired for each of the substations is estimated at $6,000. Based on this estimated assessed valuation, the property acquisitions for each of the substations for any of the alignments would result in a $600 annual property tax revenue loss."

Comment 7:

Figure II-31A, Long Beach Level of Service D or Worse Intersections, should be revised in the Final EIR to include a label indicating the difference in significance of the circle and triangle markers used. (SCRTD)

Response:

As noted in Corrections and Additions (Chapter V), the circle stands for "Year 2000 conditions" and the triangle for "Existing Conditions."

Comment 8:

The costs shown on Table S-1 are expressed in current dollars. They should be expressed in millions of current dollars. (SCRTD)

Response:

The comment is correct. On page S-7, Table S-1, Footnote 3, the capital costs for the various system alternatives should be expressed in millions of current dollars.

Comment 9:

On Table S-2, the net noise/vibration impact of operating the LB-3 alternative is listed as none; this does not agree with narrative material in Section IV-310. (SCRTD)

Response:

Section IV-310 states that an increase of 5 dBA CNEL "would affect surrounding neighborhoods." The text goes on: "... noise and vibration would be mitigated by providing an acceptable noise level ..." Though there may be "residents in some areas who would find even the mitigated ... levels objectionable because of the increase over previous levels." Therefore, the word "none" is herewith corrected to negligible.

Comment 10:

The mitigation measures contained in section IV-150 for noise and vibration should be clearly spelled out and firmly committed to in the final report. (SCRTD)

Response:

In section IV-150, page IV-7, the analysis concluded that for alternatives LB-1, LB-2, LB-4, or LB-5, there would be no discernable increase in noise exposure. The last paragraph on that page clearly spells out what mitigation would be recommended for LB-3. On page IV-10, vibration impacts are discussed and the conclusion reached that no damage from system vibration would occur.

To clarify further, the above-mentioned paragraphs are now combined in a new Section IV-153 entitled Mitigation Measures printed here in its entirety.

IV-153 Mitigation Measures

A future increase in noise exposure is expected with or without the project, but only a negligible change in noise impact over the future no project level with the implementation of project alternatives LB-1, LB-2, LB-4, or LB-5. Thus, no discernible impact is expected for these alternatives.

To mitigate possible noise impact for LB-3 (Modified River Route), a sound barrier wall is recommended from Wardlow Road to Pacific Coast Highway. Such a wall would be topped by fencing and would reduce rail transit noise levels by at least 5 dBA (bringing the maximum transit levels to below 75 dBA within 50 feet). Table IV-15C shows that this wall would be effective in reducing the impact of the project; the NII for LB-3 (Broadway Aerial), for example, is reduced by 20 percent. For residences along the Los Angeles River away from major cross-streets, where noise levels currently are low, this barrier would be most effective in reducing total noise levels. Assuming an approximate distance of 11,000 feet, the mitigation cost would be $660,000.

In station areas, no significant impacts are expected; therefore no mitigation is planned.

Vibration levels at which there is a risk of damage are considerably higher (by some 40 dB) than the levels expected from the light rail system. No damage would occur to either structures or landforms along any of the proposed alternatives. Nonetheless, the track structure as well as the light rail vehicle wheels would include resilient materials to minimize vibration and noise; the rails would be continuously welded to eliminate any "clickety-clack" effect.

Further, final mitigation measures will be specified in the Findings of Fact to be adopted by the commission at certification of the Final EIR.

Comment 11:

In addition to those measures presented in Section V-122, possible mitigation measures that may apply include:

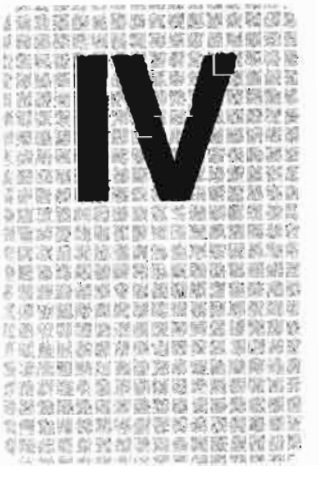
- o Consolidated deliveries
- o Equipment maintenance programs
- o Direct material delivery to sites
- o Use of slip forms for concrete
- o Monitor use of petroleum products

(SCRTD)

Response:

The above-mentioned additional mitigation measures which may be used for reducing energy consumption are herewith incorporated into the document.

Chapter



IV COMMENTS NOT REQUIRING RESPONSES

During the course of public review of both the Draft EIR and its Supplement, a number of comments were received which had no direct bearing on the adequacy or completeness of the environmental documents, either because they were general statements of opinion, statements regarding subjects outside the context of the environmental documents, or otherwise did not relate to the substance of these documents.

Among those comments received not requiring responses, a large number were statements of preference or opposition to one or more of the alignment alternatives under consideration. These comments have been summarized and are presented in this chapter, divided into two categories: those pertaining to alignments considered in the DEIR, and those pertaining to alignments considered in the the Supplemental. A file of all comments, both written and oral, is available for inspection at the offices of the LACTC.

IV-100 DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR)

All of the public commentary was examined for specific mention of route alternative preferences. The material reviewed consisted of all written comments and the transcripts of oral testimony taken at the six public hearings dealing with the Draft EIR.

Each piece of written or transcribed oral testimony was individually reviewed, and specific comments were isolated which expressed an opinion regarding one or more route alternatives. In the vast majority of cases, commenting parties stated in specific terms a preference or objection to a given route alternative. In these instances, the comments were simply recorded as such. In a minority of cases, however, comments were made which would infer support or objection to a given alternative, but did not make specific reference to it. An example of such a comment would be "The use of Atlantic Boulevard would be unacceptable." In cases such as this example, opposition to alternatives using Atlantic Boulevard (LB-1, LB-2, LB-4) was inferred. In similar fashion, inferences were drawn for all comments not stating a specific alternative but which, by the nature of the comment, clearly implied one or another.

Both positive and negative comments were included in the analysis. However, a statement of preference or opposition was required before it was included. For example, if a preference for LA-1 was stated (specific or inferred), it was included; but opposition to LA-2 and LA-3 was not included unless a statement to that effect was also made. Similarly, a statement in opposition to a given alternative did not necessarily imply a preference for another available option, unless it was so stated.

Each comment of preference and/or opposition was tabulated (see Table IV-1). Pluses (+) were entered as preferences, and minuses (-) were entered as objections. No weighting was assigned to these, either in terms of the nature of the commenting party or the strength of the statement made. Thus, a public agency comment was given the same weight as that of an individual, and a statement such as "totally unacceptable" was accorded the same weight as a much milder statement. In a number of cases, comments were made which would indicate a preference for an alternative not yet under consideration. These comments were also recorded. In the tabulation of comments, the affiliation of the commenting party was also provided according to the following categories: 1) public agency, 2) elected official or official city comment, 3) private groups or organizations, and 4) private individuals.

IV-110 RESULTS OF THE ANALYSIS

A total of 84 comments were recorded expressing a preference for and/or opposition to one or more alternatives. The comments were received from elected officials (9), public agencies (9), private groups (27), and individuals (39). The detailed analysis is presented in Table IV-1.

The Long Beach alternatives received the greatest number of comments -- 39 in all -- followed by the downtown Los Angeles alternatives (27 comments). Comments regarding both the downtown Los Angeles and mid-corridor alternatives were fairly evenly divided between statements of support and opposition (+20, -25 and +6, -5, respectively), whereas comments regarding the Long Beach alternatives were overwhelmingly negative (70 negative statements versus 22 positive). Comments received for each of the project segments were fairly evenly divided among the alternatives within each segment.

IV-120 DOWNTOWN LOS ANGELES ALTERNATIVES

Among the alternatives under consideration at the time of public review, more comments (19) were made regarding the Broadway/Spring (LA-1) alternative, and these were equally divided between support and opposition. The Olympic/9th (LA-3) alternative received 12 comments nearly equally divided between positive and negative statements.

Commenters offered number of alternatives (8) which were not under consideration by the LACTC . The most prominent among these was a Figueroa Street alignment with an extension south to the area of USC/ Exposition Park. One comment suggested that such an alignment be a subway. Two commenting parties suggested the conversion of Broadway into a transit mall, one party suggesting a subway under Broadway. The remaining suggestions were as follows: 1) construct a through-branch of

TABLE IV-1

SUMMARY OF ROUTE ALTERNATIVE PREFERENCES

	LA-1	LA-2	LA-3	MC-1	MC-2	MC-3	LB-1	LB-2	LB-3	LB-4
Public Agencies	-4	+1/-1	+1/-1	-1	-2	+1/-1	-3	+1/-3	+2	-3
Elected Officials						+2	-2	-2	-1	-2
Private Groups	+4/-4	+3/-1	-3			-1	+1/-7	+2/-7	+2/-2	+4/-7
Individuals	+6/-1	+3/-3	+2/-7	+1	+1	+1	-11	+4/-8	+6/-4	-8
Total Positive Comments	+10	+7	+3	+1	+1	+4	+1	+7	+10	+4
Total Negative Comments	-9	-5	-11	-1	-2	-2	-23	-20	-7	-20

Other Prominent Suggested Alternatives

DOWNTOWN LOS ANGELES

- Figueroa, south to USC/Exposition Park (+4)
- Broadway Transit Mall (+2)

MID-CORRIDOR

- Watts-Compton diversion (+10, -1)
- Depressed trainway through Compton (+2)

LONG BEACH

- Long Beach Boulevard, Two-Way (+17)
- Willow Street Terminus (+6, -1)

Source: M.L. Frank & Associates, 1984.

Metro Rail, south along the PE right-of-way, 2) connect the line with Metro Rail at Union Station, 3) construct LA-1 with the alignment on the south side of the Hollywood Freeway, and 4) construct a route terminating at either the Pacific Electric or Subway Terminal buildings. Public agencies were equally divided in their opinions regarding LA-2 and LA-3, but were only negative regarding LA-1. Private groups expressed a slight preference for LA-2 and LA-3. Individuals preferred LA-1 and disliked LA-3.

IV-130 MID-CORRIDOR ALTERNATIVES

MC-3 (the SPTC relocation alternative) received the most comments (four positive comments versus two negative). Two of the positive comments came from elected officials. Opinions on the remaining two alternatives (MC-1, MC-2) were few and mixed in terms of preference/opposition. This mixture of opinion extended to both public agencies and individuals. Only one private group commented.

The most notable conclusion to be derived from the mid-corridor comments is that a definite preference was expressed for another alternative, this being the so-called Watts-Compton Diversion. Eleven comments were received on this option, 10 of which were positive. Two comments suggested grade-separation or a depressed trainway through Compton.

IV-140 LONG BEACH ALTERNATIVES

Long Beach generated the most comments and the Long Beach alternatives were of interest to all categories of commenting parties.

Of the alternatives under consideration, the three alignments using Atlantic Avenue (LB-1, LB-2, and LB-4) all received a negative response. The margin of opposition was nearly the same for each (75%-95% negative). The original Los Angeles River Route (LB-3) was the only alternative receiving more support than opposition, but this can be characterized as only a mild preference. This conclusion generally holds true regardless of the category of commenting party.

As was the case for the downtown Los Angeles alternatives, a number of new alternatives (10) were suggested. The most prominent among these was the use of a two-way route along Long Beach Boulevard, a route suggested by 17 parties. One party suggested that this be in a subway configuration; another suggested an extension of this route along Pacific Avenue. A second alternative receiving support was the so-called Willow Street Terminus. This option was suggested by six commenting parties and opposed by one. The remaining suggested additional alternatives were

as follows: 1) an alignment which would proceed west on PCH or Anaheim, then south on Long Beach Boulevard, 2) an alignment which would have full grade separation in Long Beach, 3) an alignment using the SPTC right-of-way to Orange or Walnut, then to Alamitos or 1st Street, to Atlantic, and returning to the SPTC right-of-way, 4) an alignment utilizing the Long Beach/Pacific Avenue loop, 5) a Long Beach Boulevard/Atlantic couplet plus the Pacific Loop, and 6) an alignment utilizing Elm or Linden and Pacific or Cedar.

IV-200 DRAFT SUPPLEMENTAL EIR (SEIR)

The public commentary regarding the additional Long Beach alternatives discussed in the SEIR was analyzed in the same fashion as the analysis performed on the DEIR commentary. The reader is therefore referred to Section IV-100 for a description of the analysis procedure.

IV-210 RESULTS OF THE ANALYSIS

A total of 44 written and oral comments were received expressing opinions regarding the Long Beach alternatives discussed in the SEIR. Two additional comments were received which expressed opinions on alternatives previously offered. These included a comment from the City of Compton (Councilman Maxcy Filer) opposing all options through Compton except alternative MC-2, and a comment from a Mr. Zigmund Huss, who suggested that the downtown Los Angeles segment should be terminated at Temple Street.

Among the comments analyzed on the SEIR were a substantial number of opinions expressed by various residents of the Wrigley district, a section of Long Beach adjacent to the LB-3 (Modified River Route). Approximately 1,500 residents of the area signed a general petition, formally objecting to the river route options. Objections to this route were further supported by over 1,000 signed form letters to the same effect. These communications were received by the LACTC in August, 1984.

Excepting the two non-Long Beach comments and the petitions and form letters identified above, the route preference comments on the three additional Long Beach alternatives came from one public agency (SCAG), 13 private groups and organizations, and 28 individuals.

IV-220 SUMMARY OF OPINIONS

Table IV-2 presents a summary of the opinions received regarding route preference for the additional Long Beach alternatives. The expression of support and/or opposition shown in the table is lopsided in favor of the LB-5 (Long Beach Boulevard, Two-Way) alternative and against the LB-3 (Broadway Aerial-Modified River Route) alternative, with the same parties taking both positions. This is particularly true with private individuals, but somewhat less so in the case of private organizations. The key supporter of the Modified River Route alternative was the Downtown Long Beach Association. The Long Beach Boulevard Area Association, while opposing Alternative LB-5, did not express support for any of the other options.

TABLE IV-2

SUMMARY OF PUBLIC OPINION

LONG BEACH ALTERNATIVES

- LB-3 (Broadway Aerial-Modified River Route)
- LB-5 (Long Beach Boulevard, Two-Way)
- LB-6 (Willow Street Terminus)

	LB-3 (Broadway Aerial)	LB-5	LB-6
City Officials			
(None)			
Public Agencies			
SCAG		+	-
Private Organizations			
Christian Life Church	-	+	+
Citizens for Responsible Transit	-	+	
Downtown High Rise Association		+	
Downtown Long Beach Association	+	-	-
Downtown Redevelopment Project Area Commission		+	
J.C. Penney			-
Long Beach Area Chamber of Commerce	(+)	(+)	(+)
Long Beach Boulevard Association		-	
Long Beach Equestrian Trails	-		
Long Beach Plaza		+	
Rail Pac		+	
St. Luke's Episcopal Church	+	+	
Wrigley Association	-	+	
TOTAL	+2/-4	+8/-2	+1/-2
Private Individuals			
Total (29 Respondents)	+2/-14	+18/-2	+1/-2
Total Individual Opinions	+4/-18	+27/-4	+2/-5
Petition (1,570 Signatures)	-	+	
Form Letter (1,000 + Letters)	-	+	

+ = Support
- = Opposition
(+) = General support the project only

Source: M.L. Frank & Associates, 1985.

It should be noted that there were also numerous suggestions at the first Long Beach public hearing (June, 1984) that the Long Beach Boulevard, Two-Way (LB-5) and Willow Street Terminus (LB-6) options be studied and/or adopted. It was in large measure due to this body of opinion that a decision was made to prepare an SEIR for Long Beach. At that same hearing, expressions of support were registered for the LB-3 alternative (original version); however, the majority of these opinions were expressed by those opposed to placing the project on Atlantic Avenue. Residents along the Los Angeles River were either not aware of the project at the time of the first public hearing or they were insufficiently organized to respond.

IV-230 ANALYSIS OF OPINIONS

Alternative LB-6 (Willow Street Terminus) was generally viewed negatively because it would carry fewer riders, would not penetrate into the downtown area, and consequently would provide poorer service to the resident population and employment base. It was also observed that this failure to serve downtown Long Beach places the alternative in conflict with the policy embodied in the Regional Transportation Plan (RTP). Limited support for this alternative came primarily from those concerned about "regional" government intruding into their city and from those who noted there were virtually no immediate adverse impacts associated with it.

The most intense exchange of views, charges, and countercharges came with the assessment of the LB-3 (Modified River Route) alternative and the LB-5 (Long Beach Boulevard, Two-Way) alternative. Ridership, cost, and energy did not figure significantly in the views of the vast majority of respondents. Two individuals correctly noted that the LB-5 alternative is cheaper. There were no comments on energy consumption on these or any of the other alternatives under consideration.

The major points of confrontation pertain to: 1) adverse environmental impact, 2) service to geographical locations and socioeconomic groups within Long Beach, and 3) conformity with local redevelopment plans and policies. The majority of respondents considered the environmental impacts of the Modified River Route alternative to be far more severe than those associated with the Long Beach Boulevard alignment. This majority was largely comprised of residents and resident groups from the potentially-affected area along the Los Angeles River, though at least one public agency concurred with this view. Opposition to the Long Beach Boulevard alternative and associated support for the Modified River Route option came, not unexpectedly, from business associations along Long Beach Boulevard. The key point of contention among private supporters and detractors of each alternative was the relative magnitude of construction impacts along Long Beach Boulevard versus a wide variety of impacts, in

addition to construction, along the Los Angeles River, including permanent impacts in the areas of noise, visual quality, traffic, community resources, safety, crime, property values, and tax base. Visual quality and traffic impacts were two other potentially adverse impacts of the Long Beach Boulevard alternative advanced by the City of Long Beach and other business groups.

Service to the downtown area and associated support for city redevelopment activity was no less of a contested issue, though an analysis of opinions expressed showed a very high correlation with views on the relative magnitude of potential environmental impacts. Thus, many who viewed the impacts along the Los Angeles River as most severe also considered the LB-5 alternative superior in servicing the downtown area; those organizations which were concerned with impacts along Long Beach Boulevard considered the Modified River Route service to west downtown as preferable. Of those respondents with no direct interest in the location of adverse environmental impacts, the majority expressed a preference for the LB-5 alignment.

In summary, there are few points of consensus among the views expressed by respondents to the SEIR. There was little support, but also little direct opposition, to the LB-6 (Willow Street Terminus) alternative. This alternative falls to address several of the goals established for the regional transit system, a point recognized by several respondents; however, it also is attractive in that it has very few adverse impacts, a fact also noted by respondents.

The two alternatives eliciting the most interest and response--LB-3 (Modified) and LB-5--had logical supporters and detractors, most of whom expressed opposition due to reasons of perceived adverse impact. The majority of respondents, including those who were impartial from the perspective of adverse impact, seemed to favor the LB-5 alternative as best meeting transit service objectives while minimizing adverse impacts.

Chapter

V CORRECTIONS AND ADDITIONS

V-100 DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR)

This section includes corrections and revisions to the Draft Environmental Impact Report (DEIR) and Summary DEIR, arranged according to chapter, section and page in the original draft report. The corrections and revisions shown in this chapter represent the best information available as of February, 1985 and are an attempt to correct errors, typographical and otherwise, that have come to the attention of LACTC. Corrections and/or additions that have come to the commission's attention during the circulation period from members of the public and concerned agencies are contained in Chapter III (Comments Requiring Responses).

Note that each correction or addition is indicated with an underscore. Column designations "left" and "right" refer to the left-hand or right-hand side of the original page. Substantive corrections or additions are indicated with an asterisk. Changes in tables are bolded and/or underlined for easy indentification.

ERRATA SUMMARY DEIR

Page	Section	Column	Paragraph	Line	Remarks
S-i	Table of Contents			6	Indent 7 spaces from left margin.
				8	Indent 7 spaces from left margin.
				12	Indent 7 spaces from left margin.
				15-17	Indent 14 spaces from left margin.
				19	Indent 7 spaces from left margin.
				21	Indent 7 spaces from left margin.
				23-29	Indent 14 spaces from left margin.
				34	"3-310" should be S-310.
				36	"3-200" should be S-320. Page "18" should be 17.
				After 38	Insert 3 subheadings, indented 7 spaces from left margin as follows: S-410 LOS ANGELES 27 S-420 MID-CORRIDOR 28 S-430 LONG BEACH 29
S-1	S-200	Left	Last	10	"Florence-Graham" should be Florence-Firestone.
S-10	S-232		First Bullet	7	"2, and 4," should be LB-2, and LB-4.

ERRATA SUMMARY DEIR (Continued)

Page	Section	Column	Paragraph	Line		Remarks
S-23	TABLE S-3			1	*	Description of Impact for LB-3 should read as follows: LB-3: Reduces access to bike path and eliminates end segment of a horse trail.

ERRATA TABLE OF CONTENTS - DEIR

Page	Section	Column	Paragraph	Line	Remarks
i	I	Left		1	Insert I before "PROJECT DESCRIPTION".
v	II-230	Right		28	"II-64" should be II-68.
v	II-231	Right		29	"II-64" should be II-68.
vii	II-430	Right		27	"II-139" should be II-143.
vii	II-431	Right		28	"II-139" should be II--143.
vii	II-432	Right		29	"II-139" should be II--143.
vii	II-433	Right		30	"II-143" should be II-145.
x	IV-124.3	Left		34	Insert new section IV-124.3 Mitigation Measures.
xiv	VI-240			24	"LAND USE, POPULATION AND HOUSING" should be LAND USE AND POPULATION.

ERRATA TABLE OF CONTENTS - DEIR (Continued)

Page	Section	Column	Paragraph	Line	Remarks
xv	VI-310			14	"LAND USE, POPULATION AND HOUSING" should be LAND USE AND POPULATION.
xvii	VIII-214.2	Right		19	"VIII-8" should be VIII-6.
xvii	VIII-220	Right		22	"VIII-9" should be VIII-8.
xxiii	II-42J	Right		20	"II-141" should be II-139.
xxiii	II-43A	Right		23	"II-143" should be II-145.
xxv	IV-13A			48	* Replace "(Year 2000);" with Downtown.
xxix	V-24A			38	"V-24" should be V-32.
xxxiv	II-32A(2)	Right		23	"II-82" should be II-81.

ERRATA CHAPTER 1

Page	Section	Column	Paragraph	Line	Remarks
I-26	I-250	TABLE I-24C			* Revise TABLE I-24C to read as shown on page V-5.
I-31	I-252		3rd Bullet	6	"Comption" should be Compton.
I-60	I-425.1	TABLE I-42A			* Under "Annual Operating Costs" for "Olympic/9th Aerial w/LA River Route", "$10.78" should be $12.83.
I-81	I-620	TABLE I-62A		19	"MC-2" should be MC-1.

REPLACEMENT FOR TABLE I-24C

PASSENGER LOADINGS BY STATION

SYSTEM ALTERNATIVES[1]

LA-3/MC-1/LB-4		LA-3/MC-1/LB-3	
Station	Total Daily Boardings	Station	Total Boardings
4th Street	2,381	4th Street	2,379
7th Street	6,681	7th Street	6,544
Olive Street	5,280	Olive Street	5,187
Maple Avenue	4,939	Maple Avenue	4,861
Central Avenue	3,867	Central Avenue	3,809
Washington Boulevard	1,544	Washington Boulevard	1,515
Vernon Avenue	3,954	Vernon Avenue	3,903
Slauson Avenue	2,380	Slauson Avenue	2,347
Florence Avenue	4,767	Florence Avenue	4,724
Firestone Boulevard	3,826	Firestone Boulevard	3,810
103rd Street	954	103rd Street	952
Imperial Highway	9,417	Imperial Highway	9,029
Compton Boulevard	2,676	Compton Boulevard	2,505
Artesia Boulevard	3,724	Artesia Boulevard	3,734
Del Amo Boulevard	3,877	Del Amo Boulevard	3,819
Wardlow Road	3,413	Daisy Avenue	5,652
Willow Street	1,362	1st Street	5,674
Hill Street	663		
Pacific Coast Highway	3,560		
Anaheim Street	1,939		
6th Street[2]	1,882		
3rd Street[3]	0		
1st Street	3,209		
TOTAL	76,303	TOTAL	70,444

[1] System alternatives are representative of using any mid-corridor alternative and any of the Long Beach alternatives LB-1, LB-2, and LB-4, except as noted, with respect to patronage.

[2] Combines boardings of both the northbound and southbound stations of loop.

[3] Proximity of this station to terminal station does not permit data isolation from LARTS model.

Source: Southern California Association of Governments, 1983.

ERRATA CHAPTER II

Page	Section	Column	Paragraph	Line		Remarks
II-21	II-153	Left	Last	4		"county's" should be county's
II-28	II-163	TABLE II-16C		43		"7.5%" should be 7.4%.
II-33	II-181	TABLE II-18A		10		Insert Economy below "Fuel".
		TABLE II-18A		11	*	Replace "Economy" with Vehicle Type.
II-52	II-222.6	Left	Last	3		"theses" should be these.
II-63	II-224.3	Right	3	2		"developent" should be development.
II-77	II-314	TABLE II-314		6		Insert * after "Comment". Note at bottom of page to read as follows: * Long term = 24 hours; Short-term = 10-15 minutes.
II-91	II-322.6	TABLE II-32B		11		Insert One Engine Company under "Equipment" and Paramedics under "Comments".
				13, 14, 22	*	Replace "3-man" with One.
II-106	II-332	Right	2	3	*	Delete "within the Del Amo Fashion Center".
II-115	II-414	TABLE II-41A		18, 25, 29		On each of these lines, below "short-term measurement", insert the following: (10-15 minutes).

ERRATA CHAPTER II (Continued)

Page	Section	Column	Paragraph	Line		Remarks
II-139	II-425	TABLE II-42J		23		Centered below "Long Beach Alternatives" insert new line as follows: (Key to Figure II-42E).

ERRATA CHAPTER III

Page	Section	Column	Paragraph	Line	Remarks
III-42	III-321.11		1	5	"this are" should be this area.

ERRATA CHAPTER IV

Page	Section	Column	Paragraph	Line		Remarks
IV-1	IV	Left	1	Last		Delete "the".
IV-14 to 17	IV-121.11	TABLE IV-12A				Revise TABLE IV-12A as shown on pages V-8 through V-11.
IV-18	IV-121.12	Right	1	5		"revelopment" should be redevelopment.
IV-19	IV-121.12	TABLE IV-12B	7	3	*	Delete line which reads as follows: "with Adjacent Land".
IV-36	IV-123.1	Left	Last	1		"year" should be yard.
IV-37	IV-123.1	TABLE IV-12M		26	*	Under "LA-3" the "TOTAL" of "$1,800,000" should be $2,350,000.

REPLACEMENT FOR TABLE IV-12A

DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

DOWNTOWN LOS ANGELES

	Existing in 1980				1980-2000: New Development without Project				Possible Additional Development by 2000 with Project			
	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units	Office	Retail	Industrial	Housing Units
	(000s of gross square feet)				(000s of gross square feet)				(000s of gross square feet)			
LA-1 (Broadway/Spring Couplet)												
Union Station[1]	138	14	25	0	400	50	0-500	750	0	0	0	0
Temple Street[1]	4,423	44	305	0	0	0	0	0	0	0	0	0
1st/2nd Streets[1]	2,913	83	431	266	2,200-3,400	260	0	580	0	0	0	0
4th Street[1]	4,089	454	741	991	2,900-4,600	210	0	250	200[2]	25[2]	0	0
7th Street[1]	6,791	2,477	407	2,730	1,150-1,130	100	0	620	200[2]	25[2]	0	500
Olympic Boulevard[1]	2,348	334	289	298	0	40	0	750	0	25[2]	0	950

[1] Office retail and hotel space data obtained from Los Angeles Department of Transportation, CBD Parking Study, 1981.

[2] Infill: Defined as occupancy of existing structures, in contrast to new construction.

REPLACEMENT FOR TABLE IV-12A (Continued)

DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

DOWNTOWN LOS ANGELES

	Existing in 1980				1980-2000: New Development without Project				Possible Additional Development by 2000 with Project			
	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units	Office	Retail	Industrial	Housing Units
	(000s of gross square feet)				(000s of gross square feet)				(000s of gross square feet)			
LA-1 (Broadway/Spring Couplet) [Continued]												
18th Street	188	387	0	299	0	20	0	90	0	25[2]	50[2]	0
San Pedro Street	0	98	0	520	0	0	0	40	0	10[2]	50[2]	0
TOTAL	20,890	3,891	2,198	5,104	6,650-9,530	680	0-500	3,080	400[2]	110[2]	100[2]	1,450
LA-2 (Flower Street Subway)												
7th Street	10,622	1,330	1,907	1,236	6,000-6,800	430-450	0-500	200	350	25	0	250
Pico Boulevard	1,214	143	1,196	808	130	40	0	580	0	25	0	730
18th Street	243	382	0	558	0	15	0	160	0	25	50[2]	0

[1] Office retail and hotel space data obtained from Los Angeles Department of Transportation, CBD Parking Study, 1981.

[2] Infill: Defined as occupancy of existing structures, in contrast to new construction.

REPLACEMENT FOR TABLE IV-12A (Continued)

DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

DOWNTOWN LOS ANGELES

	Existing in 1980				1980-2000: New Development without Project				Possible Additional Development by 2000 with Project			
	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units	Office	Retail	Industrial	Housing Units
	(000s of gross square feet)				(000s of gross square feet)				(000s of gross square feet)			
LA-2 (Flower Street Subway) [Continued]												
Broadway	185	304	0	302	0	15	0	90	0	15	50[2]	0
San Pedro Street	0	98	0	520	0	0	0	40	0	10	50[2]	0
TOTAL	12,264	2,257	3,103	3,424	6,130-6,930	500-520	0-500	1,070	350	100	150[2]	980
LA-3 (Olympic/9th Aerial)												
4th Street[1]	3,335	155	1,035	105	4,800-5,600	300	0	0	0	0	0	0
7th Street[1]	8,242	1,060	1,402	386	5,800-6,500	300-470	0-500	100	200	30[2]	0	130
Olive Street[1]	4,519	1,012	396	1,521	230-350	75	0	1,250	0	30[2]	100[2]	1,580

[1] Office retail and hotel space data obtained from Los Angeles Department of Transportation, CBD Parking Study, 1981.

[2] Infill: Defined as occupancy of existing structures, in contrast to new construction.

REPLACEMENT FOR TABLE IV-12A (Continued)

DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

DOWNTOWN LOS ANGELES

	Existing in 1980				1980-2000: New Development without Project				Possible Additional Development by 2000 with Project			
	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units	Office	Retail	Industrial	Housing Units
	(000s of gross square feet)				(000s of gross square feet)				(000s of gross square feet)			
LA-3 (Olympic/9th Aerial) [Continued]												
Maple Avenue[1]	674	532	143	246	50	0	0	0	0	30[2]	100[2]	0
Central Avenue	0	0	0	53	0	5	0	0	0	10[2]	100[2]	0
TOTAL	16,770	2,759	2,976	2,311	10,880-12,500	680-850	0-500	1,350	200	100[2]	300[2]	1,710

[1] Office retail and hotel space data obtained from Los Angeles Department of Transportation, CBD Parking Study, 1981.

[2] Infill: Defined as occupancy of existing structures, in contrast to new construction.

Source: Sedway Cooke Associates for office, retail and hotel space, except for footnoted stations; M. L. Frank & Associates (from U.S. Census, 1980 and SCAG-82) for housing.

ERRATA CHAPTER IV (Continued)

Page	Section	Column	Paragraph	Line		Remarks
IV-39	IV-123.3	TABLE IV-120		13	*	Under "LA-1" the figure for "Property Tax Gain - New Development" of "90,000" should be 890,000.
IV-39	VI-123.3	Table IV-120		16		After "Retail Sales Tax" insert the word Gain.
IV-39	IV-124.2					Section heading should be changed to read Impact Assessment. A separate mitigation section (new Section IV-124.3) has been created from paragraphs 3, 4, and 5 on page IV-46, paragraphs 3 and 4 on page IV-48, and paragraphs 5 and 6 on page IV-56. Paragraph 4 on page IV-56 has been deleted. The entire new mitigation section is printed in Chapter III, Section 347 in the response to Comment 2 in this FEIR.
IV-58	IV-125	Right	1	1		After "Los Angeles Rail" insert the word Transit.
IV-64	IV-131	Left	2	First Bullet		After the bullet, "LA-2" should be LA-1.
IV-65	IV-131	TABLE IV-13A		11	*	"LA-3/MC-2/LB-3" should be LA-3/MC-1/LB-3.

ERRATA CHAPTER IV (Continued)

Page	Section	Column	Paragraph	Line		Remarks
IV-70	IV-131.2		5	4,5	*	"Olympic/9th Aerial" should be Flower Street Subway.
IV-73	IV-132	Left	1	6		"reading" should be reaching.
IV-90	IV-215.1		3	11		"66" should be 668.
IV-98	IV-221.11	TABLE IV-22A				Revise Table IV-22A as shown on page V-14.
IV-108	IV-223.2	Left	2	5	*	"journey-to-work" should be home-to-work.
IV-121	IV-231.1	TABLE IV-23B		10	*	"LA-2/MC-2/LB-4" should be LA-2/MC-1/LB-4.
IV-128	IV-231.3	Right	3	10		"futer" should be future.
IV-131* & 132	IV-231.6					Revise last bullet on page 131 and first and second bullets on page 132 as follows:

At Imperial Highway and Wilmington Avenue, widen all approaches by one lane; this will be done by Caltrans as part of the Century Freeway project. At the Rosecrans crossing, two of the Willowbrook Avenue legs will be realigned as part of the light rail project.

At Del Amo Boulevard and Sante Fe Avenue, restripe the westbound approach to provide dual left turn lanes. Dedicate 10 feet on the north side of Del Amo from the light rail parking lot to add an exclusive right turn lane for access and egress to parking lot.

At Willow Street and Long Beach Boulevard, add a through lane and provide dual left turn lanes at the southbound approach. Revise signaling.

IV-145 & 146	IV-321.11	TABLE IV-32A				Revise Table IV-32A as shown on pages V-15, V-16.

REPLACEMENT FOR TABLE IV-22A

DEVELOPMENT WITHIN ONE QUARTER MILE OF STATIONS

MID-CORRIDOR

	Existing In 1980			1980-2000: New Development with No Project			Possible Additional Development with the Project		
	Office	Retail	Housing Units	Office	Retail	Housing Units	Office	Retail	Housing Units
	(000s of Gross Square Feet)			(000s of Gross Square Feet)			(000s of Gross Square Feet)		
Washington Boulevard	0	17	145	0	4	140	0	0	110
Vernon Avenue	0	25	692	0	2	80	0	0	220
Slauson Avenue	0	30	434	0	0	90	0	0	260
Florence Avenue	0	300	725	9	0	80	10	30	240
Firestone Boulevard	10	150	712	5	0	60	0	0	180
103rd Street	15	60	452	3	100	100	30	100	310
Imperial Highway	0	24	612	6	100	100	30	140	310
Compton Boulevard	536	380	487	7	5	190	30	30	550
Artesia Boulevard	0	60	0	0	17	0	0	0	0
Del Amo Boulevard	0	0	0	0	3	0	0	0	0
TOTAL	561	1,047	4,259	30	231	740	100	300	2,180

Source: Sedway Cooke Associates, 1984.

REPLACEMENT FOR TABLE IV-32A

DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

LONG BEACH

	Existing in 1980				1980-2000: New Development without Project				Possible Additional Development by 2000 with the Project			
	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units
	(000's of gross sq. ft.)				(000's of gross sq. ft.)				(000's of gross sq. ft.)			
LB-1 (Atlantic Avenue Two-Way)												
Wardlow Road	13	0	0	1,196	0	0	0	230	0	0	0	60
Willow Street	91	115	0	609	0	0	0	150	0	0	0	40[2]
Hill Street	0	160	0	1,444	0	0	0	120	0	20	0	30[2]
Pacific Coast Highway	33	326	0	1,438	0	30	0	300	0	40	0	80[2]
Anaheim Street	0	318	0	1,209	0	50	0	380	0	40	0	90[2]
6th/7th Street	77	302	0	1,855	30	160	0	720	0	0	0	180
1st Street	833	585	0	1,409	1,750	300	1,422	1,240	400[1]	0	0	310
TOTAL	1,047	1,806	0	9,160	1,780	540	1,422	3,140	400[1]	100	0	790
LB-2 (Atlantic/Long Beach Couplet)												
Wardlow Road	13	0	0	1,196	0	0	0	230	0	0	0	30
Willow Street	91	115	0	609	0	0	0	150	0	0	0	20
Hill Street	0	160	0	2,282	0	0	0	240	0	20	0	40
Pacific Coast Highway	53	410	0	2,640	0	30	0	550	0	40	0	90
Anaheim Street	118	624	0	1,746	0	50	0	790	0	40	0	120
6th/7th Streets	359	565	0	2,316	30	650	0	1,810	0	0	0	270
3rd Street	643	520	0	499	1,160	160	500	490	200[1]	0	0	80
1st Street	267	195	0	1,869	910	160	380	920	200[1]	0	0	140
TOTAL	1,544	2,589	0	13,157	2,100	1,050	880	5,180	400[1]	100	0	790

[1] Infill: Defined as occupancy of existing structures, in contrast to new construction.

[2] Does not include housing acquisitions or subsequent residential on vacated parcels.

REPLACEMENT FOR TABLE IV-32A (Continued)

DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

LONG BEACH

	Existing in 1980				1980-2000: New Development without Project				Possible Additional Development by 2000 with the Project			
	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units	Office	Retail	Hotel	Housing Units
	(000's of gross sq. ft.)				(000's of gross sq. ft.)				(000's of gross sq. ft.)			
LB-3 (River Route)												
Daisy Avenue	0	65	0	2,218	850	30	922	2,809	200[1]	0	0	380
1st Street	1,135	773	0	1,234	1,440	330	250	1,082	200[1]	0	0	150
TOTAL	1,135	838	0	3,452	2,290	360	1,172	3,891	400[1]	0	0	530
LB-4 (Atlantic Loop)												
Wardlow Road	13	0	0	1,196	0	0	0	230	0	0	0	30
Willow Street	91	115	0	609	0	0	0	150	0	0	0	20[2]
Hill Street	0	160	0	1,444	0	0	0	120	0	20	0	20[2]
Pacific Coast Highway	33	224	0	1,438	0	30	0	300	0	40	0	50[2]
Anaheim Street	0	318	0	1,209	0	50	0	380	0	40	0	60[2]
6th Street	220	450	0	3,135	0	450	0	2,190	0	0	0	330
3rd Street	643	520	0	1,034	1,010	965	500	870	200[1]	0	0	130
1st Street	1,169	460	0	1,035	1,465	75	380	950	200[1]	0	0	140
TOTAL	2,169	2,247	0	11,100	2,475	1,570	880	5,190	400[1]	100	0	780

[1] Infill: Defined as occupancy of existing structures, in contrast to new construction.

[2] Does not include housing acquisitions or subsequent residential on vacated parcels.

Source: Sedway Cooke Associates for office, retail and hotel space, 1984; M. L. Frank & Associates (from U.S. Census, 1980 and SCAG-82) for housing, 1984.

ERRATA CHAPTER IV (Continued)

Page	Section	Column	Paragraph	Line		Remarks
IV-147	IV-321.11	Right	2	3-7	*	The sentence should read as follows: Table IV-32A sets forth estimates of the additional development potential which would be available on parcels acquired for the project and assumes that both displaced residential units and businesses would be relocated on Atlantic Avenue.
IV-149	IV-321.12	TABLE IV-32C		41	*	Insert new sentence as follows: Data are within 1/4 mile of each station.
IV-150	IV-321.12	2		Last	*	Insert the following sentence at the end of this paragraph: However, access within 1/4 mile is provided to the Covention Center itself by LB-1, LB-3, and LB-4.
IV-163	IV-323.2	Right	1	4	*	"LB-4" should be LB-3.
IV-163	IV-323.2	Left	4	8		Insert approximately between "of" and "12.5 million".
IV-165	IV-324.2	Right	4	5		"Opertion" should be operation.
			4	6		"trafic" should be traffic.

ERRATA CHAPTER IV (Continued)

Page	Section	Column	Paragraph	Line		Remarks
IV-174	IV-331.2	TABLE IV-33C				The heading for the extreme right-hand column should be LA-2/MC-1/LB-2.
IV-174	IV-331.2	TABLE IV-33C		Last	*	After "Source:" replace "City of Los Angeles Department of Transportation" with City of Long Beach
IV-175	IV-331.2	Right	Last	13		"left" should be right.

ERRATA CHAPTER V

Page	Section	Column	Paragraph	Line		Remarks
V-14	V-211	TABLE V-21B			*	Revise Table V-21B as shown on page V-19.
V-24	V-222	Right			*	"0.05 percent" should be 0.2 percent
V-28	V-230	TABLE V-23B			*	Revise Table V-23B as shown on page V-20.

REPLACEMENT TABLE V-21B

SUMMARY OF YEAR 2000 COUNTY AND REGIONAL TRAFFIC IMPACTS OF SYSTEM ALTERNATIVES

TRIP TYPE	NO PROJECT (WITH FULL RTP)	LA-1/MC-1/LB-4 (BASELINE)	LA-2/MC-1/LB-4	LA-3/MC-1/LB-4
1. Daily Vehicle Miles Traveled (VMT)				
Los Angeles County	177,791,861	177,643,297	177,659,720	177,714,196
Change from No Project	0	-148,564	-132,141	-77,665
Region	305,196,031	305,021,666	305,049,852	305,117,475
Change from No Project	0	-174,365	-146,179	-78,556
2. Daily Vehicle Trips				
Los Angeles County	19,891,862	19,887,056	19,888,893	19,889,247
Change from No Project	0	-4,806	-2,969	-2,615
Region	35,091,370	35,084,857	35,088,096	35,088,348
Change from No Project	0	-6,513	-3,274	-3,022
3. Average Trip Length (miles/vehicle)				
Los Angeles County	6.71	6.71	6.71	6.71
Change from No Project	0	0	0	0
Region	8.47	8.47	8.47	8.47
Change from No Project	0	0	0	0
4. Vehicle Hours Traveled				
Los Angeles County	6,422,411	6,386,792	6,387,382	6,393,554
Change from No Project	0	-35,619	-35,029	-28,857
Region	11,143,762	11,026,246	11,027,264	11,039,015
Change from No Project	0	-117,516	-116,498	-104,747

Source: Southern California Association of Governments, 1984.

(Revised figures per SCAG letter of 1/31/85.)

REPLACEMENT FOR TABLE V-23B

YEAR 2000 ANNUALIZED REGIONAL TRANSPORTATION ENERGY REQUIREMENTS

(in billions of BTUs)

Component	Year 1980	No Project	LA-1/MC-1/LB-4 (Baseline)	LA-3/MC-1/LB-3
Vehicle Propulsion				
Automobile	548,272	538,536	537,114	537,364
Bus	3,798	5,374	5,329	5,329
Light Rail	--	--	205	199
Metro Rail	--	642	642	642
Southern Pacific Diversion	--	--	6	6
Subtotal	552,070	544,552	543,296	543,540
Vehicle Maintenance				
Automobile	119,487	164,622	164,530	164,581
Bus	107	129	128	128
Light Rail	--	--	9	9
Metro Rail	--	102	102	102
Subtotal	119,594	164,853	164,769	164,820
Vehicle Manufacture				
Automobile	82,147	113,177	113,114	113,150
Bus	128	155	154	154
Light Rail	--	--	7	8
Metro Rail	--	18	18	18
Subtotal	82,275	113,350	113,293	113,326
Guideway Construction				
Light Rail	--	--	37	46
Metro Rail	--	218	218	218
Subtotal	--	218	255	264
Station Operation				
Light Rail	--	--	22	19
Metro Rail	--	453	453	453
Subtotal	--	453	475	476
TOTAL ENERGY CONSUMPTION	753,939	823,426	822,088	822,426

Source: SCAG, "Energy Impacts Technical Report," February 9, 1984.

ERRATA CHAPTER VI

Page	Section	Column	Paragraph	Line		Remarks
VI-4	VI-210		3	Last		"reoccurs" should be recurs.
VI-5	VI-210	Right	2	Last	*	Sentence should read as follows: . . . blasting would not be required.
VI-17	VI-331.2	TABLE VI-33B			*	Footnote 1 in Table VI-33B should be inserted above the source as follows: 1 Defined as total construction expenditures for labor, materials, design, and other associated costs.

ERRATA CHAPTER VII

No corrections or additions.

ERRATA CHAPTER VIII

Page	Section	Column	Paragraph	Line		Remarks
VIII-7	VIII-212.4	TABLE VIII-21B		24	*	"Atlantic Avenue Two Way" should be Compton At-Grade.
VIII-11	VIII-230	TABLE VIII-23B	Footnote 2		*	"1,387,000" should be 138,000.
VIII-15	VIII-260	TABLE VIII-26A				The source for this table should be PB/KE, 1984.
VIII-17	VIII-280	Left	2	4	*	Insert no project between "the" and "condition".

ERRATA APPENDICES

Appendix	Page	Line	Remarks
1	1-1	4	* "LA-1" should be LA-2.
2	2-1	12	"volumnes" should be volumes.
	2-4	1	"DIER" should be DEIR.
	2-5	32	"tract" should be track.
	2-11	37	"unicorporated" should be unincorporated.
	2-11	45	"an" should be and.
3	3-2	Last	Insert additional sources as follows: Frank, M.L. & Associates. 1984. Construction Energy Technical Report. Frank, M.L.& Associates. 1984. Right-of-Way Acquisition Report.
6	6-1	25	"Anderson" should be Andersen.
	6-1	29	"Paulson" should be Paulsen.

ERRATA MISCELLANEOUS

All references in the DEIR to the "Florence-Graham" area should read Florence-Firestone. These references appear on the following pages: S-1 I-2, II-79, IV-101, IV-104, and IV-110.

All references to the "Los Angeles-San Diego Bullet Train" should be deleted, as this project will not be built.

V-200 DRAFT SUPPLEMENTAL EIR (SEIR)

This section includes corrections and revisions to the Draft Supplemental Environmental Impact Report (SEIR) and Summary SEIR, arranged according to chapter, section, and page number. The corrections and revisions shown here represent the best information available as of February, 1985 and are an attempt to correct errors, typographical and otherwise, that have come to our attention. Corrections and/or additions that have come to the commission's attention during the circulation period or during the course of the public hearing from members of the public and concerned agencies are contained in Chapter III (Comments Requiring Responses).

Please note that each correction or addition is indicated with an underscore. Column designations "left" and "right" refer to the left-hand or right-hand side of the original page. Substantive corrections or additions are indicated with an asterisk. Changes in tables are bolded and/or underlined for easy identification.

ERRATA SUMMARY SEIR

Page	Section	Column	Paragraph	Line		Remarks
S-1	S-200	Left	1	4		"Rail" should be rail.
S-3	S-211	Left	1	2		"crossing, double tracks" should be changed to read crossing; double tracks.
S-5	S-220	System Map			*	A dot showing a station at Slauson Avenue was inadvertently omitted from this map. There should be a station at Slauson.
S-6	S-222	Left	2	1		"Chapter 1" should be Chapter I.
S-7	S-223	Table S-1	Footnote 1			"mid-corridor)." The closing parenthesis should be deleted.
S-9	S-223	Left	1	5		"Supplemental Draft Environmental Impact Report" should be changed to Supplement to the Draft Environmental Impact Report.
S-20	S-500	Right	1	4		"aligment" should be alignment.

ERRATA - TABLE OF CONTENTS

Page	Section	Column	Paragraph	Line	Remarks
v				25	Insert new section 153 Mitigation Measures.

ERRATA CHAPTER I - SEIR

Page	Section	Column	Paragraph	Line		Remarks
I-5	I-111	Left	1	4		After "Profiles" insert a closing parenthesis as follows: Profiles).
I-5	I-112	Left	2	Last		"Supplemental DEIR" should be changed to Supplement to the DEIR.
I-6	I-120		2	2&3		The wording should be amended as follows: "in the Los Angeles segment and MC-1 (Compton At-Grade) in the mid-corridor segment of the system."
I-7	I-120	Table I-12A			*	For "1980 Base Year" and "Year 2000 w/o Project" for "Project Boardings", insert N.A. under each heading.
I-24	I-133	Right	1	7		"stations" should be station.
I-26	I-211	Right	2	3&4		"right-of-way" should be rights-of-way.
I-29	I-130		6	Last		"follows" should be follow.
I-58	I-420		2	3	*	This line should be changed to read as follows: " . . . would be less than that calculated for any of the DEIR alternatives . . ."
I-61	I-500	Right	1	2	*	"DEIR" should be EIR.

ERRATA CHAPTER II - SEIR

Page	Section	Column	Paragraph	Line	Remarks
II-8	II-140	Right	1	3	"f" should be <u>of</u>.
II-9	II-211	Right	1	6	Insert comma after "offices" to read as follows: "<u>offices,</u> south of 6th Street."
		First Bullet			Delete comma after "LB-3" to read as follows: "LB-3 and LB-3 (Broadway Aerial)".
II-16	TABLE II-21B				The total for LB-5 under "Population" should be <u>17,784</u>, not "17,774".
II-17	II-214	Left	1	Last	"densitites" should be <u>densities</u>.
II-23	II-231	Left	1	6	Insert the word <u>year</u> before "1980".
II-35	II-310	Right	1	4	"State" should be <u>state</u>.
II-36	II-310	Figure II-31A			* The symbols in the legend for this figure were inadvertently omitted; the triangle represents "Existing Conditions"; the circle represents "Year 2000 Conditions."
II-37	II-320	Right	1	1	"Barton-Aschmann" should be <u>Barton-Aschman</u>.

ERRATA CHAPTER II - SEIR (Continued)

Page	Section	Column	Paragraph	Line	Remarks
II-37	II-330		1	7-10 *	The final sentence of this paragraph should be changed to read as follows: "In addition to the parking in the downtown area (south of 7th Street) as identified in the DEIR, the approximate number of parking spaces available within 1/4 mile radius of the proposed alternative stations is contained in Table II-33A.

ERRATA CHAPTER III - SEIR

Page	Section	Column	Paragraph	Line	Remarks
III-1	III-110	Right	Heading		"and" should be AND
III-7	III-130	Left	2	Last	Insert comma after "Chapter III" as follows: "(see Chapter III, Section 240)."
III-20	III-310	Left	2	10	"construction" should be construction.

ERRATA CHAPTER IV - SEIR

Page	Section	Column	Paragraph	Line	Remarks
IV-10	IV-153				Insert new Section IV-153 Mitigation Measures. Text is printed in Chapter III-431, in the response to Comment 10.

ERRATA CHAPTER IV - SEIR (Continued)

Page	Section	Column	Paragraph	Line	Remarks
IV-13 through	IV-200				* Due to an error in in computation, these pages from Chapter IV on Socioeconomic Environment are reprinted immediately following with corrected figures bolded and/or underlined.

REPLACEMENT TABLE IV-21A
DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

LONG BEACH

Stations	Existing in 1980					1980-2000: New Development Without Project					Possible Additional Development by 2000 With Project				
	Office (000s of	Retail gross	Hotel sq ft)	Indust. (acres)	Housing (Units)	Office (000s of	Retail gross	Hotel sq ft)	Indust. (acres)	Housing (Units)	Office (000s of	Retail gross	Hotel sq ft)	Indust. (acres)	Housing (Units)
LB-3 (Broadway Aerial) Option A															
Willow Street	0	15	0	0	367	0	0	0	0	100	0	0	0	0	10
Pacific Coast Highway	0	80	0	14	385	0	0	0	0	50	0	0	0	0	20
Anaheim Street	0	25	0	45	0	0	0	0	0	0	0	0	0	0	0
World Trade Center	224	41	0	0	1,537	1,955	50	500	0	1,920	200[1]	0	0	0	180
Civic Center	767	958	0	0	1,659	1,680	439	380	0	400	200[1]	0	0	0	70
TOTAL	991	1,119	0	59	3,948	3,635	489	880	0	2,470	400[1]	0	0	0	280
LB-3 (Broadway Aerial) Option B															
Pacific Coast Highway	0	80	0	14	385	0	0	0	0	50	0[1]	0	0	0	30
World Trade Center	224	41	0	0	1,537	1,955	50	500	0	1,920	200[1]	0	0	0	180
Civic Center	767	958	0	0	1,659	1,680	439	380	0	400	200[1]	0	0	0	70
TOTAL	991	1,079	0	14	3,581	3,635	489	880	0	2,370	400[1]	0	0	0	280
LB-3 (Broadway Aerial) Option C															
World Trade Center	224	41	0	0	1,537	1,955	50	500	0	1,920	200[1]	0	0	0	180
Civic Center	767	958	0	0	1,659	1,680	439	380	0	400	200[1]	0	0	0	70
TOTAL	991	999	0	0	3,196	3,635	489	880	0	2,320	400[1]	0	0	0	250

REPLACEMENT TABLE IV-21A (Continued)

DEVELOPMENT WITHIN ONE-QUARTER MILE OF STATIONS

LONG BEACH

Stations	Existing in 1980					1980-2000: New Development Without Project					Possible Additional Development by 2000 With Project				
	Office (000s of gross sq ft)	Retail (000s of gross sq ft)	Hotel (000s of gross sq ft)	Indust. (acres)	Housing (Units)	Office (000s of gross sq ft)	Retail (000s of gross sq ft)	Hotel (000s of gross sq ft)	Indust. (acres)	Housing (Units)	Office (000s of gross sq ft)	Retail (000s of gross sq ft)	Hotel (000s of gross sq ft)	Indust. (acres)	Housing (Units)
LB-5 (Long Beach Blvd., Two-Way)															
Wardlow Road	13	0	0	0	1,196	0	0	0	0	220	0	0	0	0	60
Willow Street	91	115	0	0	609	0	0	0	0	160	0	0	0	0	30
Hill Street	0	209	0	0	1,420	0	0	0	0	130	20	20	0	0	40
Pacific Coast Highway	87	371	0	1	1,629	0	0	15	0	320	40	40	0	0	70
Anaheim Street	66	558	0	0	1,010	46	6	0	0	480	40	40	0	0	90
6th/7th Street	411	755	0	0	1,604	34	628	0	0	1,210	0	0	0	0	280
1st Street	676	658	0	0	1,139	2,026	286	1,100	0	890	400[1]	0	0	0	210
TOTAL	1,344	2,666	0	1	8,607	2,106	935	1,100	0	3,410	400[1]	100	0	0	780
LB-6 (Willow St. Terminus)															
Wardlow Road	13	0	0	0	1,196	0	0	0	0	220	0	0	0	0	50
Willow Street	91	115	0	0	609	0	0	0	0	160	0	10-20	0	0	50
TOTAL	104	115	0	0	1,805	0	0	0	0	380	0	10-20	0	0	100

[1] Infill: Defined as occupancy of existing structures, in contrast to new construction.

Source: Sedway Cooke Associates, 1984; M.L. Frank & Associates, 1984.

o Serve Population Concentrations

The new alternatives serve different types of corridors. The Modified River Route options would traverse a low density residential area north of the Pacific Coast Highway and a concentrated multi-family area in the downtown area. For these options, the residential population potentially served by rail transit is largely influenced by the number and location of station. Although LB-5 (Long Beach Boulevard, Two-Way) would run along a retail strip for its entire length, a larger proportion of the alignment's station areas are residential in nature. Thus, LB-5 would serve a greater resident population within walking distance than LB-3. The LB-6 (Willow Street Terminus) alignment would serve a residential neighborhood composed of single-family and multi-family units located within walking distance, but these would feed the station from a large extended area. A comparison of the alternatives is presented in Table IV-21B.

TABLE IV-21B

YEAR 20000 STATION AREA POPULATION DENSITITES

	Total Population	Ranking	Population per Residential Square Mile	Ranking
LB-3 (Broadway Aerial) 3 River Stations	12,950	2	85,482	3
LB-3 (Broadway Aerial) 1 River Station	11,810	3	123,903	2
LB-3 (Broadway Aerial) No River Stations)	10,820	4	141,322	1
LB-5 (Long Beach Blvd., Two-Way)	22,872	1	44,628	4
LB-6 (Willow Street Terminus)	4,679	5	23,766	5

Source: Sedway Cooke Associates, 1984.

The table shows that LB-5 (Long Beach Boulevard, Two-Way) would serve the greatest number of residents within 1/4 mile (walking distance) of the stations. The stations of the Modified River Route options would serve only 47-57 percent of the number of people served by the LB-5 alignment stations. The addition of the Willow Street, Pacific Coast Highway, and/or Anaheim Street stations to the Modified River Route Option C would not significantly increase the residential population within walking distance of rail transit, since only approximately 2,000 people reside within 1/4 mile of these three stations. The LB-6 alignment would only serve 20 percent of the number of people (living within walking distance) served by the LB-5 stations.

The two downtown aerial stations for the Modified River Route show especially high population densitites because of the nubmer of high-rise apartments within a short walking distance of the stations. Consequently, the Modified River Route options occupy the top rankings in terms of population density. The Willow Street Terminus would serve station areas with the lowest population density and would also rank lowest in terms of total population potentially served.

o Serve Commercial Centers

The area between Pacific and California Avenues, south of the Pacific Coast Highway, contains the densest employment and shopping activity in the Long Beach segment. This area includes Long Beach Boulevard, the city's major commercial corridor. Offices are concentrated at the south end of this area, particularly below 3rd Street.

LB-5 (Long Beach Boulevard, Two-Way) is the only alternative providing direct access to both the retail and office centers. The Modified River Route would not serve retail activity along Long Beach Boulevard but would directly serve the city's high-rise offices. The LB-6 (Willow Street Terminus) alternative would not provide rail service to any of the city's commercial centers; access to these centers would require transfers to connecting buses.

The total number and density of employees and shoppers who would have pedestrian access to stations for each alternative are shown in Table IV-21C.

ERRATA CHAPTER IV - SEIR (Continued)

Page	Section	Column	Paragraph	Line	Remarks
IV-17	IV-211.2	Left	1	3	Insert the word corridor after the word "segment".
IV-19, 20, 21	IV-211.2				All references to the "general plan" should be changed to read General Plan.
IV-23 through IV-25	IV-200				* Due to an error in computation, these pages from Chapter IV on the Socioeconomic Environment are reprinted immediately following, with the corrected figures, as well as minor changes in language, bolded and/or underlined.

IV-212.2 Changes in Mobility and Accessibility

Population growth induced by the rail transit project is expected to be insignificant, as discussed in the DEIR. Using a growth factor determined by SCAG, year 2000 population in the Long Beach segment of the corridor is estimated at 297,715 with the project, which is less than one-half of one percent over SCAG's estimate of 296,315 with the project.

LB-5 (Long Beach Boulevard, Two-Way) would potentially serve the greatest number of people. Its seven station areas contained a 1980 population of 17,784 residents and would serve a year 2000 population projected at 22,872. LB-3 (Broadway Aerial) with no river stations, in contrast, contained a 1980 resident population of 5,169 with its two downtown stations, and would serve a projected population of 10,820 in the year 2000. The Broadway Aerial with three river stations contained 7,125 residents in 1980 and would serve 12,956 in the year 2000, providing the greatest accessibility and mobility among the Broadway Aerial options. LB-6 (Willow Street Terminus) would offer the least mobility for local residents and the least accessibility to major destinations and growth centers.

Although LB-5 would serve the largest population, its station areas are not projected to grow as rapidly as LB-3. As shown in Table IV-21D, population within its station areas is expected to grow by 29 percent, while the entire Long Beach segment, as discussed in the DEIR, is expected to grow by 16 percent. The fastest growing areas in the Long Beach corridor are around the World Trade Center and the Civic Center. Over the next 20 years, population in these locations is projected to more than double. Accordingly, LB-3 is in position to serve this future growth best. The Willow Street station area is the slowest growing station area among the alternatives discussed and is expected to grow by 16 percent. This area would receive transit access with both LB-5 and LB-6; however, level of service would vary. Because LB-6 would terminate at the Willow Street station, mobility for individuals in the area would improve only if they desired to travel north. To go south towards downtown Long Beach, transit riders would still have to travel by bus. In contrast, LB-5 (Long Beach Boulevard, Two-Way) could offer service in either direction and would serve two to three times the population of any other alternative.

Demographic characteristics of the station areas vary widely as was shown in Chapter II, Section 213. Long Beach has concentrations of the elderly representing approximately helf the population in the area surrounding the southernmost stations (World Trade Center and Civic Center on the Modified River Route alternative, and 1st Street and 6th/7th Streets on the Long Beach Boulevard, Two-Way alternative). Significant numbers of Blacks, Hispanics, and Asians live in the station areas of LB-6 and LB-3 (Broadway Aerial). Over 50 percent of the population at the Willow

Street, Pacific Coast Highway, and World Trade Center station areas along the Modified River Route are members of an ethnic minority. Along Long Beach Boulevard, the Hill Street, Pacific Coast Highway, and Anaheim Street stations are comprised of from 55 to 90 percent Blacks, Hispanics, and Asians.

TABLE IV-21D

POPULATION GROWTH WITHIN ONE-QUARTER MILE OF STATIONS[1]

Alternatives	1980 Population	2000 Population	Change 1980-2000
LB-3 (Broadway Aerial)			
Option A (3 River Stations)	7,125	12,956	82%
Option B (1 River Station)	6,112	11,810	93%
Option C (No River Stations)	5,169	10,820	109%
LB-5 (Long Beach Boulevard, Two-Way)	17,784	22,872	29%
LB-6 (Willow Street Terminus)	4,048	4,679	16%

[1] 1980 station area population is determined at the census block level. The proportion of station area 1980 population to the census tracts which encompass the blocks is used to derive station area population for 2000.

Source: U.S. Bureau of the Census, 1980; Sedway Cooke Associates, 1984.

Table IV-21E shows that LB-5 (Long Beach Boulevard, Two-Way) would potentially serve the greatest number of transit dependents. In addition, it would directly serve the retail strip along Long Beach Boulevard and the major commercial job center in downtown Long Beach. This enhances LB-5's potential to increase the mobility of transit dependents residing within its station areas and therefore also improves the accessibility of their likely destinations.

TABLE IV-21E

NUMBER OF LONG BEACH RESIDENTS LIKELY TO BE TRANSIT DEPENDENT

WITHIN ONE-QUARTER MILE OF STATIONS[1]

LONG BEACH

	Ethnic/Racial Minority[2]		Youth		Elderly	
	1980	2000	1980	2000	1980	2000
LB-3 (Broadway Aerial)						
Option A	3,080	5,601	1,447	2,631	1,632	2,968
Option B	2,528	4,885	1,187	2,294	1,474	2,848
Option C	1,928	4,036	902	1,888	1,374	2,376
LB-5 (Long Beach Boulevard, Two-Way)	8,698	11,186	3,984	5,124	3,864	4,969
LB-6 (Willow Street Terminus)	1,178	1,362	699	808	1,026	1,186

[1] Although the demographic profile of downtown Long Beach is likely to change between 1980 and 2000, the proportion these groups represent of the 1980 population has been applied to the year 2000 station area population to arrive at projections of the future number of transit dependents.

[2] Ethnic/Racial Minority includes Blacks, Hispanics, Asians, and Pacific Islanders, which together comprise the bulk of the non-White population. Information on low-income households, another factor which signifies transit dependency, is not available.

Source: U.S. Bureau of the Census, 1980; Sedway Cooke Associates, 1984.

Major elderly population concentrations are located in the vicinity of the Modified River Route's aerial stations. LB-3 (Broadway Aerial) would serve the retail strip along Broadway and the Civic Center. Likely destinations for the elderly population are retail concentrations and hospitals; however, since the Modified River route options would serve only minor retail concentrations and no major hospital facilities, these alternatives would offer limited local service to these transit dependents, although they could potentially improve regional mobility.

ERRATA CHAPTER IV - SEIR (Continued)

Page	Section	Column	Paragraph	Line	Remarks
IV-28	IV-220		1	3	"train" should be trail.
IV-30	IV-232	Left	1	5	After "LB-3" insert (Broadway Aerial).
IV-31	IV-242	Right	1	2	"LB-3" should be the modified LB-3 route.
IV-38	IV-242.1	Right	2	12	After "LB-3" insert (Broadway Aerial).
IV-42	IV-243	Left	4	1	After "LB-3" insert (Broadway Aerial).
IV-44	IV-310	Left	1	8&9	"Barton Aschman" should be Barton-Aschman.
IV-45	Table IV-31A				Under "Total Daily Project Boardings", "55,750" should be 54,750.
IV-54	Table IV-33A		Footnote 1		* This footnote should read as follows: The percentage of available parking spaces lost is 1.1% or less in all cases.
IV-54	IV-331	Left	Last	4	After "1000 spaces" delete the comma.

ERRATA CHAPTER V - SEIR

Page	Section	Column	Paragraph	Line	Remarks
V-1 and V-3					All references to "fugitive dust" should be changed as follows: "fugitive" dust.

ERRATA CHAPTER V - SEIR (Continued)

Page	Section	Column	Paragraph	Line	Remarks
V-14, V-15, V-18	V-210				Page number should be inserted at bottom of page.
V-19	V-220	Right	Last	Last	"no project" should be No Project.
V-20	V-220				Page number should be inserted at bottom of page.
V-21	V-230	Left	1	8	"are" should be were.
		Right	1	13	"is" should be were.
		Right	2	1	"are" should be were.
		Right	3	5&6	"No River Stations" should be no river stations.
		Right	3	11	"LA-1, MC-1, LB-4" should be LA-1/MC-1/ LB-4.
V-22	V-230				Page number should be inserted at bottom of page.

ERRATA CHAPTER VI - SEIR

Page	Section	Column	Paragraph	Line		Remarks
VI-3	VI-260	Left	Last	4		Delete "Chapter 16" and replace with the following: Section 7260 et seq.
VI-5	V-330		1	2&3	*	Delete the following sentence: "It is also possible that property values will be enhanced."

ERRATA APPENDICES - SEIR

Page	Section	Column	Paragraph	Line	Remarks
1-2	Appendix 1	Left	3	3	"Function" should be function.
4-13	Appendix 4			1	"schedule" should be scheduled.
				12	"consistant" should be consistent.
6-1	Appendix 6			1	"TRASNPORTATION" should be TRANSPORTATION.
6-2	Appendix 6			23	"stations" should be station.

Chapter

VI PERSONS AND ORGANIZATIONS COMMENTING

VI-100 DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR)

The following is a listing of those persons and organizations commenting on the DEIR and the Draft Supplemental EIR. The list is organized into the following categories: 1) elected officials, 2) cities (transmitted as official city comments and bearing the signature of mayor or city manager), 3) public agencies, 4) private groups and organizations, and 5) individuals. This listing includes all those parties commenting on the DEIR either in the form of written comment or oral testimony taken at one or more of the public hearings.

Elected Officials

Mervyn M. Dymally -- U.S. Representative, 31st District, California

Maxcy Filer -- Councilman, City of Compton

Joan Milke Flores -- Councilwoman, 15th District, City of Los Angeles

Maxine Waters -- California State Assemblywoman, 48th District

Cities

Bell
Carson
Compton
Huntington Park
Long Beach
Los Angeles
Signal Hill

Public Agencies

California Department of Transportation, District 7, Los Angeles

California Department of Transportation, Headquarters Office, Sacramento

City of Los Angeles, Department of Public Works, Bureau of Engineering

City of Los Angeles, Department of Fire

City of Los Angeles, Department of City Planning

City of Los Angeles, Department of Transportation

City of Los Angeles, Department of Water and Power

City of Los Angeles, Community Redevelopment Agency

County of Los Angeles, Community Development Commission

County of Los Angeles, Department of Regional Planning

County of Los Angeles, Office of the Sheriff

County of Los Angeles, Road Department

Long Beach Planning Department

Long Beach Polytechnic High School

Long Beach Public Transportation Company

Long Beach Unified School District

Port of Los Angeles

Public Utilities Commission, State of California

South Coast Air Quality Management District

Southern California Association of Governments

Southern California Rapid Transit District

State of California, Department of Parks and Recreation

Private Groups and Organizations

American High Speed Rail Corporation

Atlantic Unified Methodist Church

Automobile Club of Southern California

Avalon General Neighborhood Association

Bauer Professional Building

Business Association of Southern California

California Heights Action Group

Central City Association of Los Angeles

Christian Life Church

Citizens Advisory Committee, LACTC

Citizens for Rail California

Coalition for Rapid Transit

Community Development Advisory Committee

Covenant Presbyterian Church

Downtown Long Beach Business Association

Economic Resources Corporation

Electric Railway Historical Association of Southern California

First Lutheran Church

Forest City Dillon, Inc.

Gospel Memorial Church

Alexander Haagen, Shopping Center Development

Hoover Redevelopment Project Area Committee

Long Beach Area Citizens Involved

Long Beach Boulevard Area Association

Long Beach Citizens for Responsible Light Rail

Long Beach First Christian Church

Long Beach Housing Action Association

Long Beach Parent Teachers Association

Los Angeles Conservancy

Los Angeles NAACP

Los Angeles Union Passenger Terminal

RAIL PAC

Spillman Boatman Inc.

St. Luke's Episcopal Church

St. Mary Medical Center

United Ministerial Alliance

Upland Industries Corporation

Watts Labor Community Action Committee

Westminster Neighborhood Association

Individuals

Bryan Allen
Luther Anderson
Maurice Anderson
Ron Barnes
Frank Berry
Tony Blomert
Glenn Blossom
Mr. Bon
Norissa Brandt
David Cameron
Betty Clifford
Harold Crockett
Charles Curry
Frances Danenmaier
H. Draugh
Alberta Dillard
Roland Exum
George Fail
Alan Fishel
Lois Freeman
David Gould
Henry Graber
Harry Gusky
James Gusky
James Hall
Vance Hardy
Alice Harris
Wilma Haynes
Henry Herriford
Zigmund Huss
Freta Johnson
Kenneth Karp
Cecil Karstensen
Thomas Knox
Edward Loney
James McCarthy
Birdell Moore
Pauline Morgan
T.A. Nelson
Thomas Ness
Inez Norris
James Norton
Lorraine Osuna
Martha Overton
Dick Palmer
Robert Perez
Mike Perlman
Mel Pierovich
Valerie Porter
Eddie Randolph
Charles Rhodes
Allan Ross
Ken Ruonala
Samuel Schiffer
Roy Schinnerer
James Seal
Evelyn Sims
Mr. Smith
Amanda Stratton
Robert Swan
Darwin Thorpe
Enrique Torres
Rita Traub
Wilber Valley
Alan Wimmergren
Alma Woods
Peter Zimmerman

VI-200 DRAFT SUPPLEMENTAL EIR (SEIR)

Below is a listing of the persons and organizations commenting on the SEIR, organized into the following categories: 1) elected officials, 2) cities, 3) public agencies, 4) private groups and organizations, and 5) individuals. This list includes those parties commenting on the SEIR, either orally (at the public hearing January 9, 1985) or in writing. The only exceptions are those individuals (1,570) who signed a petition from the Citizens for Responsible Transit, and the over 1,000 residents of the Wrigley District who sent form letters to Supervisor Mike Antonovich. To list all these names individually would require too much space.

Elected Officials

Maxcy Filer -- Councilman, City of Compton

Cities

Compton
Long Beach
Signal Hill

Public Agencies

California Department of Transportation, District 7, Los Angeles
County of Los Angeles, Department of Regional Planning
County of Los Angeles, Flood Control District
Long Beach Public Transportation Company
Southern California Association of Governments
Southern California Rapid Transit District

Private Groups and Organizations

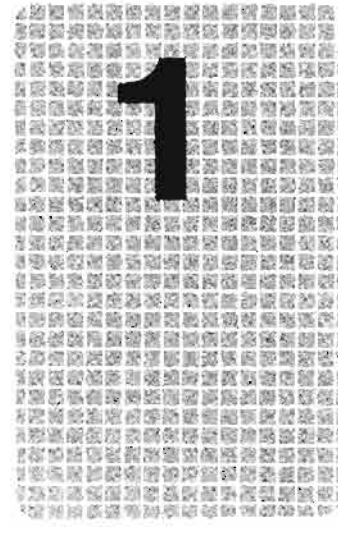
Christian Life Church
Citizens for Responsible Transit
Downtown High Rise Association
Downtown Long Beach Associates
Long Beach Area Chamber of Commerce
Long Beach Boulevard Area Association
Long Beach Equestrian Trails, Inc.
Long Beach Motor Car Dealers Association
Long Beach Plaza
Project Area Committee for Downtown Redevelopment

RAIL PAC
St. Luke's Episcopal Church
Wrigley Association

Individuals

Bryan Allen
Edward Arfmann
Justin Bartlow
Max Borton
Frank Bovee
Mary Bryce
Mildred L. Byrne
Dan Cangro
Carroll Case
Stan Cohen
Lolly Daggett
Eric Donald
Donna & Edward Fahe
Ron Frank
Henry Graber
Ray Grabinski
Bob Gribbin
Mary Helsley
Zigmund Huss
Robert Jamison
Peggy & G.E. Kimball
Otto A. Kowal
Bob Maitino
Christine Mullin
Jeffrey Mullin
T.A. Nelson
Jack Newby
Inez Norris
Quennell Norris
Julio & Angela Ovando
John & Julia Petrusak
Paul Quinby
Bret Reed
Paul W. Robinson
Deninne Sam
Robert Sechler
Robert Swan
Jerome Torres
Angela Villani
Daniel Villani
James Washington
Alex Wass-Schmidt
Horace Williams
Donald Wright
Peter Zimmerman

Appendix



APPENDIX

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SOUTHERN CALIFORNIA RAIL CONSULTANTS (Engineering Services):

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