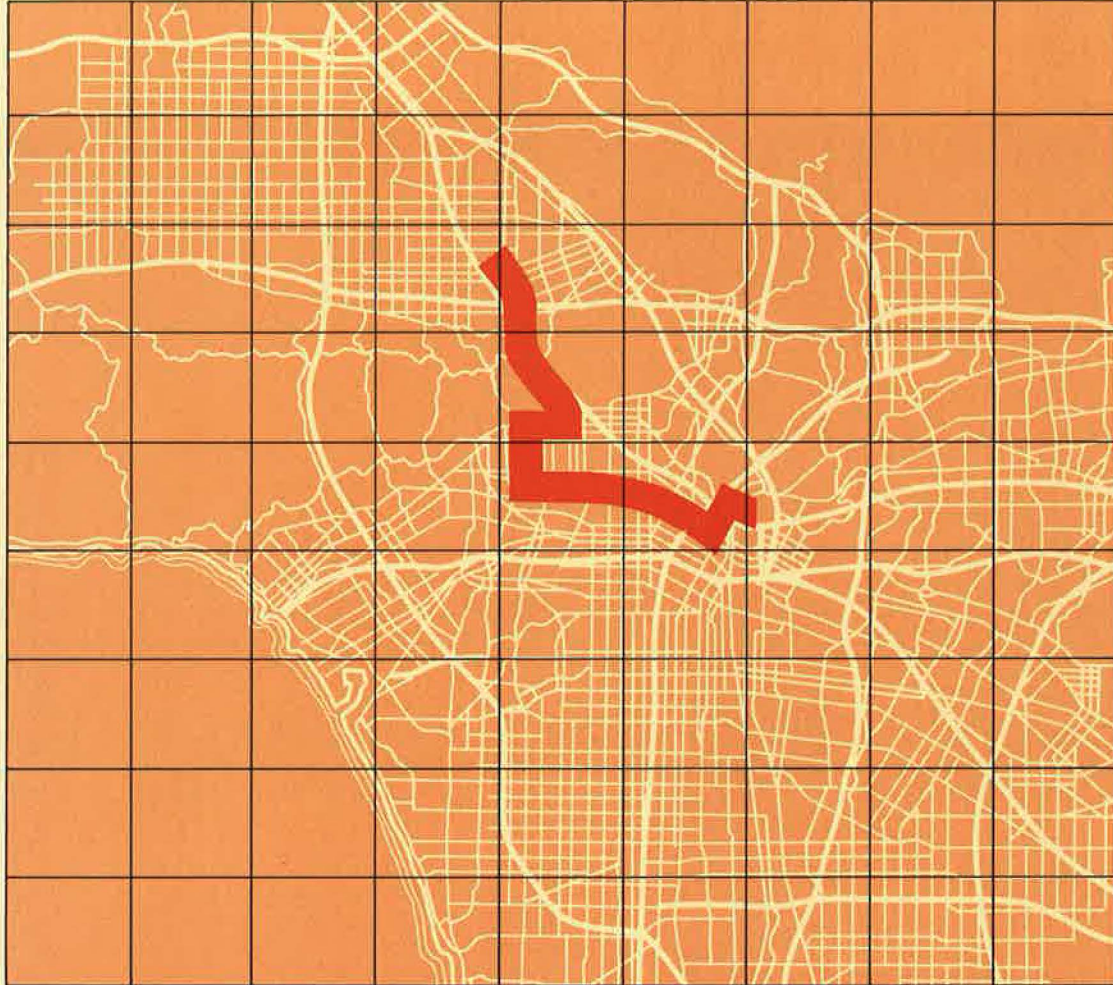


**FINAL**

**SUMMARY**

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**ENVIRONMENTAL IMPACT STATEMENT**



# **Los Angeles Rail Rapid Transit Project Metro Rail**

U.S. DEPARTMENT OF TRANSPORTATION  
URBAN MASS TRANSPORTATION ADMINISTRATION

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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT  
DECEMBER, 1983



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## **SUMMARY**

### **PROJECT PURPOSE**

The Locally Preferred Alternative, known as the Metro Rail Project, is an 18.6 mile rail rapid transit line designed and located to serve the core of the Southern California region. The urbanized area of this region is the second most densely populated in the country, behind only the urbanized area of New York. By the year 2000, the most intensely developed section, known as the Regional Core, will house approximately one million persons, an increase of nearly 25 percent from 1980. The implications of this level of development for travel are significant. Already congested roadways will have to accommodate a projected travel demand increase in the Regional Core of 25 percent by the year 2000, while bus service, already strained to capacity along certain corridors, is not expected to improve significantly. Thus, a continued reliance on current modes of transportation would diminish the mobility of Regional Core residents and employees.

To foster the goals of improving mobility and achieving efficient land use and urban form in the Regional Core, the Southern California Rapid Transit District (SCRTD) is designing a rail rapid transit system. The system extends from the high-rises of the Los Angeles Central Business District (CBD) west along the intensely-developed Wilshire Corridor, and through Hollywood and the Cahuenga Pass to the San Fernando Valley. The rail project would help achieve regional and local goals relating to air quality, energy conservation, transportation, and land use.

The proposed rail rapid transit project evolved from earlier work performed by SCRTD. The previous analysis considered eleven alternatives that included various combinations of bus and rail projects and a "do nothing" alternative, and was presented in SCRTD's Alternatives Analysis/Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) completed in April 1980. This document provided the justification for more detailed engineering on the identified preferred alternative.

Further work on the system began in 1981 as SCRTD entered the Preliminary Engineering phase of design. A description of the refined rapid transit system and an assessment of its environmental impacts were presented in a Draft EIS/EIR, released in June 1983. During the public review of the Draft EIS/EIR, numerous written comments and oral testimony were received. This report, the Final EIS/EIR, revises the Draft EIS/EIR and contains changes to the project description, as well as responses to the comments received during the public review and comment period.

### **DESCRIPTION OF ALTERNATIVES**

Several alternatives have been considered during the Preliminary Engineering phase for improving travel conditions in the Regional Core. These alternatives include a Locally Preferred Alternative, a subway alternative with an aerial segment, and a Minimum Operable Segment. The latter two alternatives have been developed with cost reductions as a major consideration. To describe the situation in the year 2000

if no major transit improvements are made, a No Project Alternative has also been examined. The following discussion identifies the routes, alignments, station locations, and operating characteristics of each alternative.

## LOCALLY PREFERRED ALTERNATIVE

This alternative represents a refinement of the Locally Preferred Alternative adopted in the 1980 Alternatives Analysis/Final EIS/EIR. It evolved as a result of further engineering and environmental analysis and extensive community meetings. The proposed route, all in subway and including 18 stations, is shown in Figure S-1. It begins at Union Station, where it turns southwest and runs through the CBD with stations at First and at Fifth Streets along Hill Street. The route turns west under Seventh Street, with a station at Flower Street. The route then passes the Harbor Freeway, and parallels Wilshire Boulevard to a station at Alvarado Avenue between Wilshire Boulevard and Seventh Street. Proceeding along Wilshire Boulevard, the route serves the Mid-Wilshire and Miracle Mile districts with stations at Vermont (half a block north of the intersection with Wilshire), Normandie, Western, Crenshaw, La Brea, and Fairfax Avenues.

Turning north under Fairfax Avenue, the route serves the Fairfax and West Hollywood communities with stations at Beverly and Santa Monica Boulevards. The alignment turns east under Sunset Boulevard for approximately two miles, north again at Cahuenga Boulevard, and then northwesterly underneath the Hollywood Freeway. Hollywood is served by a station at Sunset Boulevard and La Brea Avenue, one at Cahuenga and Hollywood Boulevards, and a third station at the Hollywood Bowl at Odin and Highland Avenues. The tunnels of the subway system pass deep under the Santa Monica Mountains just west of the Cahuenga Pass, jog northeast to a station across Lankershim Boulevard from Universal Studios, and continue under Lankershim Boulevard to a North Hollywood terminal station.

The system's main storage yard and maintenance facility are at ground level along the west bank of the Los Angeles River just south of Union Station. The north end of the line will be extended 500 feet in subway for operating storage of up to three 6-car trains so that the system can start in the morning from both ends. Primary access to the rail line will be by bus. Considerable attention during the Preliminary Engineering phase has been devoted to revising the existing bus service to offer more convenient bus-rail connections. Peak service requirements would be 1,969 buses. Bus terminals will be provided at eight stations, and on-street bus turnouts at 10 stations. Provisions for auto access include park and ride facilities at five stations, and passenger drop-off (kiss and ride) areas at five stations. The park and ride facilities are planned to be surface lots initially, with parking structures constructed later at these same locations when alternative funding sources are identified.

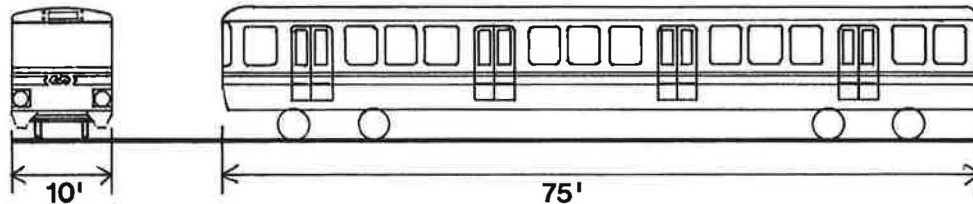
## SUBWAY ALTERNATIVE WITH AERIAL SEGMENT

Although subways minimize environmental impacts and avoid business and pedestrian disruption in dense urban areas, the costs of subways are high. Outside the densest areas, construction above ground or at the surface would result in lower capital costs. The Aerial Option has the same alignment and stations all in subway from Union Station to the San Fernando Valley. In the San Fernando Valley, however, the

## KEY SYSTEM CHARACTERISTICS

### RAIL PROJECT ALTERNATIVES

The proposed rail line will use proven two-track, steel wheel, and steel rail components. The vehicles, approximately 75 feet long and 10 feet wide, are designed to comfortably accommodate 170 passengers, but they can hold 231 passengers during heavy peak periods. Six vehicles will be linked to form a train. Each train would have an approximate passenger capacity between 1,000 and 1,400.



Average daily rail transit ridership in the year 2000 is forecast to be 364,000 boardings with the Locally Preferred Alternative (aerial or subway) and 261,000 with the Minimum Operable Segment. A ride from North Hollywood to Union Station on the full-length rail project will take about 35 minutes, including station stops. Additional data on the rail alternatives are shown in Table S-1.

All but a few portions of the subway will be tunneled, thus involving little or no surface disruption. Station structures (and, in some locations, adjacent crossovers, pocket tracks, vent shafts, or ancillary structures) will need to be constructed by cut and cover methods involving excavation. A temporary decking will be erected in place of the street's pavement. Excavation and station construction will then continue underneath this decking while limited street service is resumed above. Regular service can be provided on cross streets, while streets under which the system runs will have limited service. The excavation will then be backfilled and the street surface replaced after the station structure has been completed.

For all Project alternatives storage, maintenance, and repair will be performed at a main yard and shop on a site east of the CBD, between the Santa Fe Railway and Santa Fe Avenue. Rail tracks will be provided at the other end of the system for operating storage only.

Estimated cost of construction for the Locally Preferred Alternative would be \$2.47 billion (in constant 1983 dollars). The costs for the Locally Preferred Alternative with the Aerial Option would be \$2.41 billion and for the Minimum Operable Segment, \$1.54 billion. Local funding identified to date, using primarily state Proposition 5, SB 620, and county Proposition A funds, totals 38 percent of the project cost. SCRTD will seek the additional funds required to construct the project from federal sources.

## NO PROJECT ALTERNATIVE

Congestion in the Regional Core will increase substantially as total vehicle miles traveled in the Regional Core are projected to grow from 14.2 to 17.8 million daily by the year 2000, an increase of 25 percent over existing conditions. Twice as many of the Regional Core's intersections will have deteriorated to unsatisfactory levels of service compared to 1980. The 1983 peak hour service requirement of 2,100 buses would be expanded only marginally (just over 100 buses) due to financial limitations. Estimated capital costs for the bus fleet total \$331.4 million. As a result, ridership on the bus system would increase to 2.0 million daily boardings (an increase of about one third) by the year 2000. These additional buses would not likely improve the level of transportation service in the Regional Core since they will also have to travel on the extremely congested street system.

## EVALUATION OF ALTERNATIVES

Total transit ridership (rail and bus) would be virtually the same under the rail alternatives, but rail boardings would make up a greater share of total transit boardings under the Locally Preferred Alternative than under the Minimum Operable Segment (15 percent compared to 11 percent). In each case total transit boardings would be nearly 25 percent higher than the No Project Alternative. Under the Locally Preferred Alternative and Aerial Option, 364,000 passengers would board Metro Rail daily (107.4 million annually). Under the Minimum Operable Segment, about 261,000 daily boardings (77.0 million annually) are projected. As a result, under the Locally Preferred Alternative and the Aerial Option, 1.12 million auto vehicle miles traveled per day would be diverted to transit. Some of this diversion would be to the improved bus network which results from the reallocation of buses made possible by the rail project. Under the Minimum Operable Segment, 1.06 million auto vehicle miles traveled per day would be diverted. These changes in travel patterns and mode choice have direct, long term impacts upon land use efficiency, transportation system viability, and the economic and fiscal attributes of the Regional Core. To a lesser extent, energy efficiency and air pollution abatement would also be affected by changes in travel patterns and mode choice. For the Project alternatives, these impacts are all, on balance, positive in comparison with the No Project Alternative.

The Aerial Option could represent a savings in capital costs relative to the Locally Preferred Alternative, but it results in considerably greater noise and visual disruption, and in somewhat greater residential displacement in the communities in the San Fernando Valley. The Minimum Operable Segment costs less than two-thirds as much to construct as the Locally Preferred Alternative, but it does not provide the stimulus for economic revitalization in Hollywood and North Hollywood, nor the much needed additional transportation capacity through the Cahuenga Pass. The Project alternatives also have short term construction impacts, some of which are significant or potentially significant. Some, such as construction employment and its related effects, are substantial positive impacts. Others, such as station area excavation, are adverse, and depending upon the success and speed of decking techniques used, could be significant. The No Project Alternative would cause none of these effects. Both long term and short term effects are summarized below.

**Physical Environment.** Under the Locally Preferred Alternative, a reduction of almost 7.9 tons a day in the Los Angeles region of vehicular emissions of carbon monoxide and lesser reductions in reactive hydrocarbons, oxides of nitrogen, sulfur dioxide, and suspended particulates would be realized. While this is a positive benefit of the project, these reductions only represent minor improvements in overall regional air quality.

The Locally Preferred Alternative would save an estimated 2,326 billion British thermal units (BTUs) per year in transportation energy demand. This demand includes both construction and operation energy over the life of this project; although, when compared to total energy use in the region, this savings is relatively minor.

#### LONG TERM POTENTIAL ADVERSE EFFECTS

**Transportation and Traffic.** Additional traffic is projected on arterial and local collector streets near Metro Rail stations. Traffic going to and from the stations would in some cases filter through residential areas. Because less parking is being provided at Metro Rail stations than is indicated by demand, Metro Rail patrons looking for parking may intrude into adjacent residential areas or use parking normally available for customers or employees immediately adjacent to stations.

**Land Use and Development.** Metro Rail construction for the Locally Preferred Alternative would directly displace an estimated 201 residential units, 197 businesses, and 5 nonprofit organizations. Intensification of land uses around particular station locations could also adversely affect established residential and commercial patterns.

Land speculation could occur in some CBD station areas, as well as the Wilshire/Fairfax area, where there is limited supply of land relative to demand. Reinvestment in commercial and residential improvements will escalate rents around station sites at a more rapid rate with the Locally Preferred Alternative than would otherwise occur. This, in turn, could result in some lower income renters and some marginal business operations having to relocate further away from the station site.

**Physical Environment.** With the Locally Preferred Alternative, carbon monoxide concentrations are expected to increase at the local level, particularly at station locations where parking structures are proposed.

**Cultural Resources.** The Locally Preferred Alternative will adversely affect one property on the National Register of Historic Places (Union Station) and three properties eligible for inclusion (Title Guarantee Building, Pershing Square Building, and Hancock Park/La Brea Tar Pits). Known archaeological resources at Union Station may be encountered during construction of the crossover tracks north of the Metro Rail station. Initial studies by SCRTD indicate the Wilshire/Fairfax Station is sited near an area of extremely high paleontological sensitivity, the La Brea Tar Pits. Although the station has been moved from the area of highest paleontological sensitivity, there is still a potential for encountering paleontological resources at the new location.

The rail project would require the use of parklands, as defined by Section 4(f) of the Department of Transportation Act of 1966, at the Court of Flags, Pershing Square, and Hollywood Bowl. Construction of station facilities at Universal City, while not using Campo de Cahuenga parklands, may also adversely affect the site.

## SHORT TERM CONSTRUCTION IMPACTS

Short term construction impacts of the Aerial Option are similar to those of the Locally Preferred Alternative, with the following differences:

**Transportation and Traffic.** Traffic will be disrupted along the entire Aerial Corridor rather than at just the station locations.

**Land Use and Development.** Construction of the aerial segment, more than 2-1/2 miles long, would disrupt commercial properties along the entire length of Lankershim Boulevard.

**Physical Environment.** Construction will generate approximately 20 percent less excavated tunnel and station materials.

## MINIMUM OPERABLE SEGMENT

### LONG TERM BENEFICIAL EFFECTS

**Transportation and Traffic.** The rail system will carry 261,000 daily boardings. This ridership, along with that of the supporting bus system, would increase total transit travel more than 20 percent and result in an increase in transit's share of total trips from 3.3 percent to 3.8 percent. Total transit operating costs per passenger would decrease to 70 cents, and revenues per passenger would increase to 43 cents, resulting in a reduced net operating subsidy of 27 cents per passenger.

Mobility in the CBD and along Wilshire Corridor will be improved, as would accessibility to commercial and public facilities in these areas. The Minimum Operable Segment Alternative would realize a reduction of 1,059,000 automobile vehicle miles traveled per day. An estimated annual savings of 2,295 billion BTUs per year in regional transportation energy demand can be achieved under this alternative. This includes the construction and operating energy required by the project.

**Land Use and Development.** The Minimum Operable Segment directly serves eight of the Regional Core's 13 designated centers and would better accommodate the planned increase in Regional Core housing supply that is desired by SCAG, the county, and the city. Compared to the No Project Alternative, an additional 18.9 million square feet of commercial development and an additional 96,800 employees could be accommodated in the Regional Core by the year 2000.

Development in conjunction with this alternative could result in increases of \$6.6 million in property tax revenues and \$.4 million in sales tax revenues for the City of Los Angeles. These estimates increase modestly when revenues accruing to the county are added. These figures do not account for the loss of tax revenues that results when SCRTD acquires land for the project. However, the estimated losses are negligible compared to the increased revenues from the new development. With development incentives to encourage joint development on SCRTD property around stations, property tax revenues could increase to \$12.6 million and sales tax revenues to \$.8 million in the year 2000.

**Physical Environment.** Disposal of materials excavated during tunnel and station construction will cause noise and traffic impacts. Dust, noise, and vibration impacts between Union Station and the Fairfax/Beverly Station are similar to the Locally Preferred Alternative.

## NO PROJECT ALTERNATIVE

### LONG TERM BENEFICIAL EFFECTS

**Land Use and Development.** No direct displacement of business or dwellings in station areas would occur, and stable residential areas would not be threatened by the growth accommodated by Metro Rail.

**Cultural Resources.** Historic or potentially historic properties would not be adversely affected.

### LONG TERM ADVERSE EFFECTS

**Transportation and Traffic.** With the No Project Alternative, the Regional Core would experience increased auto use, decreased arterial street efficiency, and increased travel times. Operating energy per person mile traveled and per vehicle mile traveled in the Regional Core would increase, with likely increases also in energy consumption per capita and per dollar of gross regional product.

Transit service would be severely compromised as buses are limited to street speeds. Operating costs per transit passenger mile traveled in the Regional Core would be approximately 20 percent higher by the year 2000 as compared with the Locally Preferred Alternative.

**Land Use and Development.** Under the No Project Alternative, the rapid, high capacity transportation system needed to support adopted land use policies and plans of the city, county, Community Redevelopment Agency, and Southern California Association of Governments would not exist.

Commercial housing investment commensurate with the needs of the Regional Core's current population and its over-aged stock of available housing would not likely occur under the No Project Alternative. In addition, a development potential of about 26.7 million square feet of commercial space that could be accommodated in the Regional Core with a rail rapid transit system would be foregone as new investment located in areas with greater accessibility.

**Physical Environment.** An additional 7.9 tons of carbon monoxide, .6 tons of reactive hydrocarbons, 1.0 ton of oxides of nitrogen, .1 tons of sulfur dioxide, and .3 tons of suspended particulates would be generated daily in the Los Angeles region over what would occur with the Locally Preferred Alternative in the year 2000.

### SHORT TERM CONSTRUCTION IMPACTS

The No Project Alternative would not result in any construction impacts.



## **MAJOR CHANGES BETWEEN THE DRAFT EIS/EIR AND THE FINAL EIS/EIR**

- Inclusion of the Wilshire Crenshaw and Hollywood Bowl Stations as part of the Locally Preferred Alternative and the Locally Preferred with Aerial Option.
- Inclusion of the Wilshire/Crenshaw Station as part of the Minimum Operable Segment.
- Moving the Wilshire/Fairfax Station away from the paleontologically sensitive site in front of the Page Museum to a location behind the May Company Building.
- Deletion of the parking structure and reduction of parking to be provided at the Wilshire/Fairfax Station from 1,000 spaces to 175 spaces.
- Deletion of the optional design at Union Station which required a bus turn-around facility between the Union Station building and the railroad tracks.
- Refinement of patronage estimates for all alternatives as well as station access and bus requirements.
- Inclusion of substantive public comments and responses resulting from the distribution of the Draft EIS/EIR and the public hearings.
- Enactment of enabling legislation (Senate Bill 1238) to permit the establishment of Benefit Assessment Districts, which lie in the vicinity of stations.