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GENERAL PLANNING CONSULTANT:

POTENTIAL ECONOMIC IMPACT OF  
METRO RAIL ON LOS ANGELES CBD:  
A PRELIMINARY ANALYSIS

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Prepared for:

Southern California Rapid Transit District

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## 1.0 EXECUTIVE SUMMARY

Based on an evaluation of economic impacts of rapid transit systems in other North American cities; on a data base as established from prior economic studies for the Los Angeles Central Business District; and, on the application of a series of estimation and forecasting techniques the following findings have been made regarding the economic impacts of Metro Rail on the Los Angeles Central Business District.

1. The aggregate benefits (estimated on a cumulative basis for office, hotel and retail land uses within the Los Angeles CBD) induced by the construction and operation of the Metro Rail system range from a low of approximately \$766 million to a high of approximately \$1.56 billion (see Table A).
2. As evidenced in Table A, the largest volume of quantifiable benefits will accrue to future office space owners and developers in the Los Angeles CBD as a result of: premium (enhanced) lease rates; increased development density allowances (i.e., higher site utilization); improved occupancy levels; and, enhanced land values. The cumulative monetary benefits accruing to the office sector of the Los Angeles CBD by the year 2000 is estimated to range from a low of approximately \$722 million to a high of nearly \$1.49 billion.
3. The office land use component drives the impacts on other land uses (i.e., hotel, retail, and residential). By industry standards, for example, every incremental increase of 7,500-8,000 square feet of office space should support one additional hotel room. Retail demand is similarly impacted by office development. Every one million gross square feet of office space should translate into an additional 75-80,000 square feet of retail space.
4. Benefits accruing to Los Angeles CBD hotel owners and operators should include enhanced land values and increased profits. A cumulative monetary value of the Metro Rail-related benefit to hotel land use in the Los Angeles CBD is estimated to range from a low of approximately \$14.7 million to nearly \$27 million.
5. Significant benefits should accrue to the owners and operators of retail facilities in the Los Angeles CBD as a result of the Metro Rail project. The cumulative benefit estimate for the retail land use component in the CBD ranges from a low of approximately \$30 million to almost \$39 million.

TABLE A

SCRTD METRO RAIL PROJECT  
ESTIMATED RANGE OF LOS ANGELES CBD BENEFITS  
IN THE OFFICE, HOTEL AND RETAIL SECTORS

Land Use Sectors	Annual Benefit <sup>a/</sup>		Cumulative Benefit <sup>a/</sup>	
	Low	High	Low	High
<b>I. OFFICE</b>				
1. Premium Rents <sup>b/</sup>	\$ 35.00	\$ 71.00	\$235.00 <sup>c/</sup>	\$476.00 <sup>c/</sup>
2. Increased Site Utilization	\$ 7.00	\$ 17.00	\$7.00	\$17.00
3. Increased Occupancy	\$ 1.50	\$ 6.00	\$ 10.00	\$ 40.00
4. Increased Land Values	---	---	<u>\$430.00</u>	<u>\$860.00</u>
			Subtotal:	\$682.00
				\$1393.00
<b>II. HOTEL</b>				
1. Increased Land Value	---	---	\$ 11.50	\$ 23.00
2. Increased Profits <sup>d/</sup>	\$ .70	\$ .86	<u>\$ 3.15</u>	<u>\$ 3.87</u>
			Subtotal:	\$ 14.65
				\$ 26.87
<b>III. RETAIL</b>				
1. Increased Profits <sup>d/</sup>	\$ 3.60	\$ 4.59	Subtotal:	<u>\$ 29.69</u>
				<u>\$ 38.66</u>
<b>Total</b>				\$726.34
				\$1458.53

a/ Measured for the year 2000 in constant 1984 dollars, expressed in millions.

b/ Includes a major portion of premium rents for retail.

c/ Measured on a capitalized basis utilizing a 15% interest rate.

d/ Measures from estimates of retail sales by market segment.

SOURCE: Robert J. Harmon & Associates, Inc.

## 2.0 INTRODUCTION

### 2.1 PURPOSE

This report identifies and quantifies potential economic impacts of the Metro Rail system on the Los Angeles Central Business District (CBD), i.e., impacts from the MOS-1 Metro Rail segment excluding the Alvarado Station area. Identified impacts are based on:

1. Documented impacts of rapid transit systems in other North American cities; and
2. A land use/economic activity data base as compiled and reconciled from three previously published land use/economic impact analyses of the Los Angeles CBD.

Ultimately, station-specific economic impact analyses will be undertaken and documented using similar techniques for each of the CBD and non-CBD station areas.

### 2.2 METHODOLOGY

The initial step in the quantification of Metro Rail economic impacts in the CBD involved the compilation and synthesis of data contained in three previously-published evaluations of CBD economic impacts. The data were verified and placed in a common time frame. A conservative, mid-range forecast was established for induced land use impacts in the Los Angeles CBD for the initial five years of transit system operation. A common year 2000 baseline forecast was then developed. These various data were then summarized and interpreted. Five categories of benefit quantification were developed:

1. Highest and best use development potential;
2. Increased occupancy levels;
3. Premium (enhanced) lease rates;
4. Retail sales gains; and
5. Land value increases.

The forecasts assume completion of the full 18.6 mile system, although benefits are evaluated only for the CBD. Even though the system will be built in segments, it is planned that construction will begin on all segments prior to completion of the initial MOS-1 segment.

### 2.3 REPORT ORGANIZATION

This report contains three sections. Section 1 is an executive summary. Section 2 provides the report's purpose, methodology, and organization. Section 3 identifies, quantifies and summarizes economic impacts in the CBD for three land uses: office; hotel; and, retail trade. A description of recent trends, impacts, key forecasting parameters, range of development impacts, a refined forecast (supported by empirical and statistical data), an estimate of economic benefits and corresponding tables are provided for each of the three land uses.

## 3.0 ECONOMIC IMPACTS ON TRANSIT-SENSITIVE LAND USES

### 3.1 TRANSIT-SENSITIVE LAND USES

Direct economic impacts of the development of a transit system can be identified for four land use categories: office, hotel, retail and residential. These land uses are therefore called "transit-sensitive." For purposes of this report, the analysis of residential land use is restricted to retail sales-related impacts, since residential properties will not be assessed for special benefits.

While there are secondary or indirect influences of rapid transit systems on other land uses (e.g., wholesale, institutional), these influences are marginal compared to the transit-sensitive land use categories. For the purpose of quantifying the monetary value of economic/real estate gains, non transit-sensitive land uses are therefore excluded.

### 3.2 OFFICE SPACE DEVELOPMENT

#### 3.2.1 Recent Trends

Commercial office space has dominated new development in the Los Angeles CBD over the past twenty years, representing nearly 85 percent of all new Los Angeles CBD construction since 1965. Office space constitutes the largest category of building use in the Los Angeles CBD. During the past 35 years, 67 high-rise (8 or more stories) commercial office buildings (accounting for 25 to 26 million net square feet of rentable space) have been constructed in the Los Angeles CBD. This represents nearly one-third of the total high-rise office buildings erected in Los Angeles and Orange Counties during this period. Over sixty percent of this CBD office space (almost 16 million net square feet) has been constructed since 1966, constituting nearly fifty percent of all office buildings over 500,000 square feet constructed in the Los Angeles region.

The existing commercial office space inventory in the Los Angeles CBD is estimated at 28 million net rentable square feet. Of this total, almost two-thirds (i.e., 18 million net square feet) is situated in prime high-rise structures) with the remainder scattered throughout the CBD (principally in relatively smaller, older, and often deteriorating buildings located in the eastern sections of the CBD).

Prime high-rise commercial space (e.g., office towers constructed since the mid 1970's) is currently experiencing an historically high occupancy rate of approximately 95 percent; whereas, a high percentage of the non-prime space (class B structures) is experiencing relatively low occupancy rates (i.e., around 80%).(1) The tightening market for prime commercial space is reflected by prevailing annual lease rate increases from \$8.00-\$8.50 per square foot in 1975 to \$14.00-\$16.00 per square foot in 1978 to a current rate of \$26.00-\$32.00 per square foot. (2)

### 3.2.2 Types of Impact

Implementation of a regional rapid transit system directly influences the location of future office development due to changes in:

1. Market influences;
2. Parallel public infrastructure investments; and
3. Public development policies.

Market influences involve improved market visibility of the station areas, increased employee accessibility and investor confidence in the permanent status of the station areas. Parallel public sector infrastructure improvements include public plazas, landscaping, lighting, etc. Public development policies involve comprehensive land use planning, increased density allowances and coordinated joint development programs that are sensitive to private sector decision-making.

As demonstrated in other North American cities served by regional rapid transit systems, commercial office locational decisions are influenced by transit station locations. Transit-related commercial development activity in Atlanta and San Francisco during initial operating periods of the transit systems was modest. In contrast, in Washington, D.C., and Toronto, Ontario, between fifty and ninety percent of all commercial office development that occurred subsequent to rapid transit system start-up occurred within the station areas.(3) Important factors associated with this transit influence include:

1. The environs of the station locations (e.g., highest growth occurred in established activity centers);
2. The prevailing rate of regional growth; and
3. The type and degree of supporting public land use policies and joint development incentives.(4)

Locally, decisions involving Metro Rail station locations have reinforced the regional planning concept of "city centers." In addition, the expected annual rate of regional office space absorption in Los Angeles County of approximately five million square feet during each of the next fifteen years represents one of the strongest metropolitan area growth outlooks for office development in the United States. Finally, the joint development planning and project packaging efforts underway in Los Angeles are occurring several years sooner than was the case in other United States cities now served by rapid transit systems. Each of these factors reinforce development potential in Metro Rail station areas.

### 3.2.3 Key Forecasting Parameters

Implementation of a rapid transit system should ultimately increase the office space capture rate for the subregion (5) served by the system. Increased development in specific station areas will relate to the area's overall marketability, access and physical characteristics. Estimating a change in subregional capture entails:

1. Identifying the existing commercial office market subregions;

2. Documenting historical office development trends;
3. Verifying existing near-term development commitments;
4. Examining the holding capacities or allowed development densities in the station areas;
5. Forecasting regional office demand;
6. Defining probable trendline subregional market capture rates; and
7. Defining changes in subregional capture rates based on the rapid transit system and local land use policies and programs.

The identification of market subregions is critical to this analysis because the private sector tenant and developer market response is based on a location intrinsic to: downtown Los Angeles, mid-Wilshire, or Hollywood. Steps 2 and 3 above involve private sector market statistical analyses; while, step 4 takes into account zoning capacity and infrastructure analysis. The next step consisting of demand forecasting involves both a cohort survival population and labor pool analysis combined with a review of historical trendlines. The documentation of historical subregion capture rates is a straight forward statistical analysis. The final analytic step which entails refining the subregional capture rates, based on the advent of the Metro Rail System and adoption of progressive local land use policies, requires senior professional real estate judgment to determine the relative changes in subregional capture rates induced by a regional rapid transit system such as the San Fernando Valley to downtown Los Angeles Metro Rail System.

Historically, the CBD has captured approximately twenty percent of the commercial office development that has occurred in Los Angeles County.(6) Based on the expected level of annual commercial office space absorption in the next decade and beyond, a hypothetical one percent increase in regional capture rate would result in a 50,000 square feet increase in annual CBD office development (i.e., 1% of approximately 5,000,000 gross square feet). Office absorption and construction are cyclical, however. Office development will vary considerably on a year-to-year basis and should, therefore, be measured on a cumulative basis.

#### 3.2.4 Range of Development Impacts

Two detailed economic studies have been conducted on the land use impacts of the Metro Rail system. The most recent analysis (conducted by Economic Research Associates for Metro Rail stations located in redevelopment areas) utilized the subregional capture technique to formulate individual station rankings and to allocate growth between station areas.(7) A prior land use impact evaluation (by Peat Marwick Mitchell & Co. for the Metro Rail Final Environmental Impact Statement) supports the use of holding capacity and site-specific market factors to allocate development to individual Metro Rail station areas. This evaluation also takes into account Metro Rail staging and local development policies. Separate forecasts were made for a Los Angeles CBD to Fairfax alignment and for the development influences of an active joint development packaging policy.

A comparison of the results of the previous impact estimates of the Metro Rail system is shown in Table 1, which indicates similar anticipated levels of net commercial office influence in the CBD (i.e., between 5 and 6 million square feet in the 1989-2000 time period). The study done for the Environmental Impact Statement (EIS) estimates a slightly higher net difference of 6.03 million square feet and adds that, without development incentives, the net increase would be approximately five million square feet. The lower total development forecasts in the EIS study (15 to 21 million square feet, compared to 22 to 27 million square feet from the Redevelopment Area Study) represent a slower pace of development in 1980-1981, whereas the Redevelopment Area Study takes into account actual 1980-1983 commercial office building activity and level of committed development in 1984.

The "With Transit" forecasts show that the CBD would attain approximately a 23 percent cumulative subregional capture rate.(8) The without-transit cumulative capture rate would remain around its current twenty percent.(9) Analyses of holding capacities indicate that there is sufficient capacity to permit the higher level with transit development to occur in the CBD.

### 3.2.5 Refined Forecast

The largest market demand for future office space in the Los Angeles CBD should come from existing tenants of major Class A buildings (i.e., Class 1 structures). During the next seventeen years (i.e., 1984-2000), the average annual demand from this tenant base is over one million square feet of new space, assuming a four to five percent annual growth rate.(10) Due to recent relocations of labor-intensive clerical and data processing centers to suburban locations (11) and to normal competition from other established office centers, the Los Angeles CBD's net capture of this market has only been about fifty percent of this one million square foot total. The Metro Rail system should allow the CBD to increase its long-term capture rate for this market to 65 percent (10), indicating an increase of approximately 3.0 million square feet of office space absorption for this market segment between 1984 and 2000 in the CBD.

The second market segment that should be influenced by implementation of Metro Rail is headquarters office buildings. Los Angeles is becoming the financial center for the Pacific Basin and a major candidate for international, national, and regional headquarters office facilities. Transit stations will provide improved pedestrian access to the city's financial, retail, and entertainment centers, thus creating additional potential sites for prestige headquarters offices. The Metro Rail system should help sustain the unique market image sought by firms making headquarters location decisions. Over the next seventeen years, two to three additional headquarters office facilities could potentially be attracted to downtown Los Angeles in response to the Metro Rail system, representing an additional 1.5 to 2.0 million square feet of office space for the second market segment.

Combining these two market segments produces a forecast of 4.5 to 5.0 million square feet of additional office space, which is consistent with the lower end of the previously-estimated range of influence (i.e., 5.0 - 6.0 million). The 5.0 million square foot figure is used to estimate monetary benefits.

TABLE 1  
 RANGE OF METRO RAIL  
 DEVELOPMENT INFLUENCE IN LOS ANGELES CBD  
 COMMERCIAL OFFICE SPACE

YEAR	REDEVELOPMENT AREA STUDY		EIS STUDY	
	WITHOUT METRO	WITH METRO	WITHOUT METRO	WITH METRO
(1980-1988) <sup>a/</sup>	9,360,000	9,360,000	6,750,000 <sup>b/</sup>	6,780,000 <sup>b/</sup>
(1989-1995)	7,040,000	9,800,000	4,500,000	7,772,727
(1996-2000) <sup>a/</sup>	5,866,000	8,166,666	3,750,000	6,477,273
TOTAL	22,266,000	27,326,666	15,000,000	21,030,000

Net Difference: 5,060,666

Net Difference: 6,030,000

<sup>a/</sup> The Redevelopment Area study (Prepared by Economic Research Associates, entitled "Real Estate Development Potential in the Metro Rail Corridor", December, 1983) forecast time period was from 1983-1988 and 1989-1995. The year 2000 forecasts represent a straight line extrapolation of the annual growth rate estimated for the 1989-1995 time frame.

<sup>b/</sup> The EIS study (Prepared by Peat Marwick Mitchell and Company, entitled "Land Use and Development Impacts: Los Angeles Rail Rapid Transit Project", June, 1983) estimates are for a 1980-2000 time period. In order to determine pre-1989 estimates, a proportional annual rate was established for the "Without Metro" forecasts.

SOURCE: Robert J. Harmon & Associates, Inc.

### 3.2.6 Estimated Economic Benefits

The Metro Rail System should generate four types of economic benefits for owners and developers of office buildings or commercial building sites in downtown Los Angeles:

1. Premium lease rates;
2. Increased site utilization or density of development;
3. Increased occupancy levels; (12) and
4. Increased land values.

Monetary benefits for each category have been established by determining the low and high range of potential unit value change (e.g., lease per square foot) that should occur. The amount of office space or land area included in a one-block radius of the station and a second two-to-three block radius has been estimated. Benefits which occur annually have been valued on a capitalized basis, and those which occur on a one-time basis (e.g., increased density of development) have been valued on a cumulative, constant dollar basis.

In estimating the potential premium lease revenues attributable to Metro Rail, the range of increase within the immediate station area (0 to 600 foot radius) has been set at \$1.00 to \$2.00 per square foot per year. For properties located in a 600 to 1,800 foot radius from the station, annual premium rent values have been set at \$0.50 to \$1.00 per square foot (13), representing a 2.5 to 10 percent premium (enhanced) lease value when measured against the prevailing annual \$30 per square foot lease rates for new, prime commercial space now on the market in downtown Los Angeles. This range of values has been applied to the "With Metro" year 2000 office space forecasts. For the low estimate, the potential annual premium lease revenue is estimated at \$35 million. At the high estimate, the potential annual premium lease revenue is estimated at \$71 million. Utilizing a fifteen percent rate of interest, the capitalized value of the revenue stream is estimated at between \$235 million and \$476 million, as presented in Table 2 entitled "Monetary Benefits of Metro Rail Induced Office Impacts in Los Angeles CBD."

Because the prevailing downtown Floor Area Ratio (FAR) does not represent a market restriction (14), the potential for increased utilization of space (i.e., higher density of development) is less in the CBD Metro Rail station areas than in the non-CBD station areas, where density bonuses are provided in the specific plans governing development of these areas. An example of air rights or FAR sales that have occurred in the Los Angeles CBD is for Pershing Square, where the Jewelry Mart developer paid \$10 per square foot for approximately 20,000 square feet of increased FAR development. Selected air rights sales to date suggest a range of values for increased utilization per FAR foot of \$10-\$20 within the immediate Metro Rail Station area and \$5-\$10 in the 1,200 to 1,800 foot range.(15) Within the immediate station area, it is estimated that only five percent of the 1989-2000 CBD office development would involve increased site utilization, with the greatest potential at Union Station. Within the 500 to 1,800 foot radius, it has been estimated that ten percent of the development would involve higher site utilization. Based on these assumptions, it has been estimated that the market value of increased utilization of sites would range between \$7 million and \$16 million, measured in 1984 dollars.



For certain property owners, the Metro Rail system should afford the market the opportunity to maintain a higher level of occupancy. Principal beneficiaries should be the owners of older refurbished office buildings. To be conservative, increased occupancy levels were not assumed for commercial buildings located in immediate station areas. Within the 600 to 1,800 foot radius, it is estimated that two to three million square feet of older, refurbished office space would experience increased occupancy levels of five to ten percent. This increase represents an annual revenue increase of between \$1.5 and \$6.0 million, assuming an annual lease rate of \$15 to \$20 per square foot.(16) The capitalized value of this increase ranges between \$10 and \$40 million.

Land values of commercial properties close to transit stations have increased by as much as 100 percent over prevailing appreciation rates within ten years of the opening of a rapid transit system (e.g., Washington, D.C.).(17) A more conservative range of \$50 to \$100 per square foot for properties in the immediate station area and \$25 to \$50 per square foot for properties in a 600 to 1,800 foot radius has been utilized for this analysis. Utilizing estimates (18) of the square feet of privately-owned land within these station radii (which exclude streets and other public sector properties), and assuming these induced property appreciation levels (between a 15% and 35% increase over today's prevailing market prices) occurred by the year 2000, the cumulative land value gains would range between \$430 and \$860 million.

In summary, the overall estimated monetary value of the cumulative Metro Rail related office impacts in the Los Angeles CBD would be between \$.68 and \$1.39 billion (please refer to Table A).

### 3.3 HOTEL IMPACTS

#### 3.3.1 Recent Trends

Since 1970, 2,910 hotel rooms, considered as competitive (Class A) for business, convention, and tourist travelers have been constructed in the Los Angeles CBD. This new hotel construction consists of four (4) major facilities:

1. The Hyatt Regency (1973--487 rooms);
2. The New Otani and Gardens (1977--448 rooms);
3. The Westin Bonaventure (1977--1,500 rooms); and
4. The Sheraton Grande (1984--475 rooms).

In addition, the Biltmore Hotel's remodeling, completed in 1979, returned an additional 1,000 rooms to Class A status in the CBD.

According to "Trends in the Hotel Industry: Los Angeles" (prepared by Pannell Kerr Forster), the Los Angeles CBD hotel market experienced a 73.0 percent average occupancy rate in 1980 compared to 78.3 percent for the Los Angeles County market area. The downtown occupancy rate decreased to 59.6 percent in 1982 (reflecting the 1981-1982 economic recession) compared to 68.7 percent for the overall Los Angeles market. The first six months of 1984 show an average CBD hotel occupancy rate of 58.9 percent compared to the Los Angeles County average of 69.8 percent.

Currently, the Los Angeles CBD is credited with an inventory of 5,409 Class A hotel rooms (incorporating eight major facilities) (19), which accounts for 21.7

percent of the Los Angeles County hotel inventory (24,911 Class A rooms). During 1980-1984, average Los Angeles CBD room rates per person per night have increased almost fifty percent (\$45.93 in 1980 to \$69.89 in 1984), while Los Angeles County rates increased about 38 percent from \$47.78 to \$65.89.(20)

### 3.3.2 Types of Impact

The impact of a regional rapid transit system on demand for hotel facilities may result from:

1. An increased amount of office space;
2. A direct connection to a regional airport or to inter-regional rail facilities; and
3. A direct connection between major Class A hotels and convention center(s) (permitting promotions of more attractive packages to larger conventions).

Interviews with operators of hotels served by rapid transit systems in other North American cities indicate higher occupancy levels ranging from three to ten percent and increased food and beverage sales. These operators also noted a high degree of employee satisfaction with use of the rail system instead of the auto.

In general, a fixed guideway transit system serving a downtown area or major activity center increases the mobility and reduces the out-of-pocket travel costs for hotel guests. Travel time and cost savings are related for trips to clients' offices or government buildings and visits to tourist attractions and eating and drinking establishments. There is also a general benefit of improved orientation for visitors not familiar with the downtown area, who need only remember station locations.

For Los Angeles, the Metro Rail System does not initially provide airport access, which may reduce the potential impact that the Metro Rail System will have on hotel demand in the CBD. However, once the Los Angeles/Long Beach light rail system is constructed, there will be a direct physical connection to the Los Angeles Convention Center which will promote the potential impact of Metro Rail on hotel demand in the CBD.

### 3.3.3 Key Forecasting Parameters

There are three major hotel market segments: business and government visitors, convention delegates and tourists.(21) The convention delegate and tourist segments are traditionally analyzed from trendline data. For the business market, the net increase in office space is often utilized as a cross-reference to verify future growth in hotel demand. Industry standards suggest that each 7,500 to 8,000 square foot increase in office space will support one additional hotel room.

Estimating a change in subregional capture rates entails:

1. Identifying competing subregions for individual market segments;
2. Documenting historical trends;
3. Verifying near-term development commitments;
4. Forecasting regional office demand;

5. Forecasting regional hotel facility demands; and
6. Establishing a basis for capture rate changes in subregions by market segments resulting from the rapid transit system.

Hotel business volumes fluctuate with changes in the regional economy and improvements to support facilities. Hotel demand must be estimated on a cumulative basis, therefore.

#### 3.3.4 Range of Development Impacts

Two detailed studies have been conducted on the land use impacts of the Metro Rail System. The most recent analysis (conducted by Economic Research Associates) utilized the subregional capture technique to estimate hotel facility impacts, including a comprehensive evaluation of Los Angeles County hotel development trends. A prior analysis (by Peat Marwick Mitchell & Co.) included subregional allocation of hotel demand and estimates of future development for individual station areas, based on a combination of economic and commercial office development trends. No market segment distinction was made, however. A comparison of these previous hotel impact estimates indicates an anticipated cumulative influence of between 600 and 1,350 rooms by the year 2000. (The Redevelopment Area forecast of 300 rooms was through 1995, but was extrapolated to a year 2000 estimate of 600 rooms). This Redevelopment Area analysis concludes that the business market is the only source of new hotel demand that would be influenced directly by Metro Rail. The evaluation prepared for the EIS estimates that the cumulative net increase in room demand would be 950 rooms by the year 2000.

The "With Transit" forecasts show that the Los Angeles CBD could attain between a 21.5 and 23 percent cumulative capture rate. Under the "Without Transit" scenario it is forecast that the capture rate would decline slightly below its current 21 percent. Station area analyses of holding capacities indicate a sufficient allowance for the higher "With Transit" forecasts to occur in the CBD.

#### 3.3.5 Refined Forecast

The most significant influence of the Metro Rail System on the Los Angeles CBD hotel market stems from new office development. Using the industry standard of one room for every 7,500 to 8,000 square feet of office development, the year 2000 CBD hotel demand would increase by 625 to 666 rooms, resulting in an approximate increase of 164,000 to 177,000 room nights per year.

With the exception of the improved connection between the Hilton Hotel and Little Toyko (which would underscore the strong Japanese market segment serving the Hilton), there is no strong basis to quantify a Metro Rail system impact on the tourist segment of the CBD hotel market. The direct connections between the Biltmore, the Hyatt Hotel and the Hilton Hotel clusters at 7th and Figueroa and 7th and Hope could improve the ability to package rooms to promote larger scale conventions. With a direct connection to the refurbished Los Angeles Convention Center (by means of the Los Angeles/Long Beach light rail line), the Metro Rail System impact on the corresponding market segments of the downtown hotel market could be appreciable. Conservatively, and without accounting for this improved Convention Center accessibility, the impact on these two market segments could be ten to fifteen percent of the estimated impact for the business visitor

segment of the CBD hotel market.

Market segment comparisons support the view that the business sector will likely be the primary source of new CBD hotel demand generated by the Metro Rail System. The lower range of net increase in hotel demand (approximately 600 to 750 rooms) is deemed appropriate for estimating monetary impacts attributable to Metro Rail.

### 3.3.6 Estimated Monetary Benefits

The principal monetary effects of Metro Rail regarding hotels likely include:

1. Land value increases; and
2. Increases in retail sales volumes.

The complex nature of establishing baseline hotel room rates makes it highly difficult to quantify net changes in room rates attributable to rapid transit. This was confirmed via interviews in Atlanta, Washington, D.C., and Toronto, Canada. Thus, monetary benefits have been estimated by determining the potential low and high range of unit value changes (e.g., land value changes per square foot) and applying the amount of rooms or square footage included within the one-block and the two- to three-block areas. Benefits which occur annually (e.g., retail sales) were quantified on a cumulative basis; those which occur on a one-time basis were valued in constant 1984 dollars.

Land values of commercial properties close to transit stations have increased by as much as 100 percent over prevailing appreciation rates within ten years of the opening of a rapid transit system (e.g., Washington, D.C.). To be conservative, a lower range of \$50 to \$100 per square foot for properties in the immediate station area and \$25 to \$50 per square foot for properties in a 600 to 1,800 foot radius have been utilized. Using estimates of the square feet of land devoted to hotel rooms within these station radii (excluding streets and other public sector properties) and assuming these levels of property appreciation (between 15% and 35% increase over today's prevailing market prices) occurred by the year 2000, the cumulative land value gains of hotel properties would range between \$11.5 million and \$23 million.

The estimated monetary benefits for hotel properties are documented in Table 3. The cumulative impact of between 600 and 750 rooms of incremental hotel demand represents additional retail sales (both room and per diem expenditures). Utilizing average 1984 room rates and per diem expenditures for Los Angeles hotel guests of \$70 and \$40, respectively, and an average occupancy of seventy percent, the annual year 2000 retail sales volume increase have been estimated. Cumulative estimates were based on a proportional increase in room demand between the years 1990 and 2000, suggesting annual retail sales gains of between \$17.6 and \$21.8 million. The cumulative gain would be between \$79.0 million and \$98.0 million. ✓

In summary, the cumulative year 2000 monetary value of the Metro Rail hotel impacts has been estimated to be between \$90.0 million and \$121.0 million.

TABLE 3  
 MONETARY BENEFITS OF METRO RAIL  
 INDUCED HOTEL IMPACTS IN LOS ANGELES CBO

	<u>Immediate Station Area</u>		<u>600 to 1,800 Foot Radius</u>		<u>Total Annual Value<sup>a/</sup></u>		<u>Cumulative Year 2000 Value</u>	
	Low	High	Low	High	Low	High	Low	High
<b>1. Increased Land Values</b>								
Per Square Foot	\$50	\$100	\$25	\$50	-	-	-	-
Amount of Sq. Ft. <sup>b/</sup>	.125	.125	.21	.21	-	-	-	-
Value Change <sup>a/</sup>	\$6.25	\$12.50	\$5.25	\$10.50	-	-	<u>\$11.50</u>	<u>\$23.00</u>
						Subtotal	\$11.50	\$23.00
<b>2. Retail Sales</b>								
Number of Rooms	300	375	300	375				
Room Sales <sup>a/</sup>	\$5.40	\$6.70	\$5.40	\$6.70	\$10.80	\$13.40	\$48.60	\$60.30
Per Diem Expenditures <sup>a/</sup>	\$3.40	\$4.20	\$3.40	\$4.20	<u>\$ 6.80</u>	<u>\$ 8.40</u>	<u>\$30.60</u>	<u>\$37.80</u>
				Subtotal	\$17.60	\$21.80	\$79.20	\$98.10

a/ Measured in millions of constant 1984 dollars.

b/ Expressed in millions.

SOURCE: Robert J. Harmon & Associates, Inc.

### 3.4 RETAIL TRADE IMPACTS

#### 3.4.1 Recent Trends

Currently, it is estimated that the Los Angeles CBD contains approximately five million square feet of retail space, including: approximately 4.45 million square feet offering shopper goods, an estimated 380,000 square feet of eating and drinking space, nearly 125,000 square feet of convenience goods, and approximately 60,000 square feet of personal services retail space.

Substantive shifts have occurred in the retail segment of the Los Angeles CBD. For example, the traditional shopping domain along Broadway has been transformed into a successful Hispanic-oriented retail area, while more traditional retail facilities are locating along the expanding 7th Street spine connecting Broadway to the growth-oriented western end of the Los Angeles CBD. Long-standing downtown anchor department stores (e.g., Bullock's and May Company) have downscaled their facilities and will soon open outlets within the new Citicorp regional retail center (currently under construction at 7th & Figueroa Streets).

A number of the new major commercial office buildings and hotel facilities constructed since 1970 (e.g., ARCO Plaza and the Westin Bonaventure Hotel) have incorporated quality retail space within their developments. In addition, the Los Angeles Community Redevelopment Agency has successfully encouraged retail development to serve Bunker Hill, Little Tokyo and Chinatown residents in conjunction with CRA-approved mixed-use projects. In short, the base and mix of the Los Angeles CBD retail core is changing significantly.

#### 3.4.2 Description of Impact

The impact of a regional rapid transit system on retail sales and development is related to other land use changes via increases in per capita sales from CBD employees and visitors. Metro Rail related increases in CBD retail sales activity should have three major sources:

1. Downtown employees,
2. Local residents, and
3. CBD visitors.

Metro Rail induced sales growth should result from increases in the number of people present in the CBD and in per capita expenditures compared to the "Without Metro" conditions.

Documented evidence from other North American cities indicates that the retail sales increases reflect both increased retail space and changes in baseline retail sales generated per square foot.(22) Sales gains measured by type of store varied significantly among cities. Generally, the highest measured gain occurred in specialty stores and fast food operations. However, department stores with direct transit access have experienced significant increases in retail sales volume.(23) The creation of pedestrian-oriented areas that channel people past or through retail facilities should reinforce the retail sales impact of a rapid transit system. Changes in basic travel patterns combined with reduced noon-time travel times between office and retail centers may well expand the pedestrian domain of CBD visitors, employees, and residents.

### 3.4.3 Key Forecasting Parameters

A rapid transit system should influence both the customer base and the per capita expenditure levels. It is important that each of these factors be evaluated for each market segment. Documented case studies (24) of existing joint development projects indicate that transit-related retail development can increase the regional market draw of a CBD or major activity center. This is especially true during weekends and evenings for major retail centers such as the Omni in Atlanta and the Pavillion in Washington, D.C. This paper does not, however, incorporate into the summary statistics the increased expenditures by retail customers not residing, employed or staying in the CBD.

Per diem expenditures for CBD office employees are expected to increase from a current annual average per capita level of \$1,300-\$1,400 to a \$1,400-\$1,500 level given implementation of the Metro Rail System.(25) As noted in the section 3.3, hotel visitor expenditures in 1984 are \$40 per diem. A constant expenditure per diem approach has been used for the residential segment of this retail trade analysis, and increases are assumed for only the middle/upper income resident base. Annual retail expenditures from this market segment are estimated to be \$3,800 (measured in 1984 dollars).(26)

Historically, retail expenditure levels in the CBD have been below other comparably sized downtown areas, due to the lack of a substantial high income population living in or near the downtown area. In addition, Los Angeles did not maintain a strong downtown retail center during the major post-World War II period of suburbanization.

### 3.4.4 Range of Development Influence

The recent Economic Research Associates (ERA) analysis concludes that Metro Rail will not dramatically influence housing development in the Los Angeles CBD, so this market segment was excluded in the ERA study. The prior Peat Marwick Mitchell analysis suggests a net residential impact of Metro Rail on the CBD, resulting in a difference between the two estimates of retail trade impacts attributed to Metro Rail.

Previous impact estimates indicate an anticipated level of net Metro Rail retail influence in the CBD of between 400,000 square feet and over 1.2 million square feet. Both evaluations suggest an increase of between 350,000 and 400,000 square feet of CBD-employee-related convenience retail, specialty and restaurant facilities resulting from Metro Rail.(27) The major difference for the two analyses is in the regional shopping category. The redevelopment report suggests a net influence with the Metro Rail System of over 900,000 square feet of increased retail development in the CBD by the year 2000.

The "With Transit" forecasts suggest that the Los Angeles CBD would keep pace with regional growth only if additional regional shopping facilities can be supported. Otherwise, the CBD's overall regional competitive market position will continue to decline. Analyses of holding capacities indicate a sufficient allowance for a higher level of "With Transit" retail development.

### 3.4.5 Refined Forecast

A recent Urban Land Institute (ULI) study correlated the number of downtown office workers and 1977 CBD retail sales for fifteen major U.S. cities. The results of that survey indicate that, on average, an increase of 1,000 office workers is accompanied by a \$3.32 million increase in annual retail sales. This was not a direct measure of office worker retail spending, in that the study also recognizes that office functions downtown attract visitors who also purchase goods and services. In 1984 dollars, this ratio becomes a \$4.9 million increase for every CBD addition of 1,000 office workers. This factor applied to the approximately five million square feet (28) in Metro-Rail-induced office demand translates into approximately \$122 million in incremental retail sales. Assuming an average of \$250 per square foot required to support new retail space, this would mean that the Metro Rail system office employment impact would generate demand for 490,000 square feet of retail development. Given the variances in sales per square foot levels, this reaffirms the 400,000 square foot estimated level of employee-related retail demand generated by the Metro Rail system. Case study data demonstrate that the long-term influence of a rapid transit system can restore a CBD to its former regional competitive standing (e.g., Washington, D.C.).(29)

### 3.4.6 Estimated Monetary Benefits

Metro Rail will generate three types of monetary benefits to the retail sector served by the system:

1. Increased retail sales;
2. Increased profits to retailers; and
3. Increased property values.

(For this analysis, buildings which are predominantly office with provision of ground floor retail are evaluated as office space due to the current status of the land use data base.)

For the monetary analysis of the retail sales impacts of the Metro Rail system, the annual year 2000 retail sales volumes have been calculated for Los Angeles CBD employees, residents, and hotel guests. Cumulative sales gains were determined by a proportional annual build-up schedule correlated to office, residential and hotel impacts presented previously. Results indicate the annual year 2000 retail sales gain from both the new and baseline (without Metro Rail) level employee base measured in 1984 dollars would be between \$144.00 to \$183.0 million. On a cumulative year 2000 basis, increased retail sales from CBD employees would range from \$830.0 million to \$1.07 billion. Incremental CBD resident sales should range from \$3.8 to \$7.6 million annually resulting in \$17.5 to \$34.2 million on a cumulative basis. These results and the previously-cited hotel-related sales gains are presented in Table 4.

The second quantifiable category of retail trade oriented monetary impacts attributable to construction and operation of the Metro Rail system is retail profits. The calculation of incremental sales profits has been based on a conservative range of three to four percent recoverable profits on retail sales from employees and residents, and three to five percent profits on expenditures from hotel guests. These profit ranges have been applied to the previously-estimated retail sales increases, indicating an annual year 2000 incremental

retail sales profit from \$5.9 to \$7.6 million. On a cumulative basis, incremental retail sales profits should range from \$32.8 to \$42.5 million.

TABLE 4  
MONETARY BENEFITS OF METRO RAIL  
INDUCED RETAIL IMPACTS IN LOS ANGELES CBD

	<u>Immediate Station Area</u>		<u>600 to 1,800 Foot Radius</u>		<u>Total Annual Value<sup>a/</sup></u>		<u>Cumulative Year 2000 Value</u>	
	Low	High	Low	High	Low	High	Low	High
1. Retail Sales <sup>a/</sup>								
New Employees <sup>b/</sup>	\$ 58.80	\$ 73.50	\$ 39.20	\$ 49.00	\$ 98.00	\$122.50	\$441.00	\$551.30
Baseline Employees <sup>c/</sup>	\$ 14.40	\$ 19.20	\$ 32.00	\$ 42.60	\$ 46.40	\$ 61.80	\$319.76	\$519.12
Residents <sup>d/</sup>	-	-	\$ 3.80	\$ 7.60	\$ 3.80	\$ 7.60	\$ 17.50	\$ 34.20
Room Sales	\$ 5.40	\$ 5.70	\$ 5.40	\$ 6.70	\$ 10.80	\$ 13.40	\$ 48.60	\$ 60.30
Per Diem Expenditures	\$ 3.40	\$ 4.20	\$ 3.40	\$ 4.20	\$ 6.80	\$ 8.40	\$ 30.60	\$ 37.80
					Total Retail Sales:		\$857.46	\$1,202.72
2. Retail Sales Profits <sup>a/</sup>								
Retail <sup>e/</sup>	\$ 2.60	\$ 3.27	\$ 2.62	\$ 3.48	\$ 5.22	\$ 6.75	\$ 29.69	\$ 38.66
Hotel <sup>f/</sup>	\$ .35	\$ .43	\$ .35	\$ .43	\$ .70	\$ .86	\$ 3.15	\$ 3.87
					Total Profits:		\$ 32.84	\$ 42.53

a/ Measured in millions of constant 1984 dollars.

b/ Measured in terms of ULI correlation to include non office workers.

c/ The high range estimate assumes that 100% of employees (i.e., 64,000) located within one block and one-third of those located between 2-3 blocks of a Metro Rail station would increase their noontime spending. The lower range assumes 75% of this total would be so influenced.

d/ Estimated at \$3,800 annual expenditures for between 1,000 to 2,000 additional residents.

e/ Estimated at 3% to 4% of incremental sales.

f/ Estimated at 3% to 5% of incremental sales.

SOURCE: Robert J. Harmon & Associates, Inc.

## REFERENCES

- (1) Los Angeles Times dated 9/15/83. Grubb and Ellis Company (Los Angeles Commercial Brokers) predicts a shortage of premium commercial space by the end of 1984 and cites a 4.2% vacancy rate in commercial office buildings constructed since the mid-1970s and quotes an 18.9% average vacancy rate for class B structures.
- (2) These figures represent a composite determination derived from occupancy surveys conducted independently by three Los Angeles based commercial brokerage companies: Cushman and Wakefield, Coldwell Banker Company, and Grubb and Ellis Company. This data was selectively verified and updated by Robert J. Harmon and Associates, Inc., September 1984.
- (3) Washington Metropolitan Council of Governments, "Before and After Monitoring Program of the Washington Metropolitan Area Transit System," 1983. The detailed documentation of the above referenced real estate impacts is incorporated in the GPC "Technical memorandum 4.1.6: Documentation of Interview Results in Washington, D.C. and Atlanta, Georgia," prepared for the Southern California Rapid Transit District, August 1984.
- (4) The SCRTD published EIS document for the Los Angeles Metro Rail System documents that the public development policies, if progressively enacted, can enhance station area development by 20 to 35%.
- (5) Subregion is defined as a geographic concentration or activity center; i.e., CBD, Century City, etc.
- (6) Economic Research Associates report entitled "Real Estate Development Potential in the Metro Rail corridor", Page III-1 (June 1983 Inventory of Office Space by Submarket: Los Angeles County), December, 1983.
- (7) Economic Research Associates report entitled "Real Estate Development Potential in the Metro Rail corridor", Table IV-2 (Projected Distribution of Office Space Construction With and Without Metro Rail in 1989-1995), Page Nos. V-6 and V-7, December, 1983.
- (8) Peat Marwick Mitchell and Company report entitled "Land Use and Development Impacts: Los Angeles Rail Rapid Transit Project) prepared for the Draft Environmental Impact Statement, Table III-10 (Projected Commercial Development 1980-2000 for the Locally Preferred Alternative and Minimum Operable Segment Under Three Growth Scenarios), Pages III-22 and III-23, June, 1983.
- (9) Economic Research Associates report entitled "Real Estate Development Potential in the Metro Rail Corridor", Table V-1 (Projected Completion of Office Space By Submarket With Metro Rail: Los Angeles County, 1983-1995), Page V-2, December, 1983.
- (10) Based on professional judgment derived from conducting a cross section of office space market analyses by Robert J. Harmon and Associates, Inc. over the course of the past ten years.

- (11) For example, Southern California Gas Company and Bank of America.
- (12) Applies in particular to underutilized and redeveloping commercial properties within the immediate station environs.
- (13) GPC position paper 4.3 "Impact/Real Estate Benefits", prepared for the Southern California Rapid Transit District, August, 1984.
- (14) Assuming the historical allowances provided by the CRA for higher FARs for new development continue.
- (15) The Los Angeles Community Redevelopment Agency negotiations and data.
- (16) Calculated as 100,000 feet (i.e., 2 million times 5%) times the lower rent range of \$15 per square foot equals 1.5 million dollars; and, 300,000 square feet (i.e., 3 million times 10% equals 300,000) times the upper rent range of twenty dollars per square foot equals 6 million dollars.
- (17) Congressional Staff Study entitled "Metro Rail Impacts on Washington Area Land Values" submitted and approved by the Subcommittee on Banking Finance, Finance, and Urban Affairs, United States House of Representatives, January 2, 1981.
- (18) General Planning Consultant document entitled, "Analysis of Factors Affecting Benefit Assessment District Formation", prepared by the Southern California Rapid Transit District, September, 1984.
- (19) Represents update of 1983 inventory analysis by Economic Research Associates to include Sheraton Grande.
- (20) "Trends in the Hotel Industry: Los Angeles" prepared by Pannell Kerr Forster.
- (21) Airline employees are predominantly concentrated at the LAX airport area and are, therefore, not a major factor in downtown Los Angeles.
- (22) For example, the Woodward and Lothrop Store in Washington, D.C.
- (23) Jarold Keefer's analysis of nine selected UMTA urban initiative mixed-use projects.
- (24) Ibid.
- (25) Updated from a survey compiled in late 1970's by Dark and Higgenbotham.
- (26) Updated from 1977 estimates prepared by Property Evaluation Services for the Community Redevelopment Agency.
- (27) Economic Research Associates estimated that there would be a net difference of 207,000 square feet between 1989-1995. This figure was extrapolated to the year 2000 to be in the 350,000 to 400,000 square foot level.
- (28) Assuming 200 square feet per employee.

(29) Reference results of the "Before and After" Impact Monitoring Program prepared by the Washington Council of Governments, 1983.

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2. Technical Report, "Land Use and Development Impacts" Los Angeles Metro Rail Rapid Transit Project "Metro Rail" Draft Environmental Impact Statement and Environmental Impact Report prepared by Sedway/Cooke and Peat Marwick Mitchell & Company.
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5. Congressional Study of Land Use Impacts of the Washington, D.C. Rapid Transit System, prepared in 1981.
6. Combined Symposium of the results of the "Before and After" Impact Monitoring Program in Atlanta, San Diego, and Washington, D.C., conducted under UMTA sponsorship in September, 1983.
7. Miami Benefit Assessment Case Study prepared for the Urban Mass Transportation Administration, February, 1984.
8. Historic Benefit Assessment Case Study prepared for the Urban Mass Transportation Administration, February, 1984.
9. Series of Impact Reports prepared for the Toronto Transit Commission and summarized in 1983.
10. Series of San Francisco Bay Area Rapid Transit System Impact Reports (emphasizing land use and land value studies) prepared in 1978.
11. Ongoing Series of Atlanta Impact Reports (emphasizing land use and business impacts) prepared since 1980.
12. Private Sector Interviews conducted by GPC Project Team during June and July, 1984.