EXECUTIVE SUMMARY

Introduction

The Exposition Metro Line Construction Authority (Expo Authority) has prepared this ~~Draft~~ Final Environmental Impact Report (~~D~~FEIR) in order to extend high-capacity, high-frequency transit service from the Westside of Los Angeles to Santa Monica. This project, called the Exposition Corridor Transit Project Phase 2 (Expo Phase 2), would improve transportation mobility and connectivity for residents and commuters in the project study area; provide faster, more reliable public transportation services; increase the capacity of the transportation system; and provide more travel choices. The area is currently underserved by mass transit.

The primary purpose of this ~~D~~FEIR is to assist decision-makers and the public in assessing the impacts associated with the implementation of the alternatives under consideration. Th~~is~~e Draft EIR (DEIR) ~~will be~~was circulated for review to interested parties, including private citizens, community groups, the business community, elected officials and public agencies in accordance with state requirements.

In response to comments on the DEIR, the Expo Authority continued extensive agency coordination and community outreach and conducted additional technical and environmental analysis during the preparation of the FEIR. These efforts resulted in changes to the LRT Alternatives and new design options that are included the FEIR. The decision-makers will consider this information in any approval of the Expo Phase 2 project.

Project Purpose

The underlying purpose of t~~T~~he Expo Phase 2 project is to provide high-capacity transit service on the Westside of Los Angeles to Santa Monica, extending the mobility benefits of the Expo Phase 1 project beyond the terminus in Culver City. This proposed high-capacity, major transit investment would:

- Accommodate existing population and employment growth and transit-supportive land use densities
- Improve mobility for the large Westside transit-dependent population who have modest incomes or do not drive
- Provide enhanced access to activity centers, including a linkage to downtown Los Angeles, Culver City, Santa Monica and other destinations in the corridor
- Serve existing and future travel demand for east/west commute trips, with improved connectivity to a regional transit system

- Attract more riders by greatly improving transit services and facilities in the corridor for both work and non-work trips
- Provide an effective transit alternative to the current and expected increase in roadway congestion in the corridor
- Address system capacity constraints of heavily-used highway and transit networks
- Realize economic benefits from travel time savings, increasing the attractiveness of the corridor to employers and workers
- Spur redevelopment and revitalization plans through the availability of efficient and reliable high-capacity transit service
- Realize environmental benefits associated with increased transit usage, such as improved air quality and energy efficiencies

Corridor Issues and Opportunities

The need for transit improvements in the corridor is reflected in the following:

- The study area includes job densities in excess of 20 jobs per acre in portions, with additional job growth projected at 24 percent by 2030. In 2000, there were 8,535 employees per square mile in the study area. By 2030, the Southern California Association of Governments (SCAG) projects that job densities will increase to 10,558 employees per square mile in the study area.
- The study area includes transit-dependent populations equivalent in percentage with other areas of Los Angeles County. Improved transit in the study area would improve mobility options for students, seniors, the disabled, and those without access to an automobile.
- The I-10 Freeway currently experiences considerable congestion, operating at Level of Service F during peak periods. Congestion on the freeway is expected to increase through 2030. East/west arterials in the study area also experience congestion. Average travel volumes on these streets are expected to increase 15 to 35 percent by 2030, with peak hour volumes increasing 13 to 32 percent by 2030.
- Daily vehicle miles traveled within the study area will increase by 27 percent between the years 2005 and 2030. The increase in vehicles miles traveled will be even greater during the peak periods, increasing by 32 percent during the AM peak period and 31 percent during the PM peak period.
- Between 2005 and 2030, daily average speeds within the study area will decrease by 25 percent, from 32 mph in 2005 to 24 mph in 2030. Average speeds during the AM peak period will decrease by 32 percent, from 28 mph to 19 mph; while average speeds during the PM peak period will decrease by 39 percent, from 26 mph to 16 mph.
- Between 2005 and 2030, daily vehicle hours traveled within the study area will increase by 74 percent. The increase in vehicle hours traveled will be even greater during the peak periods, increasing by 93 percent during the AM peak period and 105 percent during the PM peak period.

- Connectivity exists with the Expo Phase 1 project and will be enhanced by the extension of the Expo Phase 2 project. Average weekday person trips[1] from the Expo Phase 1 study area to the Expo Phase 2 study area increase 20 percent between 2005 and 2030. Average weekday person trips from the Expo Phase 2 study area to the Expo Phase 1 study area increase 11 percent from 2005 to 2030.
- Connectivity between the Expo Phase 1 project and the Expo Phase 2 study area is important. Average weekday transit trips[2] from the Expo Phase 1 study area to the Expo Phase 2 study area are forecast to increase 45 percent from 2005 to 2030. Average weekday transit trips from the Expo Phase 2 study area to the Expo Phase 1 study area increase 26 percent from 2005 to 2030.
- Bus transit will experience increased challenges in meeting the needs of the study area. Peak hour loads on buses traveling in the east and west directions within the study area will increase by 111 percent between the years 2005 and 2030, from 8,095 to 17,701. During the same period, the average peak hour speeds of the buses will decrease by 8 percent to 11 mph.
- Land use plans being developed by the City of Los Angeles and the City of Santa Monica support transit oriented development and the expansion of transit into the Westside.
- Air quality, greenhouse gas, and energy conservation efforts in the Los Angeles basin including the Westside are heavily reliant on the expansion of transit to achieve conservation goals.

Alternatives Considered

Six alternatives are evaluated in this ~~D~~FEIR. Two include the No-Build and Transportation System Management (TSM) Alternatives, described as follows:

- No-Build Alternative consists of the existing transit services as well as improvements explicitly committed to be constructed by the year 2030 as defined in the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP).[3]
- The TSM Alternative would involve three basic components: addition of a rapid bus route connecting downtown Culver City with downtown Santa Monica; associated service improvements on selected north/south routes to feed stations along the new rapid bus route; and service improvements on selected routes connecting Westside communities to the Expo Phase 1 terminus.

The four proposed LRT Alternatives would begin at the terminus of the Expo Phase 1 in Culver City and would terminate in downtown Santa Monica in the vicinity of the intersection of 4th Street and Colorado Avenue. Figure 1 (Project Map—By Segment) shows the alignment of each of the Alternatives. This figure, which is included at the back of this Executive Summary, may be folded out and used as a reference while reading the summary. Depending upon the ~~a~~Alternative, the alignments would vary as follows:

[1] Weekday person trip is a trip taken on any transportation mode (walk, bus, rail, auto) on a weekday.
[2] Any trip taken on transit (bus or rail) on a weekday.
[3] 2008 Regional Transportation Plan: Making the Connections, adopted May 2008.

- LRT 1 Expo ROW–Olympic Alternative (LRT Alternative 1) would utilize approximately 5 miles of the existing Exposition ROW from the Expo Phase 1 terminus in Culver City to the intersection with Olympic Boulevard in Santa Monica. From that point, the alignment would follow Olympic Boulevard to the proposed terminus station.
- LRT 2 Expo ROW–Colorado Alternative (LRT Alternative 2) would also utilize the existing Exposition ROW from the Expo Phase 1 terminus in Culver City to the intersection with Olympic Boulevard in Santa Monica. From that point, the alignment would continue within the Exposition ROW to west of 19th Street, then diverge from the ROW and enter onto Colorado Avenue east of 17th Street and follow the center of Colorado Avenue to the proposed terminus.
- LRT 3 Venice/Sepulveda–Olympic Alternative (LRT Alternative 3) would divert from the Exposition ROW at the Expo Phase 1 terminus and follow Venice Boulevard and Sepulveda Boulevard until reaching the intersection with the Exposition ROW. The alignment would then continue westward along the Exposition ROW and Olympic Boulevard identical to the LRT 1 Expo ROW–Olympic Alternative.
- LRT 4 Venice/Sepulveda–Colorado Alternative (LRT Alternative 4) would divert from the Exposition ROW at the Expo Phase 1 terminus and follow Venice Boulevard and Sepulveda Boulevard until reaching the intersection with the Exposition ROW. The alignment would then continue westward along the Exposition ROW and Colorado Avenue identical to the LRT 2 Expo ROW–Colorado Alternative.

Summary Comparison of Alternatives

Table 1 (Performance Measures of the TSM and LRT Alternatives) provides the results of ridership analysis of the different Alternatives as a way to gauge the effectiveness of the Alternatives relative to one another.

The results show that the TSM has only one-third of the weekday boardings of the LRT Alternatives. The TSM does show benefit to transit dependents, but would attract very few New Transit Trips, particularly when compared to any of the LRT Alternatives. Thus, the TSM does not achieve the basic transportation goals of the project.

When compared to each other, the four LRT Alternatives show similar results with respect to weekday boardings, passenger miles, new transit trips, and percent of ~~new transit trips~~user benefits to transit dependents. The variation between Alternatives is not significant and is generally within the margin of error for the travel forecasting model, described in the *Modeling Results Technical Report*. The combined forecast ridership for t~~T~~he Expo Phase 2 project and Expo Phase 1 project (now under construction) is shown as well, and is consistent with the Phase 2 only Weekday Boarding results.

Table 1 Performance Measures of the TSM and LRT Alternatives

Measures	TSM	LRT 1 Expo ROW–Olympic	LRT 2 Expo ROW–Colorado	LRT 3 Venice/ Sepulveda–Olympic	LRT 4 Venice/ Sepulveda–Colorado
Performance Measures					
2030 Weekday Boardings (Phase 2 Only)	10,296	36,653	36,412	35,880	35,849
Annual Transit Dependent Passenger Miles	5,819,772	42,325,305	41,643,183	41,200,002	40,811,658
Percent of User Benefits to Transit Dependents	63.0%	63.1%	62.8%	62.5%	62.3%
New Transit Trips	3,397	11,010	10,980	10,250	10,322
Phase 1 and Phase 2 Combined					
2030 Weekday Boardings	N/A	64,048	63,998	62,105	62,077

SOURCE: AECOM, SUMMIT Model, June 2008.

Environmental Benefits and Impacts

All of the LRT Alternatives have been identified as environmentally superior to the No-Build and TSM Alternatives. While the No-Build and TSM Alternatives avoid some impacts that occur under the LRT Alternatives, neither Alternative would meet the project objectives. Table 2 (Environmental Impacts—Comparison of LRT Alternatives) summarizes the environmental differences between the LRT Alternatives.

LRT Alternative 1 offers the greatest opportunity to reduce regional vehicle miles traveled, serve to expand the existing transit system and increase regional connectivity in the Expo study area, Los Angeles County and the six-county Region. LRT Alternative 2 offers the next best reduction of these factors for Los Angeles County and the Expo study area but does not perform as well in the region. LRT Alternatives 3 and 4 do not perform as well as in Los Angeles County and the Expo study area. The projected reduction in vehicle miles traveled would also translate into reductions in air pollutant and greenhouse gas emissions.

Table 2 Environmental Impacts—Comparison of LRT Alternatives

Alternatives Compared to Each Other: ○ = Least Impact, ● = Most Impact

Alternative / Impact Topic	LRT 1	LRT 2	LRT 3	LRT 4	Differentiating Characteristics
Transportation/Traffic	○ ○	○ ○	● ●	● ●	**Intersection Delay:** LRT Alts 3 and 4 have two Significant Unavoidable Impacts. **Loss of On Street Parking:** LRT Alts 3 and 4 displace twice as many on-street parking spaces as LRT Alts 1 and 2. LRT Alt 2 displaces 67 fewer spaces than LRT Alt 1. Although replacement parking will be provided, the least disruption will occur with LRT Alt 2.
Aesthetics	●	○	●	●	**Important Aesthetic Features and Visual Character:** LRT Alts 1 and 2 will change the character of the ROW between Overland Avenue and Military Avenue through the construction of an at-grade station and roadway improvements, a distance of approximately 3,000 feet. LRT Alt 1 will require the removal of mature Coral trees on Olympic Boulevard from midway between Cloverfield Blvd. and 20th Street to 10th Street (approximately 43 trees). LRT Alt 3 will require the construction of street modifications and approximately 8,400 feet of elevated Guideway along Venice and Sepulveda Blvds, where no such structure exists today, as well as the removal of the Coral trees. LRT Alt 4 will require the same type of construction as LRT Alt 3 on Venice and Sepulveda Blvds, but will not require the removal of the Coral Trees.
Air Quality	○	○-●	○	○-●	LRT Alt 1 has the greatest reduction in Vehicle Miles Traveled and thus provides largest reduction in pollutants. LRT Alts 2, 3, and 4 also provide air quality improvements, but to a lesser degree.
Global Climate Change	○	○-●	○	○-●	LRT Alt 1 has the greatest reduction in Vehicle Miles Traveled and thus provides largest reduction in pollutants. LRT Alts 2, 3, and 4 also provide air quality improvements relative to Vehicle Miles Traveled, but to a lesser degree. LRT Alt 1 has the greatest reduction in greenhouse gas emissions. LRT Alts 2, 3, and 4 would have a less-than-significant impact with respect to greenhouse gas emissions.
Biological	○	○	○	○	All alternatives perform equally.
Cultural	○	○	●	●	LRT Alts 3 and 4 may require the physical taking of a portion of an eligible historic architectural resource.

Table 2 Environmental Impacts—Comparison of LRT Alternatives

Alternatives Compared to Each Other: ○ = Least Impact, ● = Most Impact

Alternative / Impact Topic	LRT 1	LRT 2	LRT 3	LRT 4	Differentiating Characteristics
Geology	○	○	○	○	All alternatives have similar performance characteristics.
Hazards and Hazardous Materials	○	○	○	○	All alternatives have similar performance characteristics.
Hydrology	●	●	○	○	LRT Alts 1 and 2 may have a station in a 100 year Flood Zone.
Land Use/Planning	○	○	○	○	All alternatives have similar performance characteristics.
Noise / Vibration	○	○	○	○	All alternatives have similar performance characteristics.
Paleontological	○	○	○	○	All alternatives have similar performance characteristics.
Parks and Community Facilities	○	○	○	○	All alternatives have similar performance characteristics.
Safety and Security	○	○	○	○	All alternatives have similar performance characteristics.
Socioeconomics	○	○	●	●	LRT Alts 3 and 4 require substantially more property acquisition than LRT Alternatives 1 and 2. In particular, the widening and reconstruction of Venice and Sepulveda Blvds. will be very disruptive with significant residential relocations.
Energy	○	○	○	○	All alternatives have similar performance characteristics.
Construction	○	○	●	●	The widening and reconstruction of Venice and Sepulveda Blvds. associated with LRT Alts ~~2~~3 and 4 will be very disruptive. Similarly, the reconstruction of Colorado Blvd in LRT Alts 2 and 4 will be disruptive.

Implementation of the LRT Alternatives would result in an overall reduction in total single-passenger vehicle and bus energy consumption within the study area. The LRT Alternatives would result in less energy consumption than the No-Build Alternative and, as such, would result in a beneficial energy impact. While the LRT Alternatives would lead to localized traffic impacts and removal of parking spaces, as well as potential noise and vibration impacts, visual quality and potential cultural resource impacts, and property acquisitions, these impacts would largely be mitigated to less than significant.

LRT Alternatives 1 and 2 do not result in any traffic impacts that could not be mitigated. The other two LRT Alternatives would result in impacts to two intersections that could not be mitigated due to right of way constraints.

LRT Alternative 1 would result in substantially fewer property acquisitions including ~~62~~ 68 total acquisitions with residential relocations impacting an estimated 5 residents. LRT Alternative 2 would have ~~83~~ 92 total acquisitions resulting in the relocation of an estimated 3 residents; LRT Alternative 3 would have ~~194~~ 188 total acquisitions including an estimated ~~256~~ 261 resident relocations; and LRT Alternative 4 would have ~~215~~ 212 total acquisitions including an estimated ~~254~~ 259 resident relocations.

LRT Alternative 1 would also result in the least amount of traffic disruption during construction; LRT Alternative 2 would involve construction in the middle of Colorado Avenue, and LRT Alternatives 3 and 4 would involve construction within the median of Venice and Sepulveda Boulevards. LRT Alternative 4 would additionally include construction in the middle of Colorado Avenue.

LRT Alternative 1 would result in aesthetic/visual quality impacts to the Expo/Westwood Station area due to the change in the character of the area associated with the proposed station and parking facility. LRT Alternative 1 would also result in aesthetic/visual quality impacts on Olympic Boulevard due to the elimination of the Coral trees within the median. The impacts to the Coral trees would be avoided by implementation of LRT Alternative 2, but this Alternative would result in traffic disruption on Colorado Avenue during construction. LRT Alternatives 3 and 4 would result in aesthetic/visual quality impacts along Venice and Sepulveda Boulevards due to the construction of elevated guideway and stations along major portions of those streets along with the acquisition and removal of many buildings. LRT Alternative 3 would also include the afore-mentioned elimination of the Coral trees on Olympic Boulevard.

LRT Alternatives 1 and 2 would have the least potential to impact cultural resources due to the near small number of such resources along these two Alternatives.

In summary, given the relative impacts associated with the various Alternatives, LRT Alternatives 1 or 2 are considered to be the environmentally superior Alternatives. LRT 1 (Expo ROW–Olympic Alternative) and LRT 2 (Expo ROW–Colorado Alternative) would have fewer traffic impacts; lower property acquisition, residential relocation, and related disruption; less disturbance to culturally sensitive resources; and less traffic disruption during construction. LRT 1 would result in long-term impacts on the Expo/Westwood Station area community and the coral trees on Olympic Boulevard. Selection of LRT 2 versus LRT 1 would mitigate the impacts on the coral trees, although traffic disruption on Colorado Avenue would be greater during construction than on Olympic Boulevard.

Effectiveness and Efficiency

The proposed project has been evaluated across a broad range of performance measures. The discussion below considers capital and operating costs, as well as the overall efficiency of the LRT Alternatives in meeting the Transportation elements of the Project Purpose. These measures are generally of interest to decision-makers and the public alike.

Capital Costs—TSM Alternative

For the TSM Alternative, the capital costs are estimated to be $44.3 million in mid-2008 dollars, as shown in Table 3 (TSM Capital Costs [000s]). The principal components of these costs are vehicles, professional services (project management, engineering, construction management, inspection, insurance, etc), construction of minor bus stops and street improvements, and contingencies. There would be no ROW acquisition required for the TSM Alternative.

Table 3 TSM Capital Costs (000s)

Principal Components (2008$)	TSM
Construction	$1,610
Right-of-Way	$0
Vehicles	$32,814
Professional Services and Contingency	$9,905
Total	***$44,329***

SOURCE: Capital Construction Costs, DMJM Harris/Lenax, October 2008.

Capital Costs—LRT Alternatives

Table 4 (LRT Alternatives Capital Costs in 2008$s [000s]) shows the capital costs in mid-2008 dollars for each LRT Alternative. These costs have been updated to reflect changes to the LRT Alternatives that have emerged in response to comments on the DEIR and through additional analysis conducted for the FEIR. The estimates are based on local cost information available from the Expo Phase 1 and other sources as applicable, which have been updated in the FEIR to reflect more current information on Expo Phase 1. Alternatives 1 and 2 are substantially less expensive than LRT Alternatives 3 and 4 in all categories, primarily due to the extensive land acquisition and structure costs associated with guideway construction on Venice and Sepulveda Boulevards.

These capital costs are based on the conceptual engineering design. More detailed cost estimates will be developed during later stages of the project beginning with Preliminary Engineering (PE). ~~following selection of the Locally Preferred Alternative (LPA).~~

Table 4 LRT Alternatives Capital Costs in 2008$ (000s)

Principal Components (2008$)	LRT 1 Expo ROW–Olympic	LRT 2 Expo ROW–Colorado	LRT 3 Venice/ Sepulveda–Olympic	LRT 4 Venice/ Sepulveda–Colorado
Construction	~~$508,334~~ $576,821	~~$454,378~~ $515,418	~~$694,647~~ $780,748	~~$640,648~~ $721,587
Right-of-Way	~~$151,167~~ $221,324	~~$164,916~~ $241,720	~~$277,054~~ $369,971	~~$290,803~~ $390,367
Vehicles	~~$79,013~~ $185,837	~~$90,864~~ $185,837	~~$94,815~~ $185,837	~~$102,716~~ $185,837
Professional Services and Contingency	~~$231,395~~ $368,654	~~$222,265~~ $352,611	~~$368,270~~ $497,733	~~$356,643~~ $482,532
Total	***~~$969,909~~ $1,352,636***	***~~$932,423~~ $1,295,586***	***~~$1,434,786~~ $1,834,289***	***~~$1,390,811~~ $1,780,323***

SOURCE: Capital Construction Costs, DMJM Harris/Lenax, September 2008; updated 2009.

Table 5 (Project Costs for each LRT Alternative [Year of Construction] [000s]) shows the year of construction (escalated) dollar costs for each LRT Alternative. The year of construction costs reflect revised escalation. Costs are escalated to year of construction using a range from 1 to ~~5~~7.5 percent escalation: 2 percent in 2009, 1 percent ~~through~~ in 2010, 5 percent ~~from~~in 2011, and 4 percent from 2010 ~~through 2013, and 3 percent~~ through completion of construction.

Table 5 Project Costs for each LRT Alternative (Year of Construction) (000s)

Principal Components	LRT 1 Expo ROW–Olympic	LRT 2 Expo ROW–Colorado	LRT 3 Venice/ Sepulveda–Olympic	LRT 4 Venice/ Sepulveda–Colorado
Construction	~~$718,077~~ $680,416	~~$642,992~~ $608,506	~~$979,028~~ $920,033	~~$903,882~~ $850,730
Right-of-Way	~~$197,341~~ $244,197	~~$215,289~~ $266,701	~~$361,679~~ $408,205	~~$379,628~~ $430,710
Vehicles	~~$117,072~~ $226,238	~~$134,633~~ $226,238	~~$140,486~~ $226,238	~~$152,194~~ $226,238
Professional Services and Contingency	~~$320,886~~ $428,358	~~$308,206~~ $409,713	~~$510,761~~ $578,385	~~$494,624~~ $560,721
Total	***~~$1,353,375~~ $1,579,209***	***~~$1,301,121~~ $1,511,158***	***~~$1,991,956~~ $2,132,861***	***~~$1,930,328~~ $2,068,399***

SOURCE: Capital Construction Costs, DMJM Harris/Lenax, September 2008; updated 2009.

Operating and Maintenance Costs

This section presents the operating and maintenance costs for the TSM and LRT Alternatives. Operating and maintenance costs for the Alternatives are based on the service and fleet assumptions, as well as the bus and rail vehicle revenue miles and hours described in Chapter 2 (Project Alternatives). Table 6 (2030 TSM and LRT Alternative Annual Operating and Maintenance Costs in 2008 Dollars [000s]) shows the annual operating and maintenance costs in 2008 dollars for 2030 service levels. Operating cost for the LRT Alternatives are similar, but reflect the longer length of LRT Alternatives 3 and 4.

Table 6 2030 TSM and LRT Alternative Annual Operating and Maintenance Costs in 2008 Dollars (000s)

Mode	TSM Alternative	LRT 1 Expo ROW–Olympic	LRT 2 Expo ROW–Colorado	LRT 3 Venice/ Sepulveda–Olympic	LRT 4 Venice/ Sepulveda–Colorado
Operating Cost Increment over No-Build	$10,853	$22,531	$23,788	$25,654	$26,891
Operating Cost Increment over TSM	NA	$11,678	$12,935	$14,801	$16,038

SOURCE: Connetics Transportation Group (August 2008).

Table 7 (Cost Effectiveness of the TSM and LRT Alternatives) provides the results of cost-effectiveness of the different Alternatives using the methodology of the Federal Transit Administration as a way to gauge the relative efficiency and effectiveness of the Alternatives relative to one another.

Table 7 Cost Effectiveness of the TSM and LRT Alternatives

Measures	TSM	LRT 1 Expo ROW–Olympic	LRT 2 Expo ROW–Colorado	LRT 3 Venice/ Sepulveda–Olympic	LRT 4 Venice/ Sepulveda–Colorado
Cost Effectiveness Measures					
Annual User Benefit Hours	1,160,871	3,972,637	3,949,064	3,557,885	3,571,264
Cost per Annual Hour of User Benefit*	$13.70	~~$20.21~~$25.12	~~$20.01~~$24.34	~~$32.76~~$37.75	~~$32.23~~$36.64

SOURCE: AECOM, SUMMIT Model, June 2008; updated 2009.

*Note: Cost per Annual Hour of User Benefit reflects updated capital costs based on project changes, as well as revised contingencies and escalation rates; since this is a Federal Transit Administration (FTA) cost effectiveness measure, the additional vehicles required to meet Metro's operating needs for interlining the Blue Line trains has been excluded from the calculation, per FTA methods and standards that require vehicle quantity to be based on ridership demand.

The significant performance difference between the Alternatives emerges with the examination of the cost of providing the transportation benefits. As seen on Table 1 (Performance Measures

of the TSM and LRT Alternatives), LRT Alternatives 1 and 2 show slightly higher ridership as LRT Alternatives 3 and 4. However, the Cost of per Annual Hour of User Benefit on Table 7 shows that LRT Alternatives 1 and 2 provide this better ridership at 2/3rds the cost of LRT Alternatives 3 and 4 for this key performance measure. It is worth noting that were the Expo Authority competing for funds under the Federal New Starts process, LRT Alternatives 1, 3 and 4 would not be eligible to continue in the project development process because of their high cost per Annual Hour of User Benefit. Of the LRT Alternatives, only LRT Alternative 2 would be eligible based on the updated cost effectiveness breakpoints in FTA's Fiscal Year 2011 Reporting Instructions.

Summary of Significant Environmental Impacts and Proposed Mitigation Measures

Table 8 (Summary of Significant Environmental Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives) provides a summary of the significant environmental impacts and proposed mitigation measures for the LRT Alternatives. Table 8 can be found at the back of this Executive Summary, immediately before Figure 1 (Project Map—By Segment). Section 3.18 (CEQA Impact Summary Table) of the ~~D~~FEIR provides a comprehensive summary of all impacts by topic and mitigation measures. For a more detailed discussion and description, refer to the applicable sections and chapters of this ~~D~~FEIR.

The following abbreviations are used to classify impacts by level of significance in Table 8~~1~~ (Summary of Significant Environmental Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives~~Performance Measures of the TSM and LRT Alternatives~~):

S = Significant or Potentially Significant Impact (before mitigation)

LTS = Less Than Significant (below threshold either before or after mitigation)

SU = Significant Unavoidable Impact (mitigation would not reduce to less-than-significant)

The differences among the LRT Alternatives in terms of impacts, mitigation, and level of significance are called out in the exhibit. If only one level of significance classification is provided, then the impacts, mitigation, and level of significance are the same among the LRT Alternatives. Further, the exhibit focuses exclusively on the LRT Alternatives because the TSM Alternative would not have any impacts that would require mitigation measures.

In addition to the proposed mitigation measures, the Expo Authority will comply as appropriate with the following in the design and implementation of all LRT Alternatives:

- *Metro Design Criteria*
- California Building Code
- Standard for Fixed Guideway Transit and Passenger Rail Systems (NFPA 130)
- National Electrical Code (NFPA 70)
- American Railway Engineering and Maintenance of Way Association Standards (AREMA)
- Metro Operating Rules
- Expo Fire/Life Safety Design Criteria

- California, Public Utility Commission (CPUC) General Orders (Including but not limited to 88, 95, 143-B and 164-D)
- Metro Sustainability Guidelines
- South Coast Air Quality Management District (SCAQMD) Rule 403
- National Pollution Discharge Elimination Standards (NPDES)
- Standard Urban Stormwater Mitigation Plan (SUSMP)
- Stormwater Pollution Prevention Plan (SWPPP)

Summary of DEIR Comments and Responses

The DEIR for the Expo Phase 2 project was circulated to the public for comment over a 60-day review period that concluded on March 27, 2009. Volume II (Comments and Responses) of the FEIR contains all comments received on the DEIR during the public review period, as well as the Expo Authority's responses to these comments. A total of 3,569 pieces of written correspondence were received by the Expo Authority on the DEIR, either by e-mail, letter, or form letter. Further, 173 people commented on the DEIR at three public hearings that were held during the public review and comment period. In total, over 8,979 written and oral comments were received on the DEIR.

Overall, the comments showed support for the Expo Phase 2 project, recognizing the need for an improved transit investment in the corridor. However, comments also generally focused on various issues and potential impacts associated with the Expo Phase 2 project. The Expo Authority took the community's issues very seriously, and in response to comments on the DEIR, the Expo Authority continued extension outreach efforts with agencies, key stakeholders, and the community during the preparation of the FEIR. In addition, the Expo Authority conducted additional technical analysis of key areas of controversy, identified revisions to the project, and developed or modified mitigation measures to address community concerns. Chapter 8 (Community Participation and Public Engagement) outlines the extension agency and community outreach efforts that resulted in the additional analysis, proposed project changes and design options in the FEIR.

Following is a summary of the key community issues, as well as the Expo Authority's actions to address these issues in the FEIR:

- Traffic—A number of comments were received on the traffic methodology and analysis for the Expo Phase 2 project. In general, comments focused on the demographic data used to model of traffic volumes, size of the study area that encompassed intersections, thresholds of significance to determine impacts, and data used in the traffic analysis.

  To address these comments and in consultation with the Los Angeles Department of Transportation (LADOT), the study area for the traffic analysis was expanded to include additional intersections. Master Response 1 (Traffic Methodology) in FEIR Volume II (Comments and Responses) describes the travel forecasting modeling methodology used to evaluate traffic impacts and the approach to define the traffic analysis study area, as well as the significance thresholds that were applied to determine traffic impacts and mitigation. The FEIR documents the traffic analysis, impacts and associated mitigation in Section 3.2 (Transportation/Traffic). More information can also be found in the *Transportation/Traffic Technical Background Report.*

- Grade Crossings—Several comments centered on the DEIR's evaluation of the safety of at-grade rail crossings, as well as the Metro's Grade Crossing Policy that was utilized to identify locations for grade separations. Many of the comments criticized the grade crossing recommendations at Overland Avenue, Westwood Boulevard, Sepulveda Boulevard, Barrington Avenue, and Centinela Avenue.

  In response, additional studies and discussions with LADOT regarding the evaluation of at-grade crossings have occurred at these locations. This analysis and coordination resulted in project changes and LADOT endorsement of the FEIR recommendations regarding these crossings. Master Response 2 (At-Grade Rail Crossings and Grade Separations) in FEIR Volume II (Comments and Responses) discusses the analysis of the rail crossings that was conducted in the EIR. The FEIR addresses these at-grade rail-crossing issues in Section 3.2 (Transportation/Traffic) and in the *Transportation/Traffic Technical Background Report*, which also contains a copy of the LADOT's follow-up letter from October 15, 2009.

- Parking—A number of comments were received on parking impacts and policies. In general, some have stated that the Expo Phase 2 project does not adequately mitigate for loss of on-street parking and sufficient station parking is not provided to meet demand. Further, commenters were concerned that limited or no station parking would result in transit riders using neighborhood parking.

  To address these issues, the Expo Authority conducted additional parking surveys that inventoried existing parking utilization, programs, and restrictions in the neighborhoods. In coordination with agencies and key stakeholders, on-street parking mitigations and replacement options, as well as station parking at certain locations were revised in the FEIR. Master Response 3 (Parking Impacts and Policies) in Volume II (Comments and Responses) describes the methodology that was employed in the EIR to identify on-street parking impacts and mitigation, and Master Response 4 (Neighborhood Parking and Traffic Issues) discusses the potential station parking spillover impacts and mitigation in neighborhoods. The FEIR addresses parking impacts and associated mitigation in Section 3.2 (Transportation/Traffic), as well as in the *Transportation/Traffic Technical Background Report*.

- Noise and Vibration—Many commenters inquired about the noise and vibration impacts associated with the Expo Phase 2 project. Noise and vibration issues focused on the methodology used to determine impacts and mitigation, noise generated by curves on the LRT alignment, cumulative impacts of train whistles and crossing bells, and nearby sensitive receptors such as residential areas, schools, and recording studios.

  The EIR analysis studied many possible noise and vibration sources that could be associated with the Expo Phase 2 project, including light-rail vehicle (LRV) operation, traffic noise, audible warnings, special trackwork, wheel squeal, ancillary equipment, LRV maintenance, and construction noise and vibration. An updated analysis was conducted in the FEIR in response to the many comments received, resulting in revisions to proposed noise and vibration mitigation. A summary of this updated analysis is summarized in Master Response 6 (Noise and Vibration) in Volume II (Comments and Responses), with more information found in FEIR Section 3.12 (Noise and Vibration) and the *Noise and Vibration Technical Background Report*.

- Schools—Many comments were received on the potential impacts to the schools located near the Expo Phase 2 project. Comments included noise and vibration impacts, safety risks for students, emergency access, and air quality impacts in school areas.

The Expo Authority met with local agencies, school officials, and concerned parents to discuss these issues. In response, additional analysis was conducted in the FEIR, including traffic counts, noise and vibration measurements, and air quality tests. Master Response 7 (School Issues and Concerns) in Volume II (Comments and Responses) summarizes the school issues that were specifically examined in the EIR in terms of potential impacts related to noise and vibration; safety, security, and emergency access; aesthetics; and air quality. The FEIR also proposes feasible mitigation measures to minimize potentially significant impacts on students and/or school sites. More information on schools can be found in FEIR Section 3.12 (Noise and Vibration), Section 3.14 (Parks and Community Facilities), and Section 3.4 (Air Quality), as well as the supporting technical background reports for those environmental resources.

- Maintenance Facility—A number of comments were received on the proposed location of the Maintenance Facility east of Stewart Street and north of Exposition Boulevard at a Verizon facility in the City of Santa Monica. More specifically, many of these comments raised concerns over the proximity of the facility to a residential neighborhood to the south of the proposed site and requested that alternative locations be identified.

  The Expo Authority addressed issues associated with the maintenance facility and conducted additional analysis related to cut-through traffic on neighborhood streets, noise and vibration, health risks, aesthetic impacts, and safety. In consultation with the City of Santa Monica, Metro, and the community, other potential maintenance facility sites were considered, resulting in a design option for inclusion in the FEIR. Master Response 8 (Maintenance Facility) in Volume II (Comments and Responses) discusses the proposed site location and operational functions of the facility, as well as the additional analysis and coordination efforts. The Maintenance Facility and proposed design option are described in FEIR Chapter 2 (Project Alternatives), with the impacts and mitigation associated with the Maintenance Facility found in Chapter 3 (Environmental Analysis).

The ongoing outreach efforts and additional analysis conducted for the FEIR resulted in changes to the LRT Alternatives and proposed mitigation measures. Following is a summary of the project changes that emerged in response to agency and community comments:

- Clarification of tree and parking space removal at Westwood Boulevard
- Addition of third northbound lane on Sepulveda Boulevard
- Grade separation at Centinela Avenue
- Revisions to parking mitigation and replacement options
- Redistribution of parking at the Colorado/4th Street Station to nearby City of Santa Monica public parking facilities
- Modifications to noise and vibration mitigation
- Relocation of Traction Power Substations (TPSS) sites
- Additional crossovers and extension of pocket track
- Adjustments to LRT alignment to accommodate bikeway
- Additional vehicle acquisition to integrate with Metro operations

In response to comments received on the DEIR and after further analysis and coordination with various stakeholders, five design options also have been added in the FEIR for the LRT Alternatives. The proposed design options include the following:

- Sepulveda Grade Separation—Grade separates Sepulveda Boulevard, with a bridge structure and an aerial Expo/Sepulveda Station, subject to the provision of additional funding by others. Under this grade separated design option, the LRT alignment would ascend starting west of Military Avenue to a bridge structure over Sepulveda Boulevard and an aerial station platform between Sepulveda Boulevard and the I-405 Freeway.
- Expo/Westwood Station No Parking—Eliminates the 170 surface parking spaces that were dedicated to transit patrons at the Expo/Westwood Station. As such, parking access from Overland Avenue, Selby Avenue, and Exposition Boulevard would be eliminated. To address community concerns regarding the loss of on-street parking along Westwood Boulevard, 20 parking spaces would be dedicated to neighborhood residents east of Westwood Boulevard and north of the LRT line.
- Maintenance Facility Buffer—Provides an alternative layout for the Maintenance Facility that would occupy only a portion of the Verizon site, with an extension of the facility into the existing Santa Monica College parking lot to the west. Utilization of the adjacent parking lot on the west side of the Verizon site would create an approximate 100- to 110-foot buffer between the Maintenance Facility and the residential area on the south side of Exposition Boulevard.
- Colorado Avenue Parking Retention—Preserves on-street parking along Colorado Avenue by reducing the width of the LRT trackway and sidewalks along selected portions of Colorado Avenue. Further, the Overhead Contact System (OCS) poles would be located within the sidewalks on either side of the street (versus in the center of the tracks), requiring the contact wires to span the entire street overhead. CPUC approval would be required for the reduction in track spacing.
- Colorado/4th Parallel Platform and South Side Parking—Places Colorado/4th Street Station parallel to 4th Street and modifies the track geometry leading to the station between the terminus and approximately 11th Street. With this track reconfiguration, the on-street parking would be retained on the south side of Colorado Avenue rather than the north side, between 5th Street and Lincoln Boulevard.

The revised project definition and design options are documents in FEIR Chapter 2 (Project Alternatives), as well as delineated in Appendix E (Plans and Profiles) and Appendix F (Stations Plans and Maintenance Facility).

Recommended Preferred Alternative

When considering a Recommended Preferred Alternative, the No-Build and TSM Alternatives do not meet the purpose and need for the Expo Phase 2 project. Further, given the relative impacts associated with the various Alternatives, LRT Alternatives 1 or 2 are considered to be the environmentally superior alternatives. LRT 1 (Expo ROW–Olympic Alternative) and LRT 2 (Expo ROW–Colorado Alternative) have an advantage over LRT 3 (Venice/Sepulveda–Olympic Alternative) and LRT 4 (Venice/Sepulveda–Colorado Alternative) in terms of basic environmental compatibility, performance, and conformance with the goals of the Expo Phase 2

project. In addition, LRT 1 and LRT 2 perform significantly better from a cost-effectiveness perspective.

In comparing LRT 1 and LRT 2, LRT Alternative 2 (Expo ROW–Colorado) emerges as the best performing alternative when cost and efficiency are added to the environmental characteristics. It would provide high ridership, a competitive travel time, less community disruption, and the least relocation of residents, with the most cost effective price. Many of the public comments received were in favor of using the Expo ROW alignment, as opposed to the Venice/Sepulveda alignment. The Colorado alignment also received strong support from the Santa Monica City Council, as well as major stakeholders, residents, and the community. As such, LRT Alternative 2 (Expo ROW–Colorado) is the Recommended Preferred Alternative for the Expo Phase 2 project.

Areas of Controversy/Issues to Be Resolved

This ~~D~~FEIR addresses environmental issues that are known or were raised by agencies or interested parties during the Notice of Preparation (NOP) public review period, ~~and/or during~~ the Scoping Meetings for the Proposed Project, the DEIR public review period, and on-going outreach efforts during the preparation of the FEIR. All of the NOP/Scoping comment letters, and the Scoping Meeting Summary Report, are readily available for review at www.buildexpo.org. In addition, the comments received on the DEIR, along with the responses can be found in FEIR Volume II (Comments and Responses). The following were identified as issues to be resolved:

- Selection of a ~~Locally~~ Preferred Alternative, choosing among:
  - LRT 1: Expo ROW–Olympic Alternative
  - LRT 2: Expo ROW–Colorado Alternative (Recommended in FEIR)
  - LRT 3: Venice/Sepulveda–Olympic Alternative
  - LRT 4: Venice/Sepulveda–Colorado Alternative
- Final locations for traction power substations
- On-street replacement parking final ~~amounts and~~ locations and layouts
- Final specific noise and vibration mitigation measures for each required location
- Final traffic detour plans and haul routes for construction
- Sepulveda grade separation design option, if funding available
- Expo/Westwood Station parking final amount and layout
- Maintenance Facility final location and layout
- Colorado Avenue alignment configuration and parking retention
- Colorado/4th Street Station configuration and Colorado Avenue parking retention

In addition to these issues to be resolved, some commenters still question the analysis conducted in the EIR, as well as the outcome relative to the Expo Phase 2 project. This has included the following areas of controversy and disagreement:

- Traffic modeling (e.g., use of regional model, intersection evaluation methodology, etc.)
- Metro Grade Crossing Policy to determine need for grade separations
- Grade separations proposed by community groups
- Safety risks associated with LRT operations, especially near schools

As mentioned, these issues have received exhaustive attention from the Expo Authority, with additional analysis, coordination, and project changes. More information on these areas of disagreement is provided in the Master Responses found in FEIR Volume II (Comments and Responses). The additional analysis conducted in response to these concerns is documented in FEIR Chapter 2 (Project Alternatives), Section 3.2 (Transportation/Traffic), and Section 3.15 (Safety and Security), as well as the respective technical background reports. Further, Chapter 8 (Community Participation and Public Engagement) describes the outreach efforts that were conducted to resolve project issues.

Expo Phase 2 Project Approval

As a next step, the Expo Authority Board of Directors will be asked to consider and certify the FEIR before deciding whether to approve the Recommended Preferred Alternative for the Expo Phase 2 project—LRT Alternative 2 (Expo ROW–Colorado). Project approval may include recommendations for the design options at the Expo/Westwood Station, Maintenance Facility, etc. However, some of the issues to be resolved (e.g., noise and vibration mitigation, construction detour plans, etc.) would need to be determined in later stages of engineering.

The Expo Authority will distribute comment responses to commenting agencies at least 10 days prior to FEIR certification by the Expo Authority Board. This will be handled with the distribution of the FEIR to all commenting agencies and others that have requested the FEIR.

In addition to the FEIR, other documents are necessary to support a decision and approve a project under CEQA. This includes:

- Findings of Fact—Written findings must be developed for each significant environmental impact identified in the FEIR, along with a brief explanation of the rationale for each finding. Each finding must contain an ultimate conclusion regarding each significant impact, substantial evidence supporting the conclusion, and an explanation of how substantial evidence supports the conclusion (CEQA Guidelines Section 15092).
- Mitigation Monitoring and Reporting Program—When the Expo Authority makes findings on significant effects identified in the FEIR, they must also adopt a program for reporting or monitoring mitigation measures that were adopted or made conditions of project approval. The Mitigation Monitoring and Reporting Program must ensure compliance with mitigation measures and project revisions identified in the FEIR during project implementation.
- Statement of Overriding Considerations—After considering the FEIR and in conjunction with making findings, the Expo Authority Board must not approve the project if it will have a significant effects on the environmental after imposition of feasible mitigation or alternatives, unless the Expo Authority finds that the benefits of the project outweigh the significant unavoidable adverse impacts.

- Notice of Determination—The Expo Authority must file a Notice of Determination after deciding to approve a project for which the FEIR was prepared.

In summary, the FEIR, Draft Final Findings of Fact, Mitigation Monitoring and Reporting Program, Statement of Overriding Considerations, and Notice of Determination will be brought forth to the Expo Authority Board of Directors in order to approve a project under CEQA. If approved, the Preferred Alternative (LRT Alternative 2 [Expo ROW–Colorado]) can advance in the overall project development process, with more detailed design, engineering, and on-going community outreach efforts.

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
3.2 Transportation/Traffic			
Development of some of the LRT Alternatives would result in increased delays at local intersections or reduction of the intersection level of service to below E or F. Some of the study intersections in the vicinity of the project LRT Alternatives would experience a potentially significant increase in delay without mitigation. Five out of the ~~86~~90 study intersections would be significantly impacted under the LRT Alternatives. Impact at three of these five intersections would be considered less than significant after mitigation. Two intersections are expected to remain with significant unavoidable impacts. These are the intersection of Sepulveda and Palms Boulevards, and Girard Avenue and Venice Boulevard (LRT 3 and 4). These intersections cannot be mitigated because of right of way constraints.	LRT 3 & 4: S LRT 1 & 2: LTS	**MM TR-1** *Clarington Avenue/Venice Boulevard.* Adjust signal timing and add a southbound left-turn lane. This additional lane will require the removal of on-street parking on both sides of Clarington Avenue. Property would have to be acquired to provide replacement parking. Potential parcels at the northwest and southwest corners of the Hughes Avenue/Venice Boulevard intersection have been identified. **MM TR-2** *Hughes Avenue/Venice Boulevard.* Adjust signal timing and add a northbound left-turn lane, a southbound left-turn lane, and an eastbound right-turn lane. These additional lanes will require the removal of on-street parking on both sides of Hughes Avenue. Property would have to be acquired to provide replacement parking. Potential parcels at the northwest and southwest corners of the Hughes Avenue/Venice Boulevard intersection have been identified. **MM TR-3** *20th St/Olympic Boulevard.* Adjust signal timing and add a northbound right-turn lane. To make it a feasible mitigation, partial acquisitions will be required for corner cuts at all four corners of the intersection.	LRT 3, & 4: SU LRT 1 & 2: LTS
Based on the ridership and mode of transit access forecasts at the proposed LRT stations, the demand for parking will exceed the proposed supply at several stations, potentially resulting in some parking intrusion into	All LRT: S	**MM TR-4** In the quarter mile area surrounding each station where spillover parking is anticipated, a program shall be established to monitor the on-street parking activity in the area prior to the opening of service and shall monitor the availability of parking	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
adjacent neighborhoods. Spillover parking in the neighborhoods around the stations can be expected to occur around all of the stations except the Sepulveda/National ~~and Colorado/4th Street Stations~~.		monthly for six months following the opening of service. If a parking shortage is determined to have occurred (i.e., existing parking space utilization increases to 100 percent) due to the parking activity of the LRT patrons, Metro shall work with the appropriate local jurisdiction and affected communities to assess the need for and specific elements of a permit parking program for the impacted neighborhoods. The guidelines established by each local jurisdiction for the assessment of permit parking programs and the development of community consensus on the details of the permit program shall be followed. Metro shall reimburse the local jurisdictions for the costs associated with developing the local permit parking programs within one-quarter mile of the stations and for the costs of the signs posted in the neighborhoods. Metro will not be responsible for the costs of permits for residents desiring to park on the streets in the permit districts. For those locations where station spillover parking cannot be addressed through implementation of a permit program, alternative mitigation options include time-restricted, metered, or shared parking arrangements. Metro will work with the local jurisdictions to determine which option(s) to implement.	
Development of the proposed project would result in loss of existing on-street parking spaces along the project corridor. However, the overall utilization of parking is less than 50 percent along most of the segments. Along	All LRT: S	~~**MM TR-5** *Overland Avenue.* The parking time limit of adjacent streets should be lengthened to accommodate parking spaces being displaced on Overland Avenue.~~	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
most roadway segments, replacement parking options are available on adjacent streets~~,~~ ~~within the Exposition ROW~~ or acquired parcels as part of the project. At locations where replacement parking options are not available along adjacent streets~~ or the Exposition ROW~~, the identified mitigation measures would be implemented. Implementation of the mitigation measures would reduce the impacts of displaced on-street parking spaces along the affected segments to be ***less than significant*** for all LRT Alternatives.		**Segment 1a: Venice/Sepulveda (LRT 3 and 4)** **MM TR-6** *Venice Boulevard.* The loss of on-street parking on Venice Boulevard cannot be accommodated on adjacent streets due to the high overall parking demand in adjacent neighborhoods. Replacement parking would be required along the affected sections of Venice Boulevard. The potential replacement parking lots are listed below: **MM TR-6(a)** *South Side of Venice Boulevard, between Robertson Boulevard to Watseka Avenue.* Property would have to be acquired to provide replacement parking. A potential parcel at the southeast corner of Venice Boulevard and Main Street has been identified. **MM TR-6(b)** *North side of Venice Boulevard, between Robertson Boulevard and Watseka Avenue.* Property would have to be acquired to provide replacement parking. A potential parcel at the northeast corner of the Canfield Avenue and Venice Boulevard intersection has been identified. **MM TR-6(c)** *Venice Boulevard, between Watseka Avenue and Jasmine Avenue.* Property would have to be acquired to provide replacement parking. Potential parcels at the northwest and southwest corners of the Hughes Avenue/Venice Boulevard intersection have been identified. **MM TR-6(d)** *Venice Boulevard, between Jasmine Avenue and Glendon Avenue/Midway Avenue.* Property would have to be acquired to provide replacement parking. Potential parcels at the	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		northwest corners of Venice Boulevard/Motor Avenue and Venice Boulevard/Keystone Avenue have been identified. **MM TR-6(e)** *Venice Boulevard, between Glendon Avenue/Midway Avenue and Sepulveda Boulevard.* Property would have to be acquired to provide replacement parking. Potential parcels on the south side of Venice Boulevard have been identified. **MM TR-7** *Sepulveda Boulevard.* Replacement parking would be required along the affected portions of Sepulveda Boulevard. The potential replacement parking lots are listed below: **MM TR-7(a)** *Sepulveda Boulevard, between Venice Boulevard and Charnock Road.* Property would have to be acquired to provide replacement parking. Potential parcels at the northeast corner of Venice Boulevard and Sepulveda Boulevard, northwest corner of Regent Street and Sepulveda Boulevard, and northwest corner of Charnock Road (South) and Sepulveda Boulevard, have been identified. **MM TR-7(b)** *Sepulveda Boulevard, between Charnock Road and Sepulveda Channel.* Property would have to be acquired to provide replacement parking. Potential parcels at the northeast corner of Venice Boulevard and Sepulveda Boulevard, northwest corner of Regent Street and Sepulveda Boulevard, and northwest corner of Charnock Road (South) and Sepulveda Boulevard, have been identified. **MM TR-7(c)** *Sepulveda Boulevard, between*	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		Sepulveda Channel and Clover Avenue. Property would have to be acquired to provide replacement parking. A potential parcel at the northwest corner of Clover Avenue and Sepulveda Boulevard has been identified. **MM TR-7(d)** *Sepulveda Boulevard, between Clover Avenue and I-10.* Property would have to be acquired to provide replacement parking. Potential parcels on the west side of the street have been identified. **MM TR-7(e)** *Sepulveda Boulevard, between I-10 and Exposition Boulevard.* Property would have to be acquired to provide replacement parking. Potential parcels along the east side of the street have been identified. **Segment 3: Olympic (LRT 1 and 3)** **MM TR-8** *Olympic Boulevard (20th Street to Euclid Street).* Property would have to be acquired to provide replacement parking. Potential parcels at the southwest corners of 17th Street/Olympic Boulevard and 16th Street/Olympic Boulevard have been identified. **Segment 3a: Colorado (LRT 2 and 4)** **MM TR-9** *Colorado Avenue.* Replacement parking would be required along the impacted portions of Colorado Avenue. The potential replacement parking lots are listed below. Additional replacement options could include implementation of diagonal parking on adjacent streets (after extensive neighborhood outreach), or the implementation of design options, which would reduce the extent of parking impacts.	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		MM TR-9(a) *South side of Colorado Avenue, between 14th Street and 11th Street.* Property would have to be acquired to provide replacement parking. Potential parcels on the south side of Colorado Avenue between 18th Street and 16th Street have been identified. **MM TR-9(b)** *South side of Colorado Avenue, between 11th Street and 4th Street.* Property would have to be acquired to provide replacement parking. A ~~P~~potential parcel~~s~~ at the ~~south~~northwest corner of ~~Lincoln Boulevard~~6th Street and Colorado Avenue ~~have~~ has been identified.	
3.3 Aesthetics			
Implementation of the proposed project would result in an impact on a scenic vista, or damage or remove important aesthetic features (e.g., removal of vegetation originally intended to enhance the appearance of the constructed environment) as the result of the removal of coral trees in Segment 3 (Olympic) (LRT Alternatives 1 and 3). The Expo Authority will implement an urban design process that will endeavor to minimize community aesthetic impacts and allow for the transit system to become a source of civic pride. The urban design vision would be implemented with a focus on Landscaping and Station Design, Station Area Planning, fully integrated Vertical Elements, and Public Art.	LRT 1 & 3: S LRT 2 & 4: LTS	**MM AES-1** Prior to the issuance of grading permits associated with construction along Olympic Boulevard of Segment 3 (Olympic), the Expo Authority shall consult with the City of Santa Monica's Community Forester and/or Director of Recreation and Parks to determine whether the coral trees could be relocated within the Olympic Boulevard Corridor. If relocation within the Olympic Boulevard Corridor is not feasible, the Expo Authority shall relocate the trees within the City of Santa Monica, as determined by the Community Forester and/or Director of Recreation and Parks. If the Community Forester determines that relocation of the coral trees is not feasible, the Expo Authority shall replace the trees at a minimum of 1:1 (1 impacted: 1 replaced) within the Olympic Boulevard Corridor. The species and locations shall be	LRT 1 & 3: SU LRT 2 & 4: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		consistent with the *Metro Design Criteria* and/or the *City of Santa Monica Tree Code*, and subject to the approval of the Director of Recreation and Parks. In the event the ROW is not wide enough to allow for establishment of mature replacement trees, the Expo Authority shall plant trees within the City of Santa Monica, as determined by the Community Forester and/or Director of Recreation and Parks.~~negotiate with the City of Santa Monica on tree replacement.~~	
Implementation of the proposed project could substantially degrade the existing visual character or quality of the site and its surroundings. This is considered a potential impact for a portion of Segment 1 (Expo ROW) (LRT Alternatives 1 and 2) (i.e., Expo/Westwood Station site) and all of Segment 1a (Venice/Sepulveda) (LRT Alternatives 3 and 4) (i.e., visual dominance of the aerial structures). For the Expo/Westwood Station, the Expo Authority will implement an urban design process that will endeavor to minimize community aesthetic impacts and allow for the transit system to become a source of civic pride. The urban design vision would be implemented with a focus on Landscaping and Station Design, Station Area Planning, fully integrated Vertical Elements, and Public Art. Nevertheless, given the substantial change in the character of this area, a significant impact	All LRT: S	**MM AES-2** In the event that a property acquisition along Segment 1a (Venice/Sepulveda) results in residential uses fronting directly onto a city street that was previously shielded by the acquired property, a barrier, such as fencing or a wall, and landscaping, shall be installed where feasible to shield the existing residential uses from the reconfigured streetscape.	All LRT: SU

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
will remain, which cannot be fully mitigated. For the area along Venice and Sepulveda Blvds., the opportunity for replacement landscaping is more limited due to right of way constraints. The Expo Authority will use the same design process described above, but a significant impact will remain, which cannot be fully mitigated.			
3.7 Cultural Resources			
Implementation of the proposed project could result in impacts to previously unidentified archaeological resources that may be potentially eligible for the California Register.	All LRT: S	**MM CUL-1** Per CEQA Guidelines Section 21803.2(i), "a lead agency may make provisions for archaeological sites accidentally discovered during construction. These provisions may include an immediate evaluation of the find. If the find is determined to be a unique archaeological resource, contingency funding and a time allotment sufficient to allow recovering an archaeological sample or to employ one of the avoidance measures may be required under the provisions set forth in this section. Construction work may continue on other parts of the building site while archaeological mitigation takes place." This project involves ground-disturbing activities throughout the area defined as the archaeological APE. Prior to the commencement of construction activities, a Cultural Resources Treatment Plan, including a Discovery Plan, shall be prepared describing a site-specific archaeological monitoring program for high potential areas and treatment methods that will be implemented in the event	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		archaeological resources are discovered during construction. Because buried or otherwise obscured archaeological resources may be encountered, an archaeological monitoring program shall be implemented in accordance with the project's ~~MOA.~~ Treatment Plan. Archaeological monitoring of ground-disturbing activities shall be limited to those portions of the Expo ROW that are presently obscured by pavement and/or buildings, and on Venice Boulevard where there exists ~~a~~the possibility of encountering archaeological remnants associated with the Venice Short Line, unless it can be ascertained that previous ground disturbance has eliminated the potential to yield archaeological resources. Monitoring shall be conducted by a qualified archaeological monitor who is working under the direct supervision of a Project Manager or Principal Investigator certified by the Register of Professional Archaeologists (RPA) (qualifications derived from 36 CFR Part 61). Ground-disturbing activities include, but are not limited to, pavement/asphalt removal, boring, trenching, grading, excavating, and the demolition of building foundations. The archaeological monitor will observe ~~representative~~ ground-disturbing activities in these locations to a depth of 3 feet. A preconstruction information and safety meeting shall~~ould~~ be held to make construction personnel aware of archaeological monitoring procedures and the types of archaeological resources that might be encountered. In the event that archaeological resources are	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		encountered during archaeological monitoring, the monitor may halt work in the immediate vicinity until the discovery is assessed by the project archaeologist and appropriate treatment is determined. Additional monitoring recommendations may be made at that time. If archaeological resources are encountered by construction personnel in portions of the project area where a monitor is not present, work in the immediate vicinity shall be suspended until the project archaeologist investigates the discovery and determines appropriate treatment. In the event that human remains are discovered, work in the immediate vicinity of the discovery will be suspended and additional measures will be implemented as required by state law. ~~Prior to the commencement of construction activities, a Cultural Resources Discovery Plan shall be prepared describing treatment methods that will be implemented in the event archaeological resources are discovered during construction. The Discovery Plan may be part of the Historic Properties Treatment Plan (HPTP).~~ Upon completion of all ground-disturbing activities associated with this project, an Archaeological Resources Monitoring Report shall be prepared documenting construction activities observed, including copies of all daily archaeological monitoring logs. If discoveries are made during ground-disturbing activities, the report will also document the associated cultural materials and the methods of treatment as	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		determined appropriate by the archaeologist.	
Implementation of the proposed project would result in impacts to a proposed California Register–eligible archaeological resource, the Santa Monica Air Line.	All LRT: S	**MM CUL-2** ~~If it is determined from the SHPO consultation process that there will be adverse effects to California Register- eligible resources, including the Santa Monica Air Line segment, an MOA shall be prepared in consultation with the SHPO. MOA would define the actions of the in implementing the project. The Expo Authority shall prepare a HPTP to identify measures to reduce the project's adverse effects to significant cultural resources, including the Santa Monica Air Line segment. The HPTP will be submitted to the SHPO as part of the MOA consultation and may be appended to the MOA for reference~~Per CEQA Guidelines Section 21083.2(c), mitigation measures shall be required if unique archaeological resources are not preserved in place or not left in an undisturbed state. When this is not feasible, Section 15126.4(b)(3)(C) warrants a data recovery plan. "which makes provisions for adequately recovering scientifically consequential information from and about the historical resource," and "shall be prepared and adopted prior to any excavation being undertaken." The Expo Authority shall prepare such a plan to identify measures to reduce the project's impacts to the Santa Monica Air Line a California Register–eligible resource.	All LRT: LTS
Implementation of the proposed project could result in a physical take of a portion of an eligible historic architectural resource, the Citizens State Bank at 10341 Venice	LRT 3 & 4: S LRT 1 & 2: NI	**MM CUL-3** ~~If it is determined from the SHPO consultation process that there will be adverse effects to California Register- eligible resources, including the Citizens State Bank at 10341 Venice Boulevard, an~~	LRT 3 & 4: LTS LRT 1 & 2: NI

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
Boulevard, and this would constitute a direct impact. A portion of the parcel could be acquired for the project, requiring alterations to the building itself. This impact could be avoided by selection of LRT Alternatives 1 or 2, or installation of a custom curb return and ramp.		~~MOA shall be prepared in consultation with the SHPO. The MOA would define the actions of the Expo Authority in implementing the project. The Expo Authority shall prepare a HPTP to identify measures to reduce the project's adverse effects to significant cultural resources. The HPTP will be submitted to the SHPO as part of the MOA consultation and may be appended to the MOA for reference.~~Per CEQA Guidelines Section 15126.4(b)(1), where actions on a historical resource will be "conducted in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance." Substantial adverse change to the California Register–eligible resource the Citizens State Bank at 10341 Venice Boulevard including physical destruction, damage, or alteration will be avoided through a variance request to the City of Los Angeles. If that the variance is not granted and a substantial adverse change is unavoidable, mitigation shall include archival documentation to the level of Historic American Buildings Survey (HABS) standards through archival photography of the resource, to be submitted to local archives, although not requiring submittal to the Library of Congress. Although CEQA Guidelines 15126.4(b)(2) states: "In some circumstances, documentation of an historical resource… as	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur," the additional measures of material salvage and the preparation of interpretative historical information about the historic architectural resource for public dissemination will collectively be considered adequate mitigation.	
Implementation of the proposed project may have an indirect impact on the setting of the historic Ivy Substation associated with the installation of aerial structures over Venice Boulevard in ~~Segment 1 (Expo ROW) and~~ Segment 1a (Venice/Sepulveda).	~~All~~ LRT 3 &4: S LRT 1 & 2: NI	**MM CUL-4** ~~If it is determined from the SHPO consultation process that there~~Per CEQA Guidelines Section 15126.4(b)(1), where actions on a historical resource will be ~~adverse effects to~~"conducted in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance." Visual intrusion due to construction of an aerial structure in Segment 1a on the National and California ~~Register- eligible resources, including the~~ Registered Ivy Substation located at 9015 Venice Boulevard, ~~a MOA~~ shall be ~~prepared~~avoided by the Expo Authority ~~in consultation with the SHPO. The MOA would define the actions of the Expo Authority in implementing the project. The Expo Authority shall prepare a HPTP to identify measures~~through sensitive design per the Secretary of Interior's Standards to reduce the ~~project's adverse effects~~project impacts to a level of less than significant. If the Secretary of	~~All~~ LRT 3 & 4: LTS LRT 1 & 2: NI

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		Interior's Standards are not met and an adverse visual intrusion is unavoidable, then mitigation shall include archival documentation to the level of Historic American Buildings Survey (HABS) standards through archival photography of the resource's setting prior to ~~significant cultural resources. The HPTP will~~ project construction, to be submitted to ~~the SHPO as part of the MOA consultation and may be appended to the MOA for reference.~~local archives, although not requiring submittal to the Library of Congress.	
3.10 Hydrology/Water Quality			
Implementation of LRT Alternative 1 and 2 could substantially alter the existing drainage pattern of the site or area in a manner that would cause substantial localized flooding, or increase runoff that would contribute to exceedance of the capacity of stormwater drainage systems.	LRT 1 & 2: S LRT 3 & 4: LTS	**MM WQ-1** The Expo Authority shall grade the Expo/Westwood Station and associated station parking facility and provide a stormwater drainage system with detention facilities and/or pervious pavement adequate to convey runoff from the Expo/Westwood Station during a 100-year storm event to prevent on-site flooding. The Expo Authority shall also implement stormwater detention facilities and/or pervious pavement for parking lots to reduce the off-site peak runoff from the Expo/Westwood Station and associated parking lots to existing condition levels. All detention facilities shall be designed to drain within 48 hours to minimize vector control and human safety concerns. The Expo Authority shall include these facilities and their design specifications in the engineering plans. Use of pervious pavement shall be consistent with the SUSMP and Municipal NPDES Permit limitations on infiltration BMPs. Construction and operation of these	LRT 1 & 2: LTS LRT 3 & 4: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		BMPs shall be incorporated as part of the proposed project and subject to all applicable existing regulatory requirements.	
Implementation of LRT Alternatives 1 and 2 may place structures within a 100-year flood hazard area that could impede or redirect flood flows, or otherwise expose people and/or property to water-related hazards, such as flooding.	LRT 1 & 2: S LRT 3 & 4: NI	~~**MM WQ-2(a)** The Expo Authority shall conduct a detailed topographic survey of the Segment 1 (Expo ROW) within the Federal Emergency Management Agency (FEMA)-defined 100-year flood hazard area, including Westwood Boulevard, and extending at least 50 feet beyond the proposed project ROW. The Expo Authority shall consult with the Los Angeles County Department of Public Works and/or FEMA to determine the current flood elevations within this area. The Expo Authority shall submit an application to FEMA for a LOMA, removing the proposed project alignment from the FEMA 100-year flood hazard area.~~ ~~OR:~~ **MM WQ-2(b)** The Expo Authority shall design drainage and flood protection improvements to remove the portion of the LRT Alternative from the Federal Emergency Management Agency (FEMA)-defined 100-year flood hazard area. This shall include sufficient drainage structures to pass existing flood flow from areas up-gradient from the portion of the LRT Alternative to areas down-gradient, such that there is no net change in off-site flooding and flood flows or on storm drain system capacity. This may include rerouting of flood waters from Westwood Boulevard at locations further north from the portion of the LRT Alternative to bypass the alignment corridor and Westwood Boulevard intersection.	LRT 1 & 2: LTS LRT 3 & 4: NI

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		Prior to the beginning of construction activities, the Expo Authority shall submit to FEMA an application for and obtain a Conditional Letter of Map Revision (CLOMR) and shall implement all conditions imposed by FEMA. The CLOMR would ensure that the project design is sufficient for removing the portion of the LRT Alternative from the 100-year flood hazard area. Prior to the beginning of operation, the Expo Authority shall obtain a Letter of Map Revision (LOMR), and potentially a No Rise Certificate, indicating that construction and implementation of the designed improvements have been conducted in accordance with the CLOMR and FEMA requirements and that the proposed project alignment corridor has been effectively removed from the 100-year flood hazard area. Implementation of Segment 1 (Expo ROW) would use fill material, or place other structures (such as station platforms) in the floodplain, that could impede flood flows or reduce flood storage capacity. Therefore, MM WQ-2(b) shall not include use of fill material within an existing floodplain unless sufficient additional detention and flood storage is also provided. Any detention used as part of the flood improvements shall be designed to drain within 48 hours to minimize vector control and human safety issues. The Expo Authority shall include any facilities used for flood improvements and their design specifications in the engineering drawings. As such, construction and operation of these facilities shall be incorporated as	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		part of the proposed project and subject to existing regulatory requirements.	
3.12 Noise and Vibration			
The proposed project could expose the public to, or generate, noise levels in excess of standards established by the Federal Transit Administration (FTA) noise impact criteria during the operational phase. *Note that the inclusion of a minimum 8- to 12-foot security wall and combination fence at the perimeter of the Maintenance Facility per *Metro Design Criteria* reduces noise impacts below FTA thresholds. As such, mitigation measure MM NOI-5 is no longer required.	All LRT: S	**MM NOI-1** Solid, impervious objects that block the direct path between the sound source and the receiver shall be installed at the proposed locations indicated in Table 3.12-10 to reduce the sound level at the receiver, with sound walls being the preferred option. Sound walls are a common noise mitigation measure and have been widely used on highways and on rail transit lines. Alternatively, the Expo Authority may construct a landscaped berm parallel to the rail line or use low berms with a low wall along the top. As long as the wall, berm, or berm/wall combination reaches the same elevation, the acoustical performance will be equivalent. Except where noise impacts are due to special trackwork at crossovers and turnouts, the predicted noise impact can be eliminated with sound walls or berms that extend to heights of: • 6 to 8 ft above the top of rail for ballast and tie track sections • 3.5 to 4 ft above the top of rail on aerial structures The wall heights can be reduced by 6 to 12 inches if an acoustically absorbent surface treatment is used on the track side of the wall. A 7 to 9 dB reduction in operational noise can be expected in all locations where sound walls block direct lines of sight between the sound source and the	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		receiver. This excludes receivers located in high-rise apartment buildings. Additionally, in areas where crossovers would be located near sensitive receptors, low-impact frogs may be either an alternative to sound walls or supplemental measure to sound walls. There are several different types of low-impact frogs that could be used. If during Final Engineering or Operations it is determined that measures described above are not practicable or do not provide sufficient noise mitigation, the Expo Authority or Metro, as appropriate, shall provide for sound insulation of residences and other noise-sensitive facilities as a another alternative that could be used. Sound insulation involves upgrading or replacing existing windows and doors, and weather stripping windows and doors. Installing a mechanical ventilation system may be needed so that windows do not need to be opened for ventilation. The mitigation measures will ensure that noise levels will be below the applicable FTA impact threshold for moderate noise impact. **MM NOI-2** The volume of crossing bells shall be reduced to within 5 dBA of the bottom of the CPUC-approved range. This step is sufficient to reduce the bell noise to below the applicable FTA impact thresholds. **MM NOI-3** If wheel squeal occurs that is sufficient to cause community noise levels that exceed the	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		applicable FTA moderate impact thresholds, measures to reduce wheel squeal, such as rail or wheel lubrication, will be considered by Metro. If, by the end of the first year of service, noise from wheel squeal cannot be reduced to below the FTA moderate noise impact thresholds, the noise mitigation measures discussed in measure MM NOI-1 would be applied to further reduce levels of wheel squeal so that the levels are below the FTA moderate impact thresholds. No additional mitigation is required. **MM NOI-4** Noise levels would be sufficient to warrant mitigation at 4~~7~~ of the 15 proposed TPSS sites; see Table 3.12-15. All noise impacts can be eliminated by ~~(1)~~ specifying a noise limit of 44 dBA at 50 ft from any part of the TPSS units that would be used at sites 1, 2, 3, ~~8, 10, 12,~~ and 13~~4~~. ~~and (2) locating the TPSS units at sites 1 and 2 at a minimum of 20 ft from the closest residential land use.~~ ~~**MM NOI-5** An 8- to 10-foot-high sound wall shall be installed along the southern property line of the Maintenance Facility. The wall height can be reduced to 6 to 8 feet high if the car wash and blowdown facilities are designed to generate lower noise levels than standard facilities. This can be achieved through the use of silencers on compressors and fans, minimizing openings on the south side of the blowdown and car wash buildings, and constructing the south walls of the facilities of masonry, brick, or wood studs with insulation in the cavities instead of sheet metal.~~*	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
The proposed project could expose the public to, or generate, groundborne vibration, groundborne noise levels, or vibration levels in buildings exceeding the FTA vibration impact criteria during the operational phase.	All LRT: S	**MM NOI-6** Further site-specific testing shall be performed during the ~~Preliminary Engineering~~ Final Design where potential for vibration impact has been identified. Where vibration impact is still predicted, the vibration energy transmitted into the ground shall be decreased by (1) use of low impact frogs to reduce the banging at special trackwork, and/or (2) installation of a resilient layer between the tracks and the ground. There are a number of different approaches to installing resilient elements in track to reduce vibration. Vibration-reducing design specifications for the track sections shall be determined in consultation with a qualified vibration scientist or engineer during the design phase. The specific locations where vibration mitigations are expected to be required are listed in Table 3.12-~~20~~24 (Anticipated Vibration Mitigation Locations). Final type, location, and extent of such mitigations will be determined in Final Design. The mitigation measures will be designed to ensure that vibration levels will be below the FTA impact threshold that is applicable to Detailed Vibration Assessments. The threshold for FTA Category 2 (residential) land uses is a band-maximum vibration level of 72 VdB at frequencies greater than 8 Hz.	All LRT: LTS
The proposed project could cause a substantial permanent increase in ambient noise levels in the project vicinity.	All LRT: S	**MM NOI-1**, **MM NOI-2**, **MM NOI-3**, and **MM NOI-4**, ~~and **MM NOI-5**~~, listed above.	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
3.13 Paleontological Resources			
Implementation of the proposed project could disturb or destroy unique paleontological resources or sites.	All LRT: S	**MM PAL-1** Per CEQA Guidelines, ~~T~~the Expo Authority shall retain a qualified paleontologist to prepare and implement a Paleontological Resources Management Plan (PRMP) to the standards detailed in the *Paleontological Resources Technical Background Report*. Monitoring is required at the surface and below of Segment 1 (Expo ROW) from station 540+00 to 600+00, Segment 1a (Venice/Sepulveda) from station 615+00 to 635+00, Segment 3 (Olympic) from station 790+00 to 855+00, Segment 3a (Colorado) from station 830+00 to 855+00 where there are known surface exposures of Quaternary old alluvial fan deposits of high paleontological sensitivity. In other project areas, the paleontologist will examine subsurface work to adjust monitoring to cover Quaternary old alluvial fan sediments only. Upon completion of all monitoring and mitigation activities, the paleontologist will submit a final report to the Expo Authority summarizing the work and confirming that all recommendations were implemented.	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
3.14 Parks and Community Facilities			
Implementation of the proposed project may disrupt community facilities and services through a reduction in access to facilities or cause a substantial alteration of service areas.	All LRT: S	**MM PAR-1** For those community facilities that utilize on-~~-~~street parking, the Expo Authority shall provide reasonably proximate parking to replace permanently lost parking spaces based on the number of removed spaces that are utilized. Prior to construction of the proposed project, the Expo Authority ~~shall~~ has completed a parking demand study for affected community facilities to determine the appropriate amount of parking replacement that would be required. The location of the replacement parking would be in accordance with the requirements listed in **MM TR-~~5~~ 6** through **MM TR-9(b)** in Section 3.2 (Transportation/Traffic) ~~listed above~~.	All LRT: LTS
3.15 Safety and Security			
Implementation of the proposed project could substantially limit the delivery of community safety services, such as police, fire, or emergency services, to locations along the proposed alignments.	All LRT: S	**MM SAF-1** ~~During~~ Prior to commencement of operation of the LRT Alternatives, Metro shall coordinate with the cities of Culver City, Santa Monica, and Los Angeles and inform the appropriate community safety provider of Metro's emergency response procedures as incorporated into Metro's standard operating procedures. Metro shall provide a detailed description of their emergency response procedures so as to provide other public safety providers with the knowledge of Metro's response plan in order to provide a fast, controlled and coordinated response to the various types of emergencies that may occur on the Metro rail system. Additionally, Metro shall encourage the cities of Culver City, Los Angeles, and Santa Monica to update	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		their emergency response procedures to address implementation of an LRT Alternative.	
4.0 Construction			
Transportation/Traffic			
The construction of the proposed project could result in the closure of one or more lanes of a major/arterial traffic-carrying street for an extended period of time during construction (one month or more). Major streets in the Expo Phase 2 corridor are defined in Section 3.2 (Transportation/Traffic).	LRT 2, 3 & 4: S LRT 1: NI	**MM CON-1** To ensure that continued vehicular access to community facilities is maintained, the Expo Authority shall provide at least one lane of traffic in each direction on access cross streets that are not going to be dead-ended during construction. If one lane of traffic cannot be maintained, the Expo Authority shall provide a detour route for motorists. **MM CON-2** Before the start of construction, Worksite Traffic Control Plans (WTCP) and Traffic Circulation Plans, including identification of detour requirements, will be formulated in cooperation with the City of Los Angeles, City of Santa Monica, Culver City and other affected jurisdictions (County, State) in accordance with the Work Area Traffic Control Handbook (WATCH) manual and Manual on Uniform Traffic Control Devices (MUTCD) as required by the relevant municipality. The WTCPs will be based on lane requirements and other special requirements defined by the Los Angeles City Department of Transportation (LADOT), the City of Santa Monica, and Culver City for construction within their city and from other appropriate agencies for construction in those jurisdictions. Also, the WTCP's shall be designed to maintain designated Safe Routes to School wherever possible during times of the year when nearby schools are in session.	LRT 2, 3 & 4: LTS LRT 1: NI

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		MM CON-3 No designated Major or Secondary Highway will be closed to vehicular or pedestrian traffic except at night or on weekends, unless approval is granted by the jurisdiction in which it is located.	
Construction activities for the proposed project could result in the diversion of traffic through residential areas.	All LRT: S	**MM CON-2** Listed above. **MM CON-4** The Expo Authority's contractor will develop preferred haul route plans for the removal of excavated material. Construction will be scheduled and haul routes will be planned to minimize conflicts during school arrival and dismissal times. **MM CON-5** The Expo Authority will coordinate with other major construction projects within a 1-mile radius of the construction site to avoid, to the maximum extent practicable, overlapping haul routes with other public or private construction projects.	All LRT: LTS
Construction activities for the LRT Alternatives could result in the long-term loss (three months or more) of parking or pedestrian access that is essential for continued operation of business during construction.	All LRT: S	**MM CON-6** Unless otherwise specified in the W~~w~~orksite T~~t~~raffic C~~c~~ontrol P~~p~~lan, the Expo Authority shall maintain access to the businesses that rely on on-street parking and pedestrian access during construction. If it is necessary to temporarily restrict access to a business, the Expo Authority shall provide the facility advance notice of restrictions. Unless otherwise specified in the W~~w~~orksite T~~t~~raffic C~~c~~ontrol P~~p~~lan, the Expo Authority shall schedule access restrictions to off-peak hours or during times when the business is closed and shall not fully restrict access for the total hours of operation of a business on any given day of operation. **MM CON-7** Relative to maintaining access to	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		businesses, construction activities shall be sequenced to minimize the temporary removal of multiple blocks of on-street parking at one time unless otherwise specified by the Wworksite Ttraffic Ccontrol Pplan. **MM CON-8** Contractors shall use temporary special signage to inform the public of closure information in advance of temporary closures. Signage shall also provide special access directions, if warranted.	
Aesthetics			
Implementation of the proposed project could substantially degrade the existing visual character or quality of the site and its surroundings for a portion of Segment 1 (Expo ROW) (LRT Alternatives 1 and 2) (i.e., the Sara Berman Greenway).	LRT 1 & 2: S LRT 3 & 4: NI	**MM CON-9** To the extent possible, the Expo Authority shall protect the Sara Berman Greenway during construction of Segment 1 (Expo ROW) (LRT Alternatives 1 and 2), including the placement of a construction barrier around the perimeter of the Greenway, and notifying contractors of restrictions. Substantial damage to the Greenway caused by construction activities shall be repaired as appropriate during or after the course of construction, which could include the provision of replacement landscaping.	LRT 1 & 2: LTS LRT 3 & 4: NI
Air Quality			
Peak construction activities associated with the proposed project could generate emissions that exceed SCAQMD thresholds. Compliance with SCAQMD Rule 403 would reduce this impact; however, SCAQMD thresholds would still be exceeded.	All LRT: S	~~None~~**MM CON-2**, **MM CON-3**, and **MM CON-4** listed above.	All LRT: SU
The LRT Alternatives would result in a cumulatively considerable net increase of the criteria pollutant (NO_X) during construction	All LRT: S	None	All LRT: SU

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
activities for which the project region is classified non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). Compliance with SCAQMD Rule 403 would reduce emissions, but not NO_X emissions to a level below the threshold of impact established by the SCAQMD.			
~~Construction activities associated with the LRT Alternatives would generate emissions that could result in an exceedance of localized significance thresholds (LST) established by the SCAQMD, and, therefore, could expose sensitive receptors to substantial pollutant concentrations. Implementation of Rule 403 BMPs would reduce localized pollutant levels for all regulated pollutants except PM_{10}. PM_{10} levels would still exceed the established thresholds.~~ ~~The contractor(s) would be required to employ best practices to minimize diesel emissions, but no feasible measures exist today that would achieve the standards on large construction projects.~~	~~All LRT: S~~	~~None~~	~~All LRT: SU~~
Biological Resources			
Implementation of the proposed project could result in an impact on MBTA protected species and/or avian species protected under Section 3503 of the Fish and Game Code.	All LRT: S	**MM CON-10** During construction of the proposed project, the removal of trees, shrubs, or weedy vegetation should be avoided during the February 1 through August 31 bird nesting period. If the removal	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		of trees, shrubs, or weedy vegetation were to occur during the nesting period, a survey for nesting birds shall be conducted by a qualified wildlife biologist no earlier than 14 days prior to the removal of trees, shrubs, grassland vegetation, buildings, or other construction activities. Survey results shall be valid for 21 days following the survey. The area surveyed should include all construction areas with the potential to support nesting birds protected by the MBTA and/or Section 3503 of the *Fish and Game Code*, as well as areas within 75 feet of the boundaries, as practicable or as determined by the biologist in the field, of the areas to be cleared or as otherwise determined by the biologist. If no vegetation or tree removal is proposed during the nesting period, no surveys would be required. In the event that an active nest is discovered in the areas to be cleared, or in other habitats within 75 feet of construction boundaries, clearing and construction should be postponed within this area for at least two weeks or until a wildlife biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts. Other buffers or construction requirements may be determined by the wildlife biologist in the field as practicable.	
Hazards and Hazardous Materials			
Implementation of the proposed project could create the potential for upset or accident conditions involving the release of hazardous	All LRT:S	**MM CON-11** Prior to any ground disturbance or demolition, the Expo Authority shall: • Prepare an ~~preliminary e~~Environmental S~~s~~ite	All LRT:LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
materials.		A~~a~~ssessment (ESA Phase II) for specific sites identified in the ESA Phase I prepared for the proposed project. The Phase IIs shall include soil sampling for contamination on sites where releases of hazardous materials are known and groundwater sampling where soil contamination is detected. Based on the age of structures identified along the alignment, ~~the preferred LRT Alternative, which shall be submitted for review to the appropriate regulatory agency(s). The ESA shall evaluate, at a minimum, the potential for soil and groundwater contamination, as well as~~ the potential for exposure to mold, lead, and asbestos should also be studied. • If contaminated areas are identified within the construction area, the Expo Authority shall coordinate with the appropriate regulatory agencies to determine the need for further investigation and/or remediation of the contaminated site. **MM CON-12** In the event that previously unknown or unidentified soil and/or groundwater contamination that could present a threat to human health or the environment during construction of the proposed project is encountered, construction activities in the immediate vicinity of the contamination shall cease immediately. If contamination is encountered, measures shall be prepared and implemented that (1) identifies the contaminants of concern and (2) describes measures to be taken to protect	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		workers, and the public from exposure to potential site hazards. Such measures would include a range of options, including, but not limited to, physical site controls during construction, remediation, long-term monitoring, post-development maintenance or access limitations, or some combination thereof. Depending on the nature of contamination, if any, appropriate agencies shall be notified (e.g., City Fire Department). A Site Health and Safety Plan that meets Cal-OSHA requirements shall be prepared and in place prior to commencement of work in any contaminated area.	
Land Use/Planning			
Implementation of the proposed project would result in the physical division of a community through temporary access restrictions.	All LRT: S	**MM CON-6** Listed above.	All LRT: LTS
Noise and Vibration			
The proposed project could expose the public to, or generate, noise levels in excess FTA noise impact criteria and *Metro Design Criteria* during the construction phase.	All LRT: S	**MM CON-13** The Expo Authority's contractor shall develop a Noise Control Plan demonstrating how he will achieve the more restrictive of the *Metro Design Criteria* noise limits and the noise limits of the city noise control ordinance. The plan shall include measurements of existing noise, a list of the major pieces of construction equipment that will be used, and predictions of the noise levels at the closest noise-sensitive receptors (residences, hotels, schools, churches, temples, and similar facilities). The Noise Control Plan will need to be approved by the Expo Authority prior to initiating construction. Where the construction cannot be p~~r~~erformed in	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		accordance with the requirements of the Metro or applicable city noise limits, the contractor shall investigate alternative construction measures that would result in lower sound levels. The contractor shall conduct noise monitoring to demonstrate compliance with contract noise limits. **MM CON-14** The contractor shall utilize a combination of the following options of best management practices for noise abatement to comply with the *Metro Design Criteria*: • The contractor shall utilize specialty equipment equipped with enclosed engines and/or high-performance mufflers as commercially available. • The contractor shall locate equipment and staging areas as far from noise-sensitive receptors as possible. • The contractor shall limit unnecessary idling of equipment. • The contractor shall install temporary noise barriers as determined by the Noise Control Plan. • The contractor shall reroute construction-related truck traffic away from residential streets to the extent permitted by the relevant municipality. • The contractor shall avoid impact pile driving near noise-sensitive receptors (residences, hotels, schools, churches, temples, and similar facilities) where possible. Where	

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
		geological conditions permit their use, drilled piles or a vibratory pile driver is generally quieter.	
Parks and Community Facilities			
Implementation of the proposed project may disrupt community facilities and services through a reduction in access to facilities or cause a substantial alteration of service areas.	All LRT: S	**MM CON-1** Listed above. **MM CON-15** Unless otherwise specified in the Wworksite Ttraffic Ccontrol Pplan, the Expo Authority shall maintain vehicular and pedestrian access to the identified community facilities (refer to Table 4.6 4 [Access, Parking, and Service Area Impacts on Community Facilities]) during construction. If it is necessary to temporarily restrict access to a community facility, the Expo Authority shall provide the facility notice of any restriction. Unless otherwise specified in the Wworksite Ttraffic Ccontrol Pplan, the Expo Authority shall schedule access restrictions to off-peak hours or during times when the community facility is closed and shall not restrict access for the total hours of operation of a community facility on any given day of operation. **MM CON-16** Near the identified community facilities construction activities shall be sequenced to minimize the temporary removal of multiple blocks of on-street parking at one time unless otherwise specified by the Wworksite Ttraffic Ccontrol Pplan	All LRT: LTS
Safety and Security			
Implementation of the proposed project could substantially limit the delivery of community safety services, such as police, fire, or	All LRT: S	**MM CON-17** The Expo Authority shall maintain access to all police and fire stations at all times during construction.	All LRT: LTS

Table 8 Summary of Significant Environmental~~All~~ Impacts and Proposed Mitigation, and Significant Unavoidable Impacts for LRT Alternatives

Impact	Significance Before Mitigation by Alternative	Mitigation Measures	Significance After Mitigation by Alternative
emergency services, to locations along the proposed alignments.		**MM CON-18** During construction of the LRT Alternatives, the Expo Authority shall coordinate with the cities of Culver City, Santa Monica, and Los Angeles and inform the appropriate community safety provider of the construction emergency response procedures as incorporated into the Contractor's Systems Safety Program Plan. The Plan will include a detailed description of all emergency response procedures that shall be implemented by the contractor, so as to provide other public safety providers with the knowledge of the contractor's response plan in order to provide a fast, controlled, and coordinated response to the various types of emergencies. Additionally, the Expo Authority shall encourage the cities of Culver City, Santa Monica, and Los Angeles to update their emergency response procedures to address construction of the LRT Alternatives.	
Socioeconomics			
Construction of the proposed project could disrupt a business for a period of three months or more.	All LRT: S	**MM CON-1**, **MM CON-2**, **MM CON-3**, **MM CON-13**, and **MM CON-14** listed above.	All LRT: LTS

KEY:
NI = No Impact
B = Beneficial Impact
S = Significant or Potentially Significant Impact (before mitigation)
LTS = Less Than Significant (below threshold either before or after mitigation)
SU = Significant Unavoidable Impact (mitigation would not reduce to less than significant)

Figure 1
Project Map—By Segment

Source: EXPO, 2008.

NORTH
NOT TO SCALE