Gold Line Phase II

Pasadena to Montclair - Foothill Extension

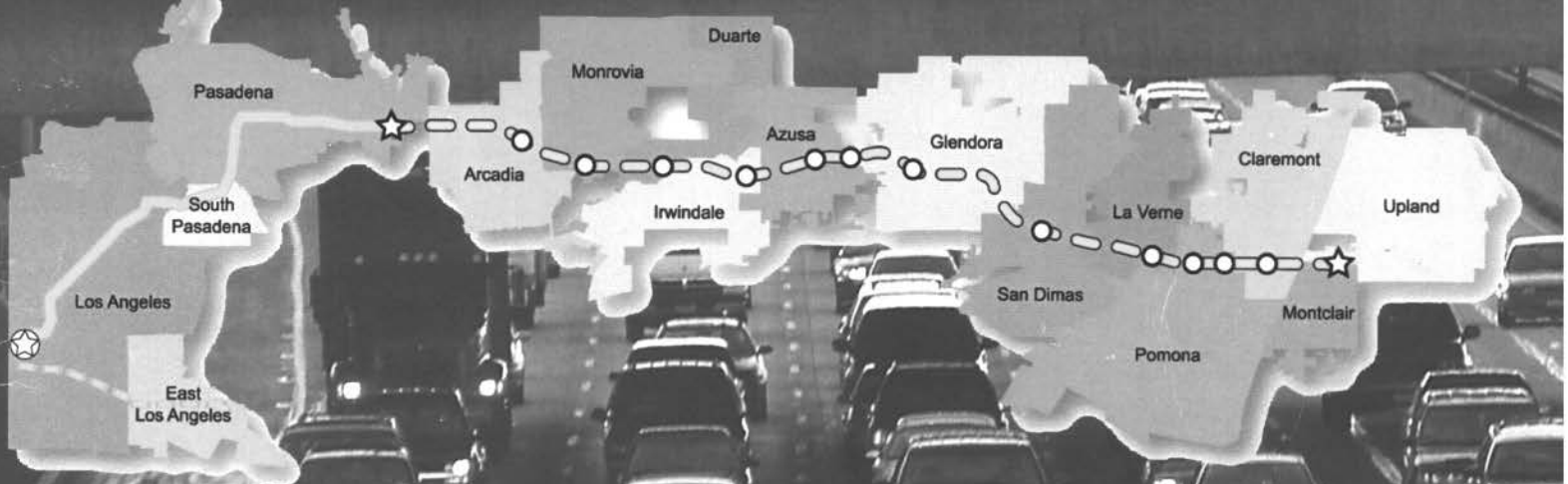
Draft Environmental Impact Statement

Draft Environmental Impact Report

(SCH No. 200361157)

April 2004

Volume 1: Executive Summary



U.S. Department of Transportation
Federal Transit Administration

GOLD LINE PHASE II
PASADENA TO MONTCLAIR
DRAFT ENVIRONMENTAL IMPACT STATEMENT/
DRAFT ENVIRONMENTAL IMPACT REPORT (SCH No. 200361157)

Los Angeles and San Bernardino Counties, California

Prepared by:
US DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION
and
LOS ANGELES TO PASADENA METRO BLUE LINE CONSTRUCTION AUTHORITY

In cooperation with:
Federal Railroad Administration
San Bernardino Associated Governments
San Gabriel Valley Council of Governments
Los Angeles County Metropolitan Transportation Authority

Submitted Pursuant to:
National Environmental Policy Act of 1969, §102,42 USC §4332; Federal Transit Laws, Title 49 USC Chapter 53, §5301(e), §5323(b) and §5324(b); Title 49 USC §303, formerly Department of Transportation Act, §4(f); National Historic Preservation Act of 1996, §106, 16 USC 470(f); Executive Order 11990 (Protection of Wetlands); Executive Order 11988 (Flood Plain Management); Executive Order 12898 (Environmental Justice); Executive Order 13045 (Environmental Health and Safety Risks to Children); Executive Order 13112 (Invasive Species); and Executive Order 13166 (Improving Access to Services for Persons with Limited English Proficiency). California Environmental Quality Act, Public Resources Code 2100 *et seq.*; and the State of California CEQA Guidelines as amended December 1, 2003 (California Code of Regulations, Title 14, Chapter 3 §15000 *et seq.*)

Leslie Rogers
Regional Administrator
Federal Transit Administration

4/23/04
Date

Habib F. Balian
Chief Executive Officer
Los Angeles To Pasadena Metro Blue Line
Construction Authority

4/19/04
Date

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This Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) describes and summarizes the transportation impacts, environmental impacts, and costs for the proposed Gold Line Phase II Light Rail Transit (LRT) Extension Project being considered in Los Angeles and San Bernardino Counties, California. The proposed project is an extension of light rail transit from the city of Pasadena on the west to the cities of Montclair and Upland on the east. The proposed project would be construction of an 8.7-mile rail extension (Pasadena to Irwindale with 4 stations, 2,350 parking spaces [by 2025], and a maintenance and operation facility) or a 24-mile rail extension (Pasadena to Montclair with 12 stations, 7,150 parking spaces [by 2025], and a maintenance and operation facility). The lead agencies for the DEIS/DEIR are the Federal Transit Administration (FTA) and the Los Angeles to Pasadena Metro Blue Line Construction Authority (Construction Authority). Depending on the alternative selected, the Construction Authority may seek a federal transit New Starts grant to fund the selected Locally Preferred Alternative (LPA).

This report is a combined DEIS and DEIR, satisfying both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), respectively. The DEIS/DEIR examines four alternatives: No Build, Transportation System Management (TSM), Light Rail Transit (LRT) on Triple Tracks, and LRT on Double Tracks Alternatives. Each of the LRT alternatives is assessed for a Full Build Alternative (24 miles) and a Build Alternative to Maintenance Facility (8.7 miles). The proposed maintenance facility would encompass about 33 acres and would accommodate about 170 vehicles (19 to 29 for the proposed Full Build project and the remainder for the balance of the overall (44 miles) Gold Line system. The facility would support an ultimate system with operation of 3-car trains at 5-minute headways. The LRT alternatives were developed based on extensive public involvement and initial environmental and technical analysis conducted as part of the Gold Line Phase II Alternatives Analysis conducted by the Construction Authority (January 2003). The DEIS/DEIR examines the socioeconomic and physical environmental impacts, capital and operating costs, and the potential effects on transportation and traffic for the alternatives being considered. Where adverse environmental effects under NEPA and significant environmental impacts under CEQA are identified, the document identifies draft mitigation measures that would eliminate or reduce impacts. The information contained in this document will be used by the Construction Authority to select an LPA for implementation of the Project and by FTA to make informed programming decisions and to ensure that potential environmental impacts are fully considered.

This DEIS/DEIR is being circulated for agency and public review to disclose potential environmental impacts associated with these alternatives. The comments received during the public review period for this document will be individually addressed in the Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR) for the Project. Commenters are asked to focus their comments on the alternatives addressed in this environmental document. The public review period for this DEIS/DEIR is from May 7 to June 21, 2004. Public hearings will be held in each city in the study corridor (see page ii). During the public review process, the DEIS/DEIR and supporting technical reports are available for review at the **Construction Authority offices, 625 Fair Oaks Avenue, Suite 200, South Pasadena, CA 91030** and the libraries and other locations listed on page iii. Copies of this DEIS/DEIR are available for purchase in hard copy form and on a CD-ROM. Contact the Construction Authority at 626-799-0080 or its website (www.metrogoldline.org) for more information. Comments may be submitted in writing to the address above, at any public hearing, by fax to 626-799-8599 or by e-mail to eircomments@metrogoldline.org before midnight on June 21, 2004.

The Construction Authority Board of Directors will consider all comments prior to adoption of the LPA and certification of an FEIR. FTA will consider all comments in the preparation of the FEIS and adoption of a Record of Decision.

For additional information concerning this document, please contact:

Mr. A. Joseph Ossi; Office of Human and Natural Environment; FTA, 400 7th Street SW, Room 9413, TPL-30, Washington D.C. 20590; Phone: (202) 366-1613

Mr. Ray Sukys; Office of Planning and Program Development; FTA, Region 9, 201 Mission Street, Suite 2210, San Francisco, CA, 94105; Phone: (415) 744-3115

Mr. Erv Poka, Metropolitan Office, FTA/FHWA, Region 9; 888 S. Figueroa Street, Suite 1850, Los Angeles, CA, 90017; Phone: (213) 202-3950.

Mr. Habib F. Balian, Chief Executive Office, Los Angeles to Pasadena Metro Blue Line Construction Authority, 625 Fair Oaks Avenue, Suite 200, South Pasadena, CA 91030; Phone: (626) 799-0080

GOLD LINE PHASE II DEIS/DEIR PUBLIC HEARING SCHEDULE		
Date	**Location**	**Time/Format**
Wed., May 19	Claremont Council Chambers 225 Second St., Claremont	5-7 pm - Open House 7:00 pm - Presentation & Public Hearing with Traffic & Transportation Commission
Thur., May 20	Teen and Family Center 241 W. Dawson Ave., Glendora	5:30-6:30 pm - Open House 6:30 pm - Presentation & Public Hearing. Town Hall format with City Council and Transportation Commission
Wed., May 26	Duarte Community Center 1600 Huntington Dr., Duarte	6:00 pm – Open House
Tues., June 1	Ramona Hall Community Center 4580 N. Figueroa St., Los Angeles	5:30 – 7:30 – Open House & Public Hearing
Thur., June 3	Monrovia Community Center 119 W. Palm, Monrovia	6-8 pm – Open House
Mon., June 7	Montclair Council Chambers 5111 Benito St., Montclair	5-7 pm - Open House 7:00 pm - Presentation & Public Hearing
Tues., June 8	San Dimas Council Chambers 245 E Bonita Ave., San Dimas	5:30 pm- Open House 7:00 pm - Presentation & Public Hearing
Wed., June 9	La Verne Council Chambers 3660 D St., La Verne	5:30-6:30 pm - Open House 6:30 pm - Presentation & Public Hearing with Planning Commission
Wed., June 9	Due to seismic refit, city hall will be closed. Call 626-744-4009 for location	5:15-6:15 pm - Open House 6:15 pm - Public Hearing with Planning Commission
Thur., June 10	South Pasadena Council Chambers 1424 Mission St., So. Pasadena	6:30-7:30 pm - Open House 7:30 pm - Presentation & Public Hearing
Mon., June 14	Ganesha Park Community Center 1575 N. White Ave., Pomona	6-8:30 pm - Open House
Mon., June 14	Arcadia Council Chambers 240 Huntington Dr., Arcadia	7:00 pm - Presentation & Public Hearing
Tues., June 15	Irwindale Council Chambers 5050 N. Irwindale, Irwindale	5-6 pm - Open House 6:00 pm - Presentation & Public Hearing
Wed., June 16	Azusa Council Chambers 213 E. Foothill Blvd., Azusa	6:30 pm - Open House 7:30 pm - Presentation & Public Hearing with Planning Commission
Thurs. June 17	Duarte Community Center 1600 Huntington Dr., Duarte	4:30 pm Presentation & Public Hearing with San Gabriel Valley Council of Governments Joint Powers Authority

GOLD LINE PHASE II DEIS/DIER DOCUMENT LOCATIONS	
Location	**Address**
Construction Authority	625 Fair Oaks Ave., Suite 200, South Pasadena
Arcadia Public Library	20 W. Duarte Rd., Arcadia
Azusa Public Library	729 N. Dalton Ave., Azusa
Claremont Public Library	208 N. Harvard Ave., Claremont
Duarte Public Library	1301 Buena Vista St., Duarte
Glendora Public Library	140 S. Glendora Ave., Glendora
Irwindale Public Library	5050 North Irwindale Ave., Irwindale
La Verne Public Library	3640 D St., La Verne
Los Angeles Public Library	6145 N. Figueroa St., Los Angeles
Monrovia Public Library	321 South Myrtle Ave., Monrovia
Montclair Public Library	9955 Fremont Ave. Montclair
Pasadena Public Library	285 E. Walnut St., Pasadena
Pomona Public Library	625 S. Garey Ave., Pomona
San Dimas Public Library	145 N. Walnut Ave., San Dimas
San Gabriel Valley Council of Governments	3452 East Foothill Blvd., Suite 810, Pasadena
South Pasadena Public Library	1100 Oxley St., South Pasadena
Upland Public Library	450 N. Euclid Ave., Upland
Note: Copies of Technical Reports are available only at the Construction Authority	

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Esta Declaración Preliminar de Impactos Ambientales e Informe Prelimar de Impactos Ambientales (DEIS/DEIR, siglas en inglés) describe y resume los impactos al transporte y al ambiente y los costos para el Proyecto de extensión de la Fase II Transporte de Tren Ligero (LRT) de la Línea Dorada que está considerándose para los condados de Los Ángeles y San Bernardino. El Proyecto propuesto es una extensión del tren ligero que transita de la ciudad de Pasadena en el oeste y las ciudades de Montclair y Upland en el este. El proyecto propuesto es la construcción de una extensión de 8.7 millas de vía (Pasadena a Irwindale con 4 estaciones, 2,350 espacios de estacionamiento [para el 2025], y una instalación para mantenimiento y operaciones), o una extensión de 24 millas de vía (Pasadena a Montclair con 12 estaciones, 7,150 lugares de estacionamiento [para el 2025] y una instalación para mantenimiento y operaciones). Las agencias encargadas del DEIS/DEIR son la Administración de Tránsito Federal (FTA) y la Autoridad de Construcción de la Línea Azul Metro de Los Ángeles a Pasadena (Autoridad de Construcción). Es la intención de la Autoridad de Construcción, dependiendo de la alternativa seleccionada, procurar la subvención federal para Nuevos Inicios (New Starts Grant) para financiar la Alternativa Preferida Localmente (LPA) seleccionada.

Este informe es una combinación del DEIS y DEIR, satisfaciendo tanto la Ley Nacional de Política Ambiental (NEPA) y la Ley de Calidad Ambiental de California (CEQA), respectivamente. El DEIS/DEIR explora cuatro alternativas: La No Construcción, Administración de Sistemas de Transporte (TSM), Transporte de Tren Ligero (LRT) por Riel Triple, y LRT en Alternativa de Riel Doble. Cada una de las alternativas de LTR es analizada con Alternativa de Construcción completa (24 millas) y con Alternativa de Construcción a Instalación de Mantenimiento (8.7 millas). La instalación de mantenimiento propuesta comprendería cerca de 33 acres y tendría lugar para 170 vehículos (19 a 29 para la propuesta de proyecto de construcción completo y lo demás para el resto del sistema de Línea Dorada (44 millas). Esta instalación dará apoyo al sistema y operación final de trenes de 3 vagones en intervalos de 5 minutos. Las alternativas de LRT fueron desarrolladas basándose en extensa participación Pública y análisis técnicos y ambientales llevados a cabo como parte del Análisis de Alternativas Fase II de la Línea Dorada, conducidos por la Autoridad de Construcción (Enero 2003). El DEIS/DEIR examina los impactos socioeconómicos y físico ambientales, costos capitales y operacionales y los efectos potenciales al transporte y al tránsito para las alternativas consideradas. En donde se identifiquen efectos ambientales adversos bajo NEPA e impactos ambientales significativos bajo CEQA, el documento identifica medidas mitigatorias preliminares que podrían eliminar o reducir los impactos. La información contenida en este documento será utilizada por la Autoridad de Construcción para seleccionar la LPA para la implementación del proyecto y por la FTA para tomar decisiones bien informadas de programación y para asegurarse de que los impactos ambientales potenciales están considerados completamente.

Este DEIS/DEIR es puesto en circulación para revisión pública y de otras agencias para divulgar los impactos ambientales potenciales asociados con estas alternativas. Los comentarios recibidos durante el periodo de revisión pública para este documento serán abordados individualmente en la Declaración Final de Impactos Ambientales/Informe Final de Impactos Ambientales (FEIS/FEIR) para el Proyecto. Se solicita que los comentarios estén enfocados a las alternativas abordadas en este documento sobre el ambiente. El periodo para revisión pública para este DEIS/DEIR es del 7 de mayo al 21 de junio, 2004. Se llevaran a cabo audiencias públicas en cada una de las ciudades en el corredor estudiado (ver pagina ii). Durante el proceso de revisión pública, el DEIS/DEIR junto con los informes técnicos que lo apoyan, están disponibles para su revisión en las oficinas **Construction Authority offices, 625 Fair Oaks Avenue, Suite 200, South Pasadena, CA 91030** y en las bibliotecas y otros lugares listados en la pagina iii. Copias del DEIS/DEIR están disponibles para su compra en papel impreso y en CD-ROM. Comuníquese con la Autoridad de Construcción al 626-799-0080 o su página en Internet (www.metrogoldline.org) para más información. Puede enviar sus comentarios por escrito al domicilio mencionado encima, o en las audiencias públicas, por fax al 626-799-8599, o correo electrónico al eircomments@metrogoldline.org antes de la medianoche del 21 de junio, 2004.

La junta directiva de la Autoridad de Construcción considerará todos los comentarios antes de adoptar la LPA y certificar el FEIR. La FTA considerará todos los comentarios en la preparación del FEIS y adopción de un Registro de Decisión.

Para información adicional concerniente a este documento por favor comuníquese con:
Mr. A. Joseph Ossi; Office of Human and Natural Environment; FTA, 400 7th Street SW, Room 9413, TPL-30, Washington D.C. 20590; Teléfono: (202) 366-1613

Mr. Ray Sukys; Office of Planning and Program Development; FTA, Region 9, 201 Mission Street, Suite 2210, San Francisco, CA, 94105; Teléfono: (415) 744-3115

Mr. Erv Poka, Metropolitan Office, FTA/FHWA, Region 9; 888 S. Figueroa Street, Suite 1850, Los Angeles, CA, 90017; Teléfono: (213) 202-3950.

Mr. Habib F. Balian, Chief Executive Office, Los Angeles to Pasadena Metro Blue Line Construction Authority, 625 Fair Oaks Avenue, Suite 200, South Pasadena, CA 91030; Teléfono: (626) 799-0080

AUDIENCIAS PUBLICAS DEIS/DEIR LINEA DORADA FASE II		
Fecha	**Lugar**	**Horario/Formato**
Miércoles 19 de mayo	Cámara del Concilio de Claremont 207 Harvard Ave., Claremont	5-7 pm - Open House 7:00 pm – Presentación y Audiencia Pública con la Comisión de Tráfico y Transporte
Jueves 20 de mayo	Centro Familiar y de Jovenes 241 W. Dawson Ave., Glendora	5:30-6:30 pm - Open House 6:30 pm - Presentación y Audiencia Pública. Formato de Town Hall con el Concilio de la Ciudad y Comisión de Transporte
Miércoles 26 de mayo	Centro Comunitario de Duarte 1600 Huntington Dr., Duarte	6:00 pm – Open House
Martes 1 de junio	Centro Comunitario Ramona Hall 4580 N. Figueroa St., Los Angeles	5:30 – 7:30 – Open House & Audiencia Pública
Jueves 3 de junio	Centro Comunitario Monrovia 119 W. Palm, Monrovia	6-8 pm – Open House
Lunes 7 de junio	Cámara del Concilio de Montclair 5111 Benito St., Montclair	5-7 pm - Open House 7:00 pm - Presentación y Audiencia Pública
Martes 8 de junio	Cámara del Concilio San Dimas 245 E Bonita Ave., San Dimas	5:30 pm- Open House 7:00 pm - Presentación y Audiencia Pública
Miércoles 9 de junio	Cámara del Concilio de La Verne 3660 D St., La Verne	5:30-6:30 pm - Open House 6:30 pm - Presentación y Audiencia Pública con la Comisión de Planificación
Miércoles 9 de junio	Debido a restauración sísmica, la alcaldía estará serrada. Lláme al 626-744-4009 para el lugar.	5:15 - 6:15 Open House 6:15 pm - Audiencia Pública con la Comisión de Planificación
Jueves 10 de junio	Cámara del Concilio de South Pasadena 1424 Mission St., So. Pasadena	6:30-7:30 pm - Open House 7:30 pm - Presentación y Audiencia Pública
Lunes 14 de junio	Centro Comunitario Ganesha Park 1575 N. White Ave., Pomona	6-8:30 pm - Open House
Lunes 14 de junio	Cámara del Concilio de Arcadia 240 Huntington Dr., Arcadia	7:00 pm - Presentación y Audiencia Pública
Martes 15 de junio	Cámara del Concilio de Irwindale 5050 N. Irwindale, Irwindale	5-6 pm - Open House 6:00 pm - Presentación y Audiencia Pública
Miércoles 16 de junio	Cámara del Concilio de Azusa 213 E. Foothill Blvd., Azusa	6:30 pm - Open House 7:30 pm - Presentación y Audiencia Pública con la Comisión de Planificación
Jueves 17 de junio	Centro Comunitario de Duarte 1600 Huntington Dr., Duarte	4:30 pm - Presentación y Audiencia Pública con Concilio de Gobiernos del Valle de San Gabriel /Autoridad de Poderes Conjuntos

LUGARES CON DOCUMENTOS DEIS/DEIR LINEA DORADA FASE II	
Lugar	**Domicilio**
Autoridad de Construcción	625 Fair Oaks Ave., Suite 200, South Pasadena
Biblioteca Pública Arcadia	20 W. Duarte Rd., Arcadia
Biblioteca Pública Azusa	729 N. Dalton Ave., Azusa
Biblioteca Pública Claremont	208 N. Harvard Ave., Claremont
Biblioteca Pública Duarte	1301 Buena Vista St., Duarte
Biblioteca Pública Glendora	140 S. Glendora Ave., Glendora
Biblioteca Pública Irwindale	5050 North Irwindale Ave., Irwindale
Biblioteca Pública La Verne	3640 D St., La Verne
Biblioteca Pública Los Angeles	6145 N. Figueroa St., Los Ángeles
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Biblioteca Pública Pasadena	285 E. Walnut St., Pasadena
Biblioteca Pública Pomona	625 S. Garey Ave., Pomona
Biblioteca Pública San Dimas	145 N. Walnut Ave., San Dimas
Concilio de Gobiernos del Valle de San Gabriel	3452 East Foothill Blvd., Suite 810, Pasadena
Biblioteca Pública South Pasadena	1100 Oxley St., South Pasadena
Biblioteca Pública Upland	450 N. Euclid Ave., Upland
Nota: Copia de Informes Técnicos solo esta disponible en la oficina de la Autoridad de Construcción	

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本「環境影響聲明草案/環境影響報告草案」（DEIS/DEIR）描述並總結了擬在加州洛杉磯和 San Bernardino Counties 實施的「黃金線路第二階段輕軌運輸延長項目」 (Gold Line Phase II Light Rail Transit (LRT) Extension Project) 對交通以及環境帶來的影響及其成本。此提議項目是要在西部的 Pasadena 市到東部 Montclair 和 Upland 市之間加修輕軌運輸線路。此提議項目擬新建一條 8.7 英哩長的輕軌延長線 （從 Pasadena 到 Irwindale，帶 4 個車站和 2,350 個停車位 [2025 年之前建成]，以及一個維護和運營設備）或一條 24 英哩長的輕軌延長線（從 Pasadena 到 Montclair，帶 12 個車站，7,150 個停車位[2025 年之前建成]，以及一個維護和運營設備）。「環境影響聲明草案/環境影響報告草案」(DEIS/DEIR) 的管理機構是「美國聯邦交通管理局」（Federal Transit Administration）和「洛杉磯到 Pasadena 的地鐵藍線營建管理局」 (Los Angeles to Pasadena Metro Blue Line Construction Authority，簡稱「營建管理局 」)。依照選用的方案，「營建管理局」將尋求聯邦運輸「新開始」項目來撥款並資助所選用的「當地優選方案」(LPA)。

本報告結合了「環境影響聲明草案」和「環境影響報告草案」，同時滿足了「國家環境政策法案」(NEPA) 和「加州環境品質法」(CEQA)。「環境影響聲明草案/環境影響報告草案」 (DEIS/DEIR) 審查了四種可選方案：不營建輕軌延長線、「交通系統管理」(TSM)、「三軌輕軌運輸」和「雙軌輕軌運輸」方案。針對每種輕軌運輸方案都評估了其「全面營建方案」（24 英哩）和「營建方案到維護設備」(8.7 英哩)。提議的維護設備將占地大約 33 英畝，能容納約 170 輛車（提議的「全面營建」項目爲 19 到 29 英畝，及全長 44 英哩的黃金線路系統的剩餘部分）。此設備將可支持系統每隔 5 分鐘開出帶 3 節車廂的列車。輕軌運輸方案的開發是基於廣泛的公衆參與及初步環境和技術分析。此分析由「營建管理局」於 2003 年 1 月在作「黃金線路第二階段方案分析」時一並進行。「環境影響聲明草案/環境影響報告草案」(DEIS/DEIR) 審查了在考量範圍內各方案的社會經濟及物理環境影響、資本和運營成本，以及對交通運輸存在的潛在影響。本報告指出「國家環境政策法案」下的不利環境影響和「加州環境品質法」(CEQA)的嚴重環境影響並提出草擬的緩解環境影響措施，以消除或減少對環境的影響。本文件中包含的信息將由「營建管理局」用來選擇要實施的「當地優選方案」，並由「美國聯邦交通管理局」用來在有詳實信息的情況下作規劃，並確保所有潛在環境影響都得到全面考量。

本「環境影響聲明草案/環境影響報告草案」（DEIS/DEIR）已在機構和公衆間流通，以便公開這些方案的潛在環境影響。在本文件的公審期間收到的意見和建議將在項目的「最終環境影響聲明/最終環境影響報告」(FEIS/FEIR) 中一一解答。評估者必須針對此環境文件中提及的方案做評估。本報告的公審期爲 2004 年 5 月 7 日到 6 月 21 日。在各城市的學習走廊還將召開公開聽證會（參見第二頁）。在公審過程中，「環境影響聲明草案/環境影響報告草案」（DEIS/DEIR）及其輔助的技術報告可在「營建管理局」辦公室（**625 Fair Oaks Avenue, Suite 200, South Pasadena, CA 91030**）及第三頁列出的圖書館及其他地點獲得以供查閱。你也可以購買本「環境影響聲明草案/環境影響報告草案」（DEIS/DEIR）的印刷本及 CD-ROM。若要了解更多信息，請致電 626-799-0080 聯系「營建管理局」或上網至 (www.metrogoldline.org)。如有意見或建議，請在 2004 年 6 月 21 日午夜前寫信到上面的地址、在公開聽證會提出、發送傳真到 626-799-8599，或寫電子郵件到 eircomments@metrogoldline.org。

「營建管理局董事會」將在採行「當地優選方案」並核准「最終環境影響報告」前對所有意見和建議作考量。美國聯邦交通管理局將在準備「最終環境影響聲明」和採行「決定記錄」時對意見和建議作考量。

如欲洽詢此文件的相關信息，請聯系：

A. Joseph Ossi 先生; Office of Human and Natural Environment; FTA, 400 7th Street SW, Room 9413, TPL-30, Washington D.C. 20590; 電話號碼： (202) 366-1613

Ray Sukys 先生; Office of Planning and Program Development; FTA, Region 9, 201 Mission Street, Suite 2210, San Francisco, CA, 94105; 電話號碼： (415) 744-3115

Erv Poka 先生, Metropolitan Office, FTA/FHWA, Region 9; 888 S. Figueroa Street, Suite 1850, Los Angeles, CA, 90017; 電話號碼： (213) 202-3950

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「黃金線路第二階段環境影響聲明草案/環境影響報告草案」（GOLD LINE PHASE II DEIS/DEIR）公開聽證會		
日期	**地點**	**Time/Format**
5月19日，星期三	Claremont Council Chambers 207 Harvard Ave., Claremont	開放時間 - 下午 5-7 下午 7:00 – 交通和運輸委員會的報告及公開聽證會
5月20日，星期四	Teen and Family Center 116 E. Foothill Blvd., Glendora	開放時間 - 下午 5:30-6:30 下午 6:30 – 報告及公開聽證會 市議會和交通委員會進行城鎮大會市民提問方式的會議
5月26日，星期三	Duarte Community Center 1600 Huntington Dr., Duarte	開放時間 - 下午 6:00
6月1日，星期二	Ramona Hall Community Center 4580 N. Figueroa St., Los Angeles	下午 5:30 – 7:30 – Open House 和公開聽證會
6月3日，星期四	Monrovia Community Center 119 W. Palm, Monrovia	開放時間 - 下午 6-8
6月7日，星期一	Montclair Council Chambers 5111 Benito St., Montclair	開放時間 - 下午 5-7 下午 7:00 – 報告及公開聽證會
6月8日，星期二	San Dimas Council Chambers 245 E Bonita Ave., San Dimas	開放時間 - 下午 5:30 下午 7:00 -報告及公開聽證會
6月9日，星期三	La Verne Council Chambers 3660 D St., La Verne	開放時間 - 下午 5:30-6:30 下午 6:30 – 策劃委員會的報告及公開聽證會
6月9日，星期三	由於地震整修，市政廳將關閉。請致電 626-744-4009 洽詢地點。	開放時間 - 下午 5:15-6:15 下午 6:15 - 策劃委員會的公開聽證會
6月10日，星期四	South Pasadena Council Chambers 1424 Mission St., So. Pasadena	開放時間 - 下午 6:30-7:30 下午 7:30 - 報告及公開聽證會
6月14日，星期一	Ganesha Park Community Center 1575 N. White Ave., Pomona	開放時間 - 下午 6-8:30
6月14日，星期一	Arcadia Council Chambers 240 Huntington Dr., Arcadia	下午 7:00 – 報告及公開聽證會
6月15日，星期二	Irwindale Council Chambers 5050 N. Irwindale, Irwindale	開放時間 - 下午 5-6 下午 6:00 - 報告及公開聽證會
6月16日，星期三	Azusa Council Chambers 213 E. Foothill Blvd., Azusa	開放時間 - 下午 6:30 下午 7:30 – 策劃委員會的報告及公開聽證會
6月17日，星期四	Duarte Community Center 1600 Huntington Dr., Duarte	下午 4:30 – San Gabriel Valley 政府議會/聯合動力機構 (San Gabriel Valley Council of Governments/Joint Powers Authority) 的報告及公開聽證會

「黃金線路第二階段環境影響聲明草案/環境影響報告草案」文件地點（GOLD LINE PHASE II DEIS/DEIR）	
地點	地址
「營建管理局」Construction Authority	625 Fair Oaks Ave., Suite 200, South Pasadena
Arcadia 公共圖書館	20 W. Duarte Rd., Arcadia
Azusa 公共圖書館	729 N. Dalton Ave., Azusa
Claremont 公共圖書館	208 N. Harvard Ave., Claremont
Duarte 公共圖書館	1301 Buena Vista St., Duarte
Glendora 公共圖書館	140 S. Glendora Ave., Glendora
Irwindale 公共圖書館	5050 North Irwindale Ave., Irwindale
La Verne 公共圖書館	3640 D St., La Verne
Los Angeles 公共圖書館	6145 N. Figueroa St., Los Angeles
Monrovia 公共圖書館	321 South Myrtle Ave., Monrovia
Montclair 公共圖書館	9955 Fremont Ave. Montclair
Pasadena 公共圖書館	285 E. Walnut St., Pasadena
Pomona 公共圖書館	625 S. Garey Ave., Pomona
San Dimas 公共圖書館	145 N. Walnut Ave., San Dimas
San Gabriel Valley 政府議會	3452 East Foothill Blvd., Suite 810, Pasadena
South Pasadena 公共圖書館	1100 Oxley St., South Pasadena
Upland 公共圖書館	450 N. Euclid Ave., Upland
註: 只有「營建管理局」才有提供技術報告	

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EXECUTIVE SUMMARY

This summary describes and summarizes the transportation impacts, environmental impacts, and costs for the proposed Gold Line Phase II LRT Extension Project being considered in Los Angeles and San Bernardino counties in California. The document evaluates a No-Build Alternative, a Transportation System Management (TSM) Alternative, and two light-rail transit (LRT) alternatives. The Full Build LRT Alternative would extend approximately 24 miles, from Pasadena to Montclair, and would have 12 stations. The Build LRT to Maintenance Facility Alternative would extend just under 9 miles, from Pasadena to Irwindale, and would have 4 stations. Both LRT alternatives include the Maintenance and Operations (M&O) facility, as well as configurations for triple-track and double-track operations because of existing freight operations along the rail corridor. Station locations, including optional sites, were identified in consultation with the cities in which they would be built.

ES-1 BACKGROUND

As implementation of Phase I of the Gold Line LRT from Los Angeles to Pasadena began, attention was focused on the potential use of the remainder of the former Pasadena Subdivision railroad right-of-way to extend service eastward from Pasadena. The Los Angeles to Pasadena Metro Blue Line Construction Authority (Construction Authority) and the San Gabriel Valley Council of Governments, with the participation of cities along the rail right-of-way, initiated an Alternatives Analysis study. Conducted during 2002, the Alternatives Analysis process essentially was a screening process where a full range of alternatives was narrowed down during three levels of screening to arrive, ultimately, at a locally preferred alternative (referred to herein as LPA-AA) as the basis for further, more detailed study. That local mode and alignment preference, extending the LRT mode eastward from its terminus in Pasadena along the existing rail right-of-way (owned by the Los Angeles County Metropolitan Transportation Authority [LACMTA]), also recognized the need for further evaluation of ways to address freight movements. More detailed information on the AA process is included in Chapter 2.

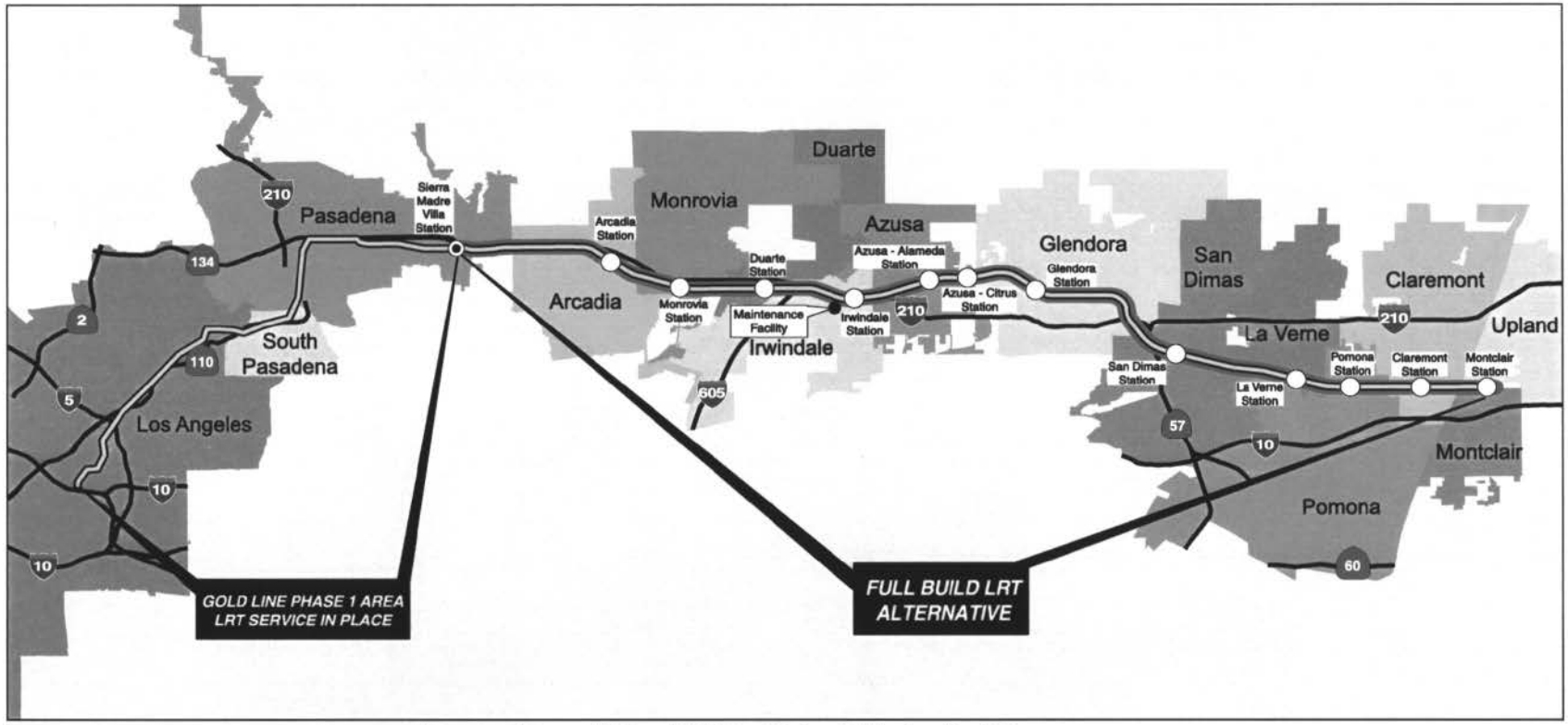
The LPA-AA was used as the basis for potential LRT alternatives as presented in the federal and state scoping process that was initiated by the Federal Transit Administration (FTA) and the Construction Authority in July 2003.

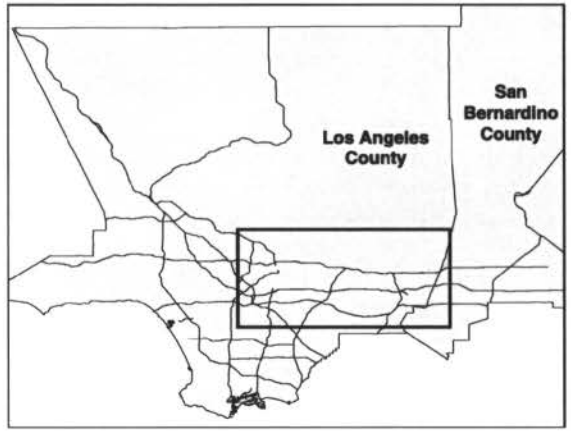
ES-2 STUDY AREA AND STUDY CORRIDOR

A general study area was defined that encompasses 13 adjoining cities that lie along I-210 and a railroad right-of-way, between Pasadena on the west and Montclair on the east. The study area includes the cities of Pasadena, Arcadia, Monrovia, Duarte, Irwindale, Azusa, Glendora, San Dimas, La Verne, Pomona, and Claremont in Los Angeles County. In San Bernardino, it includes the cities of Montclair and Upland.

For the purposes of environmental analysis, a study corridor was defined within the broader study area. **Figure ES-1** shows the study area and study corridor.

The study corridor was defined to be 1,000 feet in width, along either side of the rail alignment. This 2,000-foot width was selected because most potential environmental impacts that would be generated by the proposed LRT service would occur within this band. The 2,000-foot band is the area of potential impact (API) for all environmental assessment topics except traffic and cultural resources. For traffic, the API was determined on a case-by-case basis in consultation with corridor cities to reflect traffic patterns of the cities around proposed stations. For cultural resources, the Area of Potential Effect (APE) was





Sources: U.S. Census TIGER Data, 2000; Jones & Stokes Associates, 2004.

0 2.5 5 10 Miles

Legend

- Existing Station
- Proposed Station
- Full Build LRT Alternative
- 2000 Foot Study Corridor

Figure ES-1: Gold Line Phase II Study Area and Study Corridor

defined by FTA, with concurrence of the State Historic Preservation Officer, to meet the needs for assessing impacts in accordance with Section 106 of the National Historic Preservation Act. The APE was defined to be the proposed railroad alignment and one parcel beyond sites to be used for stations or parking. This definition included the caveat that the APE could be refined to account for project elements that would not be known until later in the design development process, such as noise barriers.

For convenience and to reflect geographic limits of the two LRT alternatives, the Phase II study corridor was divided into two segments. Segment 1 includes Pasadena east of the Sierra Madre Villa station and the cities of Arcadia, Monrovia, Duarte, and Irwindale. Segment 2 includes the cities of Azusa, Glendora, San Dimas, La Verne, Pomona, Claremont, Montclair, and Upland.

ES-3 PURPOSE AND NEED

ES-3.1 Summary of Purpose and Need

The proposed Gold Line Phase II project would provide:

- *a high-capacity improvement that responds to problems associated with the corridor's only freeway,*
- *transportation improvements that respond to transit issues identified in the corridor,*
- *transportation improvements that respond to problems associated with the corridor's arterial network,*
- *transportation improvements that respond to issues associated with population and employment conditions and forecasts, and*
- *transportation improvements that respond to environmental goals of the region and corridor.*

ES-3.2 Development of Purpose and Need

The purpose of the proposed Gold Line Phase II project would be to address the transportation problems and deficiencies, as well as the environmental problems and issues, identified in the discussions below. Proposed transportation solutions (either Transportation System Management/Transportation Demand Management [TSM/TDM] or rail alternatives) must address the following five basic needs:

1. Provide a high-capacity improvement that responds to problems associated with the corridor's only freeway:
   - *Highway capacity in the study corridor is not sufficient to accommodate current and forecasted peak-hour demands.*
   - *Substantial congestion exists during peak periods and will increase over time.*
   - *Travel times on freeways are currently substantial and will increase over time.*
   - *There are no alternative highway routes to provide relief.*
2. Provide transportation improvements that respond to transit issues identified in the corridor:
   - *Commuter rail service is available only in the eastern quarter of the study corridor and is linked only to downtown Los Angeles.*
   - *Transit service between the end points of the study corridor is limited to three bus routes.*

- *The available bus routes do not connect all of the downtowns in the study corridor.*
- *The available routes do not serve several major activity centers in the corridors.*
- *Bus service is subject to traffic congestion and incidents, resulting in some trips being of unpredictable durations.*

3. Provide transportation improvements that respond to problems associated with the corridor's arterial network:

   - *East–west arterials that potentially provide alternative routes to I-210 are discontinuous.*
   - *Travel times on arterials are slow and subject to congestion and incidents that affect their viability as alternate routes across the study area.*

4. Provide transportation improvements that respond to issues associated with population and employment conditions and forecasts:

   - *Access between areas of current and forecasted population and locations of current and forecasted employment must utilize transportation facilities that are currently at or over capacity during peak periods.*
   - *Existing transit services connect only some of the activity centers in the corridor.*
   - *Existing transit service between activity centers is infrequent, even during peak hours.*
   - *The corridor is expected to grow substantially in population and employment through 2025, and such growth would place ever-increasing demands on the transportation infrastructure.*
   - *Communities recognize and have undertaken planning to accommodate forecasted growth; many community plans call for transit improvements to help manage that growth.*

5. Provide transportation improvements that respond to environmental goals for the region and corridor:

   - *Transportation improvements must support achievement of the region's air quality plan.*
   - *Transportation improvements should avoid or minimize impacts to natural and manmade environments.*

ES-3.2.1 Highway Considerations

Southern California suffers from a long-term disparity between population growth and increases in transportation capacity. The Southern California Association of Governments (SCAG) in its adopted 2001 Long Range Transportation Plan (2001 RTP) and in its Draft 2004 Long Range Transportation Plan (2004 RTP) notes that population more than doubled between 1960 and 2000, yet freeway miles increased by less than 30 percent. Accompanying this disparity are increases in vehicle miles traveled each year, reflecting the longer distances that persons travel between place of residence and place of work.

Congestion levels continue to grow on the region's freeway network. A review of Census 2000 data indicates that the average travel time to work in much of the study corridor is between 26 and 35 minutes (State of the Region 2002, SCAG).

Mobility tracking of the Los Angeles area by the Texas Transportation Institute (TTI) for the past two decades consistently ranks the metropolitan area as having the highest amount of annual travel delay in the country. Data beginning in 1982 show that more than 50 percent of the annual delay is categorized as

recurring delay, which is attributed to system deficiencies and use at levels in excess of design capacity, as opposed to delays caused by incidents. The cost of congestion was estimated at over $1,000 per person annually.

As part of the project's initial analysis, efforts were made to determine the existing congestion levels within the study corridor. This analysis revealed that more than 50 percent of all freeway lanes (on I-210) west of Irwindale Avenue operate at Level of Service (LOS) F or worse. East of Irwindale Avenue the percentage drops to 41 percent.

Mobility is also affected by the fact that there are no other freeways that serve the study corridor. There are no plans for substantial increases in I-210 capacity due to the substantial impacts that would occur to adjoining communities if freeways were widened. Among the impacts from widening would be numerous residential and commercial property acquisitions, loss of revenue to local communities from commercial properties that lie adjacent to the freeway, and substantial construction-period impacts. Modest increases in capacity can be expected from the addition of High-Occupancy Vehicle (HOV) connections, higher HOV occupancy requirements (i.e., a change from 2+ to 3+), or from operational improvements such as Intelligent Transportation Systems (ITS) projects.

Highway Congestion Problems:

- *Highway capacity in the study corridor is not sufficient to accommodate current and forecasted peak-hour demands.*
- *Substantial congestion exists during peak periods and will increase over time.*
- *Travel times on freeways are currently substantial and will increase over time.*
- *There are no alternative highway routes to provide relief.*

ES-3.2.2 Transit Considerations

The Los Angeles County Metropolitan Transportation Authority (LACMTA), Foothill Transit, Omnitrans, and some local communities provide transit service in the study area. The primary orientation of transit service is east–west and occurs mostly along major thoroughfares. Public transportation needs in the study corridor are fulfilled by a combination of traditional transit service (fixed-route bus service with scheduled stops), non-traditional transit service (special shuttle systems and demand-responsive services), and rail service (commuter and inter-city rail). Generally, the cities in the corridor contract with Foothill Transit to fulfill the subregional transportation needs of their citizens. Access Services provides specialized transit service in much of the corridor. A review of the transit routes in the study corridor indicates that the main transit demand is for east–west travel, which is the same as the travel demand on I-210 and arterial streets.

Commuter rail service is available from the eastern part of the study corridor to downtown Los Angeles. There are Metrolink commuter rail stations in Pomona, Claremont, and Montclair; there are no commuter rail stations in the communities west of Pomona. The scheduled weekday travel time from Montclair (the most easterly station in the study corridor) to downtown Los Angeles is approximately 55 minutes; from Pomona the scheduled travel time is approximately 47 minutes. By way of comparison, the scheduled travel time for express bus service from Montclair to downtown Los Angeles is approximately 126 minutes.

Transit Problems:

- *Commuter rail service is available only in the eastern quarter of the study corridor and is linked only to downtown Los Angeles.*
- *Transit service between the end points of the study corridor is limited to three bus routes.*
- *The available bus routes do not connect all of the downtowns in the study corridor.*
- *The available routes do not serve several major activity centers in the corridors.*
- *Bus service is subject to traffic congestion and incidents, resulting in some trips being of unpredictable durations.*

ES-3.2.3 Arterial Considerations

The study corridor includes an extensive network of arterial streets, which generally form a grid pattern. This grid offers some opportunities for travel that are alternatives to the use of I-210. However, despite the presence of very long east–west arterials such as Foothill Boulevard or Arrow Highway, these east–west arterials are not continuous. The longest segments of the major east–west arterials cross a few communities before a break occurs, usually requiring trip-makers to drive about a mile north or south to connect to another long segment. As a result, there are no street arterials, or linked arterials, that create an uninterrupted route across the study corridor. This discontinuity affects automobile and truck movements, as well as transit service, and tends to push those drivers who need to make longer trips onto I-210.

Posted travel speeds on arterials in the study area are generally 35 mph. However, actual travel speed through the corridor is greatly influenced by frequently occurring intersections and congestion at intersections. Travel data gathered in fall 2003 for 117 intersections near proposed LRT stations indicate that 13 percent of them functioned as a LOS with substantial amounts of delay (LOS D, E, or F) in the morning period, with congestion increasing to about 16 of the 117 intersections in the afternoon period. Data were not gathered for all roadways on which transit occurs, but the conditions identified are consistent with field observations.

Arterial Network Problems:

- *East–west arterials that have the potential to provide alternative routes to I-210 are discontinuous.*
- *Travel times on arterials are slow and subject to congestion and incidents that affect their viability as alternate routes across the study area.*

ES-3.2.4 Population & Employment Considerations

Among the indicators of demand for transportation improvements are the population and employment characteristics of a corridor. The Phase II study area has continually increased in population over time and is forecasted to have substantial growth (over 22 percent) through 2025. In addition to population growth, the corridor has had a strong increase in employment over time, with a forecast of robust increases in employment (over 24 percent) throughout the corridor.

Population and Employment Issues:

- *Access between areas of current and forecasted population and locations of current and forecasted employment must utilize transportation facilities that are currently at or over capacity during peak periods.*
- *The corridor is expected to grow substantially in population and employment through 2025, and such growth would place ever-increasing demands on the transportation infrastructure.*
- *Communities recognize and have undertaken planning to accommodate forecasted growth; many community plans call for transit improvements to help manage that growth.*

ES-3.2.5 Environmental Considerations

The Los Angeles metropolitan area has the unfortunate distinction of having some of the most serious air quality problems in the nation. SCAG's 2004 Draft RTP reports that during the 1990s, the region achieved consistent improvements in the number of days exceeding federal or state standards for ozone and carbon monoxide. The region exceeded the federal one-hour standard for ozone during 40 days in 2000 compared to 130 days in 1990. However, in 2002, the number of days exceeding the federal one-hour standard for ozone increased to 49 days from 36 days in 2001. The number of days for health advisory also increased from 15 to 18 days between 2001 and 2002. SCAG reports that available data for 2003 indicated that it would be worse than in 2002.

The strategy for addressing the region's air quality concerns includes transportation improvements that provide increased mobility while simultaneously reducing air emissions. Accordingly, the proposed Gold Line Phase II project is being incorporated into the 2030 Long Range Transportation Plan (2004 Draft RTP) and into the near-term Regional Transportation Improvement Plan.

Environmental Issues:

- *Transportation improvements must support achievement of the region's air quality plan.*
- *Transportation improvements should avoid or minimize impacts to natural and manmade environments.*

ES-3.2.6 Previous Analysis

During initial corridor planning undertaken in 2001 by the Los Angeles to Pasadena Metro Blue Line Construction Authority (Construction Authority) and the San Gabriel Valley Council of Governments, representatives of local governments established goals and objectives for transportation improvements in the study corridor. These goals and objectives are shown in **Table ES-1**.

TABLE ES-1
GOALS AND OBJECTIVES

Category	Goal	Objective
Land Use & City Vision	To locate stations that facilitate cities' visions for land use and development around transit stations and adjoining activity centers	Cities and transit providers to jointly select station locations that maximize transit use and further cities' plans for transit-oriented development (infrastructure, parking, development, redevelopment, etc.)
	To create a system that creates/adds identity and attractiveness to San Gabriel Valley cities	To provide highly visible stations that represent the cities' senses of place
		To respect community architectural and urban design standards
		To provide safe access for pedestrians and bicycles
		To enhances community identity
		To take advantage of the high visibility of the corridor to promote transit use
Transit Usefulness	To complement other existing transit in the corridor and optimize previous investments	To provide efficient intra-corridor service not currently met by Metrolink, Foothill Transit or the Pasadena Gold Line Phase I
		To make good use of the right-of-way already purchased
	To reduce auto dependency	To create a system with the capability to carry at least 25 percent as many people as are carried in all I-210 travel during the day and offer a level of service capable of attracting this percent of travel
	To improve mobility and provide connectivity to regional and local transit systems	To provide good connections to Metrolink, Foothill Transit, and the Pasadena Gold Line Phase I at Sierra Madre Villa Avenue
	To implement a project within a reasonable period of time	To implement new transit service in the corridor by 2008
Cost-Effectiveness	To develop a cost-effective transit system	To incur capital costs of less than the cost of increasing the capacity of I-210 by 25%
		To be capable of being operated and maintained at or better than the average cost of other rapid transit systems in Los Angeles County

TABLE ES-1
GOALS AND OBJECTIVES

Category	Goal	Objective
Environmental	To improve air quality and preserve and protect the natural and manmade environment	To avoid potential impacts by utilizing existing, disturbed right-of-way
		To avoid property acquisitions to the extent possible
		To work jointly with the cities to identify potential impacts and feasible mitigation measures in order to minimize impacts
		To reduce, not add to, tailpipe emissions
Study Process	To work collaboratively with local cities throughout the Alternatives Analysis process	To ensure that the desires, policies, and concerns of corridor cities and citizens are considered in the LPA process
		To develop a public participation program in collaboration with corridor cities
		To listen to the community and explain how we have responded to comments as the study progressed

Source: Gold Line Phase II Extension, Pasadena to Claremont Alternatives Analysis, Final Draft Report. May 22, 2002; Los Angeles to Pasadena Metro Blue Line Construction Authority.

An Alternatives Analysis was conducted between September 2001 and June 2002 by the Construction Authority and the San Gabriel Valley Council of Governments (SGVCOG). The Alternatives Analysis looked at transportation conditions and possible solutions for improving mobility across the corridor from Pasadena to Claremont. Seven alternatives were examined in this study and screened down to a Locally Preferred Alternative (LPA-AA) selected by the Construction Authority and the SGVCOG in 2002. The LPA-AA is a continuation of the LRT technology from the existing Sierra Madre Villa LRT station in Pasadena to the Claremont Transit Center.

Issues from Previous Planning:

- *Alternative transportation modes have been previously assessed. Rail modes were shown to be more effective in dealing with corridor transportation problems than either highway improvements or bus-based improvements.*
- *Cities in the study corridor have expressed their support for extending LRT service along an available right-of-way, as opposed to commuter rail service.*

ES-4 PROJECT DEVELOPMENT STATUS

ES-4.1 Development of Alternatives

A number of alternatives were initially evaluated during the planning portion of the Alternatives Analysis of this study (Gold Line Phase II Extension Pasadena to Claremont Alternatives Analysis, Final Draft Report, dated January 9, 2003). This analysis looked at a wide range of alignment and technology options aimed at serving the corridor transportation needs. These included a No-Build Alternative, a

Transportation System Management (TSM) Alternative, as well as various modal alternatives: bus rapid transit (BRT), LRT, commuter rail (CR), HOV lanes, and guideway-based alternatives. This range of potential alternatives was identified using the 1993 EIR produced for this alignment as a guide, as well as input from the public.

These alternatives encompassed a variety of options, including differing technologies, alignments, and operations. Technologies looked at in the initial analysis included enhanced bus service, BRT, LRT, CR, diesel multiple units, HOV facilities, and fixed-guideway facilities. The alignment alternatives included the existing railroad right-of-way, the I-210 freeway, and local major arterials. Operations alternatives varied by mode starting with five-minute headways.

Once the list of potential alternatives was developed, alternatives were screened for flaws that would prevent their implementation or seriously limit their ability to service the needs of the study corridor. Screening criteria were created and applied to the twenty-five potential alternatives. An alternative was eliminated in this first round of screening if it:

- was estimated not to be cost-effective,
- posed significant environmental disadvantages,
- offered no advantages over less-costly technologies,
- would not be likely to meet projected travel demand,
- would not be likely to reduce travel times,
- would be more costly to construct and/or operate than TSM alternatives, and/or
- would not meet or would conflict with goals and objectives established for the corridor Alternatives Analysis.

During the second round of screening, alternatives were analyzed using a number of different factors, including engineering or environmental "fatal flaws," potential to service existing land uses, transit-oriented development potential, implementation time, and financial capacity.

As a result of the second-round screening analysis and input from the Technical Advisory Committee, which had been established for the Alternatives Analysis process, the list of 25 alternatives was reduced to seven. These seven alternatives were analyzed using criteria developed for the proposed project and identified in the Alternatives Analysis report. Utilizing the findings of the report, the Technical Advisory Committee identified the Locally Preferred Alternative (LPA-AA) in June 2003 as Alternative 4, double-track LRT with either a separate freight track or with no freight (see Chapter 2, Alternatives, for further detail). Part of the LPA decision was to invest funds in the existing rail corridor for transit purposes, as opposed to investing in highway or arterial-based improvements or creating a new rail corridor.

Expanding I-210 to accommodate bus or HOV lanes would entail widening the freeway right-of-way, elevating a busway above the freeway, or running buses on the shoulders or in the HOV lanes. This alignment was not considered for further analysis for the following reasons:

- high costs associated with widening the freeway,

- inability to implement transit by the goal service date of 2008 due to extensive widening and construction,
- significant impacts to the natural and manmade environment,
- inconsistency with the goal of locating stations that facilitate corridor cities' vision for land use and development around transit stations and adjoining activity centers within cities' downtowns, and
- community resistance to further construction on I-210, which has been ongoing for a number of years. Communities along the corridor are resistant to additional right-of-way and construction impacts.

BRT and Rapid Bus alternatives were examined that utilized local major arterials, dedicated local streets, or a combination of freeway and local streets. These alignments were examined and eliminated due to disadvantages that included:

- no reduction in travel times,
- high costs associated with widening local streets,
- significant impacts to environmental and community resources associated with widening streets, and/or
- impacts to residential neighborhoods along local streets during construction and, potentially, during operation.

The existing rail alignment was deemed the most promising for development of transit service for the following reasons:

- A limited amount of land acquisition would be necessary to support rail service along the existing right-of-way (ROW).
- Implementing service would maximize the previous investment made by LACMTA in purchasing the ROW.
- Rail service would be consistent with the goals of locating stations that facilitate many corridor cities' vision for land use and development around transit stations and adjoining activity centers.
- Rail service on the existing ROW would require a shorter construction time than a new ROW.
- Use of a pre-existing ROW that included current train movements would generate fewer and less-significant impacts on existing natural and manmade environments than a new ROW.

ES-4.2 Alternatives to Be Evaluated

The LPA-AA was the basis for the development of the alternatives assessed in this document. Four basic alternatives are reviewed in this document: (1) the No-Build Alternative, (2) the TSM Alternative, (3) the Full-Build LRT Alternative, and (4) the Build LRT Alternative to the Maintenance Facility.

The No-Build Alternative includes all highway and transit projects and operations that the region and LACMTA expect to be in place in 2025 (the future analysis year for this EIS/EIR). The No-Build Alternative would not require construction of ancillary facilities other than those included in the projects comprising the alternative. The No-Build Alternative is LACMTA's Long Range Transportation Plan 2025 (RTP 2025) Constrained Alternative (Package G). This alternative/package includes a balance of vehicle and transit improvements, including an expanded bus network. Projects within RTP 2025 that are relevant to the corridor are stated below.

- Transit Projects include countywide (Los Angeles and San Bernardino counties) bus service improvements; commuter rail (Metrolink) improvements; Gold Line Phase I LRT service, with planned headways of 5 minutes peak, 10 minutes off-peak (currently operating at 10 minutes peak and 12 minutes off-peak); and the construction of the Eastside LRT extension, with service headways of 5 minutes peak, 10 minutes off-peak.
- Freeway improvements include projects on freeways such as the extension of freeway Route 30/I-210 from Foothill Boulevard to I-15 (now completed) and the continuing extension of I-15 to I-215 in the future.
- Smart street projects include improvements such as synchronized traffic signals, on-street parking removal, frontage road and grade separation construction, and key intersection improvements to improve traffic flow.
- Arterial improvement projects include improvements to existing roadways.

The Transportation System Management (TSM) Alternative is defined by the FTA as the No-Build Alternative plus lower cost transit capital and operational improvements that are intended to enhance the performance of the transportation system within the study corridor. Compared with the "build" alternatives, the TSM Alternative should be a relatively low-cost approach to addressing the transportation problems. Per FTA, the TSM Alternative should represent the best that can be done to improve transit mobility in the corridor without the construction of new major transit facilities. The TSM Alternative for the Gold Line Phase II corridor includes increasing the frequency of bus service to the existing east–west and north–south major transit routes run by LACMTA and Foothill Transit. The TSM Alternative would provide enhanced bus service in the Phase II study area corridor by creating or improving connecting service to the Phase I Gold Line station at Sierra Madre Villa, as well as increasing peak-period and off-peak-period service frequencies to downtown Pasadena and among the cities and major activity centers within the study corridor. To the areas east of Duarte, the peak-period bus service would go from eight buses per hour in each direction to 17 buses per hour. The areas west of Duarte would have service increased from 11 buses per hour in each direction to 24 buses per hour. Other transit improvements would include transportation center improvements within each city and along the corridor and implementation of an Advanced Travelers System. The TSM Alternative would not require construction of ancillary facilities other than bus shelters.

The two build alternatives utilize the existing LACMTA/SANBAG right-of-way through the San Gabriel Valley for LRT service eastward from the Sierra Madre Villa in Pasadena (the current terminus of Gold Line Phase I). The major difference between the two alternatives is their length and terminus: the Full-Build LRT Alternative (**Figure ES-2**) extends 24 miles east to the city of Montclair in San Bernardino County, while the Build LRT Alternative to the Maintenance Facility (**Figure ES-3**) extends only from the Sierra Madre Villa station to the city of Irwindale, a distance of approximately 9 miles. See ES-3.2.2 for further explanation regarding the maintenance facility

The **Full-Build Alternative** encompasses Segments 1 and 2 of Phase II and extends the current Gold Line system from Sierra Madre Villa station to the Montclair TransCenter (approximately 24 miles). The Montclair TransCenter is located in Montclair, and borders the city of Upland. Segment 1 of Phase II lies between the current Sierra Madre Villa station and the proposed M&O facility site in Irwindale, about 8.7 miles in length. Segment 2 of Phase II lies between the proposed M&O facility site and the existing Montclair TransCenter. The same LRT technology and the same types of system components would be used as will be found in the existing Phase I segment from Los Angeles to Pasadena and in the soon-to-be-built Eastside Extension. The Eastside Extension will run from Union Station to Beverly/Atlantic in East Los Angeles.

The Full-Build Alternative would include 12 new stations, with at least one in or serving each of the cities along the corridor. Potential station locations, including some optional ones, have been defined in consultation with the corridor cities. Parking facilities would be provided at each new station. Parking would be free to Gold Line users and would be managed by the Construction Authority.

The location of the M&O facility is proposed to be on now-vacant property west and south of the Miller Brewing facility and the proposed Irwindale Station. Additional information on stations, parking, and the M&O facility is provided below. Approximately 21 traction power substations (TPSSs) would be constructed along the route in order to provide electrical power to the line. Where possible, TPSS sites would be located near a station. TPSS sites would be located within existing rail ROW or within properties to be acquired for stations or parking.

The **Build LRT Alternative to the Maintenance Facility** would connect the existing Sierra Madre Villa station to the proposed Irwindale station (approximately 8.7 miles). The same LRT technology and the same types of system components would be used as will be found in the existing Phase 1 segment from Los Angeles to Pasadena and in the soon-to-be-built Eastside Extension. The Build LRT Alternative would include four LRT stations (Arcadia, Monrovia, Duarte, and Irwindale). The proposed stations would be the same as described under the Full-Build Alternative. Parking facilities would be provided at each new station and in the same locations as identified for the Full-Build Alternative. Parking would be free to Gold Line users and would be managed by the Construction Authority.

The location of the M&O facility would be the same as identified for the Full-Build Alternative. Seven TPSS facilities would be constructed along the route in order to provide electrical power to the line in addition to one TPSS at the M&O facility.

Within the two LRT Alternatives, there are three operational configuration options for handling the existing freight traffic while also implementing light-rail transit:

- **Triple-Track Configuration:** This operational configuration would provide two light-rail tracks and one freight track for most of the alignment length. Two light-rail tracks would extend from the existing Sierra Madre Villa station to the proposed terminus at Montclair. A single freight track would extend from Monrovia, where the western-most freight customer is located, to the eastern border of the city of La Verne, where it would link up with the existing BNSF freight tracks. The existing single freight track between Monrovia and La Verne would have to be relocated within the ROW in order to provide room for the two light-rail tracks. Between La Verne and Montclair, the rail ROW includes tracks jointly used by Metrolink and BNSF. In that segment, which is a wide ROW, the LRT tracks would be located on the northern portion of the ROW, while Metrolink/freight tracks would be located on the southern portion.

- **Double-Track Configuration without Freight:** This operational configuration assumes that the freight interests would, through negotiation, move to other modes of access. This would result in there being two LRT tracks along the corridor from Sierra Madre Villa Station to the eastern border of the city of La Verne. East of La Verne, freight would continue to operate on the existing Metrolink/freights tracks that share the ROW.

Figure ES-2: Full Build LRT Alternative Alignment

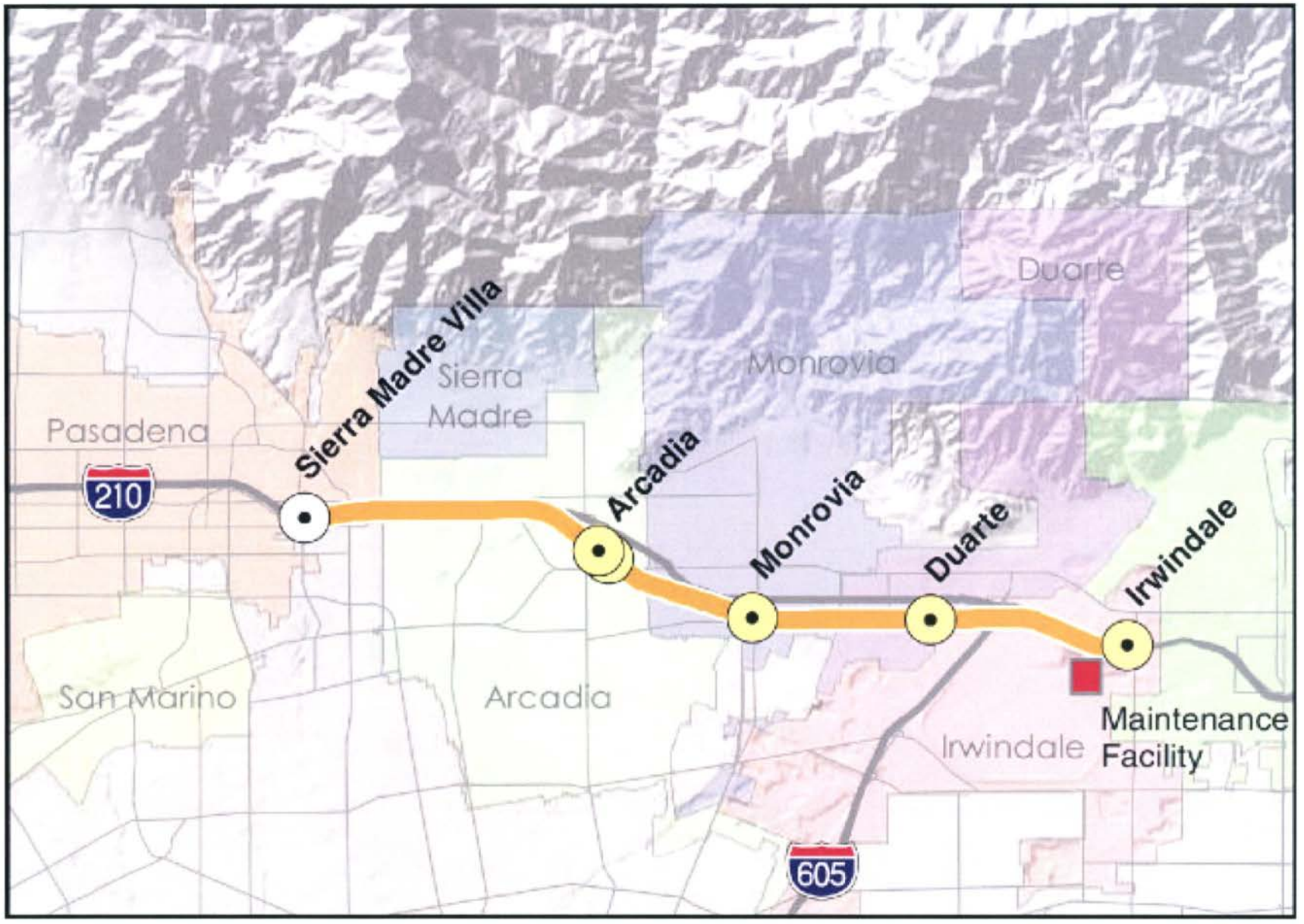
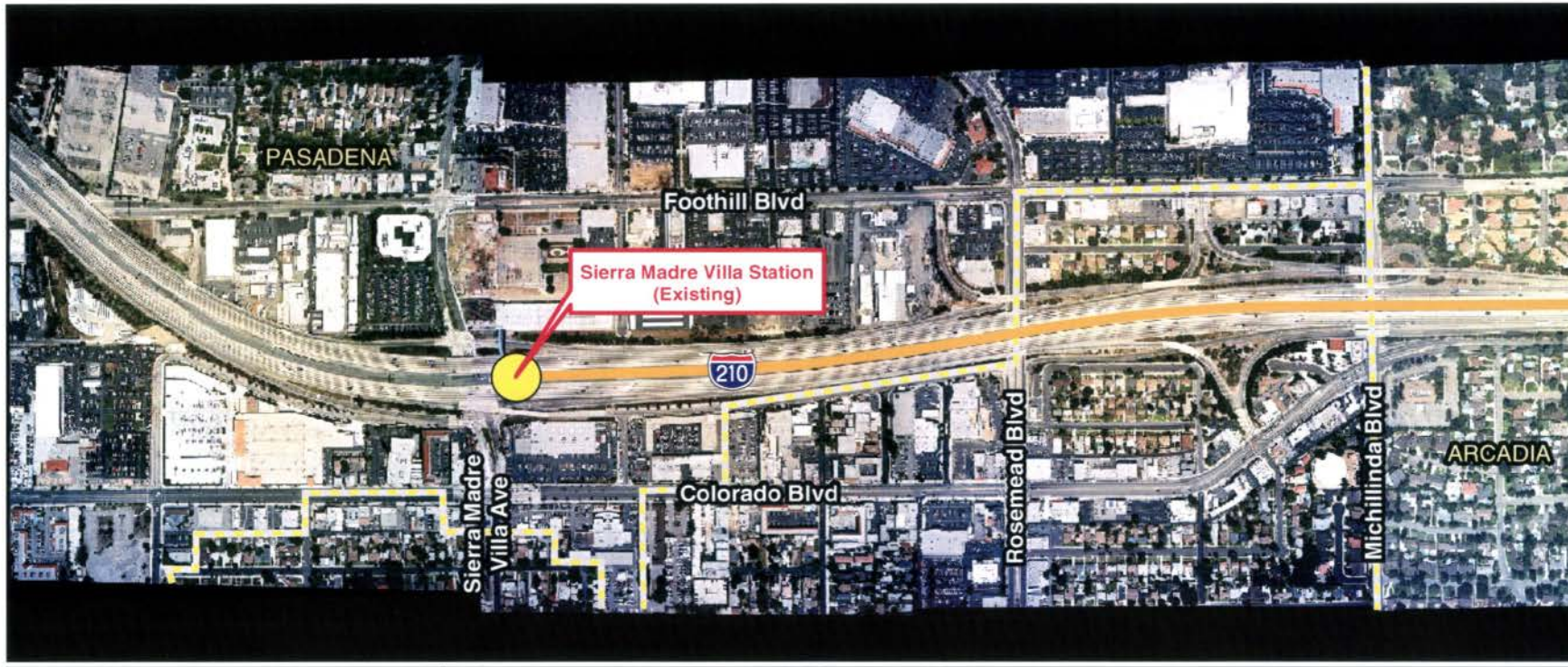


Figure ES-3: Build LRT Alternative to Maintenance Facility

- **Double-Track Configuration with Freight:** This operational configuration would have freight and light-rail vehicles sharing the same tracks along the ROW between Monrovia and La Verne. Freight operations would occur during a time-separated window, not when LRT services would be occurring. LRT operations are assumed to begin at approximately 4 a.m. and end at about 2 a.m.; freight operations would typically be restricted to hours when LRT service is not in operation. Under this operational configuration, freight service to the east of La Verne would operate on the existing (and separate) Metrolink/freight tracks and would not be required to be time-separated.

All three options are examined and analyzed in this DEIS/DEIR.

Figures ES-4 through ES-25 show the entire alignment overlaid on aerial photographs, from Pasadena to Montclair.



LEGEND

- Proposed Station (Not to Scale)
- Existing Station (Not to Scale)
- Optional Station (Not to Scale)
- City Boundary

Proposed Alignments

- 2 LRT Tracks
- 2 Metrolink Tracks (Existing)
- 2 LRT Tracks or 2 LRT Tracks + 1 Freight Track
- 1 Track: Metrolink + Freight

0 250 500 1,000 Feet

N

Source: C&C Aerial Mapping Corp., July 15, 2003; Thomas Brothers Maps, 2003

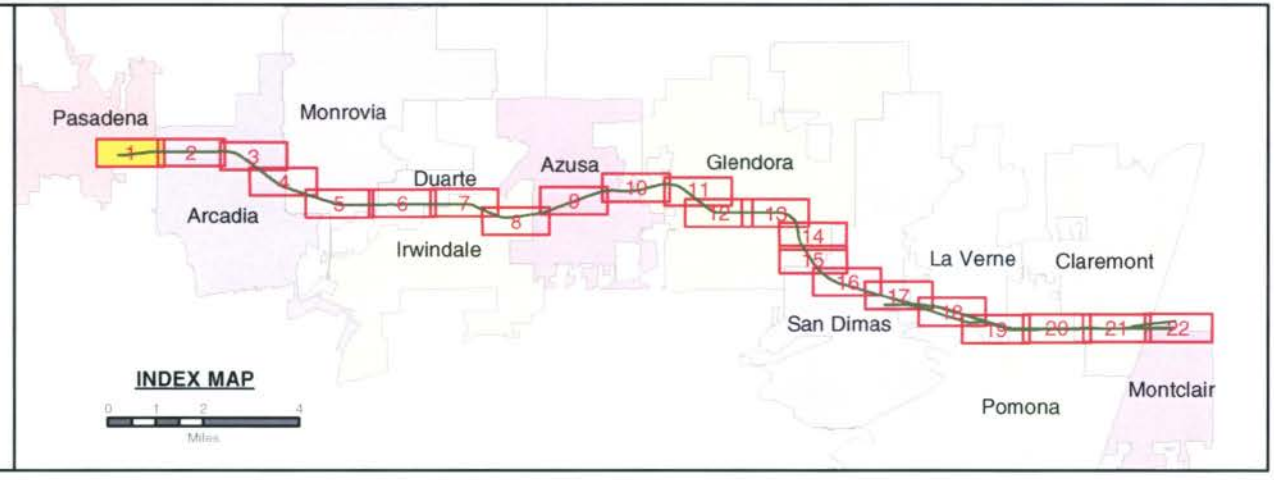


Figure ES-4: Full Build LRT Alternative (1 of 22)

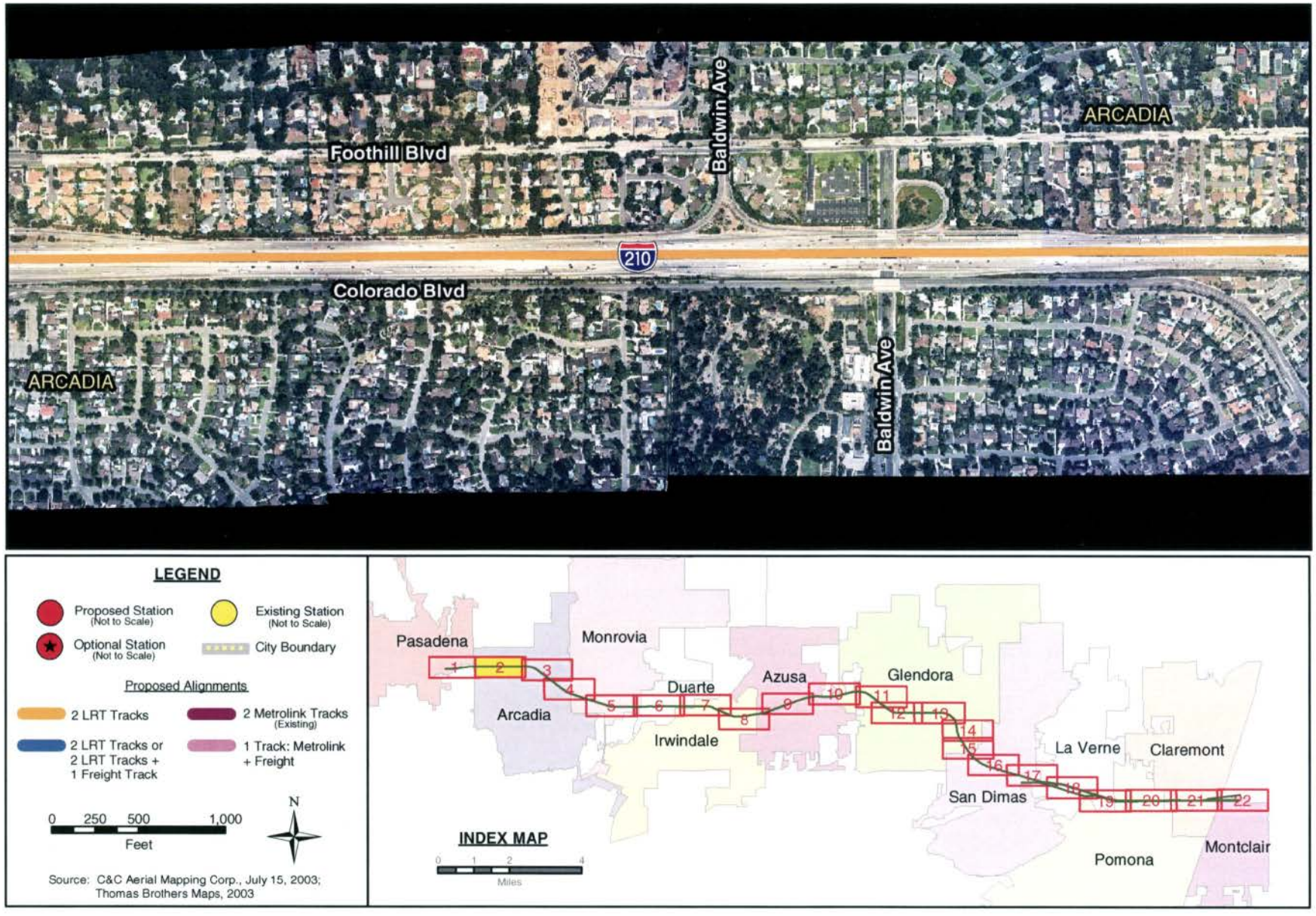


Figure ES-5: Full Build LRT Alternative (2 of 22)

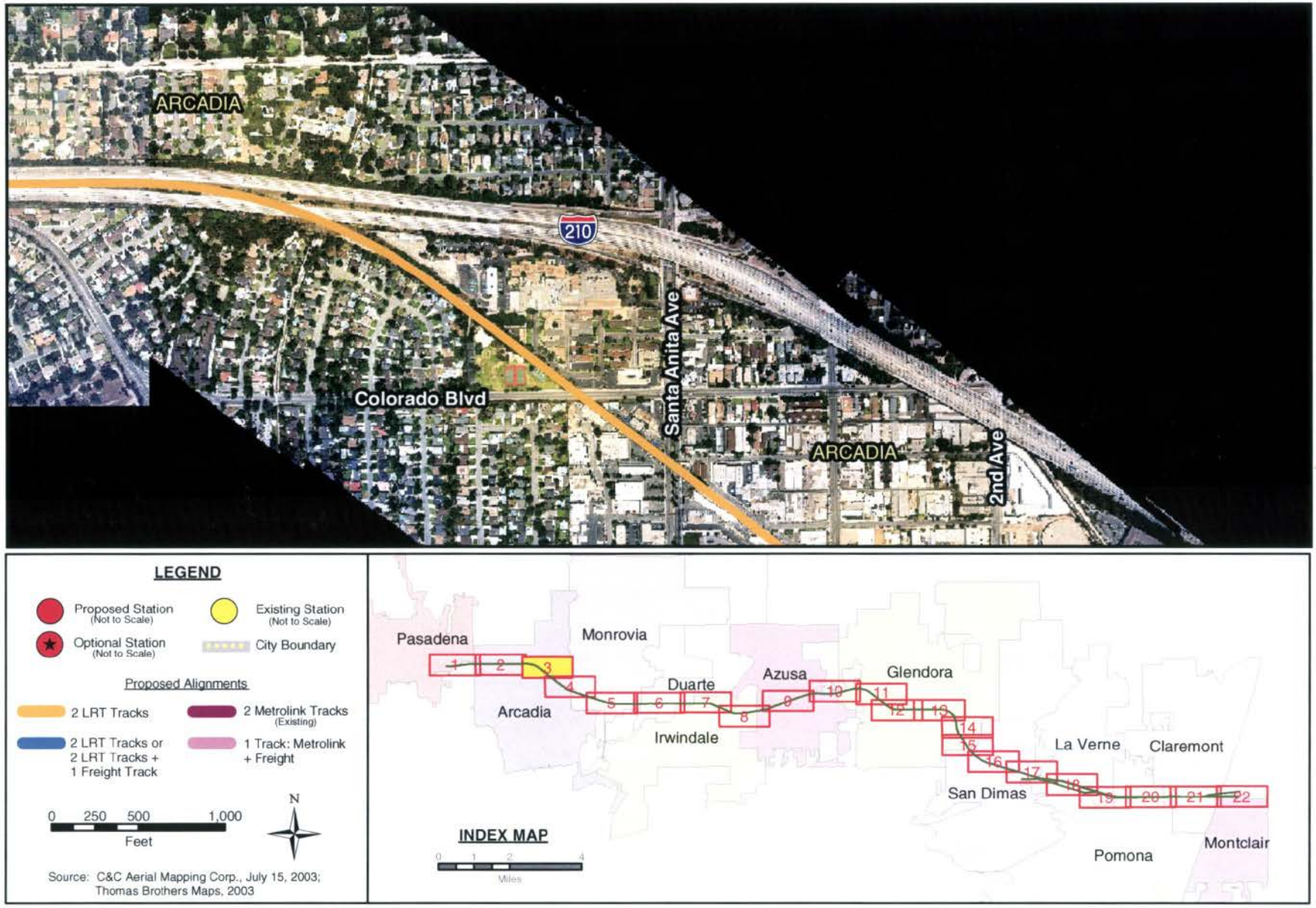


Figure ES-6: Full Build LRT Alternative (3 of 22)

Figure ES-7: Full Build LRT Alternative (4 of 22)

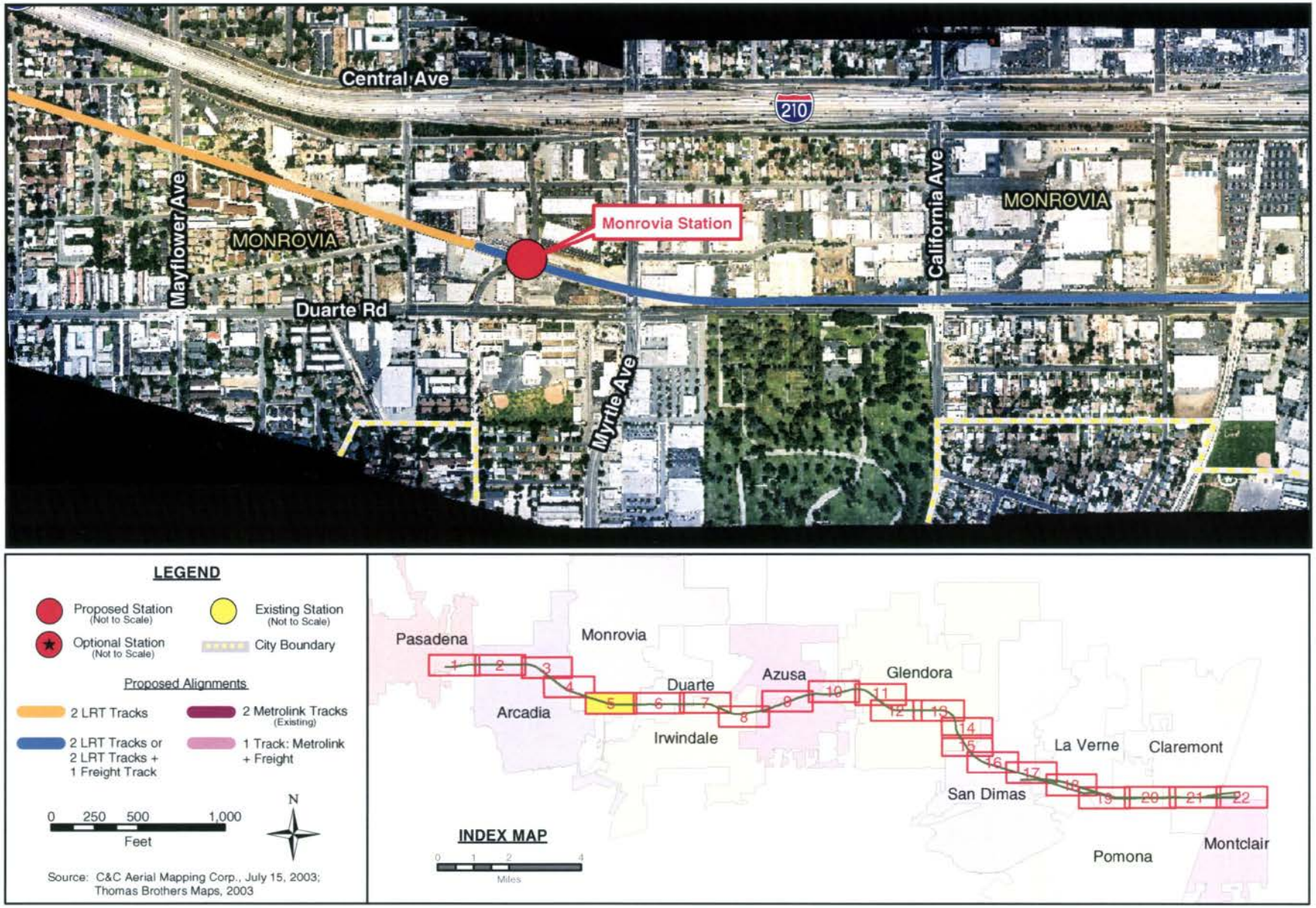


Figure ES-8: Full Build LRT Alternative (5 of 22)

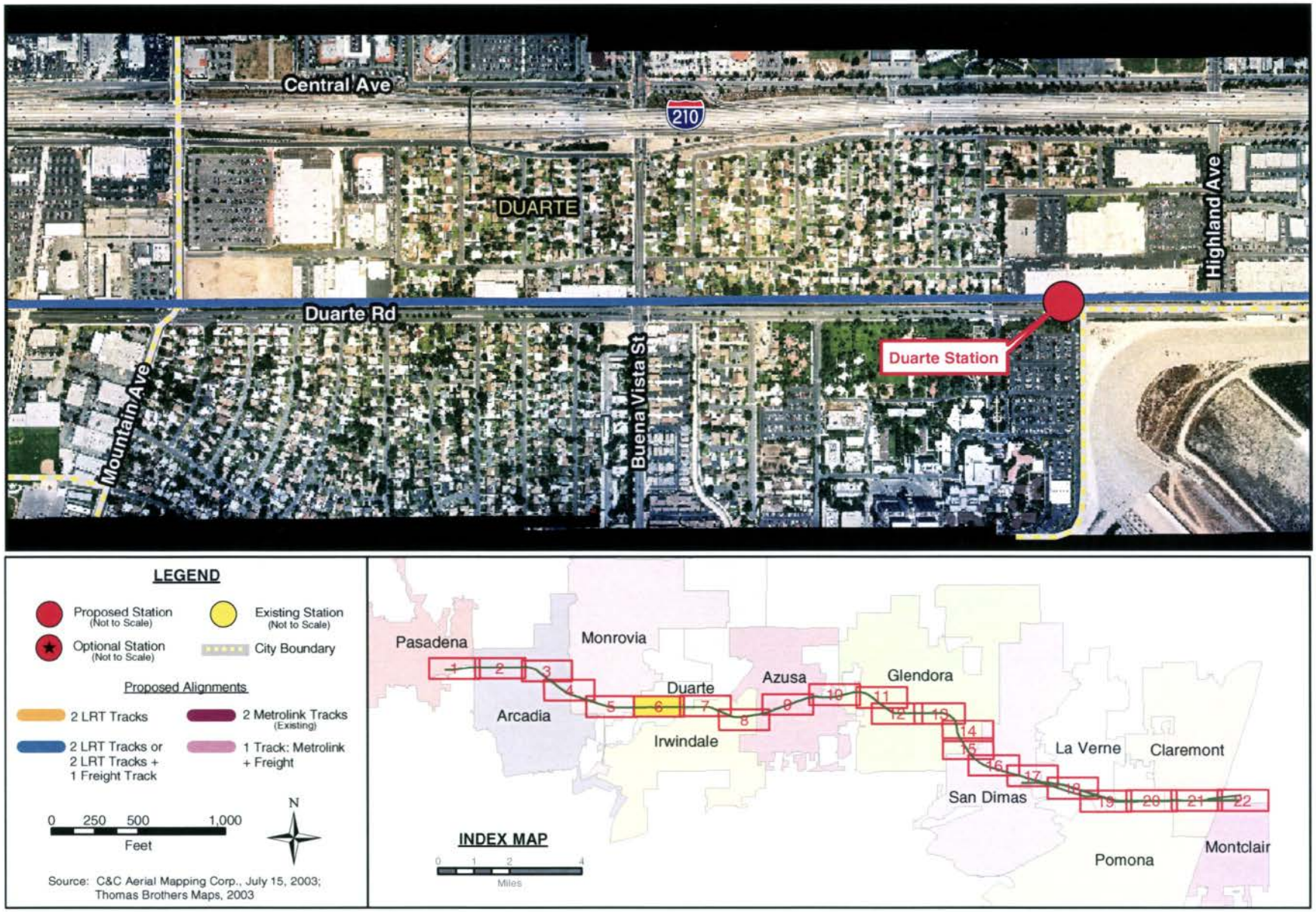


Figure ES-9: Full Build LRT Alternative (6 of 22)

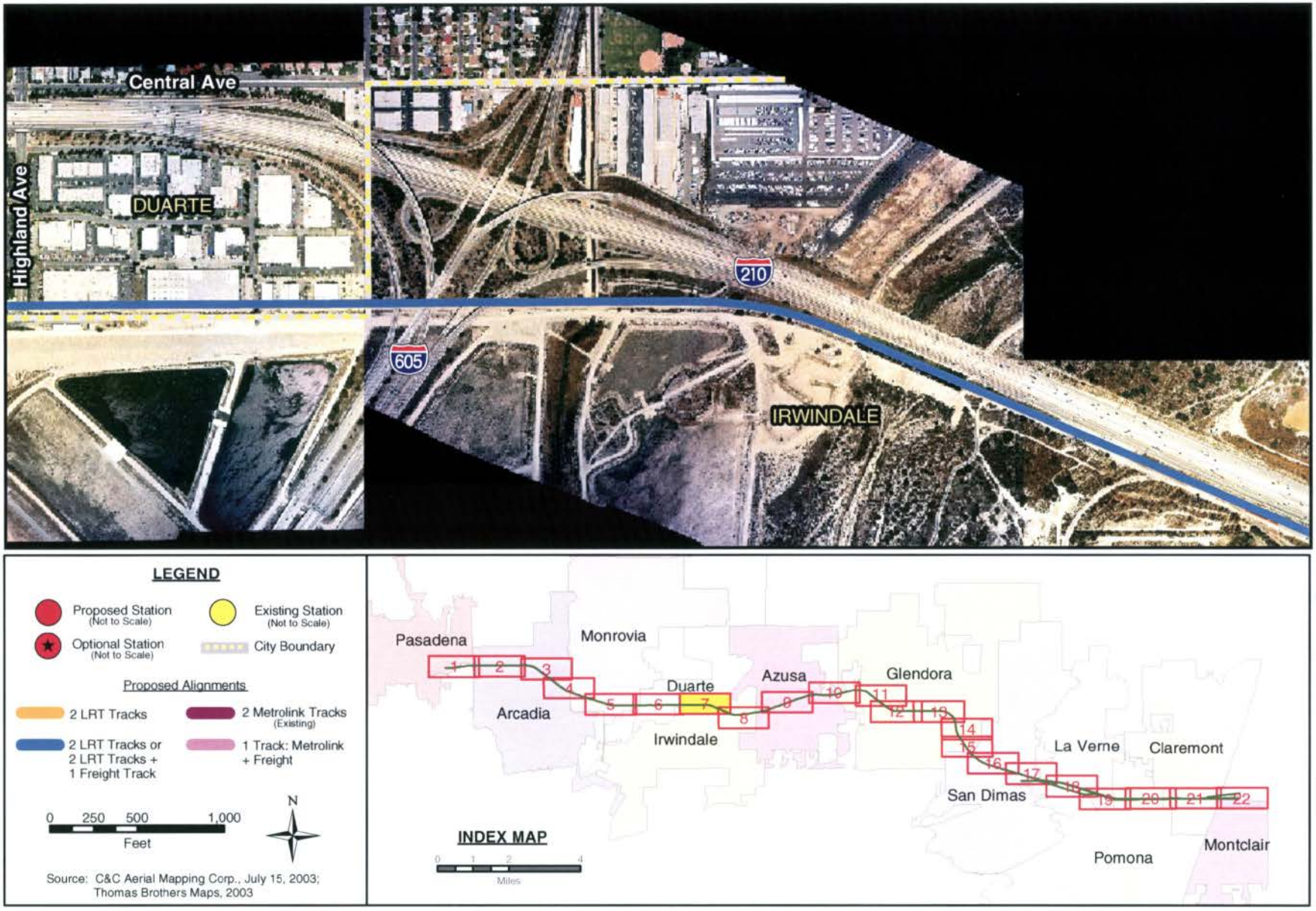


Figure ES-10: Full Build LRT Alternative (7 of 22)

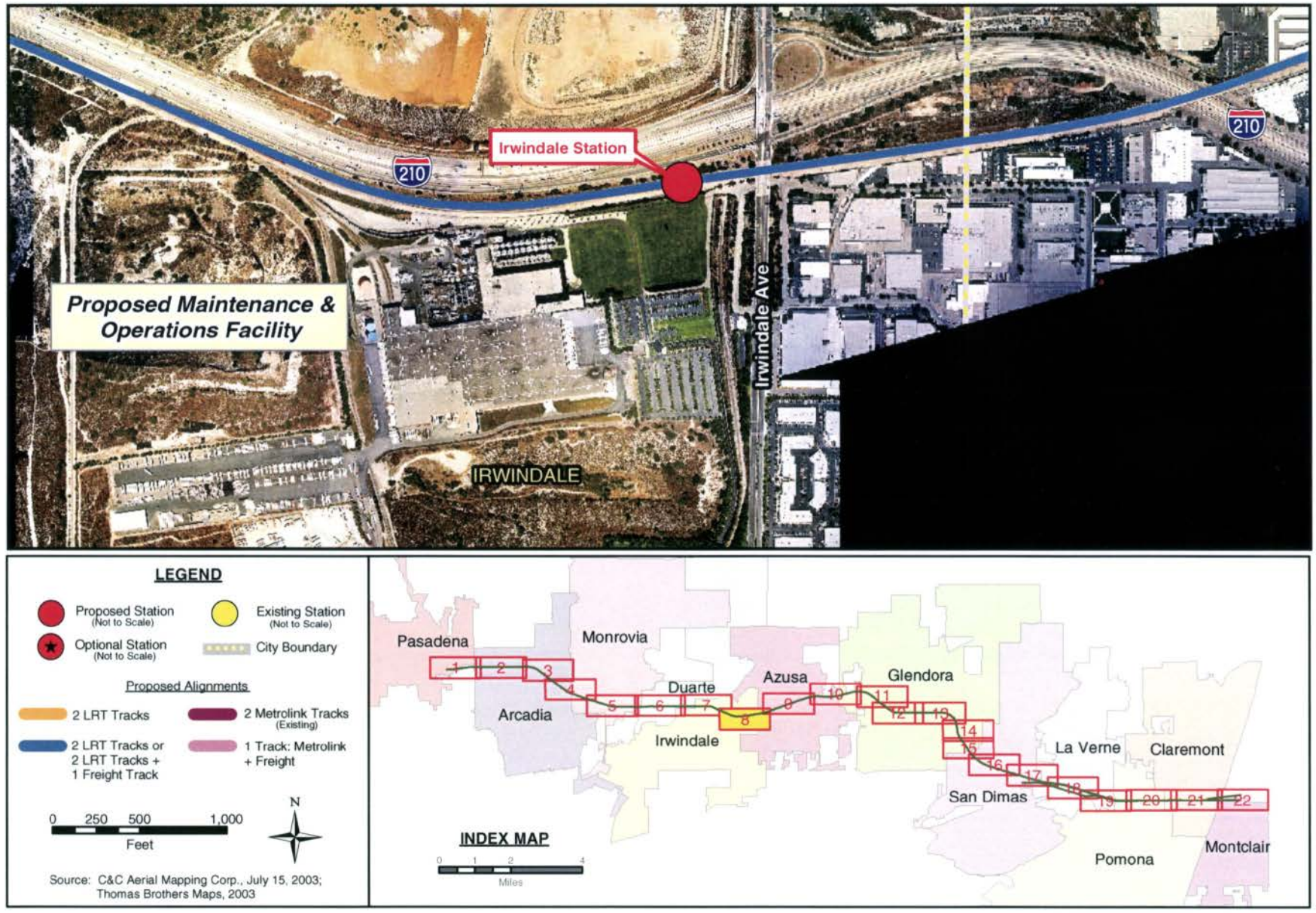


Figure ES-11: Full Build LRT Alternative (8 of 22)

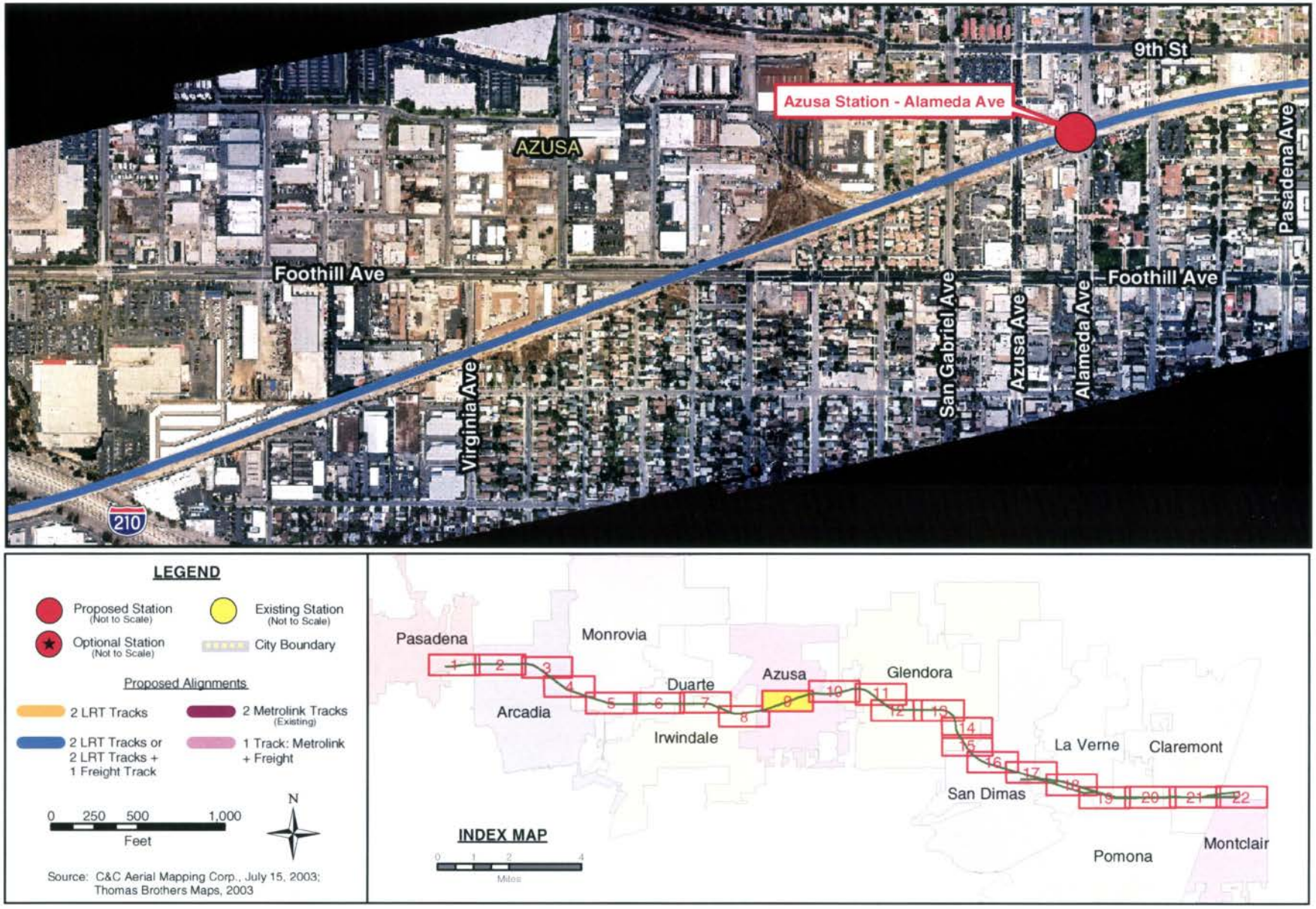


Figure ES-12: Full Build LRT Alternative (9 of 22)

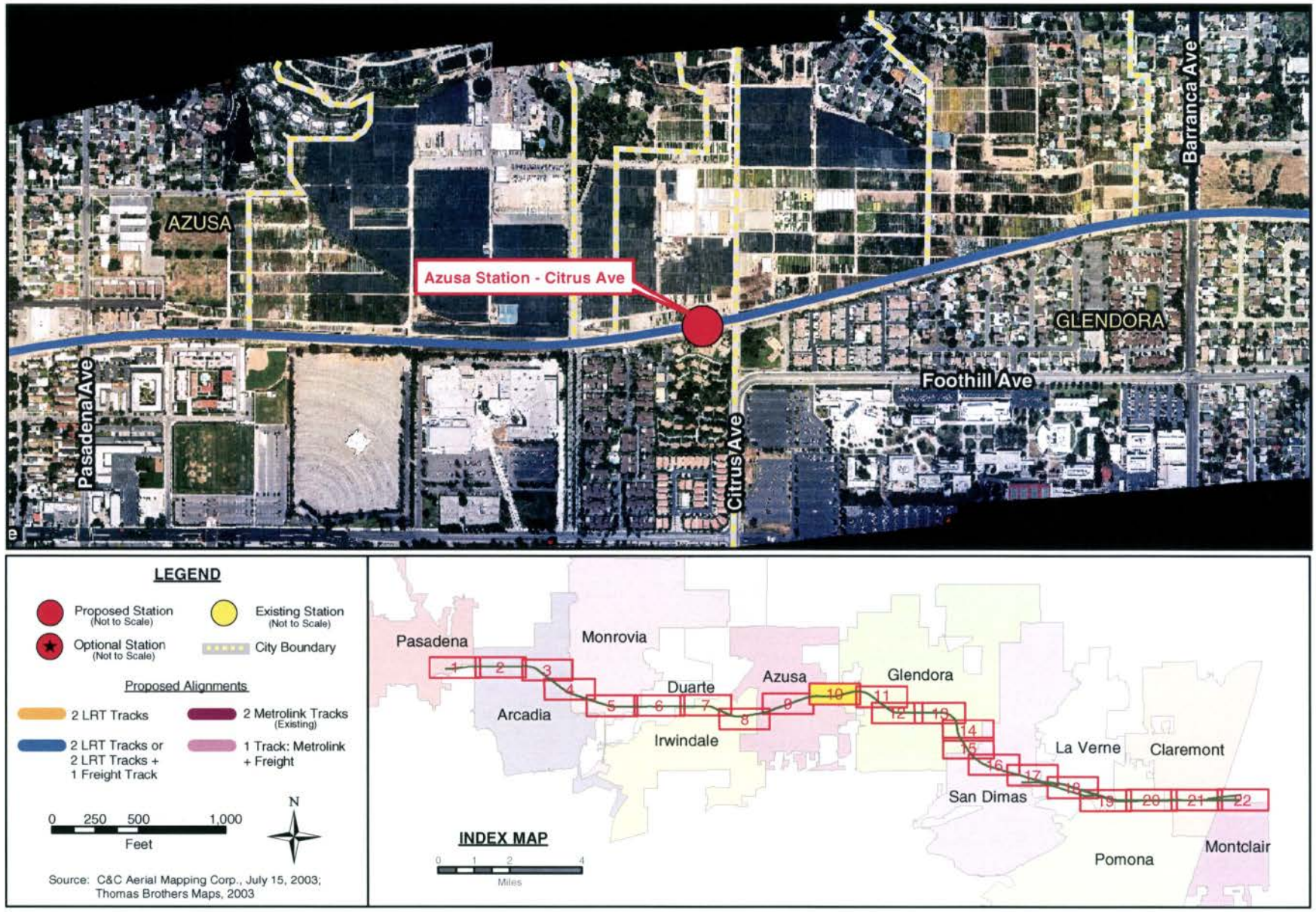


Figure ES-13: Full Build LRT Alternative (10 of 22)

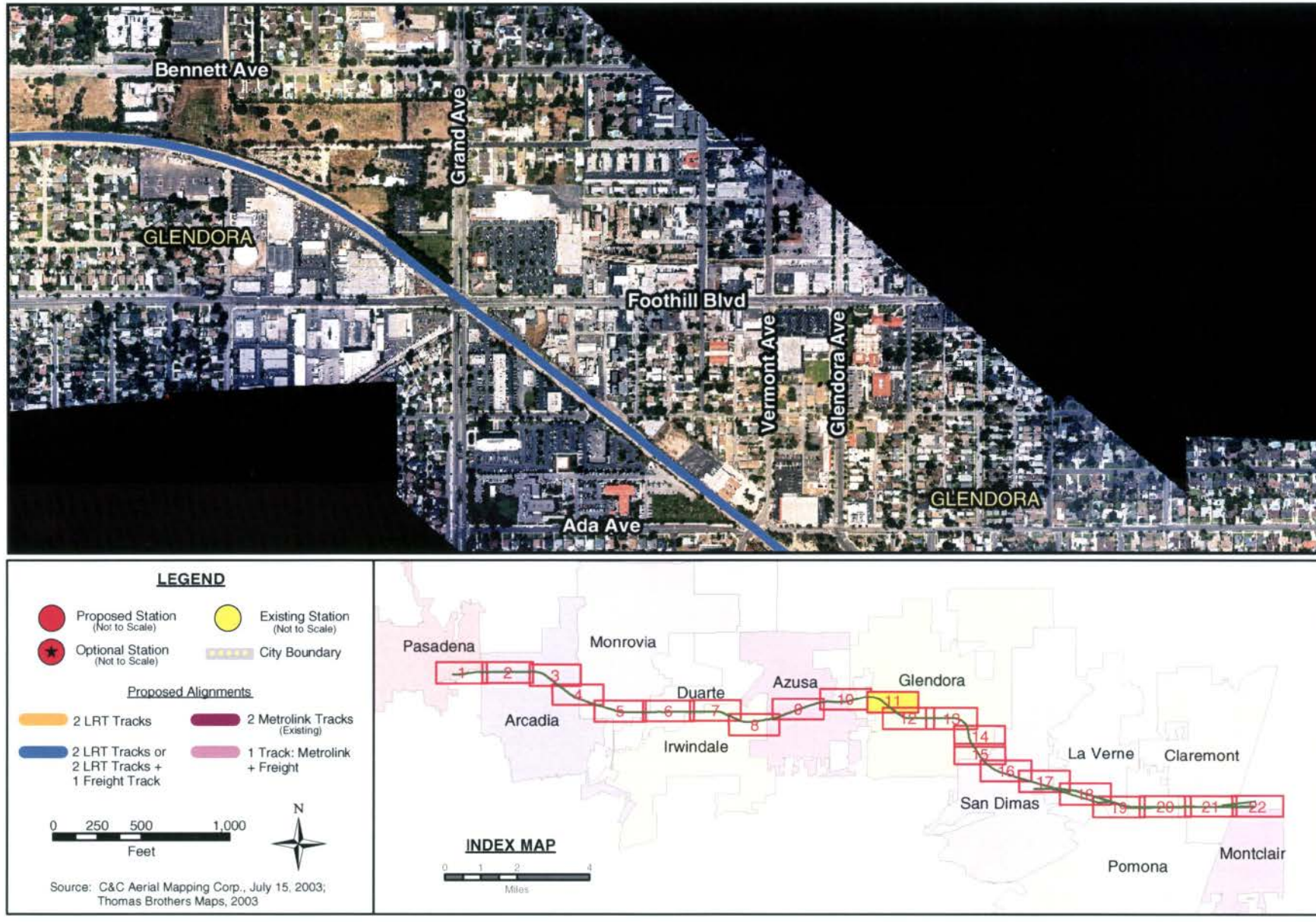


Figure ES-14: Full Build LRT Alternative (11 of 22)

Figure ES-15: Full Build LRT Alternative (12 of 22)

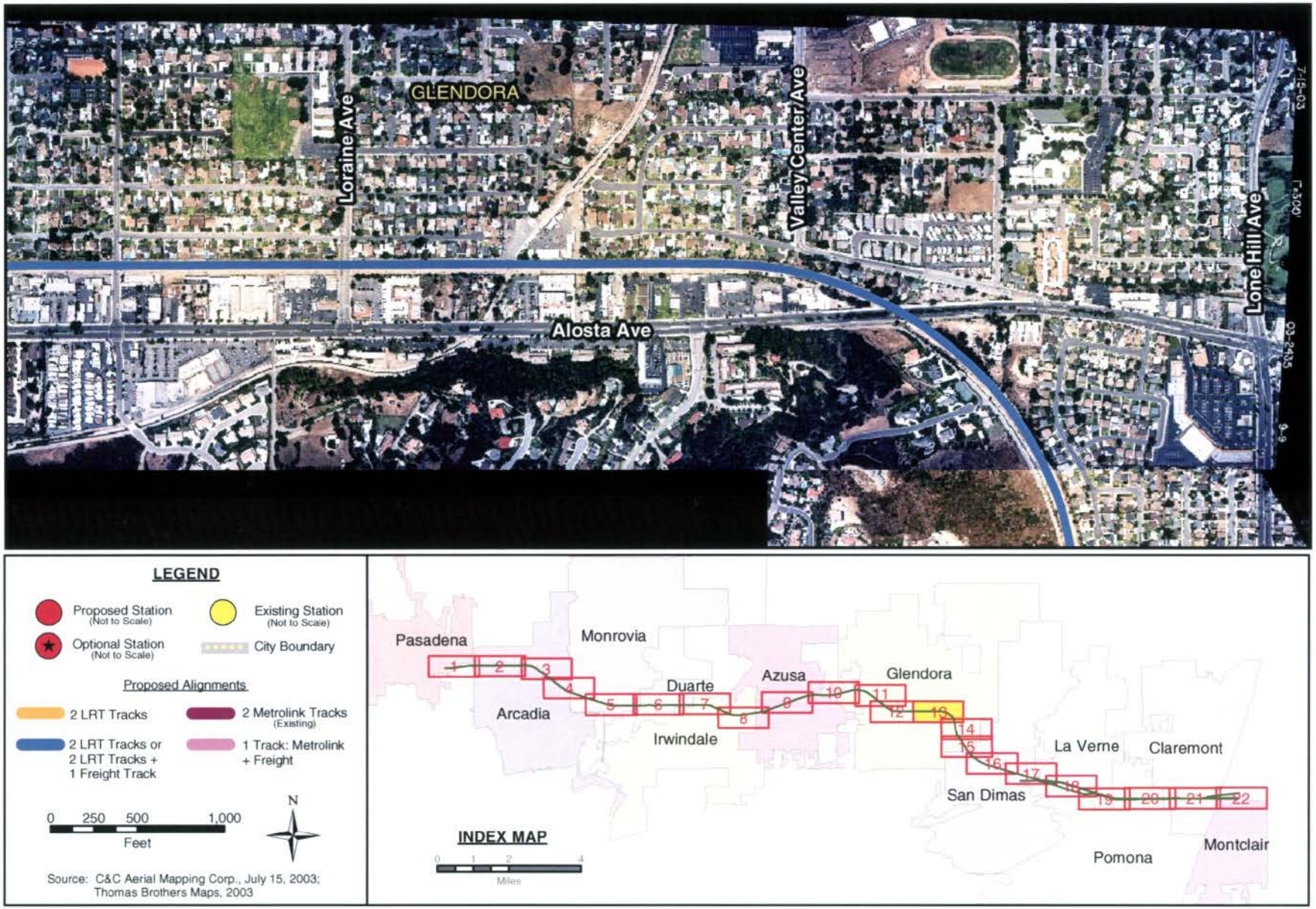


Figure ES-16: Full Build LRT Alternative (13 of 22)

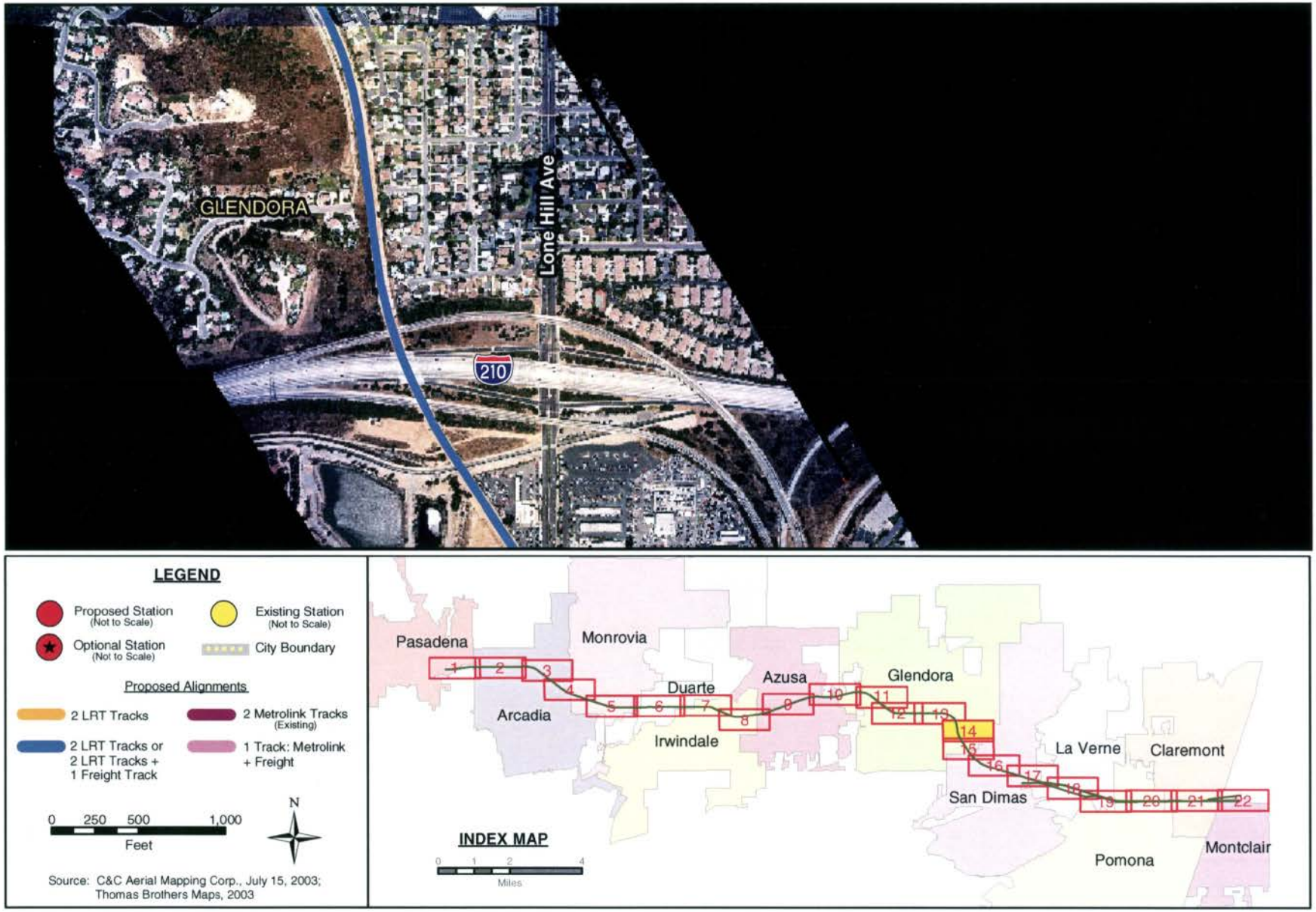


Figure ES-17: Full Build LRT Alternative (14 of 22)

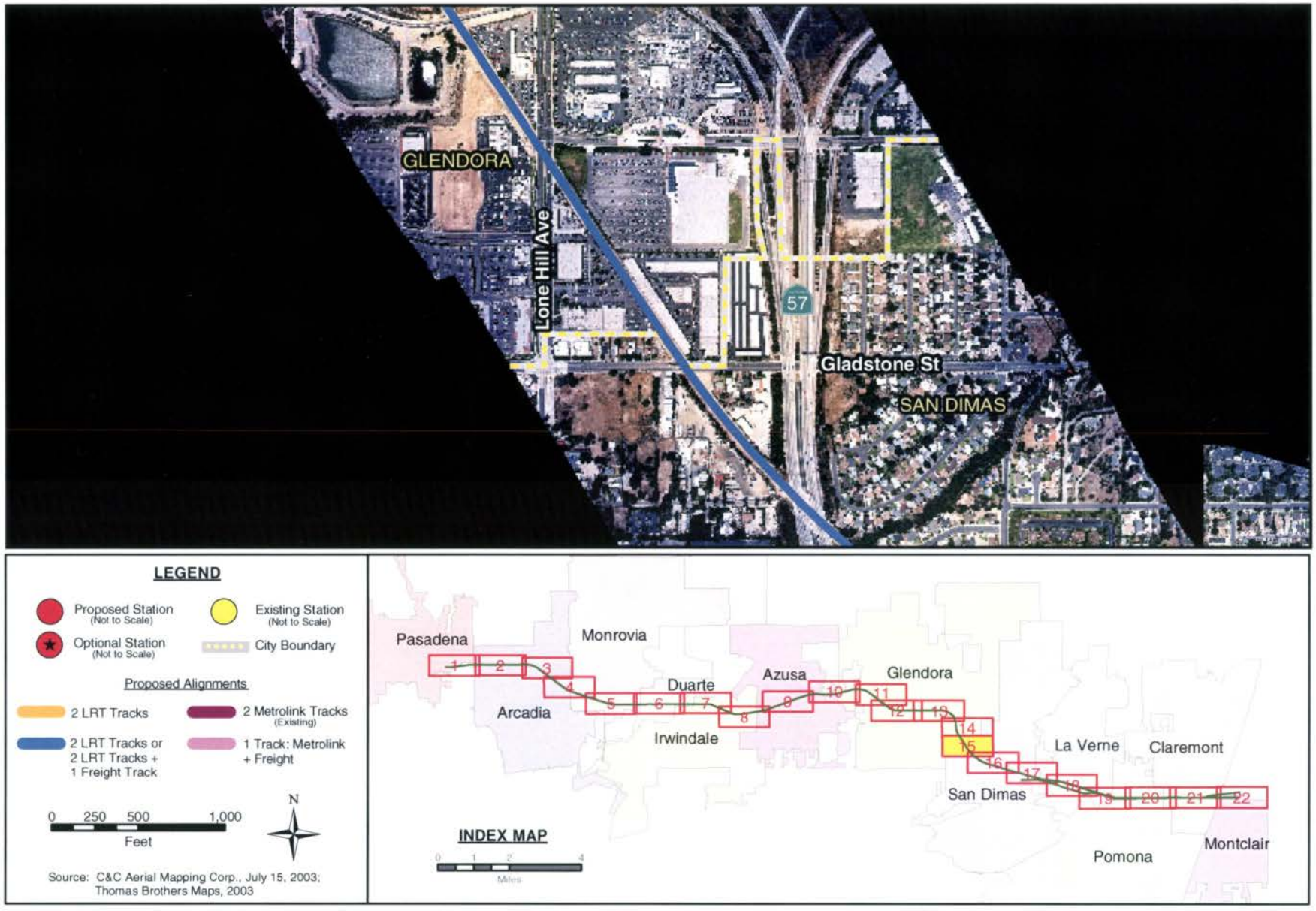


Figure ES-18: Full Build LRT Alternative (15 of 22)

Figure ES-19: Full Build LRT Alternative (16 of 22)

LEGEND

- Proposed Station (Not to Scale)
- Existing Station (Not to Scale)
- Optional Station (Not to Scale)
- City Boundary

Proposed Alignments

- 2 LRT Tracks
- 2 Metrolink Tracks (Existing)
- 2 LRT Tracks or 2 LRT Tracks + 1 Freight Track
- 1 Track: Metrolink + Freight

0 250 500 1,000 Feet

N

Source: C&C Aerial Mapping Corp., July 15, 2003; Thomas Brothers Maps, 2003

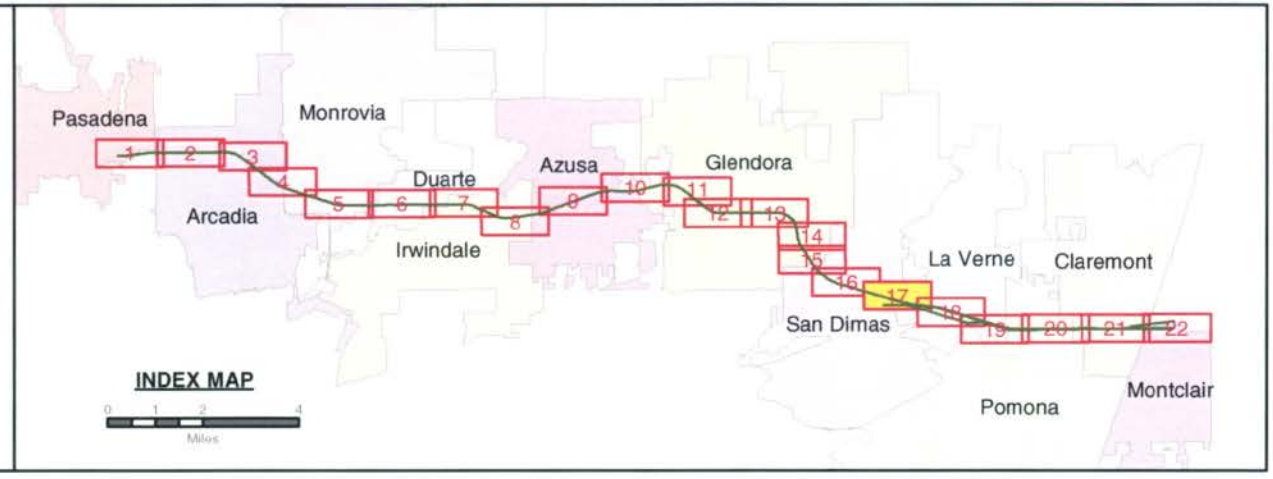


Figure ES-20: Full Build LRT Alternative (17 of 22)

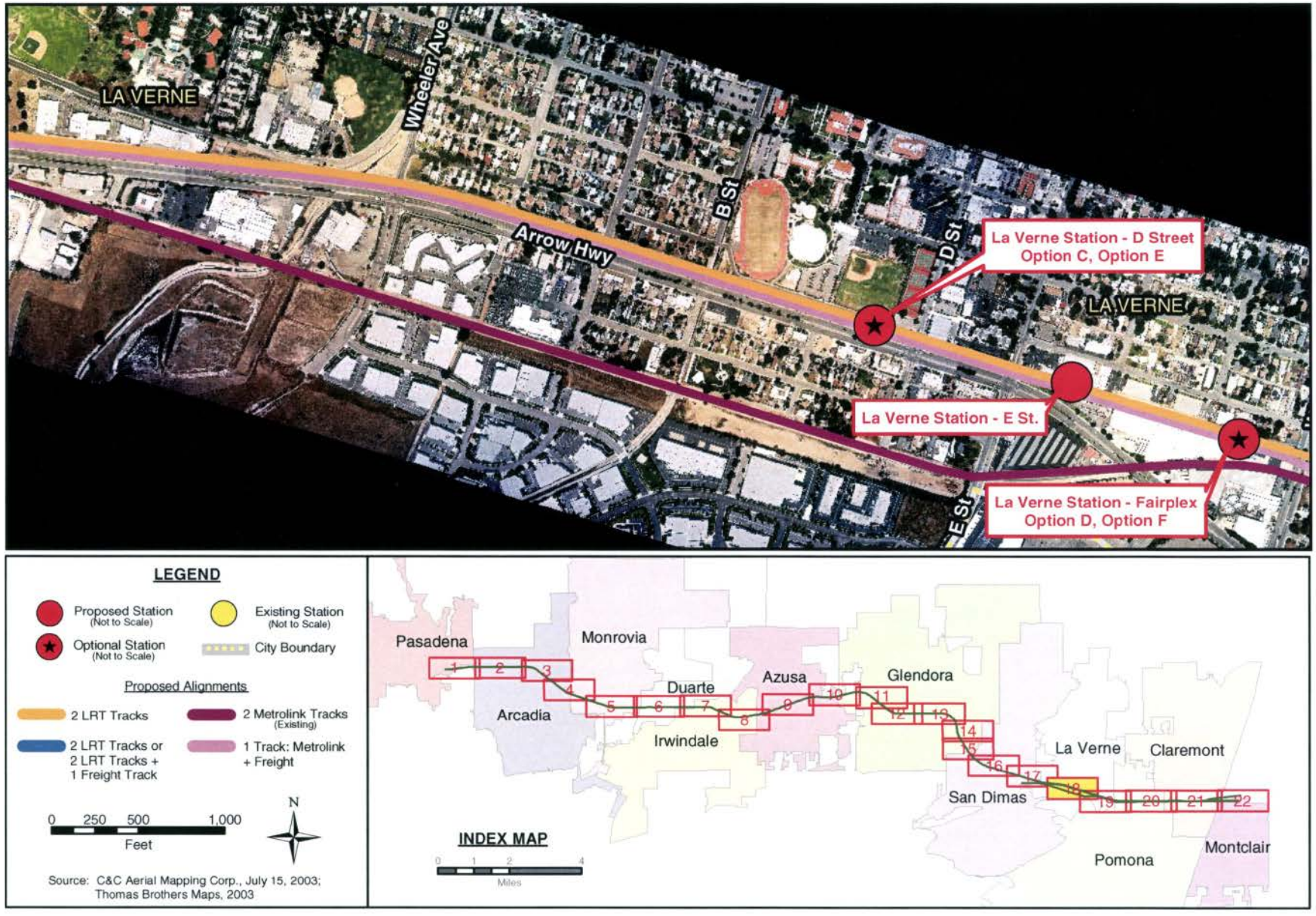


Figure ES-21: Full Build LRT Alternative (18 of 22)

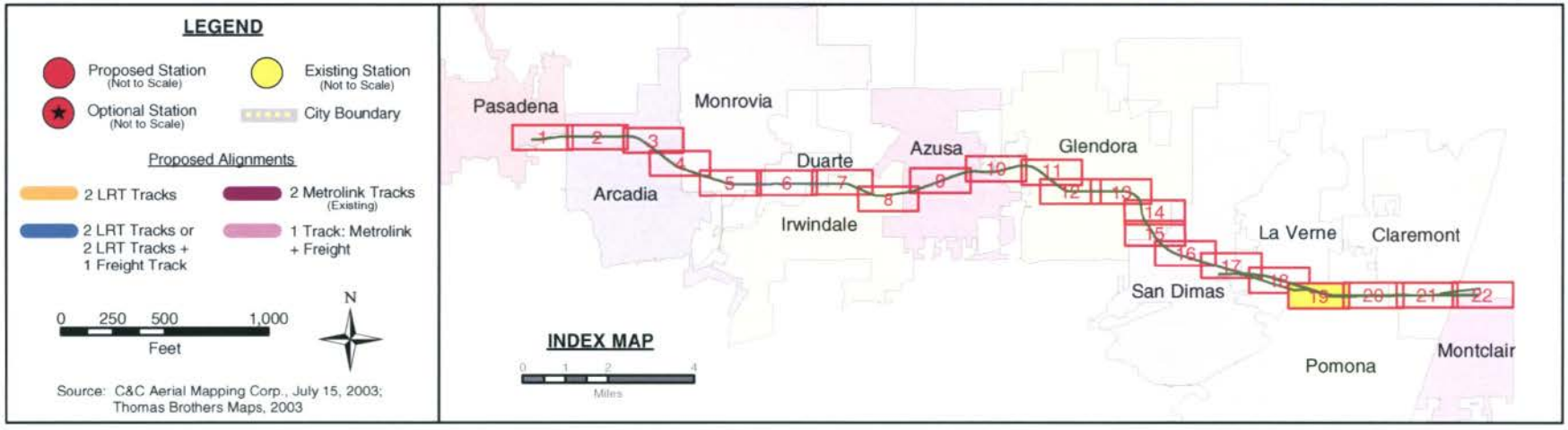


Figure ES-22: Full Build LRT Alternative (19 of 22)

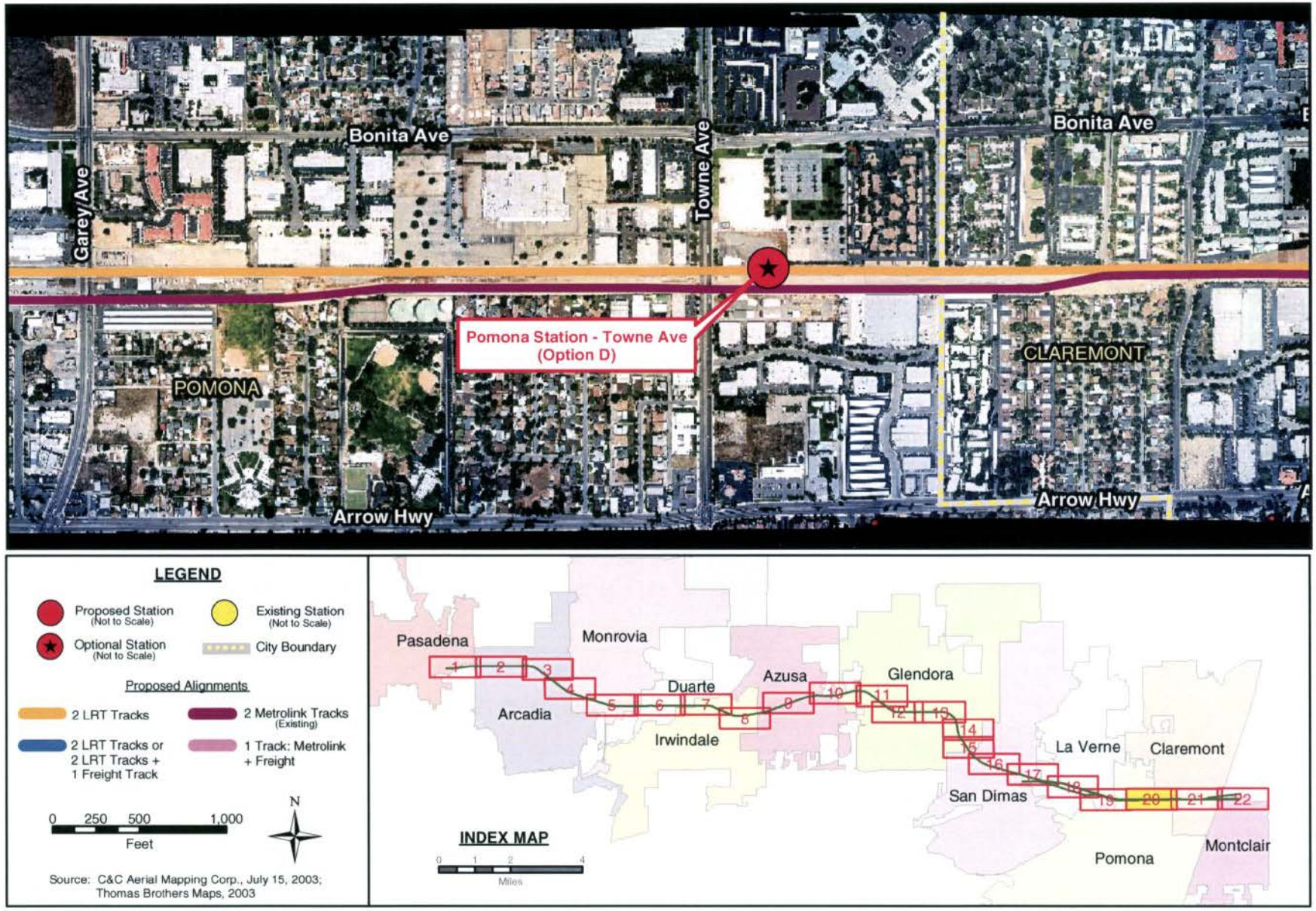


Figure ES-23: Full Build LRT Alternative (20 of 22)

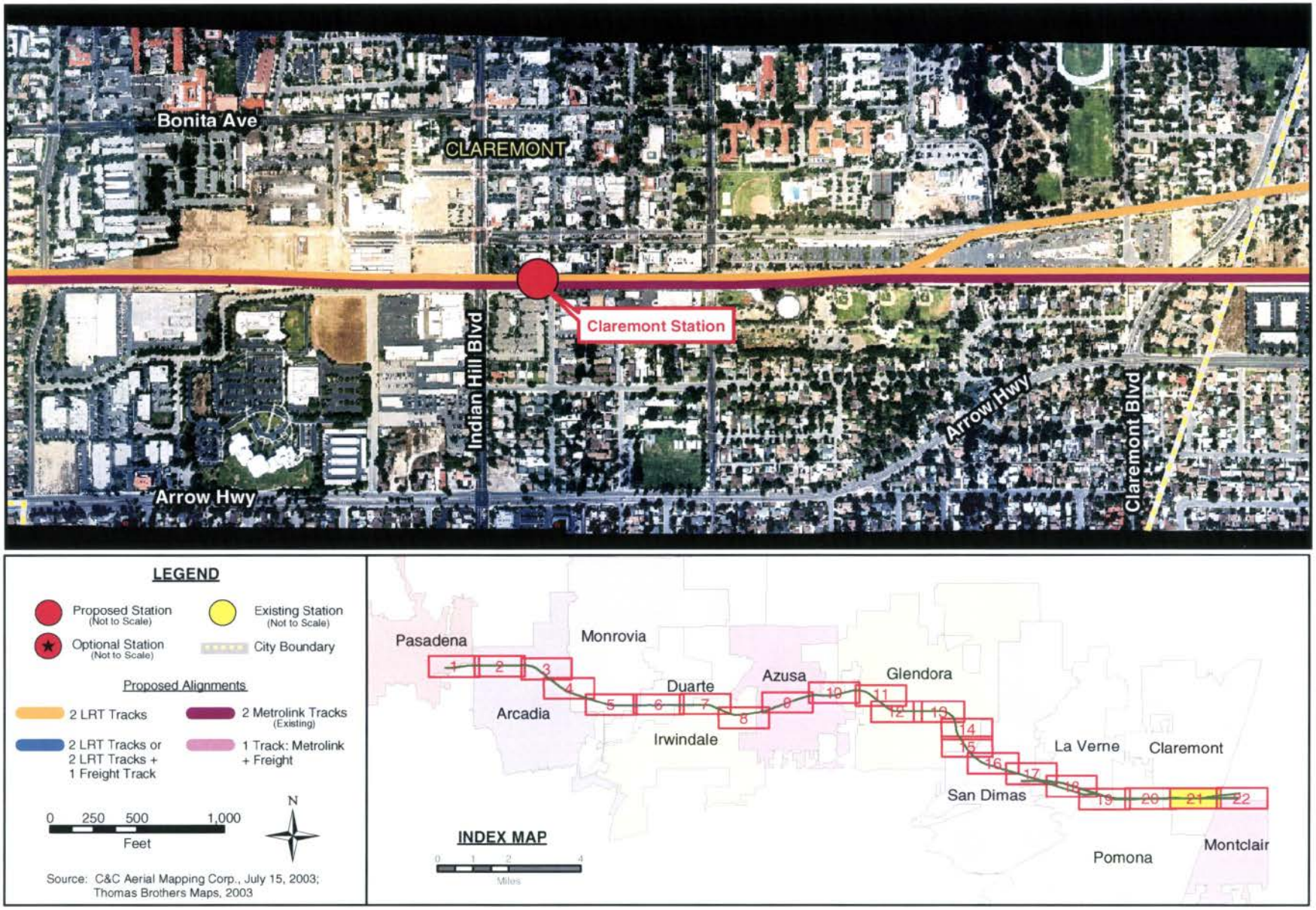


Figure ES-24: Full Build LRT Alternative (21 of 22)

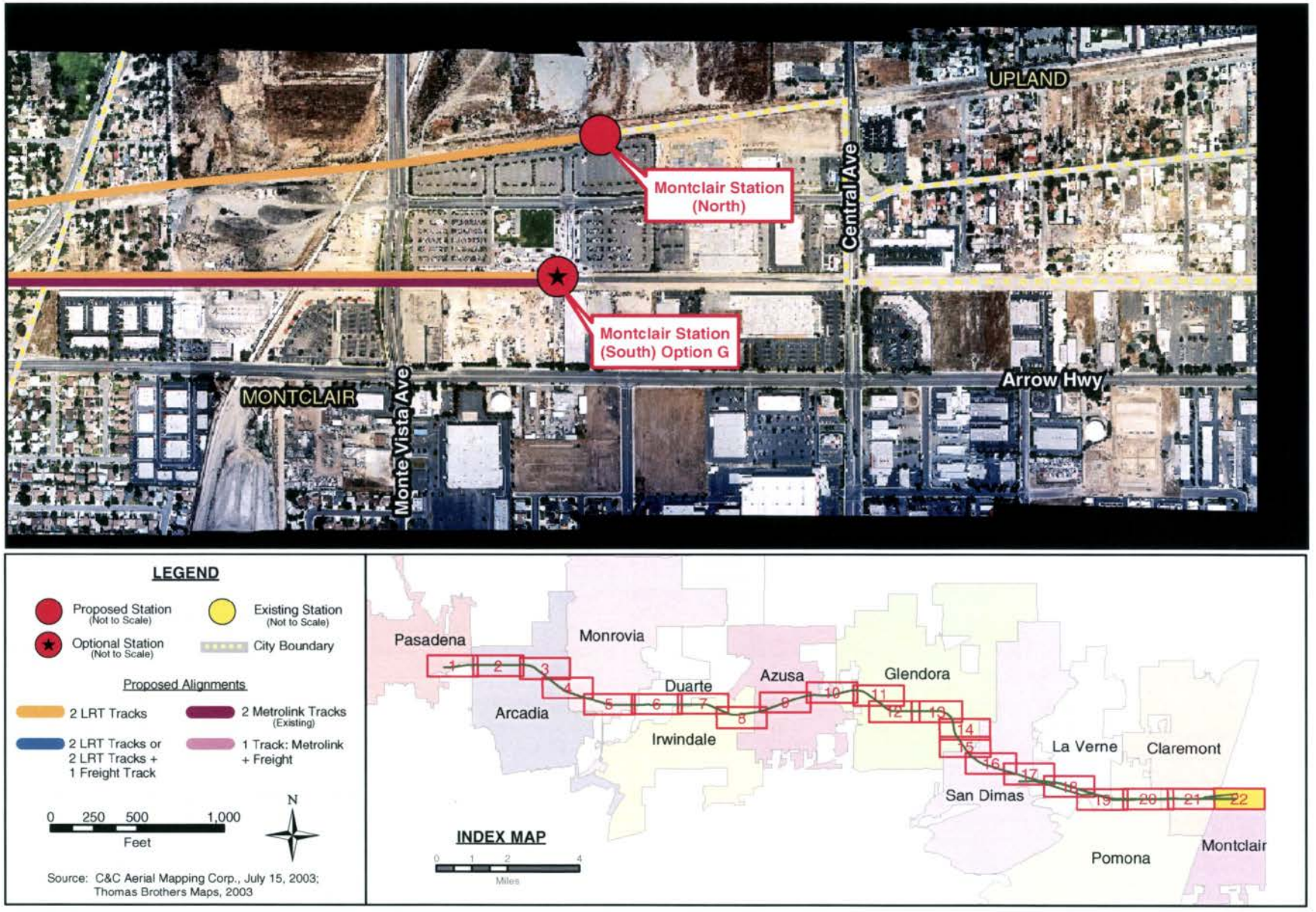


Figure ES-25: Full Build LRT Alternative (22 of 22)

ES-4.2.1 Stations

Locations for proposed LRT stations and parking were developed in consultation with corridor cities. **Figures ES-26 through ES-29** illustrate typical station configurations.

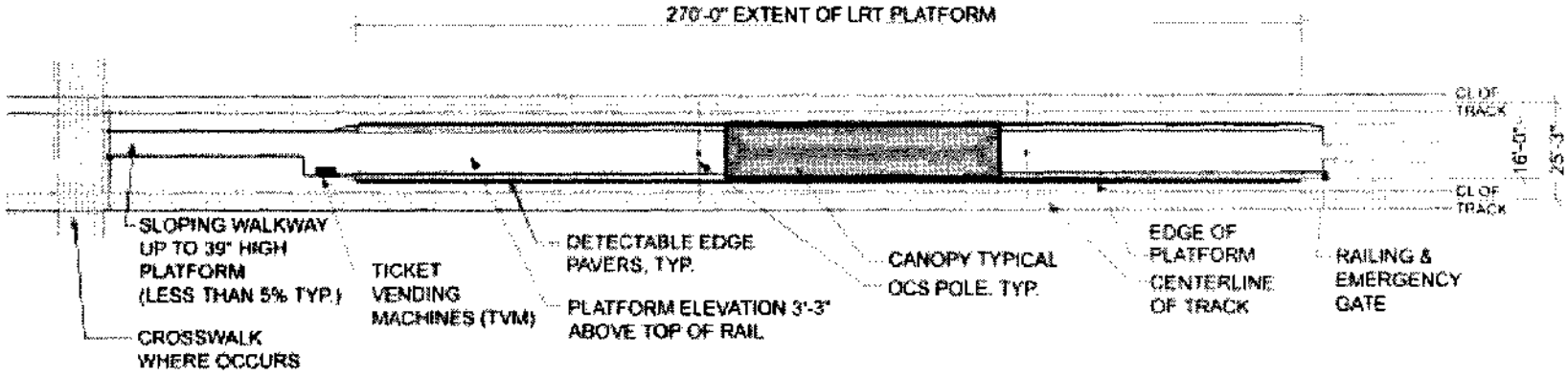
Reflective of the past use of this rail corridor for passenger service, existing historic depots in the cities of Monrovia, Azusa, San Dimas, and Claremont were selected as the locations for LRT service. Locations of previous depots in Arcadia and Glendora were also selected. All of these stations would contain one or two platforms, 270 feet in length, to accommodate LRT trains with up to three cars. Platforms would be approximately 14 feet wide for side-platform stations and 18 feet wide for center-platform stations. The conceptual design for the proposed stations in Phase II is based on the LRT stations created for Gold Line Phase I.

Station platforms would be either at grade or elevated above grade. Platforms would be designed to accommodate high-floor LRT vehicles, with the platform level approximately 3 feet above the level of the tracks. Grade changes between the platform and the surrounding land would be addressed with stairs, and ramps and sloped walks that meet the requirements of the Americans with Disabilities Act (ADA).

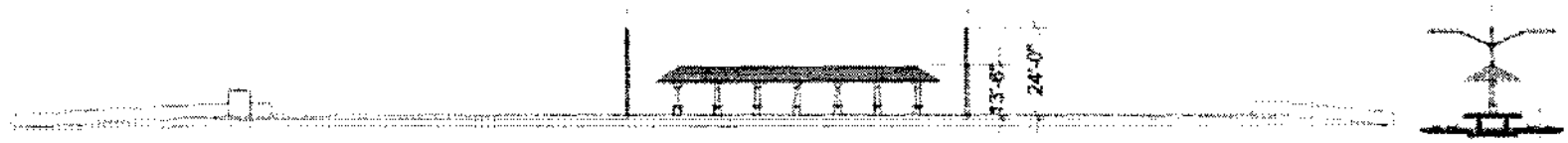
Stations would be configured with center platforms or side platforms. Center platform stations have a single platform located between the tracks and would serve trains traveling in both directions. Passengers would access the stations by using a crosswalk and a sloping walkway between the LRT tracks for street-level stations and stairs and elevators (and possibly escalators) at elevated stations. Side-platform stations have separate platforms for each track to serve trains traveling in opposite directions. For elevated stations, passengers traveling from one platform to the other would need to take the stairs or elevators (or escalators, if provided) to another level and then return to the platform level once they had crossed. For at-grade stations, passengers would need to go down the ramp from the platform to a designated crosswalk, cross the tracks, and then go back up the ramp or stairs to the other platform. Passenger access to the at-grade platforms would be at one or both ends, connected to existing or new sidewalks, or along the outside of the platform.

LACMTA design guidelines state that stations are to be at least 180 feet from the nearest street in order to allow for safe emergency stopping of LRT vehicles shy of the roadway. In some locations, waivers may need to be obtained for non-conforming station locations due to existing street configurations. Consistent design and equipment layout would be used throughout the system, as initiated in the Phase I construction, for the convenience of transit passengers and to control capital, operations, and maintenance costs. Signage, maps, fixtures, furnishings, lighting, and communication equipment would have consistent design throughout the system. However, opportunities would be provided during later stages of project development for stations to have individual and community identities through creative design of other station components, such as roof canopies, guardrails, floor finishes, station furniture, plaza and entrance areas, artwork, vertical finishes, and related items. The final design of stations would result from a combination of LACMTA-standard system components and design enhancements provided by individual cities. An area for fare collection and transit information posting would be provided on the platforms, similar to the existing LRT systems in Los Angeles County.

Parking at each station would be necessary to accommodate patrons using the LRT service. Parking facilities would be provided at each station based on the results of travel demand modeling. It is currently estimated that more than 7,000 parking spaces would be required at the 12 stations along the alignment. It should be noted that the demand for parking has been established from the transportation modeling process for 2010 and for 2025. Although proposed locations for parking have been developed based on the 2025 demand forecast, it is assumed that staged implementation of parking is likely to occur. Staged implementation would enable existing or new surface lots to serve initial ridership, with parking

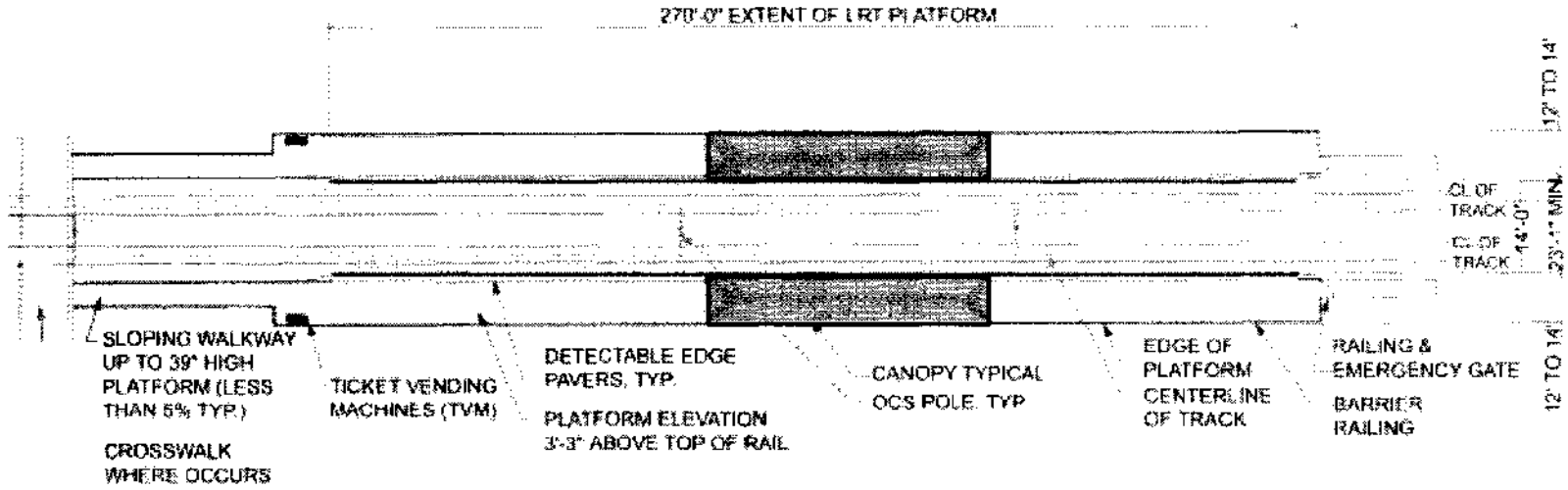


Prototypical Center Platform Concept

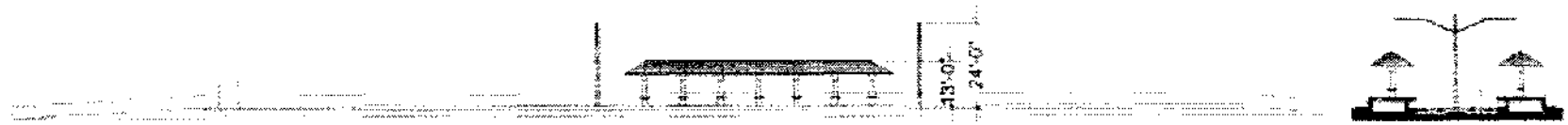


Prototypical Station Elevation and Cross Section

Figure ES-26: Typical Station Layout: Center Platform

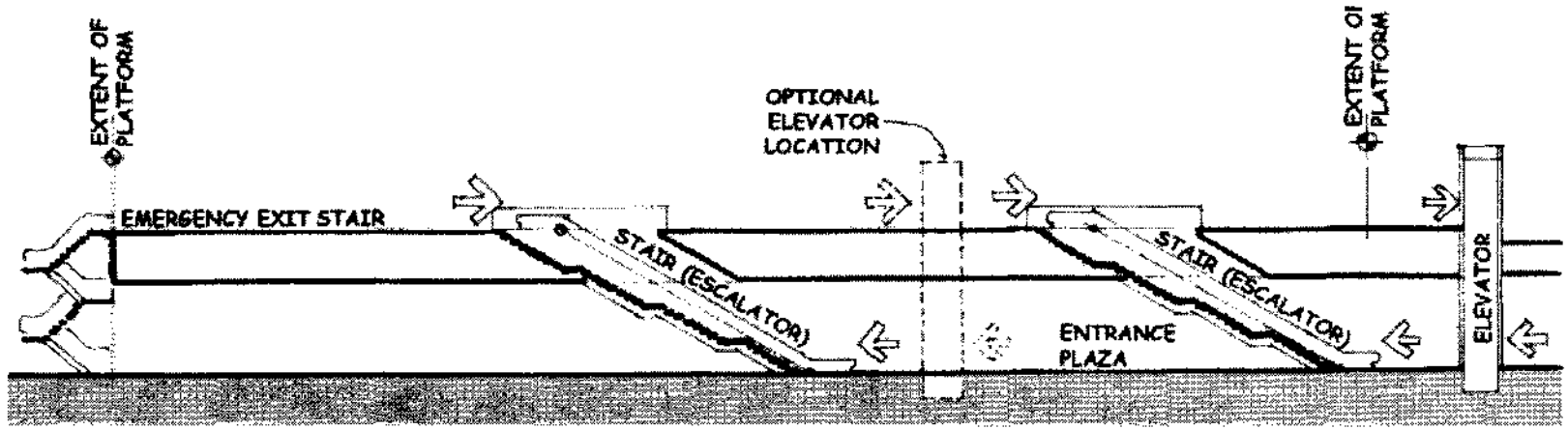


Prototypical Side Platform Concept

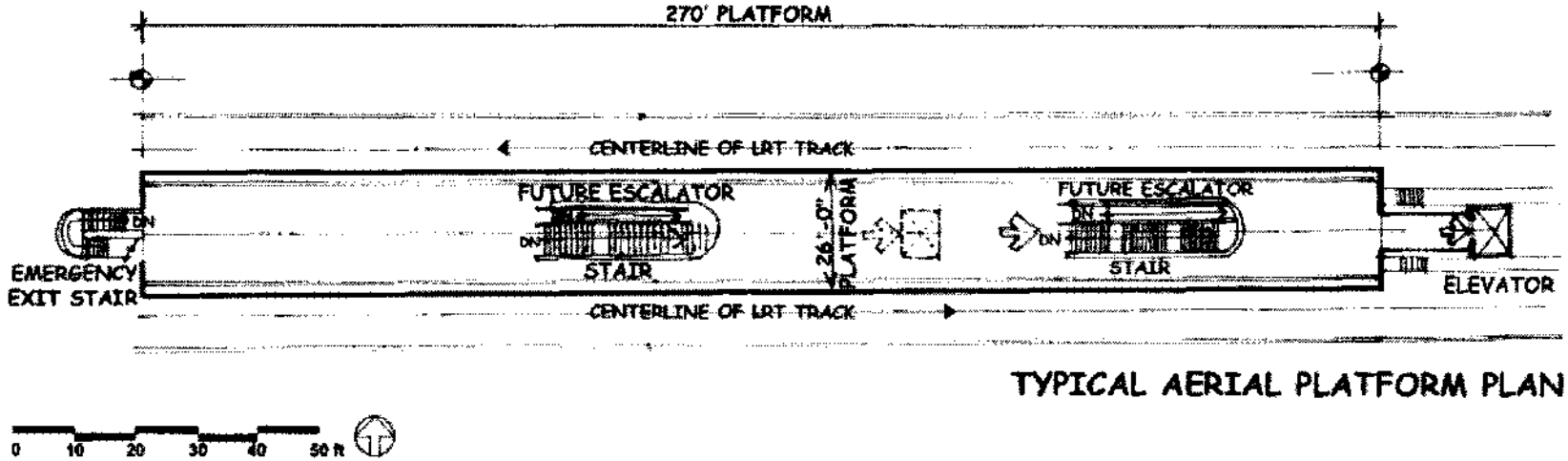


Prototypical Station Elevation and Cross Section

Figure ES-27: Typical Station Layout: Side Platform

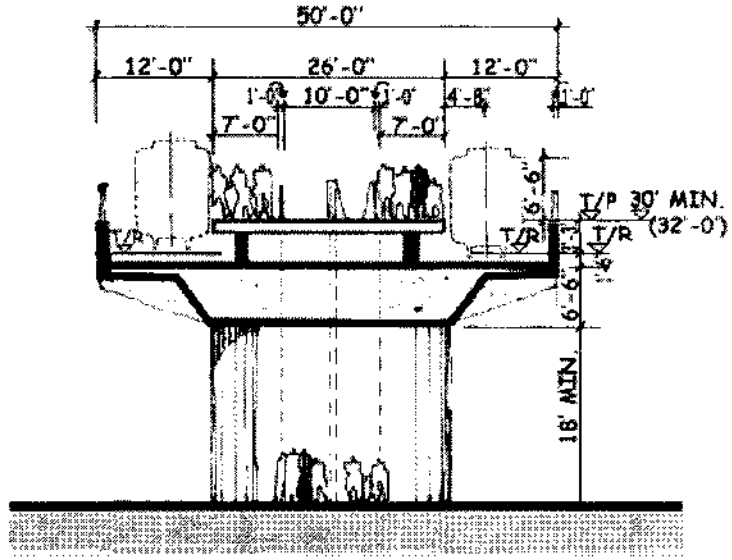


TYPICAL AERIAL PLATFORM
LONGITUDINAL SECTION



TYPICAL AERIAL PLATFORM PLAN

Figure ES-28: Typical Station Layout: Aerial Station



TYPICAL AERIAL STATION SECTION

Figure ES-29: Typical Station Section: Aerial Station

structures being created over time as ridership increases. For the purpose of environmental analysis, the impacts of 2025 parking demand (i.e., the likely worst-case scenario) have been assessed. Parking demand for each station is included in the descriptions below. It is also assumed that parking at any of the stations might be provided as part of transit-oriented development that may be implemented by the individual cities.

Each city along the alignment has been provided the opportunity to locate a station within its borders. Based on numerous meetings with each city, preliminary station layouts and parking locations have been identified and analyzed. The proposed station and parking sites in each city are described below.

❑ Arcadia

The city of Arcadia has three potential station sites, each located near the diagonal crossing of the intersection of North First Avenue and East Santa Clara Street. There are three station options (see below) that could occupy the sites. Parking for all options would take advantage of the city-owned parking lot located south of Wheeler Avenue between North Santa Anita Avenue and North First Avenue. It is currently utilized by residents to access local shops. This lot could become a parking structure in the future as transit ridership develops. In 2025, forecasts predict that 800 parking spaces would be necessary for the Arcadia station (please refer to **Figure ES-30**).

The initial site identified for the LRT station would be located northwest of the North First Avenue/East Santa Clara Street intersection, within the rail right-of-way next to Front Street as shown in **Figure ES-30**. This location would utilize a center platform with entry from the southern end at the intersection of North First Avenue and East Santa Clara Street. The platform begins 180 feet from the street curb to comply with California Public Utilities Commission (CPUC) regulations. Potential parking or passenger drop-off is also located adjacent to the station at Front Street.

As a potential alternative to the initial location, an Option A site would be located southeast of the intersection of North First Avenue and East Santa Clara Street. Due to the narrowing of the railroad ROW, this option would have side platforms, and access would be provided from the north at the aforementioned intersection. Option A could be implemented for either at-grade operation of the LRT line across Santa Anita Avenue or if there were a grade separation of the LRT line above Santa Anita Avenue (please refer to **Figure ES-31**).

The city of Arcadia has also expressed interest in having an aerial station in this area, which is Option B. Option B would be located in the same location as the initial station (i.e., to the west of First Avenue) but would be elevated approximately 30 feet above grade (please refer to **Figure ES-32**). This option is required for the potential grade separation of the LRT line above Santa Anita Avenue, since the LRT could not transition over the short distance from an elevation above Santa Anita Avenue to an at-grade station west of First Avenue. In addition, a grade separation over North First Avenue would be necessary, since the station elevation of approximately 30 feet occurs immediately west of North First Avenue.

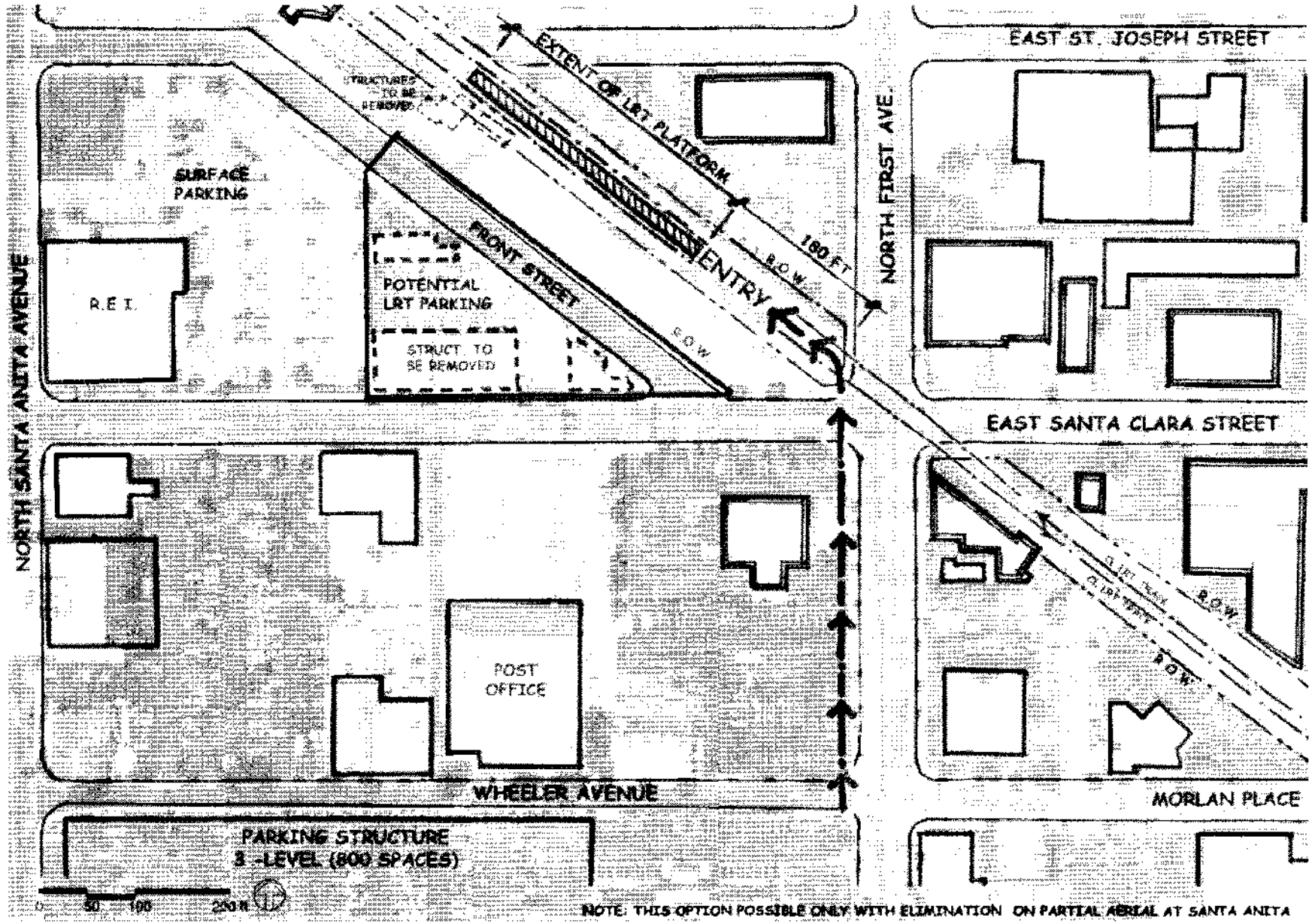


Figure ES-30: Site Plan: City of Arcadia Station

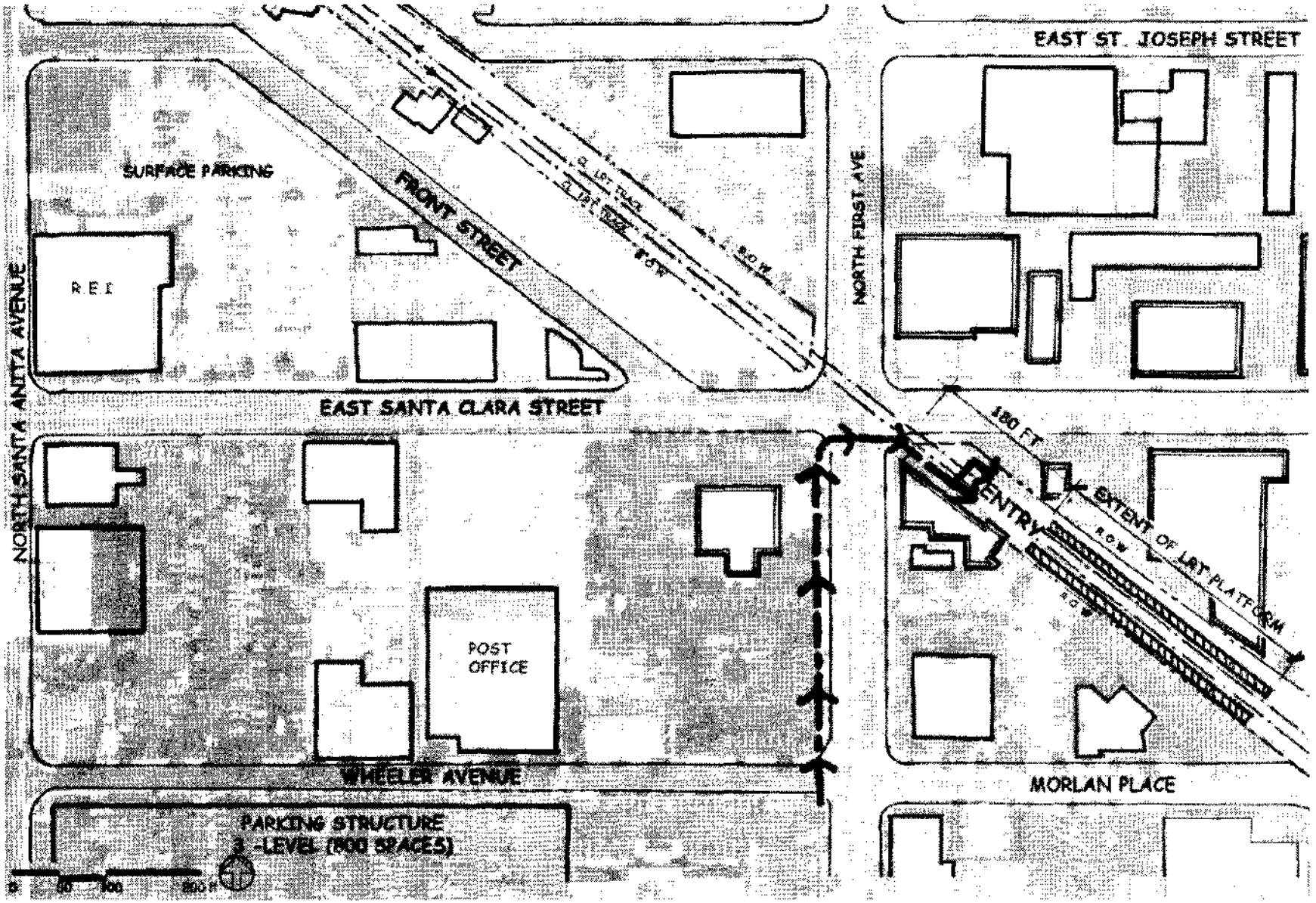


Figure ES-31: Site Plan: City of Arcadia Station, Option A

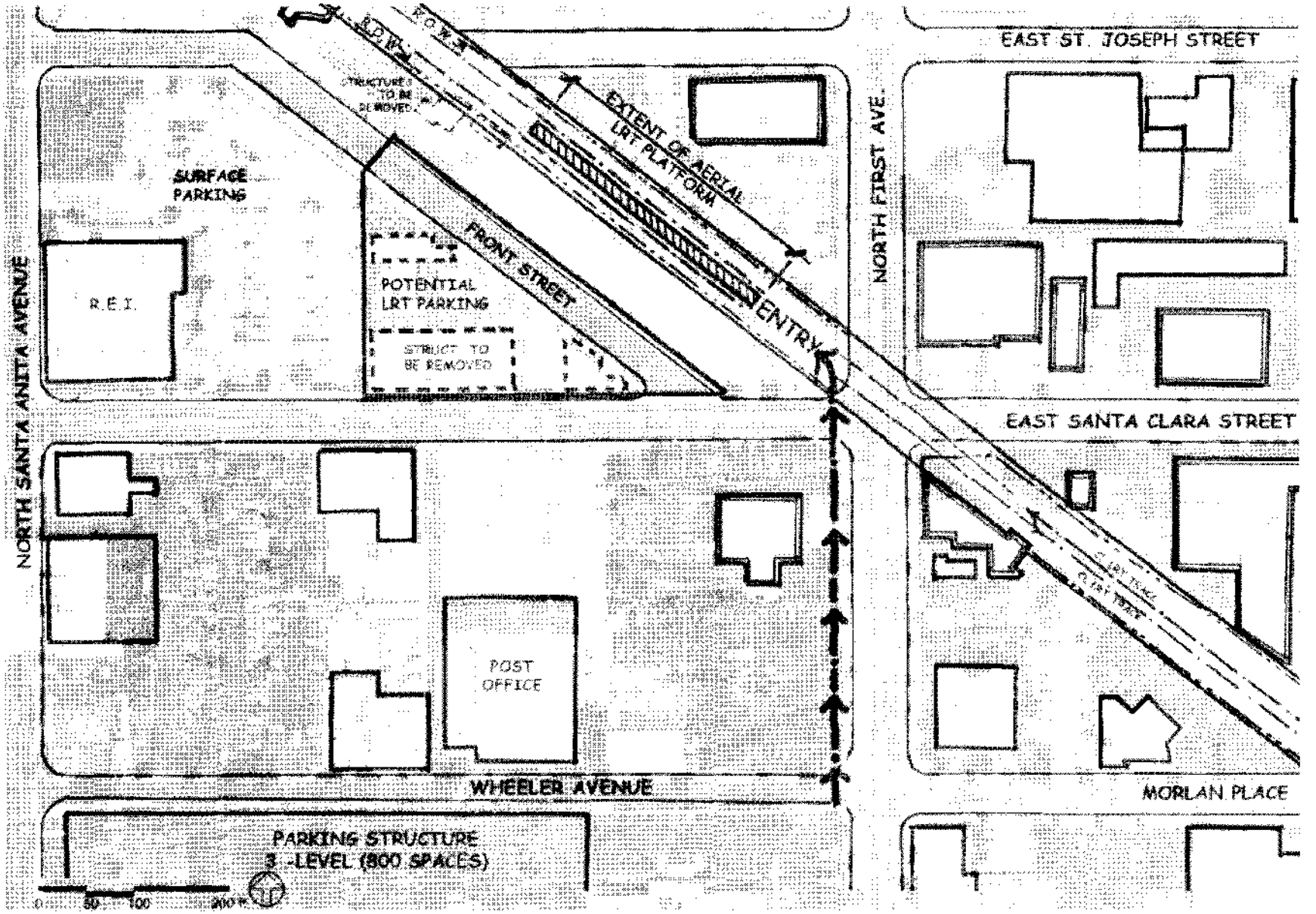


Figure ES-32: Site Plan: City of Arcadia Station, Option B

❑ Monrovia

The city of Monrovia has an historic Santa Fe depot located on Myrtle Avenue just south of West Pomona Avenue. Currently, the city is in the process of restoring the depot and creating a new transit center, including a surface parking lot of 205 spaces. Foothill Transit will provide bus service to the transit center in addition to the proposed Gold Line LRT station. The station would be located just west of the historic depot, adjacent and connected to the new transit center. For the double-track alternative, the station would be a side-platform station (see **Figure ES-33**). For the triple-track alternative, the station would be a center platform station closer to the existing Santa Fe depot (please refer to **Figure ES-34**). Approximately 600 parking spaces would be required at the Monrovia station in 2025. Parking demand associated with LRT service would be accommodated by the new transit center lot and a proposed parking structure on the south side of the alignment. Creation of the parking structure would require the acquisition and demolition of commercial structures to the southwest of the station.

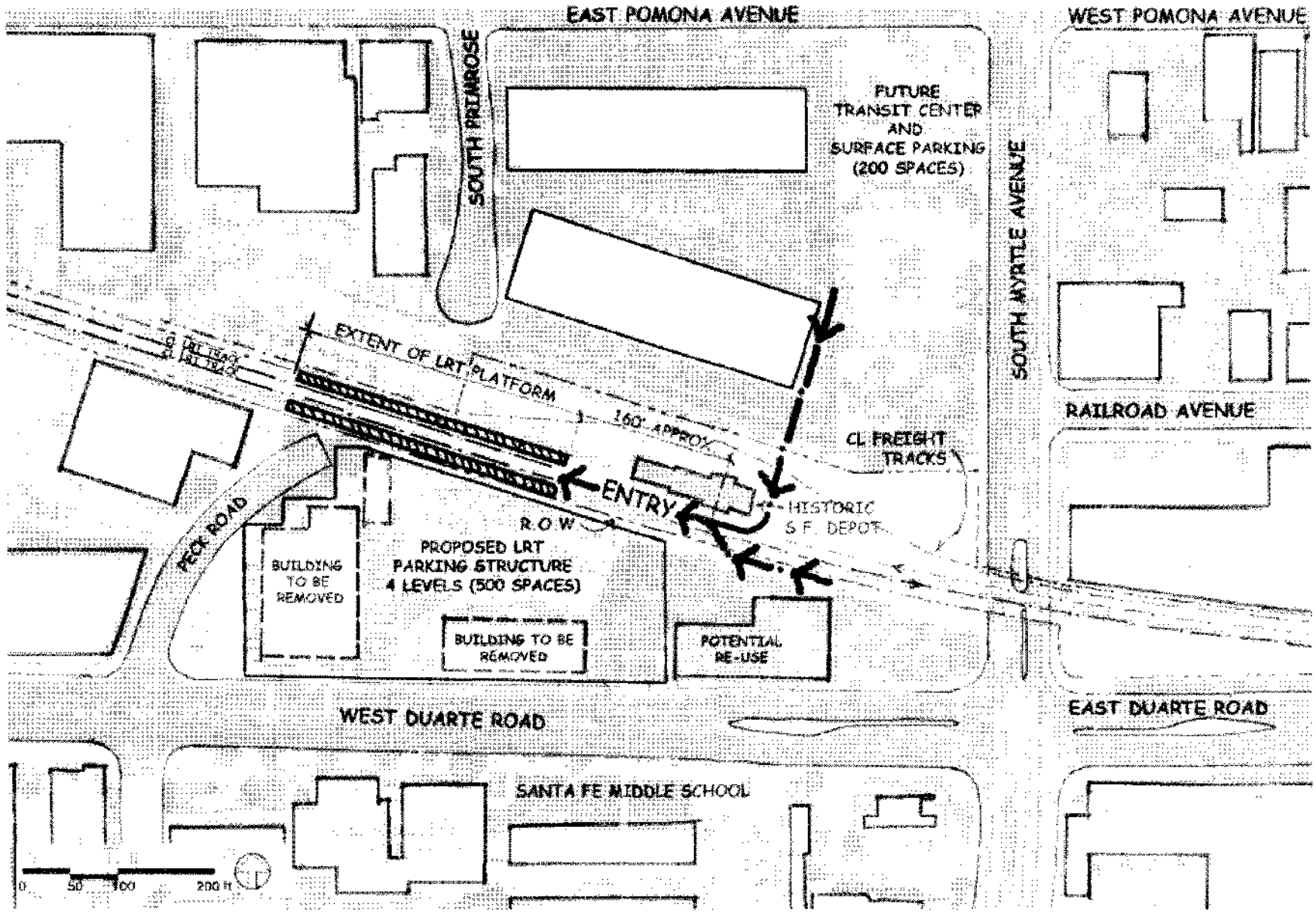


Figure ES-33: Site Plan: City of Monrovia Station, 2-Track Alternative

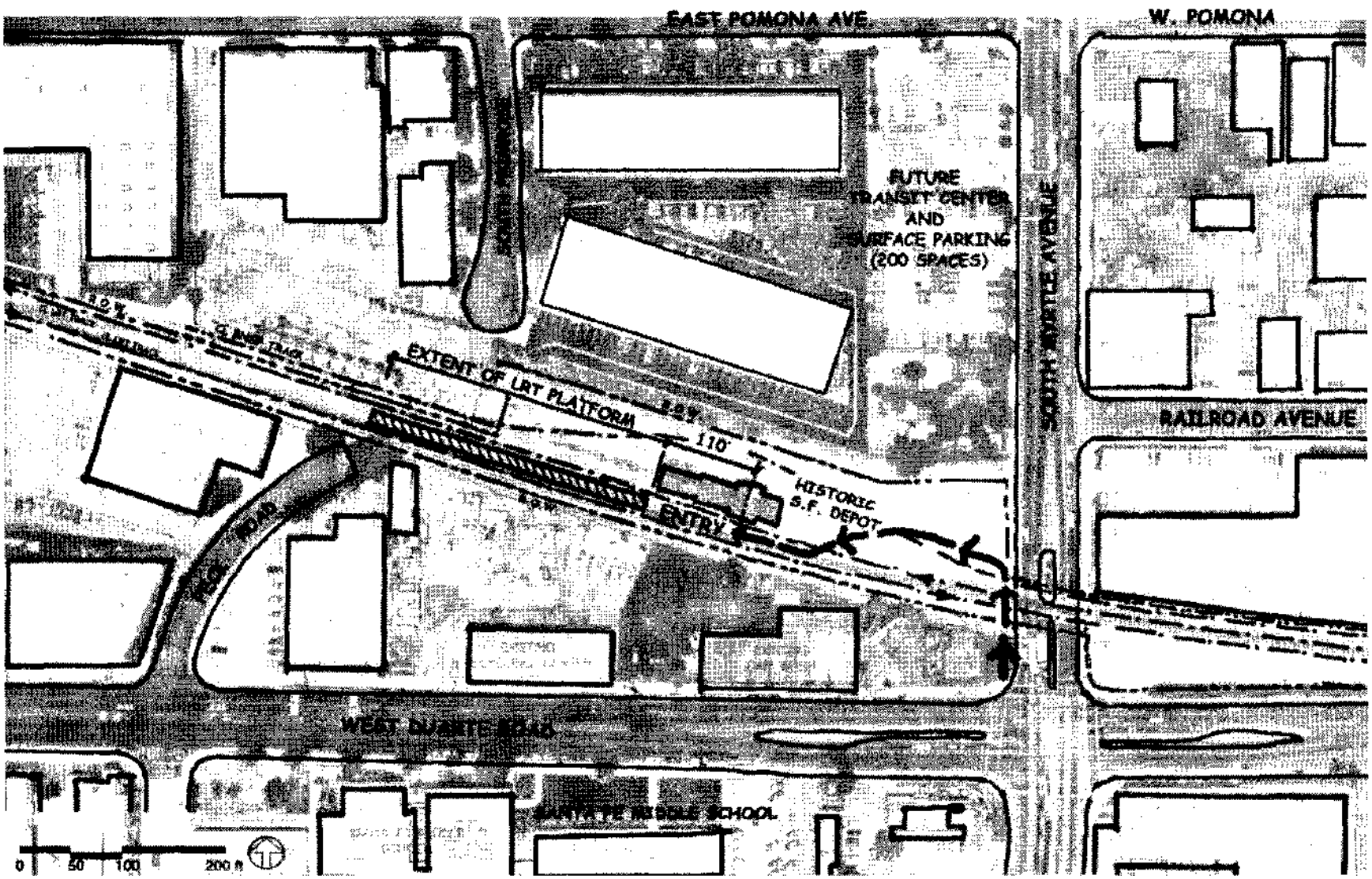


Figure ES-34: Site Plan: City of Monrovia Station, 3-Track Alternative

❑ Duarte

The city of Duarte station would be sited near the City of Hope National Medical Center. The City of Hope is an internationally recognized hospital and a major destination in Duarte. However, the rail ROW is at its narrowest at this point, and thus the station site would require expanding into the parking lane of Duarte Road if the triple-track operational configuration were implemented. For the double-track operational configuration, expansion in the parking lane would not be necessary. Parking is currently not allowed along this stretch of Duarte Road, as per the City of Duarte. A center platform is proposed for this location due to the narrow ROW. The estimated 250 parking spaces that are forecasted to be required by 2025 are proposed to be accommodated in a parking structure located on City of Hope property. The proposed structure would be located on a current surface parking area and would be jointly utilized by transit patrons and City of Hope visitors and staff (please refer to **Figure ES-35**).

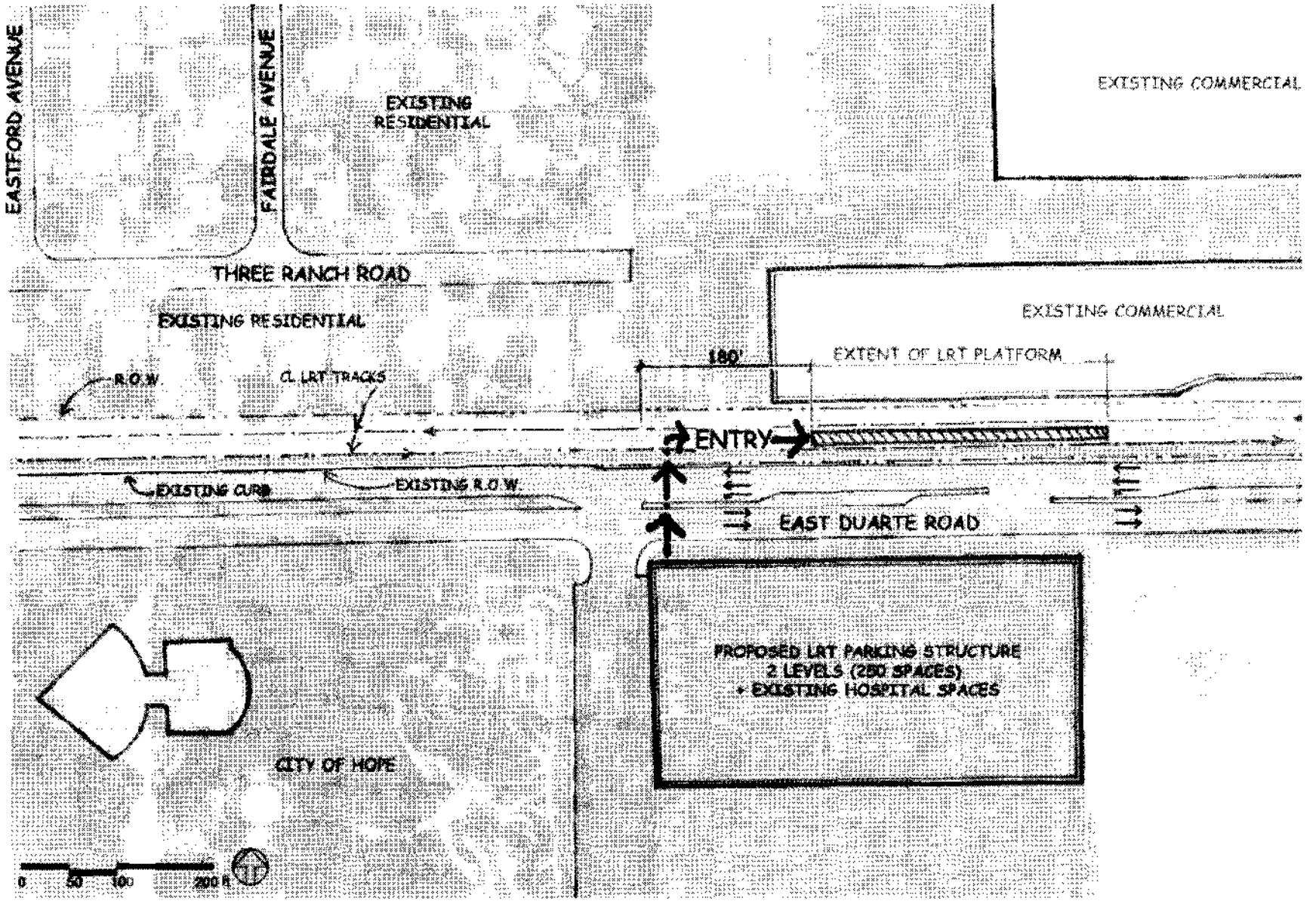


Figure ES-35: Site Plan: City of Duarte Station

❑ Irwindale

The station location for the city of Irwindale would be located adjacent to the Miller Brewing Company facility, west of Irwindale Boulevard. Vehicular access for the station would be provided via Irwindale Boulevard and a frontage road called Montoya Road. Approximately 700 parking spaces would be required by 2025. These parking spaces would be provided in a parking structure, to be located on a vacant site south of the station (please refer to **Figure ES-36**).

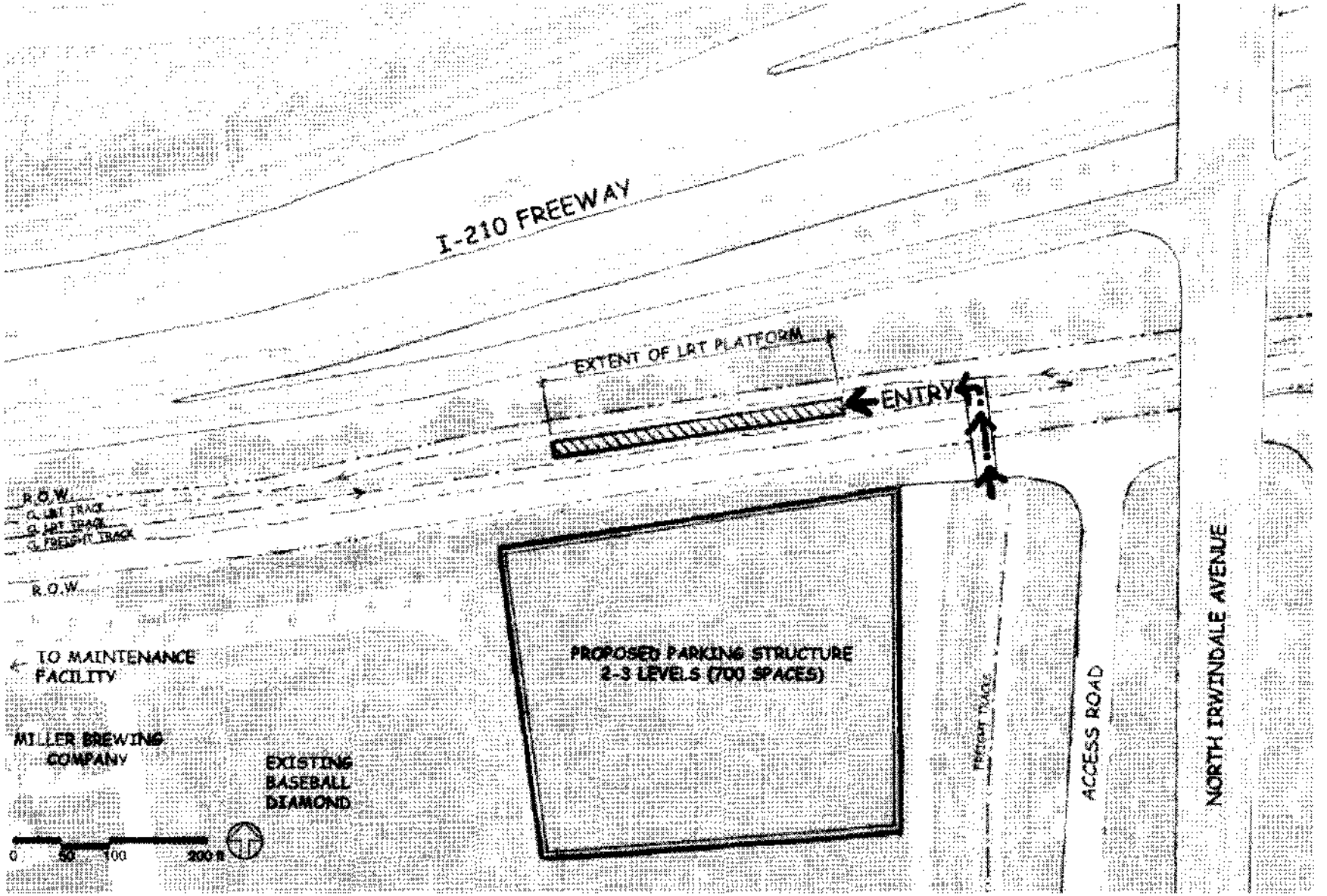


Figure ES-36: Site Plan: City of Irwindale Station

❑ Azusa

The city of Azusa would have two stations: one located in the downtown center near the historic Santa Fe depot and one located at the proposed Monrovia Nursery development (please refer to **Figures ES-37 and ES-38**).

The downtown station would be located at North Alameda Avenue, which would be closed across the rail right-of-way. This location takes advantage of the existing historic Santa Fe depot, which is located just east of North Alameda Avenue. This station would have a center platform, as illustrated in Figure ES-15. The downtown Azusa station would need approximately 400 parking spaces in 2025. Parking is proposed within the rail ROW and in a parking structure that would be built on the block bounded by North Alameda Avenue, 9th Street, and North Dalton Avenue. Creation of the parking structure would require the acquisition and demolition of commercial structures.

The Azusa/Citrus Avenue station site at Monrovia Nursery would be a part of a transit-oriented mixed-use development just west of Citrus Avenue and north of the rail ROW. This location would have side platforms due to the close proximity of the future grade-separated crossing at Citrus Avenue (part of the Monrovia Nursery redevelopment project). The developer would incorporate approximately 350 parking spaces into the transit center design (please refer to **Figure ES-38**).

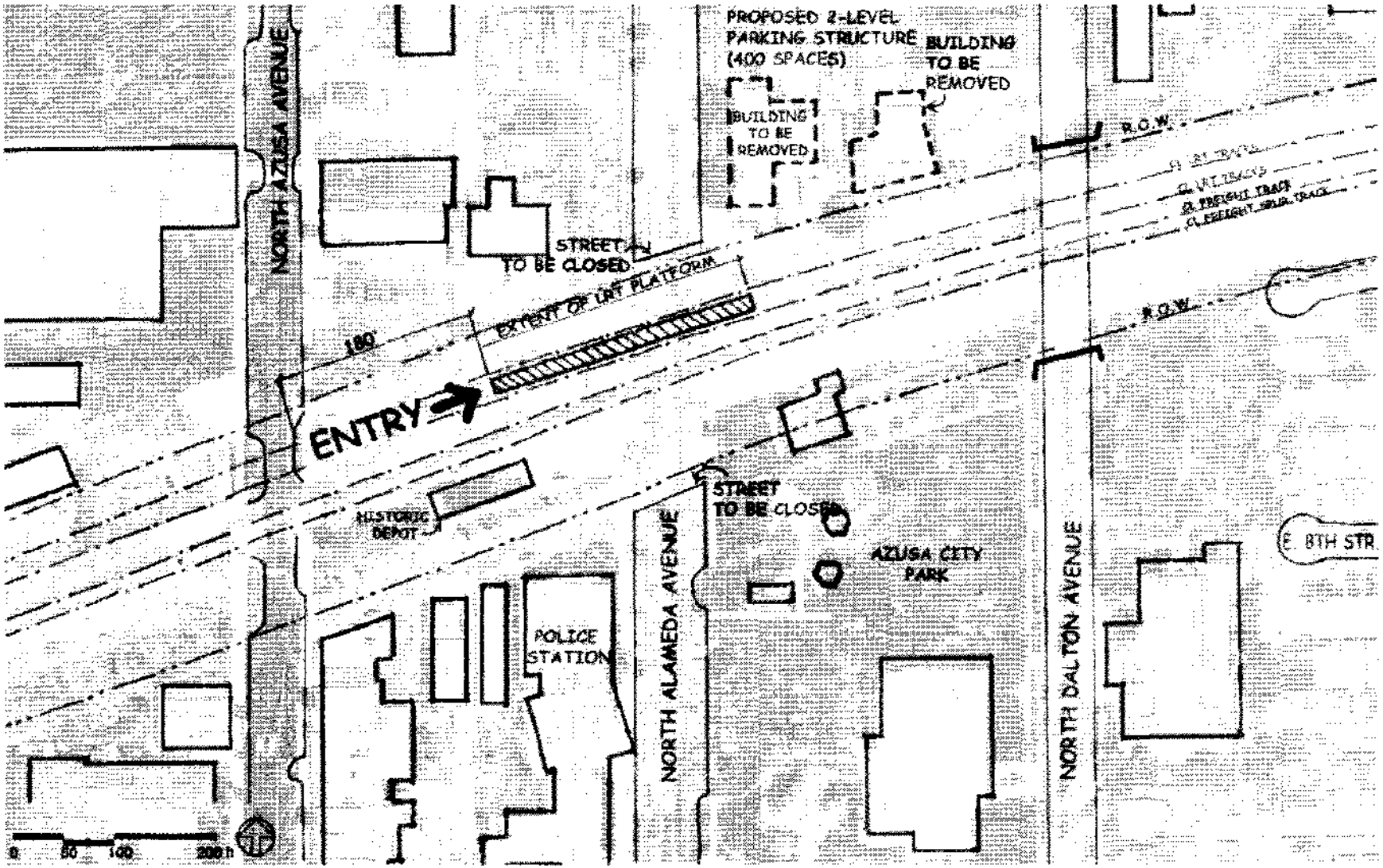


Figure ES-37: Site Plan: City of Azusa, Alameda Avenue Station

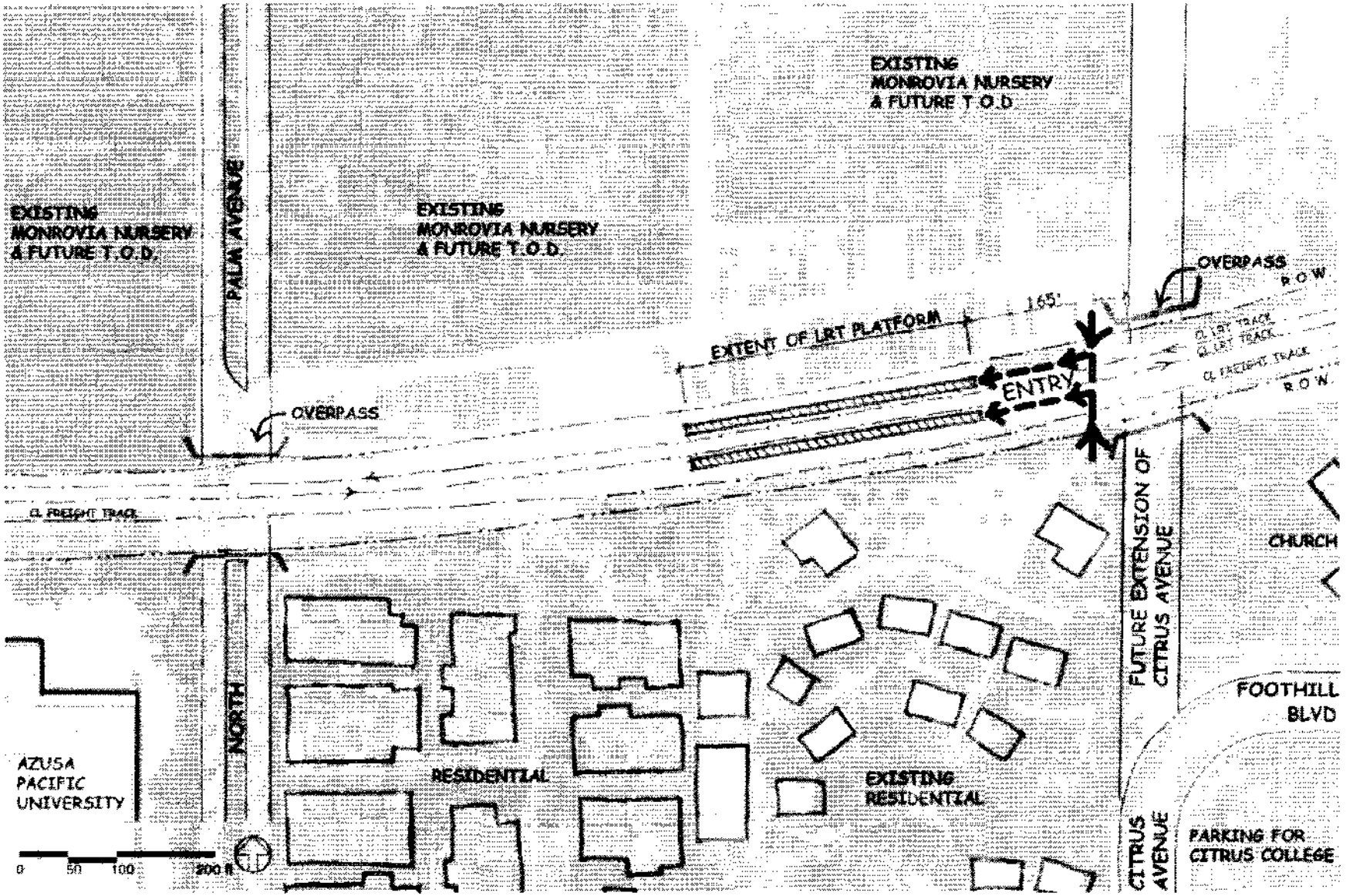


Figure ES-38: Site Plan: City of Azusa, Citrus Avenue Station

❑ Glendora

The city of Glendora station would be sited on a parcel located between Glendora Avenue on the east and northeast, East Ada Street on the north, and Vermont Avenue on the west. A center-platform station would be located near Vermont Avenue, as shown in **Figure ES-39,** 180 feet from the curb, as required by the CPUC in the double-track alternative. For the triple-track alternative, shown in **Figure ES-40,** side platforms would be required. Surface parking would be provided on the remainder of the site. Approximately 400 parking spaces would be required in 2025 at this location. Parking is also proposed to be provided on a parcel located north of the rail ROW and Vermont Avenue. Creation of the parking structure would require the acquisition and demolition of commercial buildings.

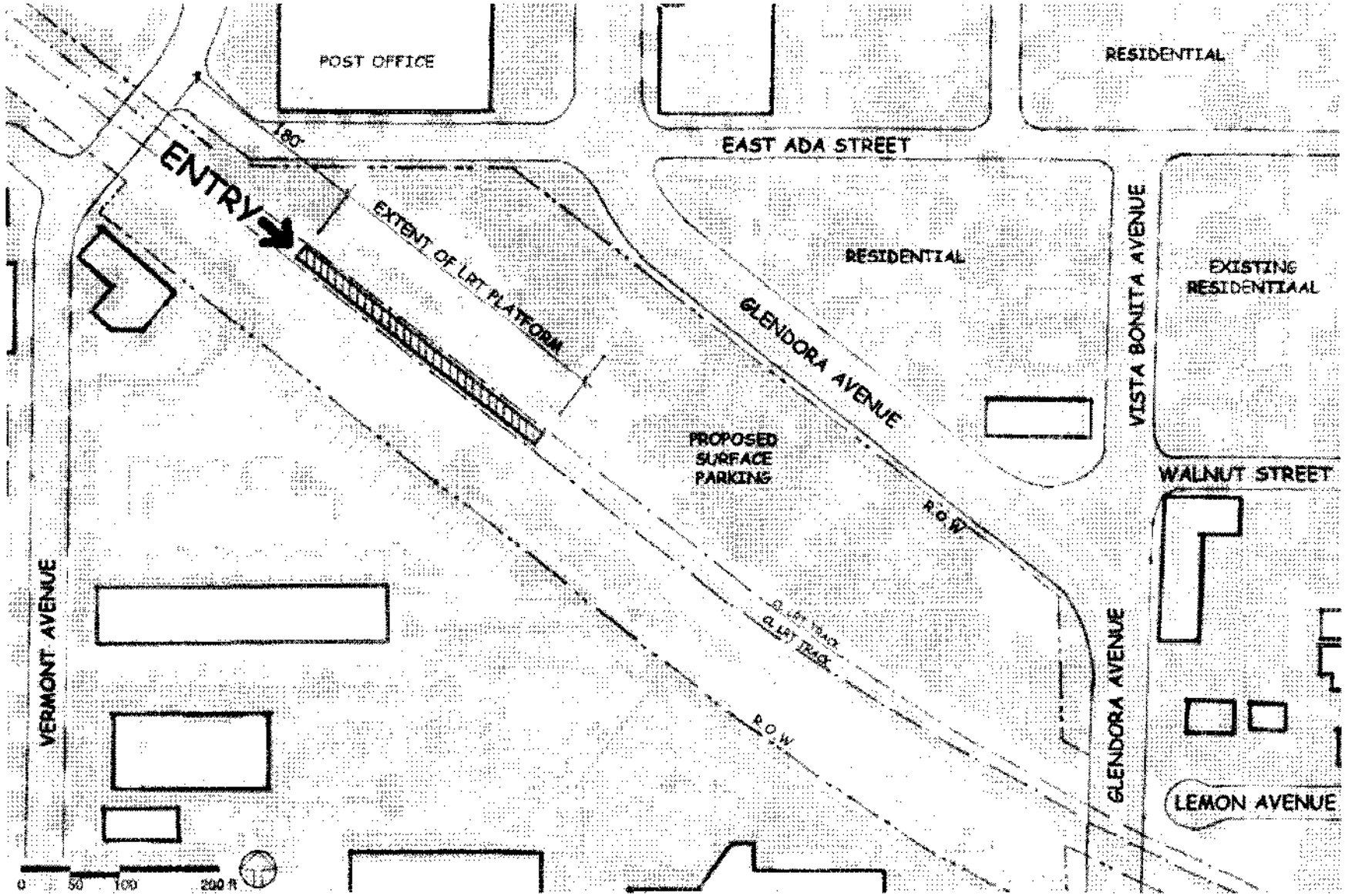


Figure ES-39: Site Plan: City of Glendora Station, 2-Track Alternative

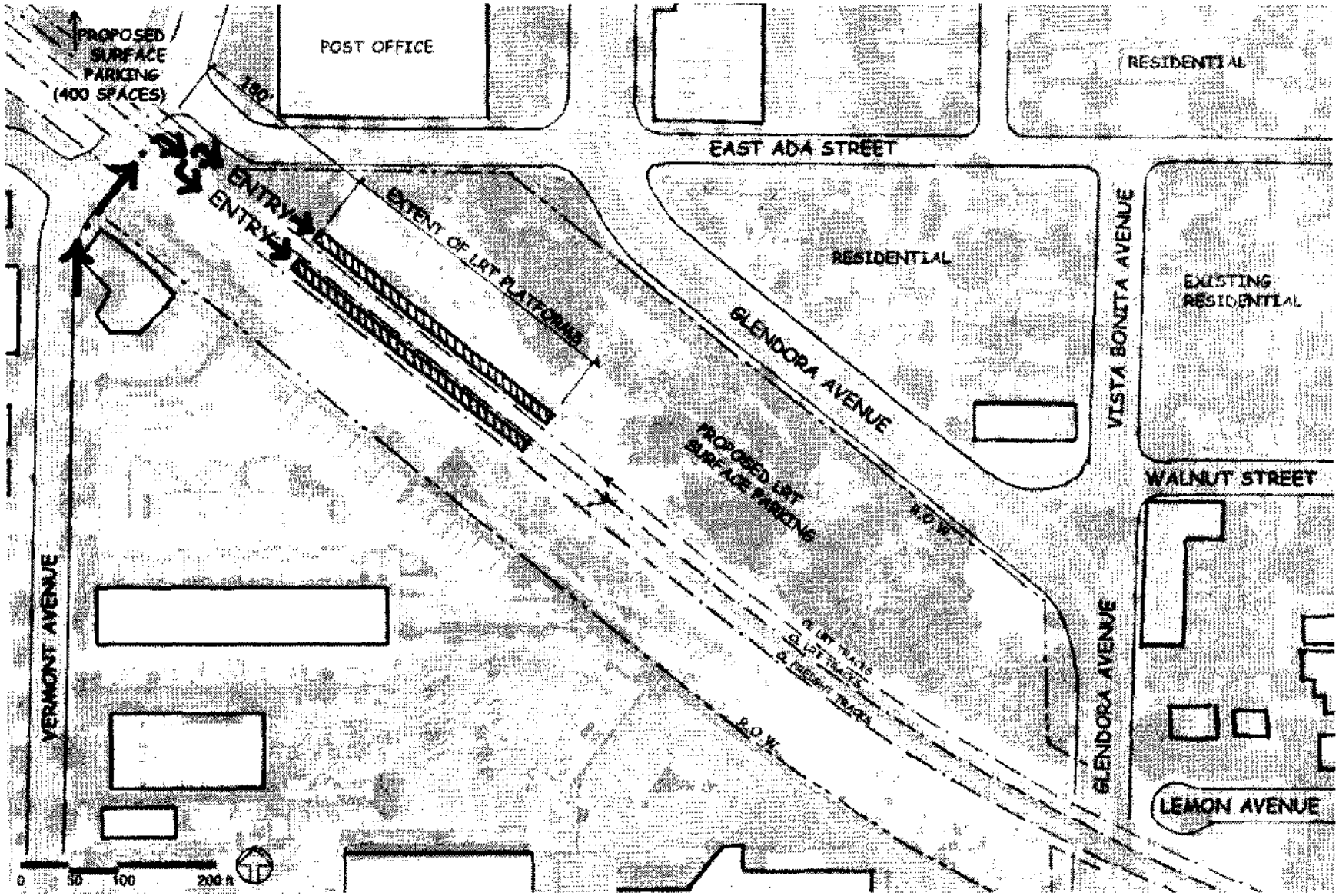


Figure ES-40: Site Plan: City of Glendora Station, 3-Track Alternative

❑ San Dimas

Two station site options have been identified for the city of San Dimas. The station siting choice is complicated by a rail alignment that crosses two major arterials on the diagonal in the center of town. For the double-track alternative, the station would be located near the historic Santa Fe Depot on the south side of Bonita Avenue, east of Cataract Avenue. The side platforms at this location would need to be offset in order to accommodate the 180-foot distance requirement at intersections. The station would be accessed via both the northern and southern ends of the side platforms. For the triple-track alternative, the station would be located north of Bonita Avenue and west of Cataract Avenue. Access to this station would be via the southern end of a center platform. Refer to **Figure ES-41** for the double-track alternative and **Figure ES-42** for the triple-track alternative.

Approximately 750 parking spaces would be needed at the San Dimas station in 2025. Three parking options have been identified. For the LRT station at the historic depot, some parking demand could be met at the existing park-and-ride lot, which is located nearby, east of Monte Vista Avenue. Three other locations were identified by the city as possible locations for parking. Surface parking could be provided at one of these, a location west of Cataract and north of Bonita. This site includes the historic La Verne Orange Association Building, which would remain on the site. Two locations for parking structures were identified. The first of these is located west of Acacia Avenue, at its intersection with First Street. The second is located west of Eucla Avenue, at its intersection with Second Street. Either of the parking structure locations would require the acquisition and demolition of commercial buildings.

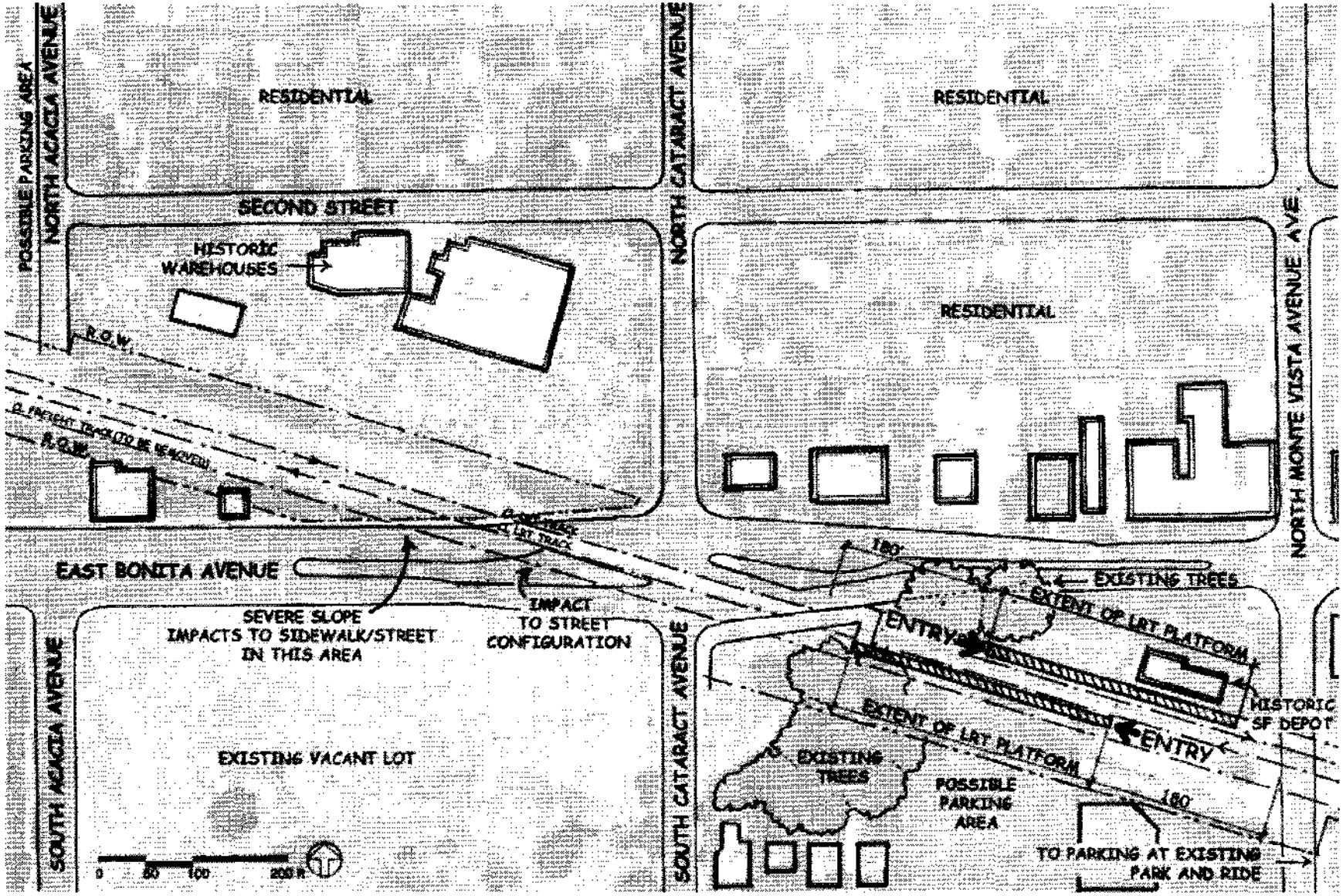


Figure ES-41: Site Plan: City of San Dimas Station, 2-Track Alternative

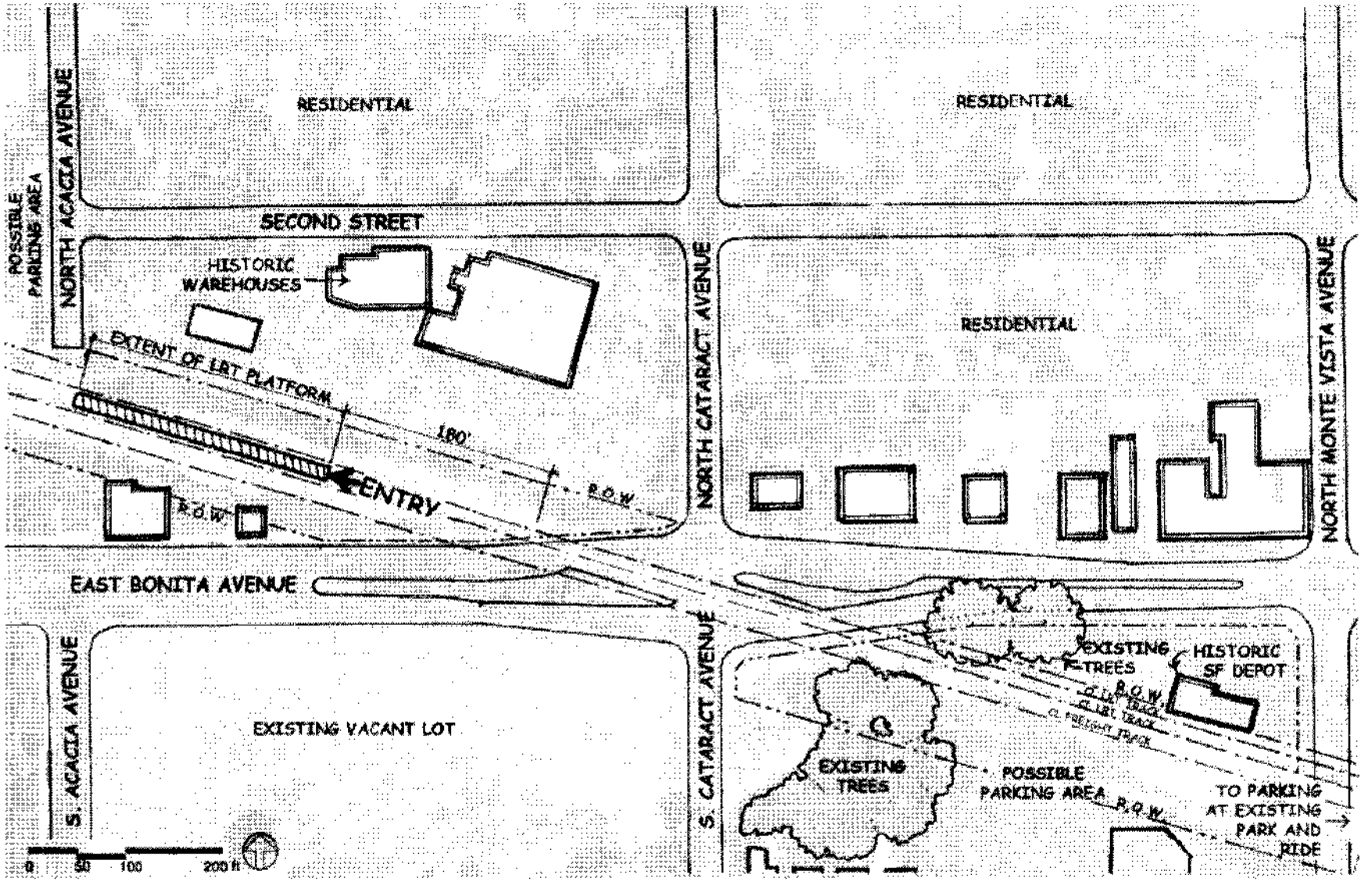


Figure ES-42: Site Plan: City of San Dimas Station, 3-Track Alternative

❑ La Verne

There are several options for the station site in the city of La Verne. The station would be located east of E Street, just north of Arrow Highway. This location would have a center platform and is illustrated in **Figure ES-43**.

Option C, a double-track alternative, and Option E, a triple-track alternative, would be located west of D Street, adjacent to the University of La Verne campus, just north of Arrow Highway. This location would have a center platform, as illustrated in **Figure ES-44**.

Option D, a double-track alternative, and Option F, a triple-track alternative, would be located adjacent to a potential multimodal transfer facility that would be built on the triangle of land south of the rail ROW, between E Street and White Street, and bordered on the southwest by Arrow Highway and on the southeast by the Metrolink right-of-way. This location would have a center platform for LRT operations (please refer to **Figure ES-45**). This facility is tentatively planned to contain a light-rail station, a Metrolink station, a bus transfer facility, patron parking, and kiss-n-ride access. Currently, the city of La Verne, the city of Pomona, the Fairplex, Foothill Transit, Metrolink, and the Gold Line Authority are in discussions regarding the potential for such a regional transit facility.

Parking for all station options is planned to occur on the grounds of the nearby Fairplex. An estimated 800 spaces would be needed by 2025.

If the multimodal facility were built (Options D and F), instead of following the current Metrolink ROW and turning southwest at White Street, the Metrolink tracks would continue west along a shared Gold Line alignment parallel to and north of Arrow Highway until approximately San Dimas Canyon Road. At this point Metrolink tracks would cross over Arrow Highway and reunite with the Metrolink ROW on the south side of Arrow Highway. Additional parking, beyond that identified for LRT stations below, may be required by Metrolink and Foothill Transit according to their planning requirements. Funding issues and partnering agreements would be worked out separately between the various groups involved.

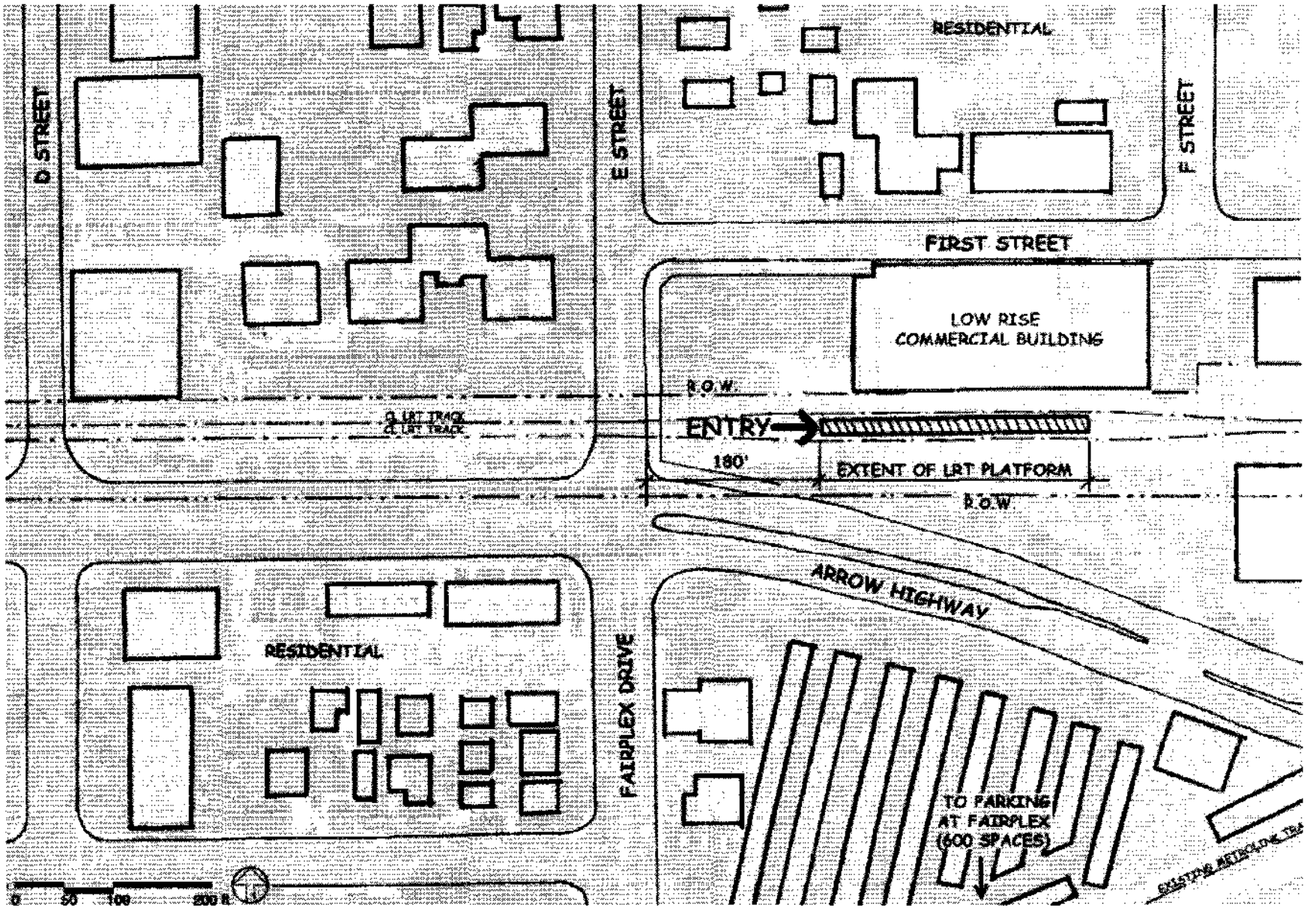


Figure ES-43: Site Plan: City of La Verne, E Street Station Option C

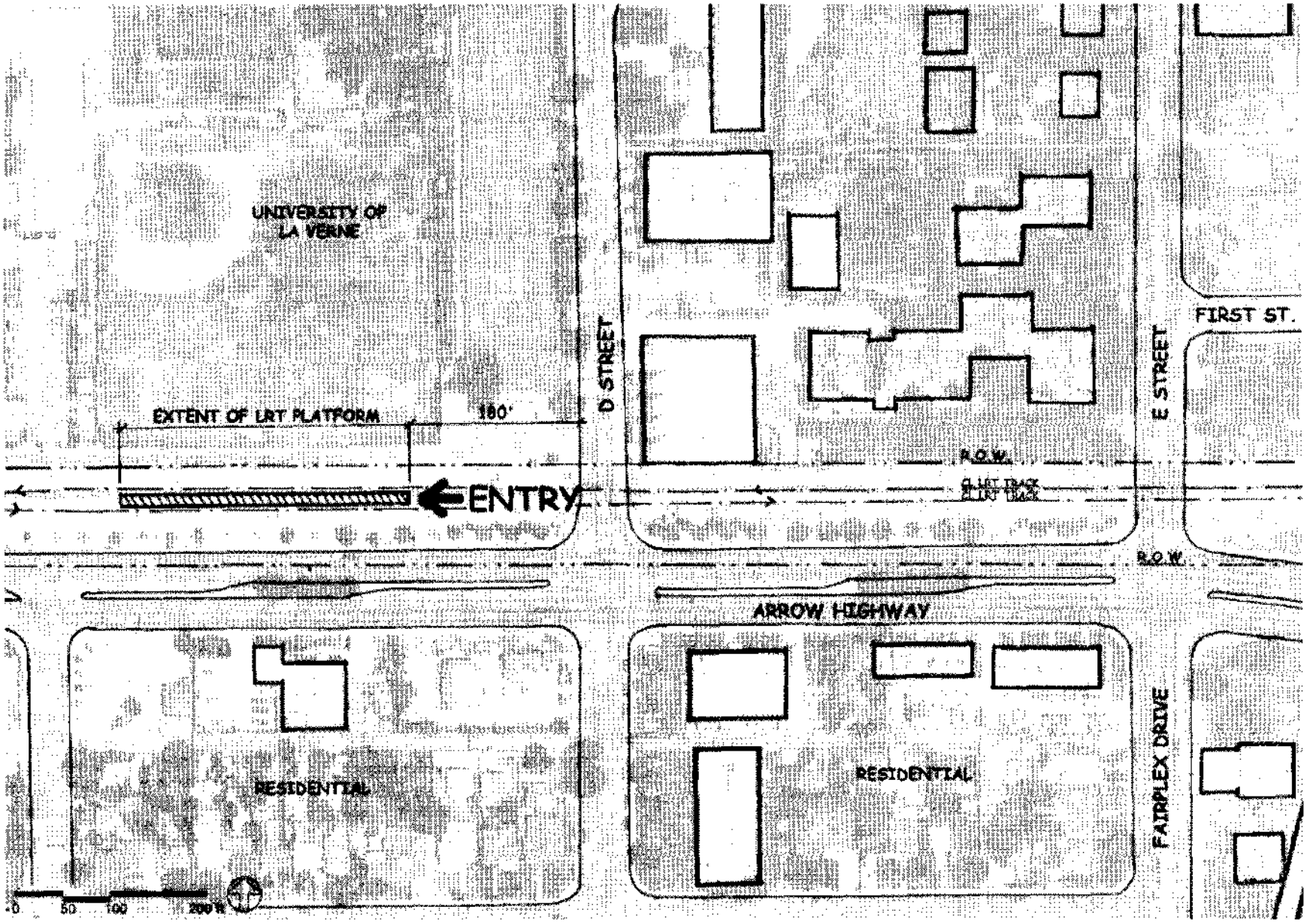


Figure ES-44: Site Plan: City of La Verne, D Street Station Option C

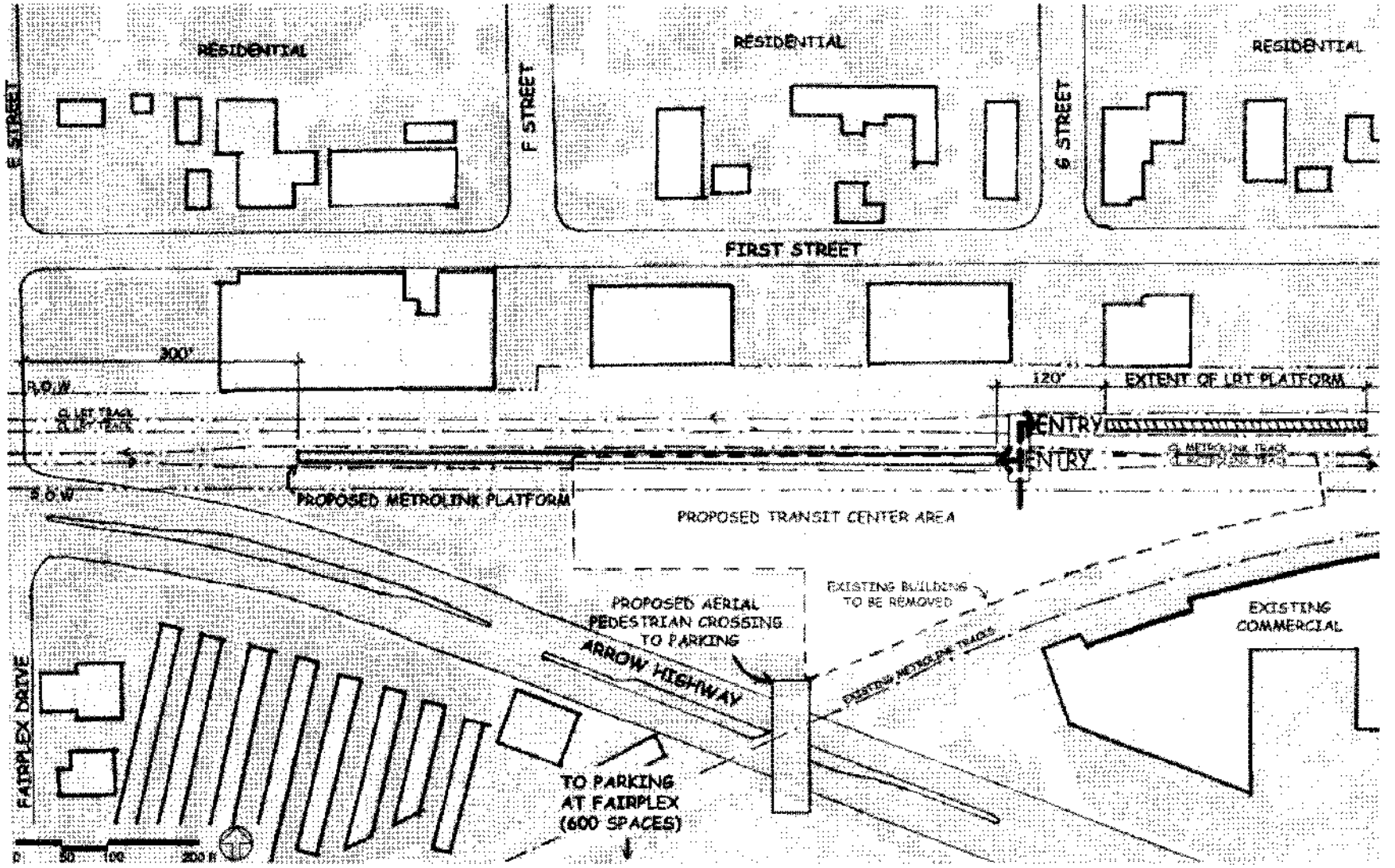


Figure ES-45: Site Plan: City of La Verne, Fairplex Station Option D

❑ Pomona

The city of Pomona has two options for station sites. Approximately 800 parking spaces would be required at the Pomona station in 2025 (please refer to **Figures ES-46 and ES-47**).

Currently, the San Bernardino Metrolink line stops in Pomona at a passenger station located west of Garey Avenue and accessible via West Santa Fe Street. One proposed LRT station site is located adjacent to the existing Metrolink facility (see **Figure ES-46**). This location would have a center platform, as illustrated in Figure ES-24. Current surface parking is fairly limited and at capacity. A nearby vacant lot located north of the alignment is proposed for a parking structure. Access to the parking structure would be off of Bonita Avenue.

The second option for a station in Pomona (Options D and F) is located to the east of Towne Avenue. This station alternative would be part of a package of stations with the La Verne Fairplex station (Options D and F). This location would have a center platform. To the north of the alignment and east of Towne Avenue is a vacant industrial site, which is identified as a potential location for surface parking (please refer to **Figure ES-47**).

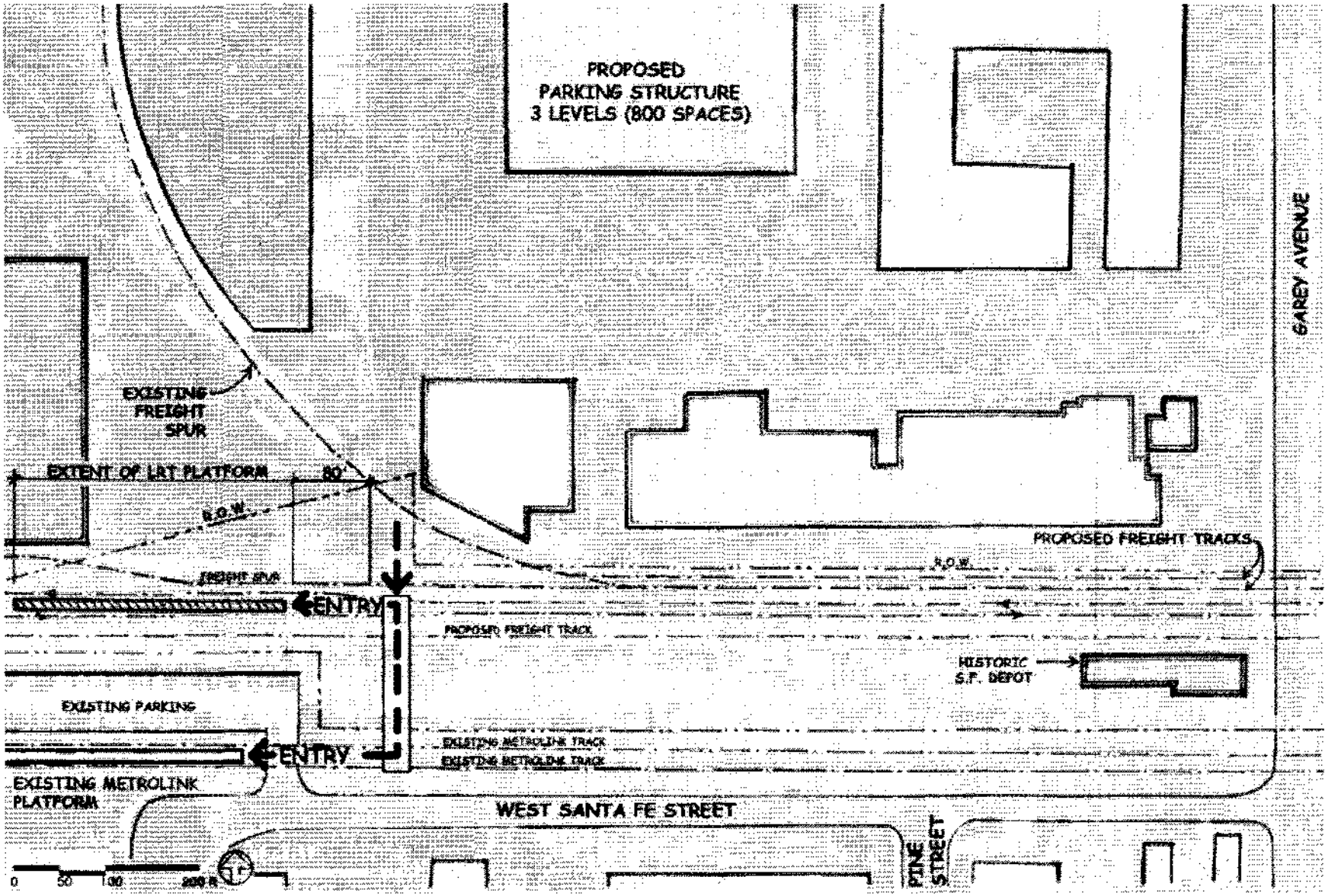


Figure ES-46: Site Plan: City of Pomona, Garey/Metrolink Station

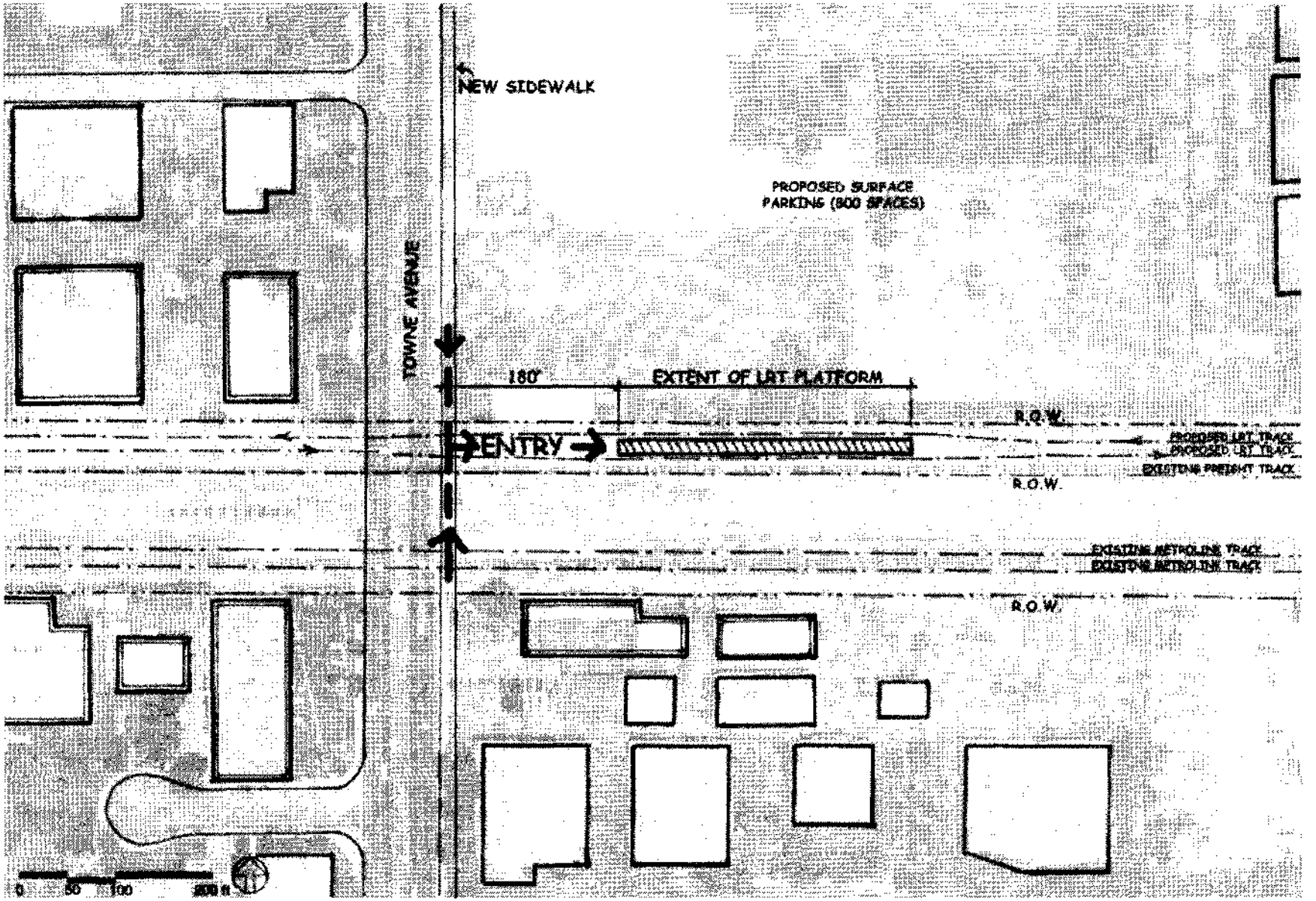


Figure ES-47: Site Plan: City of Pomona, Towne Avenue Station Option D

❑ Claremont

Claremont has a thriving transit center that focuses on its historic, restored Santa Fe depot, located north of the tracks to the east of Indian Hill Boulevard. Metrolink has a newly expanded and renovated commuter rail station at this location. The Gold Line LRT station is proposed to be located between Indian Hill Boulevard and the west end of the existing Metrolink station, with easy access between the two systems.

The Claremont LRT station would require approximately 700 parking spaces in 2025. Two locations for parking have been identified. The current transit center parking lot, located west of College Avenue, is under capacity and could be utilized for additional LRT parking or a future structure. A second option would be to provide a parking structure that would be located to the west of Indian Hill Boulevard at what is currently a vacant lot (please refer to Figure **ES-48**).

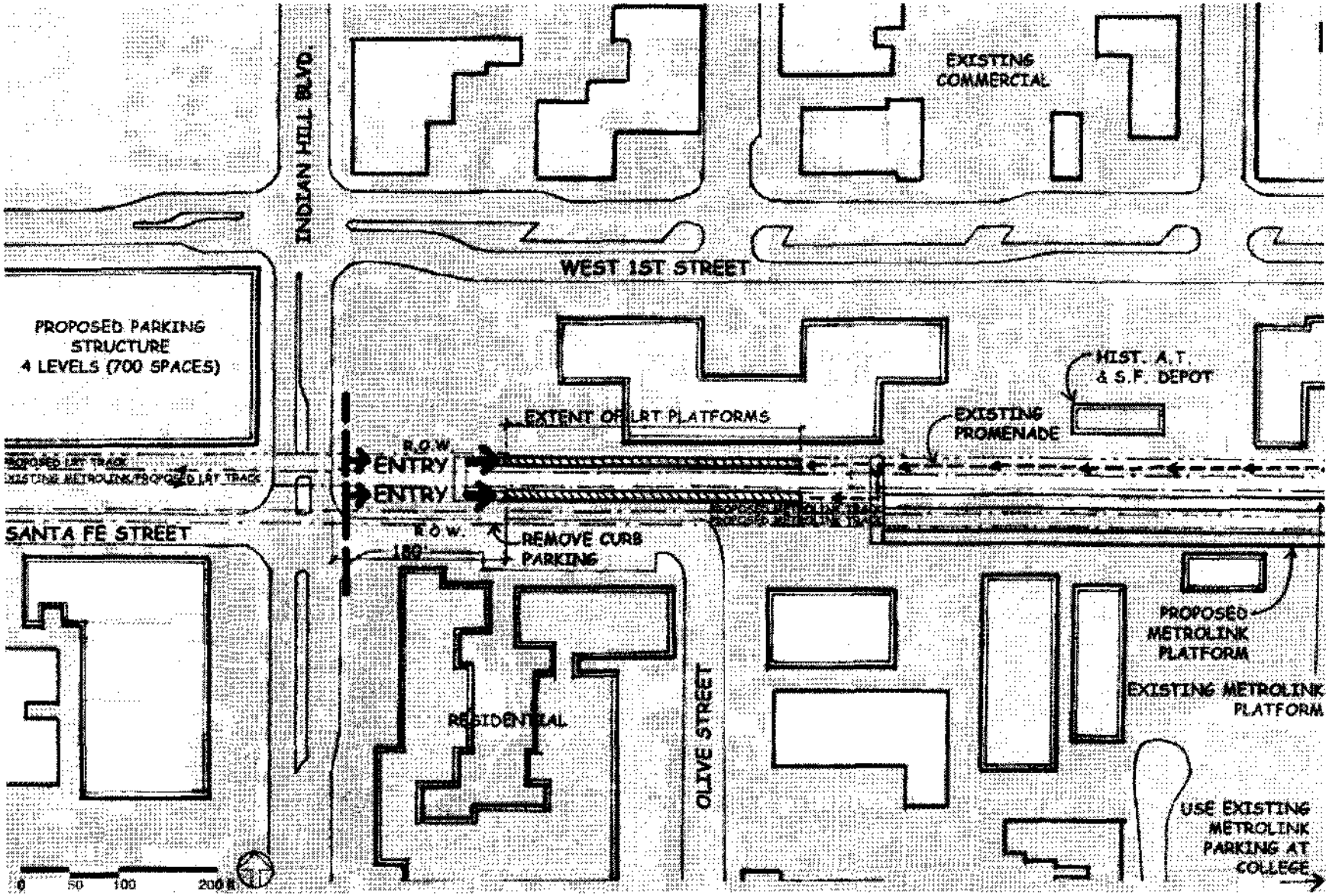


Figure ES-48: Site Plan: City of Claremont Station

❑ Montclair

There are two potential station locations for the terminus station in the city of Montclair in San Bernardino County. Currently, the Montclair TransCenter houses transfer operations between Metrolink and Foothill Transit and contains ample parking for all current and planned operations. The LRT service would require approximately 800 parking spaces in 2025. This demand can be accommodated within the existing TransCenter parking.

The city of Montclair has a specific plan process under way for the TransCenter and the adjoining neighborhood directly south of the site. The focus of the specific plan is to increase connectivity between the TransCenter and Montclair Mall, which is located about 2 blocks south of the rail ROW. The station would be located on the north side of the TransCenter. This location would have a center platform, and access would be provided from the western end of the platform. In order to reach the north side of the TransCenter, the LRT alignment would turn northward to the east of the Claremont station and transition into an abandoned rail ROW that is owned by the San Bernardino Associated Governments (SANBAG). This ROW is typically referred to as the Union Pacific ROW or the Pacific Electric ROW (please refer to **Figure ES-49**).

The city of Upland, located directly to the north of the TransCenter, has a number of housing and commercial developments in the planning stages for the land adjacent to the north side of the TransCenter. The city limits of Upland and Montclair is the center line of the Pacific Electric ROW.

Option G would locate the LRT station on the south side of the TransCenter, just west of the existing Metrolink station. This location would have side platforms and access from the eastern end of the LRT platforms. The existing Metrolink station would need to be relocated to the south side of the rail ROW in order for the LRT tracks to be placed on the north side of the ROW. The southern LRT platform would be located immediately next to a relocated Metrolink side platform (please refer to **Figure ES-50**).

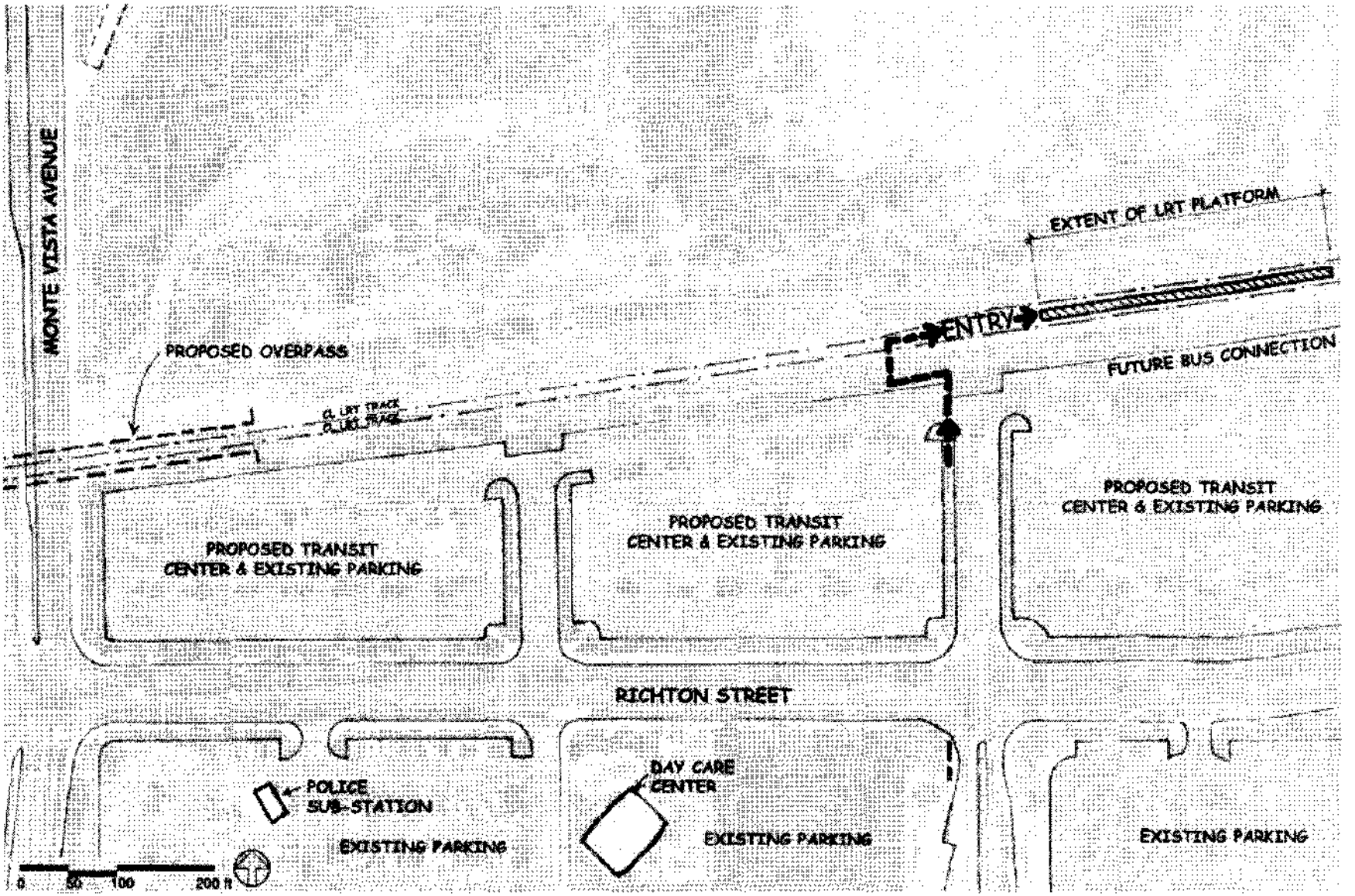


Figure ES-49: Site Plan: City of Montclair Station, (North)

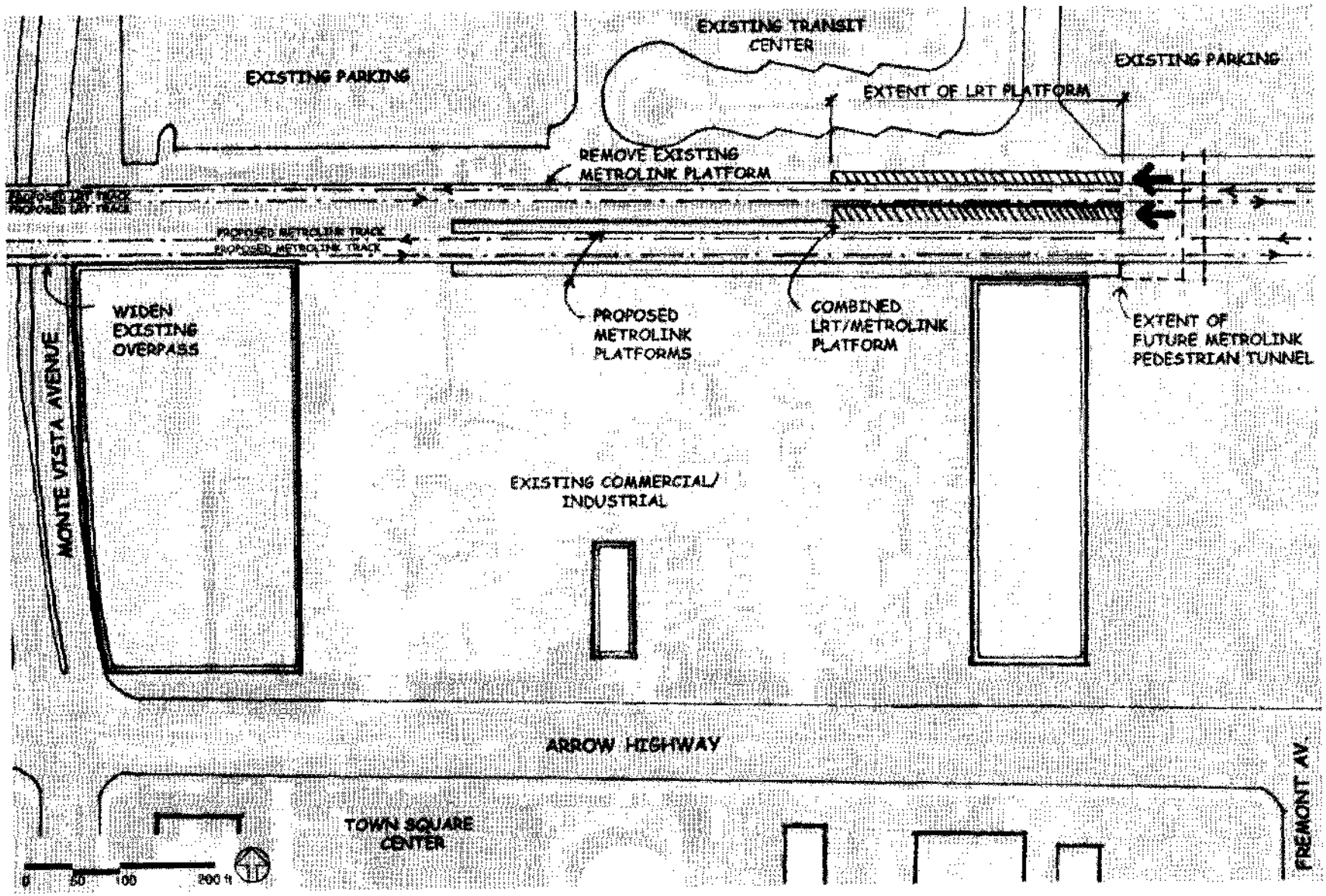


Figure ES-50: Site Plan: City of Montclair Station, (South), Option G

ES-4.2.2 Maintenance and Operations Facility

Either LRT alternative would require the construction of a Maintenance and Operation (M&O) facility. LACMTA does not have sufficient capacity at its existing facilities to handle the vehicles necessary to operate Phase II service. The conceptual design of the M&O facility has been based on a need to handle adequately all fleet requirements for an ultimate Gold Line operation that would include the Eastside Extension, Phase I, and Phase II. The proposed site in Irwindale would be conveniently located at about the midpoint of this combined route. Vehicular access to accommodate delivery of goods and supplies is very close to the I-210/Irwindale Avenue interchange. The proposed facility would include:

- A storage yard for approximately 121 light-rail vehicles (LRVs) with an adjacent 30,000-square-foot transportation building complete with recreational facilities, an eating and food service area, a meet-and-greet area (train operator/maintenance personnel interface), offices, and its own parking facility (213 spaces) that would also accommodate visitors.

- A maintenance area (with sufficient storage for an additional 50 vehicles) that would include a 100,000-square-foot maintenance building with facilities for daily servicing, preventive maintenance, running repairs, heavy repairs, blowdown, wheel truing, parts storage and material control, component troubleshooting and repair, maintenance administration, and employee welfare and support areas.

- An approximately 8,000-square-foot paint shop and paint prep area (body shop) with associated sheet metal, welding, and paint storage areas.

- A 35,000-square-foot operations center (as a second floor to a portion of the maintenance building) to house rail operations, M&O training, and the signals and communications department. The overall maintenance area would have its own parking facility (161 spaces).

- A 12,000-square-foot Maintenance-of-Way (MOW) building to serve the Track Department that will include a storage track and lay down area.

- A Traction Power Substation (TPSS) for the yard and shop.

Figure ES-51 shows the conceptual layout of the M&O facility.

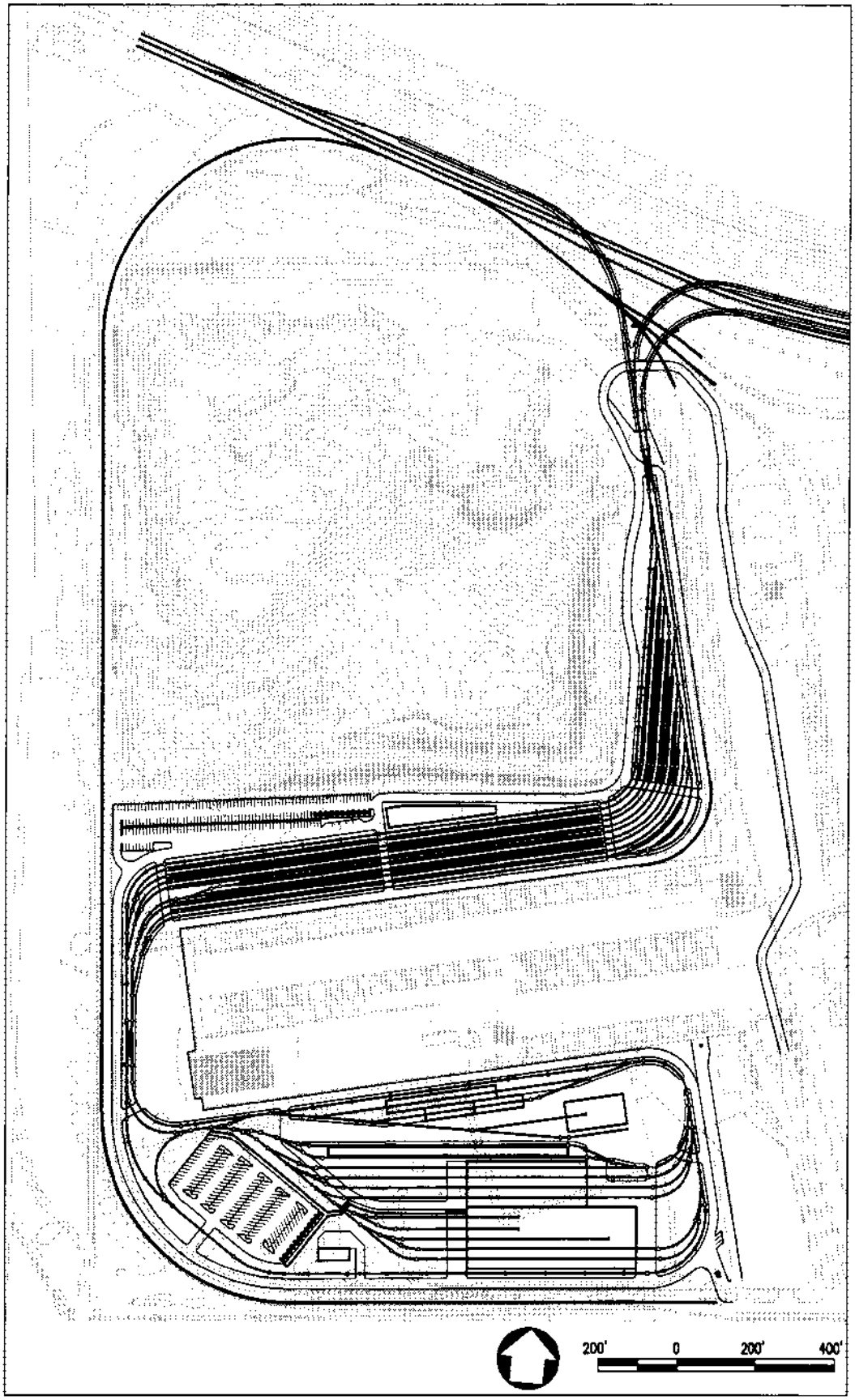


Figure ES-51: Site Plan: Maintenance and Operations Facility, Irwindale

ES-5 ENVIRONMENTAL PROCESS

ES-5.1 Overview

The FTA and the Construction Authority initiated the environmental process in June 2003. A joint National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) document, an Environmental Impact Statement/Environmental Impact Report (EIS/EIR), is being prepared for the proposed project.

Scoping began in the summer of 2003 and is described in detail in the following subsection. Scoping included activities to help define the range of alternatives being assessed in the EIS/EIR. Conceptual-level engineering was performed in order to help define alternatives to the degree necessary to identify and assess the level of environmental impacts that would be generated by alternatives.

This DEIS/DEIR evaluates a No-Build Alternative, a Transportation System Management (TSM) Alternative, and two light-rail transit (LRT) alternatives. The Full Build LRT Alternative would extend approximately 24 miles, from Pasadena to Montclair, and would have 12 stations. The Build LRT to Maintenance Facility Alternative would extend just under 9 miles, from Pasadena to Irwindale, and would have 4 stations. Both LRT alternatives include the Maintenance and Operations (M&O) facility, as well as configurations for triple-track and double-track operations because of existing freight operations along the rail corridor. Station locations, including optional sites, were identified in consultation with the cities in which they would be built.

After receiving and considering public comment on the DEIS/DEIR (see Section ES-11.3), the Construction Authority will select a Locally Preferred Alternative (LPA) and seek approval from FTA to enter Preliminary Engineering (PE). The LPA is typically one of the alternatives described in the DEIS/DEIR, or a modification of an alternative, and serves as the basis for beginning PE. During PE, the LPA is developed to a greater level of detail, and any options included in the LPA are investigated. The completed engineering work serves as the basis for any necessary updated evaluations of environmental impacts identified in the DEIS/DEIR, or for any follow-on or special studies that are needed to complete the initial level of impact assessment or to evaluate options. Comments received on the DEIS/DEIR are also considered as part of the PE design process, and as part of the additional environmental analysis.

The environmental impacts associated with PE-level design, as well as responses to comment on the DEIS/DEIR are reported in a Final EIS/EIR. Upon approval of the FEIS/FEIR, a refined alternative can be advanced to the final design stage, and subsequently to construction and operation.

ES-5.2 Scoping

The FTA was the lead agency for the evaluation of environmental impacts under NEPA of 1969, as amended (42 USC 4321, et seq.). The NEPA Scoping period commenced on July 2, 2003, with FTA's issuance of the Notice of Intent (NOI). The NOI to prepare this EIS was published in the Federal Register on July 9, 2003 (FR 41749, Vol. 67, No. 118). The NEPA Scoping period closed on August 1, 2003. The NOI announced the FTA's intent to prepare an EIS in accordance with NEPA and provided formal notice of the opportunity to comment in writing and/or at the public Scoping meetings. The NOI also included information on the project background, study area, potential alternatives, probable effects to be studied, relevant Scoping meeting information, and contact information.

The Construction Authority prepared an EIR for the proposed project to address the requirements of CEQA (California Public Resources Code, Section 21000, et. seq.). The Construction Authority mailed the Notice of Preparation (NOP) for an EIR on June 26, 2003, to the State Clearinghouse and to a project-specific mailing list. It was posted at the Los Angeles and San Bernardino County Clerks' offices on June 27, 2003. The NOP announced the Construction Authority's intent to prepare an EIR pursuant to the CEQA. Like the NOI, it provided formal notice of the opportunity to comment in writing and/or at the public Scoping meetings and commenced the CEQA scoping period. The NOP also advised California agencies of their obligation to comment on the proposed project within 30 days. The CEQA Scoping period closed on August 1, 2003. The NOP also included information on the proposed project, alternatives, anticipated effects, Scoping meeting information, and contact information. The NOP included a preview of anticipated project impacts via a CEQA Initial Study (IS) Checklist.

The NOP was distributed to agencies and organizations along the study corridor with jurisdiction or interest in the proposed project via a trackable delivery system (UPS, Second-Day Air) on June 26, 2003. This distribution date ensured receipt of the NOP by July 30, 2003. An additional 95 NOP packages were mailed June 30 and July 27.

NOP packages were sent to:

- 11 federal agencies
- 18 state agencies
- 13 county agencies
- 7 utility providers
- 14 school districts
- 16 corridor cities (including nearby South Pasadena, Bradbury, and Los Angeles)
- 35 elected officials
- 73 organizations and individuals that might have an interest in the project, including non-profit groups, Native American organizations, transit advocates, major activity centers and employers along the alignment
- 94 people who attended meetings during the Alternatives Analysis process.

In total, 404 NOP packages were distributed. The complete list, including addresses, is available upon request. Postcards notifying residents of Scoping meetings were sent to approximately 23,000 residents, elected officials, government officials, and interested parties along both the Phase I (Los Angeles to Pasadena) Gold Line alignment and in the Phase II (Pasadena to Montclair) study area.

Two copies of the NOP packages were placed in 16 different public libraries in the Phase I and Phase II segments. Transmittal letters sent with the NOP instructed libraries to place the documents in an area that would be readily accessible to the public. Due to varying operating hours of the libraries, notices were delivered between June 30 and July 3.

Six newspaper notices were placed announcing the scoping meetings. All notices included the information about the scoping meetings, a project map, and contact information. The newspapers were chosen for their circulation and audience. Four newspapers of general circulation, the *Los Angeles Times*, the *Pasadena-Star News*, the *San Gabriel Valley Tribune*, and the *Inland Valley Daily Bulletin*, contained

notices that were published on July 3, July 2, July 2, and July 7, respectively. Other newspapers were used to reach the two main minority population groups in the study area. The *Chinese Daily News* serves the cultural Chinese population and Chinatown, while *La Opinion* is circulated to the Latino audience of greater Los Angeles. The Scoping notice was published in the minority language papers on July 3.

Notice of the public Scoping meetings was provided by:

- posting the NOI in the Federal Register
- filing the NOP with the State Clearinghouse and Los Angeles and San Bernardino County Clerks
- mailing the NOP to responsible and trustee public agencies
- mailing the NOP to organizations and individuals known or assumed to be interested in the proposed project
- mailing the NOP, or Scoping Notice, to residents, businesses, and institutions in the study area
- publishing notices of the Scoping meetings in newspapers of general circulation
- publishing notices of the Scoping meeting in non-English newspapers.

The five Scoping meetings (four for the general public and one for agencies) were held in an open house format with information stations and illustrated display boards. Members representing FTA, the Construction Authority, and the project consultant team staffed the meetings. These meetings were held on July 15, July 16, July 17, and July 21 in San Dimas, Claremont, South Pasadena, and Arcadia for the general public, respectively. The meeting for the public agencies occurred on July 22 at the Construction Authority offices in South Pasadena. At the public Scoping meetings, Chinese and Spanish interpreters were present for non-English-speaking members of the public. Project fact sheets were also provided in English and Spanish. All comments received were catalogued and forwarded to technical specialists to consider in their work. Responses to NOI/NOP comments are not required under NEPA or CEQA. A table of comments received and the locations in this document in which the issues raised are addressed is included in Chapter 8, Public Outreach.

ES-5.3 Next Steps

The next step in the environmental process is the issuance of the DEIS/DEIR for public review and comment. Comments will be accepted at public hearing and by other means listed in the NOA (see Section ES-11.3).

After receiving and considering public comment on the DEIS/DEIR (see Section ES-11.3), the Construction Authority will select a Locally Preferred Alternative (LPA) and seek approval from FTA to enter Preliminary Engineering (PE).

ES-6 OVERVIEW OF ENVIRONMENTAL IMPACTS

Table ES-2 summarizes the environmental topics that were found to be less than adverse under NEPA/ less than significant under CEQA, the topics where potentially adverse/significant impacts were found that would require mitigation measures, and potentially adverse/significant impacts after mitigation.

TABLE ES-2
OVERVIEW OF IMPACTS

Effect/Impact Rating NEPA/CEQA	Topics	Comment
No Adverse Effects/No Significant Impacts or Less Than Adverse/ Less than Significant	Acquisitions, Air Quality, Community Facilities, Energy, Executive Orders, Geologic/Seismic, Historic Resources, Land Use, Safety & Security, Socioeconomics, Utility Disruptions, Visual Impacts, Water/Water Quality	Where potential impacts were identified, compliance with required agency permits and best management practices reduce potential impacts below thresholds of significance
Potentially Adverse/Potentially Significant	Archeological, Biological, Hazardous Materials, Noise & Vibration, Traffic	Mitigation measures required during construction in addition to permits and best management practices to reduce impacts below thresholds of significance
Potential Remainder Impacts After Mitigation	Freight Rail Operations	For double-track configuration with time-constrained delivery

As can be seen in the table, of the 19 topics addressed in the DEIS/DEIR, the proposed alternatives would result in limited effects/impacts to the environment:

- 13 topics would be less than adverse/less than significant and require no mitigation.
- 5 topics would require mitigation measures. Of these:
    - 3 are limited to the construction period, and would be reduced by typical and well-documented means (archeology, hazardous materials, traffic).
    - 2 types of potential long-term impacts would also be reduced by typical and well-documented means (biology, noise).
- 1 topic (freight operations) would have a remainder significant impact under one of the three operating scenarios.

Table ES-3 and **Table ES-4** summarize the construction- and operational- period impacts associated with the TSM, Full Build, and Build LRT to Maintenance Facility alternatives for all of the environmental topics covered in this DEIS/DEIR . Also addressed are impacts associated with the three operating scenarios for the LRT alternatives.

The tables show, for each of the alternatives, and by operational scenario:

- initial level of impact/effect under NEPA and CEQA,
- impact reductions addressed by regulatory compliance and/or permits,
- possible mitigation measures ,
- and the resulting level of NEPA effect/CEQA impact after regulatory compliance and mitigation measures are considered.

For impacts that are assessed under NEPA, the level of impact is expressed in terms of whether it is not adverse, potentially adverse, or adverse. NEPA assessments often do not have specific impact criteria, and documents typically do not specify whether impacts are significant. CEQA, on the other hand, requires that a determination of significance be made. Accordingly, for impacts assessed under CEQA the level of impact is expressed in terms of whether it is not significant (i.e., has no impact), has less than significant impact, potentially significant impacts, or significant impacts, when compared to specific criteria of significance.

The summary of impacts for the LRT Build alternatives by city is shown in Section ES-7.

Table ES-3
Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Acquisitions & Displacements										
X			X			Negligible for bus shelters	Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act The California Relocation Act	Not adverse/not significant	None	Not adverse/not significant
X				X		Negligible for bus shelters	See above	Not adverse/not significant	None	Not adverse/not significant
X					X	Negligible for bus shelters	See above	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	NA	No effect/no impact	None	No effect/no impact

Table ES-3
Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X			X		Acquisitions and displacements: for stations and parking: Arcadia: May need to acquire up to eight total parcels and displace up to 11 businesses, depending on option. Monrovia: Would need to acquire three total parcels. All buildings, except a car wash, will be demolished in the parcels. Duarte: Would need to partially acquire five parcels with no displacements. Irwindale: Would need to partially acquire land owned by Miller Brewing.	See above	Potentially adverse/potentially significant	The potential effect of property acquisitions would be mitigated to a less than significant level through compliance with the federal Uniform Relocation and Real Properties Acquisition Act of 1970 and the state California Relocation Act. The Uniform Act provides for uniform and equitable treatment of persons displaced from their homes or businesses who are eligible for assistance, and establishes uniform and equitable land acquisition policies. The California Act seeks to ensure the consistent and fair treatment of owners of real property, encourage and expedite acquisitions by agreement to avoid litigation, and promote confidence in public land acquisitions.	Less than adverse/less than significant

Table ES-3
Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X				X	Acquisitions and displacements for stations and parking: Azusa: Would need to acquire eight total parcels and displace eight residences and two businesses. Glendora: Would need to acquire two total parcels and displace six businesses. San Dimas: Construction of four parking lots would require the acquisition of five total parcels and displacement of a construction yard and offices, eight total parcels and displacement of a sign company, one total parcel and no displacements, and eight total parcels and no displacements, respectively. La Verne: Would need to acquire two total parcels and displace one business. Pomona: One option would need to partially acquire one parcel and would not require any displacements. The other option would require acquisition of two total parcels and no displacements. Claremont: Would require street closure of Santa Fe Street, blocking 19 residential parking spaces. Would need to acquire five total parcels and partially acquire six parcels and displace nine businesses and five storage tanks. Montclair: Southern station would require three partial acquisitions and no displacements.	See above	Potentially adverse/potentially significant	Same as above	Less than adverse/less than significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
		X	X			None	N/A	No effect/no impact	None	No effect/no impact
		X		X		Acquisitions and displacements for stations and parking: Arcadia: May need to acquire up to eight total parcels and displace up to 11 businesses, depending on option. Monrovia: Would need to acquire three total parcels. All buildings, except a car wash, will be demolished in the parcels. Duarte: Would need to partially acquire five parcels with no displacements. Irwindale: Would need to partially acquire land owned by Miller Brewing.	See above	Potentially adverse/potentially significant	Same as above for Double Track	Less than adverse/less than significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
		X			X	No acquisitions and displacements except: Azusa: Would need to acquire eight total parcels and displace eight residences and two businesses. Glendora: Would need to acquire two total parcels and displace six businesses. San Dimas: Construction of four parking lots would require the acquisition of five total parcels and displacement of a construction yard and offices, eight total parcels and displacement of a sign company, one total parcel and no displacements, and eight total parcels and no displacements, respectively. La Verne: Would need to acquire two total parcels and displace one business. Pomona: One option would need to partially acquire one parcel and would not require any displacements. The other option would require acquisition of two total parcels and no displacements. Claremont: Would require street closure of Santa Fe Street, blocking 19 residential parking spaces. Would need to acquire five total parcels and partially acquire six parcels and displace nine businesses and five storage tanks. Montclair: Southern station would require three partial acquisitions and no displacements.	See above	Potentially adverse	Same as above for Double Track	Not adverse/not significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Air Quality										
X			X			In comparison to No-Build Alternative, an increase in CO, NOx, and ROG by 0.03 percent. The TSM Alternative would not exceed the state 1- or 8-hour CO standards of 20 ppm or 9 ppm, respectively.	Federal Clean Air Act National Ambient Air Quality Standards California Clean Air Act California Ambient Air Quality Standards SCAQMD Air Quality Mgmt. Plan	Less than adverse/potentially significant for fugitive dust	Best Management Practices are as follows: 1) Minimize use of onsite diesel construction; 2) Replace diesel with electric equipment where feasible; 3) Properly tune and maintain all diesel equipment; 4) Shut off equipment to reduce idling when not in direct use; 5) Stage haul trucks away from residential areas and schools; 6) Cover all hauling trucks; 7) Sweep site access points; 8) Maintain a fugitive dust control program (SCAQMD Rule 403); 9) Phase construction activities to minimize concurrent dust generating activities within a 2,500-foot radius; and 10) Suspend grading operations during first and second stage smog alerts and during high winds greater than 25 miles per hour.	Less than adverse/less than significant
X				X		See above	See above	Less than adverse/potentially significant for fugitive dust	Same as above	Less than adverse/less than significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
X					X	See above	See above	Less than adverse/potentially significant for fugitive dust	Same as above	Less than adverse/less than significant
	X		X			None	NA	No effect/no impact	None	No effect/no impact
	X			X		In comparison to No-Build Alternative, a decrease in Co, NOx, and ROG by 0.04 percent. The Alternative would not exceed the state 1- or 8-hour CO standards of 20 ppm or 9 ppm, respectively.	See above	Less than adverse/potentially significant for fugitive dust	Same as above	Less than adverse/less than significant
	X				X	See above	See above	Less than adverse/potentially significant for fugitive dust	Same as above	Less than adverse/less than significant
		X	X			None	NA	No effect/no impact	None	No effect/no impact
		X		X		In comparison to No-Build Alternative, a decrease in CO, NOx, and ROG by 0.04 percent. The Alternative would not exceed the state 1- or 8-hour CO standards of 20 ppm or 9 ppm, respectively.	See above	Less than adverse/potentially significant for fugitive dust	Same as above.	Less than adverse/significant
		X			X	See above	See above	Less than adverse/potentially significant for fugitive dust	Same as above	Less than adverse//significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Biological Resources										
X			X			None	Federal Endangered Species Act Sections 7 and 10 Migratory Bird Treaty Act California Endangered Species Act CDFG Code 2050 et. seq.	No effect/no impact	None	No effect/no impact
X				X		None	NA	No effect/no impact	None	No effect/no impact
X					X	None	NA	No effect/no impact	None	No effect/no impact
	X		X			None	NA	No effect/no impact	None	No effect/no impact

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X			X		**All cities:** Direct: Mature trees may support nesting raptors protected under the Migratory Bird Treaty Act. Indirect: Vegetation: Increased amounts of construction dust deposited on adjacent vegetation. Habitat: Fragmentation, noise, dust, night lighting, and human encroachment. **Irwindale (M&O facility site):** Direct: Vegetation: Construction of facilities would remove several acres of alluvial fan sage scrub and possible small amount of riparian scrub. Possibly suitable habitat for several species of sensitive plants, including federally- and state-listed Nevin's barberry. Ten other sensitive plant species have potential to occur within project site. Wildlife: Area may support federally listed coastal California gnatcatcher, as well as the least Bell's vireo and the southwestern willow flycatcher. Three sensitive reptile species (the San Diego horned lizard, the two-striped garter snake, and the rosy boa), two avian species (the Cooper's hawk and the coastal cactus wren), and one mammal species (the San Diego desert woodrat) have moderate-to-high potential of occurring within the project site.	See above	Potentially adverse/potentially significant	To avoid impacts to biological resources: Construction limits shall be fenced or flagged to avoid disturbance to preserved areas. When possible, vegetation clearing shall commence during the non-breeding season. In the event that vegetation removal must take place during the raptor breeding season, a qualified biologist shall conduct a preconstruction survey to identify the locations of affected raptors within the project site. If the biologist finds an active nest, he/she shall flag a 500-foot buffer around the active nest. If a buffer is not possible, then noise barriers will be utilized. In addition, the biologist shall be present at all preconstruction meetings. Any equipment shall be maintained daily to reduce leaks of materials potentially detrimental to biological resources. Prior to completion of daily activities, all debris will be removed.	Less than adverse/less than significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X				X	See above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X	X			None	NA	No effect/no impact	None	No effect/no impact
		X		X		See above	See above	Potentially adverse	Same as for Double Track	Less than adverse/less than significant
		X			X	See above	See above	Potentially adverse	See above	Less than adverse/less than significant
Community Facilities and Services										
X			X			None	None	No effect/no impact	None	No effect/no impact
X				X		None	None	No effect/no impact	None	No effect/no impact
X					X	None	None	No effect/no impact	None	No effect/no impact
	X		X			None	None	No effect/no impact	None	No effect/no impact

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X			X		**Police Protection:** Could periodically affect emergency response in any city. **Fire Protection:** Could periodically affect emergency response times in any city. **Schools:** Arcadia: Project may cause noise and air quality impacts at adjacent schools. Monrovia: Project may cause noise and air quality impacts at adjacent schools. Duarte: Project may cause noise and air quality impacts at adjacent schools. **Parks:** Arcadia: Six parks may be affected by air quality and noise impacts. Duarte: Four parks may be affected by air quality and noise impacts. Irwindale: The Santa Fe Dam Recreation Area may be affected by air quality and noise impacts. **Government Centers:** No government centers are within 0.25 mile of alignment. **Hospitals:** Duarte: Construction noise, vibration, and air quality may impact The City of Hope National Medical Center.	None	Potentially adverse/potentially significant	Consultation with appropriate police and fire departments during the development of the Transportation Management Plan to develop alternate routes or to amend service areas to maintain emergency service coverage and response times during project construction. Aside from temporary closures, access to all businesses, facilities, and roads will remain open and accessible. Air quality mitigation measures will be implemented to reduce air quality impacts (see Air Quality mitigation above). Noise and vibration mitigation measures will be implemented to reduce noise and vibration impacts (see Noise and Vibration below).	Less than adverse/less than significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X				X	**Police protection:** Could periodically affect emergency response in any city. **Fire Protection:** Could periodically affect emergency response times in any city. **Schools:** Azusa: Project may cause noise and air quality impacts at adjacent schools. La Verne: Project may cause noise and air quality impacts at the University of La Verne. Claremont: Project may cause noise and air quality impacts at adjacent schools. **Parks:** Azusa: Veterans Freedom Park may be affected by air quality and noise impacts. Glendora: Five parks may be affected by air quality and noise impacts. San Dimas: Rhodes Park may be affected by air quality and noise impacts. La Verne: Wheeler Avenue Park may be affected by air quality and noise impacts. **Government Centers:** Traffic disruptions and construction nuisances may affect three government centers. **Hospitals:** Minor emergency access disruptions, elevated noise levels, and reduced air quality may affect two hospitals.	None	Potentially adverse/potentially significant	Same as for Double Track	Less than adverse/less than significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
		X	X			None	None	No effect/no impact	None	No effect/no impact
		X		X		**Police protection**: Could periodically affect emergency response in any city. **Fire Protection:** Could periodically affect emergency response times in any city. **Schools**: Arcadia: Project may cause noise and air quality impacts at adjacent schools. Monrovia: Project may cause noise and air quality impacts at adjacent schools. Duarte: Project may cause noise and air quality impacts at adjacent schools. **Parks:** Arcadia: Six parks may be affected by air quality and noise impacts. Duarte: Four parks may be affected by air quality and noise impacts. Irwindale: The Santa Fe Dam Recreation Area may be affected by air quality and noise impacts. **Government Centers**: No government centers are within 0.25 mile of alignment. **Hospitals**: Duarte: Construction noise, vibration, and air quality may impact The City of Hope National Medical Center.	None	Potentially adverse/potentially significant	Same as for Double Track	Less than adverse/less than significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
		X			X	**Police protection:** Would not substantially affect emergency response in any city. **Fire Protection:** Would not substantially affect emergency response times in any city. **Schools:** Azusa: Project may cause noise and air quality impacts at adjacent schools. La Verne: Project may cause noise and air quality impacts at the University of La Verne. Claremont: Project may cause noise and air quality impacts at adjacent schools. **Parks:** Azusa: Veterans Freedom Park may be affected by air quality and noise impacts. Glendora: Five parks may be affected by air quality and noise impacts. San Dimas: Rhodes Park may be affected by air quality and noise impacts. La Verne: Wheeler Avenue Park may be affected by air quality and noise impacts. **Government Centers:** Traffic disruptions and construction nuisances may affect three government centers. **Hospitals:** Minor emergency access disruptions, elevated noise levels, and reduced air quality may affect two hospitals.	None	Potentially adverse/potentially significant	Same as for Double Track	Less than adverse/less than significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Cultural Resources										
X			X			None	Section 106 of the National Historic Preservation Act Section 15064.5 of the CEQA Guidelines CFR 60.4 National Park Service Guidelines (36 CFR 49) Secretary of Interior's Standards and Guidelines (48 FR 44716-44742) State Health and Safety Code 5097.98	No effect/no impact	None	No effect/no impact
X				X		None	See above	No effect/no impact	None	No effect/no impact
X					X	None	See above	No effect/no impact	None	No effect/no impact
	X		X			None	See above	No effect/no impact	None	No effect/no impact

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X			X		All cities: Potential for subsurface structural remains or prehistoric sites if excavation exposes buried, unrecorded resources. No adverse effects to historic properties	See above	Potentially adverse/potentially significant	1. If buried cultural resources are uncovered during construction, all work shall be halted in the vicinity of the archaeological discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological resource. 2. In the event of an accidental discovery of any human remains in a location other than a dedicated cemetery, the steps and procedures specified in Health and Safety Code 7050.5, CEQA Guidelines § 15064.5(e), and the Public Resources Code 5097.98 shall be implemented. 3. Provisions for the disposition of recovered prehistoric artifacts shall be made in consultation with culturally affiliated Native Americans.	Less than adverse/less than significant
	X				X	Same as above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X	X			None	NA	No effect/no impact	None	No effect/no impact
		X		X		Same as above	See above	Potentially adverse/potentially significant	Same as for Double Track	Less than adverse/less than significant
		X			X	Same as above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Energy										
X			X			Minor construction-related activities, such as signage installation. Would not require substantially increased energy demanding facilities.	RCRA Section 6002 CPG listings	Not adverse/not significant	None	Not adverse/not significant
X				X		See above	See above	Not adverse/not significant	None	Not adverse/not significant
X					X	See above	See above	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	NA	No effect/no impact	None	No effect/no impact
	X			X		One-time, nonrecoverable energy costs associated with construction of tracks/rails, systems/equipment, transportation-related facilities, and railcars.	See above	Not adverse/not significant	None	Not adverse/not significant
	X				X	See above	See above	Not adverse/not significant	None	Not adverse/not significant
		X	X			None, construction complete	NA	No effect/no impact	None	No effect/no impact
		X		X		One-time, nonrecoverable energy costs associated with construction of tracks/rails, systems/equipment, transportation-related facilities, and railcars.	See above	Not adverse/not significant	None	Not adverse/not significant
		X			X	See above	See above	Not adverse/not significant	None	Not adverse/not significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Executive Orders										
X			X			Executive Orders are mandates that must be met for all federally funded projects. See Regulatory Compliance and/or Permit(s) column.	Executive Order (EO) 11988 (Floodplain Management) EO 11990 (Protection of Wetlands) EO 12898 (Environmental Justice) EO 13045 (Environmental Health and Safety of Children) EO 13112 (Invasive Species)	Not adverse (CEQA does not apply)	None	Not adverse (CEQA does not apply)
X				X		See above	See above	Not adverse	None	Not adverse
X					X	See above	See above	Not adverse	None	Not adverse
	X		X			See above	See above	Not adverse	None	Not adverse
	X			X		See above	See above	Not adverse	None	Not adverse
	X				X	See above	See above	Not adverse	None	Not adverse
		X	X			See above	See above	Not adverse	None	Not adverse
		X		X		See above	See above	Not adverse	None	Not adverse
		X			X	See above	See above	Not adverse	None	Not adverse

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Geologic/Seismic										
X			X			None	None	No effect/no impact	None	No effect/no impact
X				X		None	None	No effect/no impact	None	No effect/no impact
X					X	None	None	No effect/no impact	None	No effect/no impact
	X		X			None	None	No effect/no impact	None	No effect/no impact
	X			X		Potential effects of regional faults	None	Potentially adverse/potentially significant	Special design studies to meet building code	Less than adverse/less than significant
	X				X	Same as above	None	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X	X			None, construction complete	None	No effect/no impact	None	No effect/no impact
		X		X		Same as above	None	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X			X	Same as above	None	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
Hazardous Materials										
X			X			None	None	No effect/no impact	None	No effect/no impact
X				X		None	None	No effect/no impact	None	No effect/no impact
X					X	None	None	No effect/no impact	None	No effect/no impact
	X		X			None	None	No effect/no impact	None	No effect/no impact

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X			X		Former agricultural and orchard use. Potential oil well in the City of Duarte. Facilities onsite with known or potential subsurface contamination, including area of soil staining. Potential asbestos and lead paint containing building materials in properties to be acquired. Presence of hazardous materials, drums, trash, and debris onsite.	RCRA	Potentially adverse/potentially significant	Mitigation of contaminated materials to conform to applicable local, state, and federal requirements. Asbestos and lead abatement prior to demolition On-site measures to prevent contamination: 1) Removal and Disposal—identify, remove, and haul and dispose of the material in a licensed Class I, II, or III disposal facility. 2) Recycling—impacted material may be treated and recycled at regulated recycling facilities 3) Onsite reuse 4) Excavated soils shall be sampled for purpose of classifying materials and determining disposal requirements. If contaminated, the contractor will do the following: 1) segregate and stockpile the material on visqueen and 2) spray the stockpile with an approved vapor suppressant 5) Contractor will provide qualified personnel and protective equipment to dispose of contaminated materials and test soils.	Less than adverse/less than significant
	X				X	Same as above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X	X			None	None	No effect/no impact	None	No effect/no impact

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
		X		X		Same as above	See above	Potentially adverse/potentially significant	Same as Double Track	Less than adverse/less than significant
		X			X	Same as above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
Land Use and Planning										
X			X			None	None	Not adverse/not significant	None	Not adverse/not significant
X				X		None	None	Not adverse/not significant	None	Not adverse/not significant
X					X	None	None	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	None	No effect/no impact	None	No effect/no impact
	X			X		None, land use impacts not anticipated because construction activities are temporary and access to surrounding uses would be maintained.	None	Not adverse/not significant	None	Not adverse/not significant
	X				X	See above	None	Not adverse/not significant	None	Not adverse/not significant
		X	X			None	None	Not adverse/not significant	None	Not adverse/not significant
		X		X		See above	None	Not adverse/not significant	None	Not adverse/not significant
		X			X	See above	None	Not adverse/not significant	None	Not adverse/not significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Noise and Vibration										
X			X			None	Voluntary compliance with local noise ordinances to extent feasible	Not adverse/not significant	None	Not adverse/not significant
X				X		None	See above	Not adverse/not significant	None	Not adverse/not significant
X					X	None	See above	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	See above	No effect/no impact	None	No effect/no impact
	X			X		Temporary noise and vibration during construction with potential of being intrusive to residents near sites.	See above	Not adverse/potentially significant	Limit construction activities to weekday hours (7:00 a.m. to 6:00 p.m. typically) and voluntarily comply with local regulations and guidelines for construction activities to the extent feasible.	Not adverse/less than significant
	X				X	See above	See above	Not adverse/potentially significant	See above	Not adverse/less than significant
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		See above	See above	Not adverse/potentially significant	See above	Not adverse/less than significant
		X			X	See above	See above	Not adverse/potentially significant	See above	Not adverse/less than significant

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TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Railroad Operations										
X			X			None	None	No effect/no impact	None	No effect/no impact
X				X		None	None	No effect/no impact	None	No effect/no impact
X					X	None	None	No effect/no impact	None	No effect/no impact
	X		X			None	None	No effect/no impact	None	No effect/no impact
	X			X		Potential restriction on freight delivery	None	Potentially adverse/potentially significant	1. Switches to allow freight trains to move from one side of the right-of-way to another to reach customers. 2. Replacement of the 6,000 foot long siding in Irwindale at another location in the BNSF network 3. A constrained operating schedule under which freight service would occur during LRT non-revenue hours. 4. As an alternative to the constrained operating service, implement strategies for the delivery and/or pick-up of goods via trucks.	Potentially adverse/potentially significant
	X				X	See above	None	Potentially adverse/potentially significant	See above	Potentially adverse/potentially significant
		X	X			None	None	Potentially adverse/potentially significant	Replacement of the 6,000-foot-long siding in Irwindale at another location in the BNSF network.	Not adverse/less than significant
		X		X		No restrictions on freight delivery	None	Not adverse/not significant	None	Not adverse/not significant
		X			X	See above	None	Not adverse/not significant	None	Not adverse/not significant

Table ES-3
Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Safety and Security										
X			X			Minimal increases in demand to existing programs	None	Not adverse/not significant	None	Not adverse/not significant
X				X		See above	None	Not adverse/not significant	None	Not adverse/not significant
X					X	See above	None	Not adverse/not significant	None	Not adverse/not significant
	X		X			See above	None	Potentially adverse/potentially significant	None	Not adverse/not significant
	X			X		See above	None	Potentially adverse/potentially significant	Standard construction safety practices will be employed; delineated and separated construction zone boundaries using temporary fencing; use of construction zone flaggers for traffic control; and 24-hour private security onsite.	Less than adverse/less than significant
	X				X	See above	None	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X	X			None	None	No effect/no impact	None	No effect/no impact
		X		X		Safety hazards may increase within construction sites.	None	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X			X	See above	None	Potentially adverse/potentially significant	See above	Less than adverse/less than significant

Table ES-3
Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Socioeconomics										
X			X			None	Ensure temporary access routings for pedestrians and vehicles per city policies.	Less than adverse/less than significant	None	Less than adverse/less than significant
X				X		None	See above	Less than adverse/less than significant	None	Less than adverse/less than significant
X					X	None	See above	Less than adverse/less than significant	None	Less than adverse/less than significant
	X		X			None	See above	No effect/no impact	None	No effect/no impact
	X			X		Potential for temporary and localized access restrictions to property impacts to occur such as temporary loss of parking for customers, access to delivery docks, or closures of walkways, etc.	See above	Potentially adverse/potentially significant	Traffic Management Program will be developed in consultation with cities to ensure access to residential and business properties.	Less than adverse/less than significant
	X				X	See above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		See above	See above	Potentially adverse/potentially significant	Same as Double Track.	Less than adverse/less than significant
		X			X	See above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant

Table ES-3
Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Traffic and Transportation										
X			X			None	Voluntary compliance with local ordinance to the extent feasible	Not adverse/not significant	None	Not adverse/not significant
X				X		None	See above	Not adverse/not significant	None	Not adverse/not significant
X					X	None	See above	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	See above	No effect/no impact	None	No effect/no impact
	X			X		Construction would temporarily interfere with normal flow, causing some lanes and streets to be closed to vehicles for various durations.	See above	Potentially adverse/potentially significant	Consult with each city to develop specific traffic management plans to provide required pedestrian and traffic movements. To the extent practical, traffic lanes will be maintained in both directions, particularly during peak traffic hours. Access to homes and businesses will be maintained throughout the construction period.	Less than adverse/less than significant
	X				X	See above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		See above	See above	Potentially adverse/potentially significant	Same as Double Track	Less than adverse/less than significant
		X			X	See above	See above	Potentially adverse/potentially significant	See above	Less than adverse/less than significant

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Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Utility Disruptions and Relocations										
X			X			None	None	Not adverse/not significant	None	Not adverse/not significant
X				X		None	None	Not adverse/not significant	None	Not adverse/not significant
X					X	None	None	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	None	No effect/no impact	None	No effect/no impact
	X			X		Relocation of utilities traversing or with rail right-of-way required. Franchise holders typically liable for relocation costs	None	Not adverse/not significant	None	Not adverse/not significant
	X				X	See above	None	Not adverse/not significant	See above	Not adverse/not significant
		X	X			None	None	No effect/no impact	None	No effect/no impact
		X		X		See above	None	Not adverse/not significant	None.	Not adverse/not significant
		X			X	See above	None	Not adverse/not significant	See above	Not adverse/not significant
Visual Impacts										
X			X			None	Voluntary compliance with local design guidelines	Not adverse/not significant	None	Not adverse/not significant
X				X		None	See above	Not adverse/not significant	None	Not adverse/not significant
X					X	None	See above	Not adverse/not significant	None	Not adverse/not significant

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Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
	X		X			None	See above	No effect/no impact	None	No effect/no impact
	X			X		Potential visual impact in Monrovia and Duarte due to removal of the oleander screening hedgerow along Duarte Road east from Myrtle Avenue	See above	Potentially adverse/potentially significant	Provide landscaping of right-of-way consistent with that in Phase I	Less than adverse/less than significant
	X				X	None	See above	Not adverse/not significant	None	Less than adverse/less than significant
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		Potential visual impact in Monrovia and Duarte due to removal of the oleander screening hedgerow along Duarte Road east from Myrtle Avenue	See above	Potentially adverse/potentially significant	Same as Double Track	Less than adverse/less than significant
		X			X	Potential visual impact in La Verne due to removal of Deodar cedars tree landscape screening along Arrow Highway, roughly between Walnut and Park Avenues.	See above	Potentially adverse/potentially significant	Same as Double Track	Less than adverse/less than significant

Table ES-3
Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
Water/Water Quality										
X			X			None	Clean Water Act (CWA) Section 303 (CWA) Section 401 Permit (CWA): LARWQCB—SBRWQCB Section 402 NPDES Permit (CWA) Section 404 Permit (CWA): ACOE CDFG Code Section 1601 Permit: CDFG Federal Flood Insurance Program: FEMA Executive Order 11988 Porter-Cologne Water Quality Control Act RWQCB Basin Plans TMDLs Water Quality Certificate	Not adverse/not significant	None	Not adverse/not significant

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Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
X				X		None	See above	Not adverse/not significant	None	Not adverse/not significant
X					X	None	See above	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	See above	No effect/no impact	None	No effect/no impact
	X			X		Minimal impacts during construction	See above	Potentially adverse/potentially significant	Obtain all required permits and employ Best Management Practices: 1) installation of check dams and filter berms to protect drainage ways; 2) placing chemical stabilizers, mulch, seed, or sod; 3) using geotextiles and gradient terraces to protect slopes; 4) using silt fences and temporary diversion dikes to protect construction area perimeters; 5) using onsite dust control; 6) stabilizing construction area entrances 7) adhering to the appropriate County measures guiding/governing the use of fertilizers, pesticides, and soil amendments.	Not adverse
	X				X	See above	See above	Potentially adverse/potentially significant	See above	Not adverse
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		See above	See above	Potentially adverse/potentially significant	Same as Double Track	Not adverse

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Pasadena Gold Line—Phase II: Construction Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/CEQA Impact Level	Potential Mitigation	Effect/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II, Seg 1	Ph II, Seg 2					
		X			X	See above	See above	Potentially adverse/potentially significant	See above	Not adverse

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Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
Acquisitions & Displacements										
X			X			None, acquisitions made prior to construction and in compliance with the federal Uniform Relocation and Real Properties Acquisition Act of 1970 and the state California Relocation Act.	None	Not adverse/not significant	None	Not adverse/not significant
X				X		See above	None	Not adverse/not significant	None	Not adverse/not significant
X					X	See above	None	Not adverse/not significant	None	Not adverse/not significant
	X		X			See above	None	Not adverse/not significant	None	Not adverse/not significant
	X			X		See above	None	Not adverse/not significant	None	Not adverse/not significant
	X				X	See above	None	Not adverse/not significant	None	Not adverse/not significant
		X	X			See above	None	Not adverse/not significant	None	Not adverse/not significant

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Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X		X		See above	None	Not adverse/not significant	None	Not adverse/not significant
		X			X	See above	None	Not adverse/not significant	None	Not adverse/not significant
Air Quality										
X			X			None	Federal Clean Air Act National Ambient Air Quality Standards California Clean Air Act California Ambient Air Quality Standards SCAQMD Air Quality Mgmt. Plan	Not adverse/not significant	None	Not adverse/not significant
X				X		None	See above	Not adverse/not significant	None	Not adverse/not significant
X					X	None	See above	Not adverse/not significant	None	Not adverse/not significant
	X		X			None	See above	No effect/no impact	None	No effect/no impact

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Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X			X		Ongoing operations and maintenance could potentially have adverse air quality effects/impacts.	See above	Potentially adverse/ potentially significant	Follow LACMTA'S Systems Design Criteria and Standards as they apply to operations 1) minimize use of onsite diesel construction equipment; particularly unnecessary idling; 2) replace diesel equipment with electrically powered equipment, where feasible; 3) diesel powered equipment should be tuned and maintained; 4) equipment will be shut off while idling; 5) all trucks hauling loose material should be covered; 6) utilize street sweeping equipment onsite.	Less than adverse/less than significant
	X				X	See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		Ongoing operations and maintenance could potentially have adverse air quality effects/impacts.	See above	Potentially adverse/ potentially significant	Same as Double Track	Less than adverse/less than significant

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Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X			X	See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
Biological Resources										
X			X			None	Federal Endangered Species Act Section 7 and 10 Migratory Bird Treaty Act California Endangered Species Act CDFG Code 2050 *et. seq.*	Not adverse	None	Not adverse
X				X		See above	See above	Not adverse	None	Not adverse
X					X	See above	See above	Not adverse	None	Not adverse
	X		X			None	See above	No effect/no impact	None	No effect/no impact

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Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X			X		**Irwindale:** Direct: Vegetation: Construction of facilities would permanently remove several acres of alluvial fan sage scrub and possible small amount of riparian scrub. Possibly suitable habitat for several species of sensitive plants, including federal- and state-listed Nevin's barberry. Ten other sensitive plant species have potential to occur within project site. Wildlife: Area may support federal-listed coastal California gnatcatcher as well as the least Bell's vireo and the southwestern willow flycatcher. Three sensitive reptile species, the San Diego horned lizard, the two-striped garter snake, and the rosy boa; two avian species, the Cooper's hawk and the coastal cactus wren; and one mammal species, the San Diego desert woodrat, have moderate-to-high potential of occurring within the project site.	See above	Potentially adverse/ potentially significant	Detailed surveys during Preliminary Engineering are required to fully characterize habitat values and the presence or absence of species. Depending on these results, consultation with USFWS and CDFG may require acquisition of replacement habitat.	Less than adverse/less than significant
	X				X	None	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		Same as above	See above	Potentially adverse/ potentially significant	Same as Double Track	Less than adverse/less than significant
		X			X	See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
Community Facilities and Services										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			None (after noise mitigation provided- See Noise section)	None	No effect/no impact	None	No effect/no impact
	X			X		Same as above	None	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	Same as above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			None	None	No effect/no impact	None	No effect/no impact

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X		X		Same as above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	Same as above	None	Not adverse/ not significant	None	Not adverse/ not significant
Cultural Resources										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			None	See above	No effect/no impact	None	Not adverse/ not significant
	X			X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	None	See above	Not adverse	None	Not adverse/ not significant
		X	X			None	See above	No effect/no impact	None	No effect/no impact
		X		X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant

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Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
Energy										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			Would result in comparatively higher energy consumption than other alternatives. However, less than 1% increase in energy consumption for the project.	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X		X		See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	See above	See above	Not adverse/ not significant	None	Not adverse/ not significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
Executive Orders										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X		X		See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	See above	See above	Not adverse/ not significant	None	Not adverse/ not significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
Geologic/Seismic										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	None	None	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
		X		X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	None	None	Not adverse/ not significant	None	Not adverse/ not significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
Hazardous Materials										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	None	None	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
		X		X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	None	None	Not adverse/ not significant	None	Not adverse/ not significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
Land Use and Planning										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			None, construction complete	None	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		Pasadena: None Arcadia: One alternative would close Front Street to accommodate parking, displacing commercial-light industrial buildings. Monrovia: Development of parking structures north or south of the station would displace office-light industrial buildings; corridor traverses residential area-noise and vibration mitigation would be provided. Duarte: Railroad abuts residential area- noise and vibration mitigation would be provided. Irwindale: None	None	Not adverse/ not significant	None (acquisition and noise issues mitigated during construction period)	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X				X	Azusa: Residences south of alignment – noise and vibration mitigation would be provided; station and parking in area zoned for Community Facilities, where surface lots not permitted (Azusa Municipal Code); downtown Azusa parking structure alternative may result in land use impacts to adjacent residential and light manufacturing. Glendora: Northwest – parking alternative may require demolition of a warehouse; residential uses abut the alignment to the north – noise and vibration mitigation would be provided. San Dimas: Parking alternatives would replace vacant land or continue existing parking use; a few residential uses abut the alignment – noise and vibration mitigation would be provided. La Verne: Residences abut north side of alignment – noise and vibration mitigation would be provided. Pomona: Residences south of the alignment – noise and vibration mitigation would be provided. Claremont: Multi-family residential development to the south – noise and vibration mitigation would be provided. Montclair: none. Upland: none.	None	Not adverse/ not significant	See above	Not adverse/ not significant

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Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X	X			None, construction complete	None	No effect/no impact	None	No effect/no impact
		X		X		Pasadena: None Arcadia: One alternative would close Front Street to accommodate parking, displacing commercial and light industrial buildings. Monrovia: Development of parking structures north or south of the station would displace office and light industrial buildings; corridor traverses residential area and may require noise and vibration buffering. Duarte: Railroad abuts residential area and may require noise and vibration buffering. Irwindale: None	None	Not adverse/ not significant	See above	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X			X	Azusa: Residences south of alignment may require noise and vibration buffering; station and parking in area zoned for Community Facilities, where surface lots not permitted (Azusa Municipal Code); downtown Azusa parking structure alternative may result in land use impacts to adjacent residential and light manufacturing. Glendora: Northwest – parking alternative may require demolition of a warehouse; residential uses abut the alignment to the north and may require noise and vibration buffering. San Dimas: Parking alternatives would replace vacant land or continue existing parking use; a few residential uses abut the alignment and may require noise and vibration buffering. La Verne: Residences abut north side of alignment and may require noise and vibration buffering. Pomona: Residences south of the alignment may require noise and vibration buffering. Claremont: Multi-family residential development to the south may require noise and vibration buffering. Montclair: Alignment may further divide residential neighborhood along S. Huntington Drive in Montclair from neighborhood north of alignment. Upland: See Montclair above.	None	Not adverse/ not significant	See above	Not adverse/ not significant

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Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
Noise and Vibration										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			Potential noise increase is less than 1 decibel	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		Potential unmitigatable noise impacts near at-grade crossings from required warning devices	See above	Potentially adverse/ potentially significant	None (noise issues mitigated during Construction period). Potential unmitigatable noise impacts near at-grade crossings from required warning devices	Potentially adverse/ potentially significant
	X				X	See above	See above	Potentially adverse/ potentially significant	See above	Potentially adverse/ potentially significant
		X	X			Potential noise increase is less than 1 decibel	See above	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X		X		Detailed comparisons of existing and future noise levels along the alignment are presented in Tables 3-11.6, 3-11.7, 3-11.10, and 3-11.11 for the LRT Triple Track Alternative. Detailed comparisons of existing and future vibration levels along the alignment are presented in Tables 3-11.8, 3-11.9, 3-11.12, and 3-11.13 for this Alternative. According to Section 3-11.2.4.c—Long Term Impacts, Triple Track Alternative—there are adverse/significant noise and vibration impacts along the corridor.	See above	Potentially adverse/ potentially significant	Same as Double Track	Potentially adverse/ potentially significant
		X			X	See above	See above	Potentially adverse/ potentially significant	See above	Potentially adverse/ potentially significant
Railroad Operations										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	None	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X		X			None	None	No effect/no impact	None.	No effect/no impact
	X			X		Potential restriction on freight delivery	None	Potentially adverse/ potentially significant	Potential negotiations to provide alternate delivery via truck	Potentially adverse/ potentially significant
	X				X	See above	None	Not adverse/ not significant	See above	Not adverse/ not significant
		X	X			None	None	No effect/no impact	None	No effect/no impact
		X		X		See above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	See above	None	Not adverse/ not significant	None	Not adverse/ not significant
Safety and Security										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	None	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	None	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			Incremental increase in demand for existing services	None	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X			X		See above	None	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	See above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			See above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X		X		See above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	See above	None	Not adverse/ not significant	None	Not adverse/ not significant
Socioeconomics										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			None	See above	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X			X		None. Long-term beneficial impacts likely to result in that alternative reinforces the economic vitality of individual communities and serves as a catalyst for types of development or redevelopment envisioned and/or enabled by local plans.	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X		X		See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	See above	See above	Not adverse/ not significant	See above	Not adverse/ not significant
Traffic and Transportation										
X			X			Operation of 48 intersections expected to improve under TSM Alternative. This is a beneficial impact.	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		See above	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	See above	See above	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X		X			A total of 31 intersections anticipated to be affected significantly prior to mitigation. Nine intersections expected to be beneficially affected by Triple Track Configuration.	See above	Potentially adverse/ potentially significant	Potential operational mitigation measures: Modifications to intersection geometry. Changes to signal operations to improve efficiency. Signalization of selected intersections that are currently stop-sign controlled. Incorporation of new signals into the ATSAC system. Prohibition of left turns at intersections along the alignment. See Section 3-15.6.2. for proposed mitigation measures to specific intersections.	Less than adverse/less than significant
	X			X		See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
	X				X	See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
		X	X			A total of 31 intersections anticipated to be affected significantly prior to mitigation. Ten intersections expected to be beneficially affected by Triple Track Configuration.	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X		X		See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
		X			X	See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
Utility Disruptions and Relocations										
X			X			None, only applicable during construction phase.	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		See above	None	Not adverse/ not significant	None	Not adverse/ not significant
X					X	See above	None	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			See above	None	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		See above	None	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	See above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			See above	None	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X		X		See above	None	Not adverse/ not significant	None	Not adverse/ not significant
		X			X	See above	None	Not adverse/ not significant	None	Not adverse/ not significant
Visual Impacts										
X			X			None	None	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X		X			None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X			X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
	X				X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X	X			None	See above	Not adverse/ not significant	None	Not adverse/ not significant
		X		X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X			X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant
Water/Water Quality										
X			X			None	Clean Water Act (CWA) Section 303 (CWA) Section 401 Permit (CWA): LARWQCB—SBRWQCB Section 402 NPDES Permit (CWA) Section 404 Permit (CWA): ACOE CDFG Code Section 1601 Permit: Federal Flood Insurance Program: FEMA Executive Order 11988 Porter-Cologne Water Quality Control Act RWQCB Basin Plans TMDLs Water Quality Certificate	Not adverse/ not significant	None	Not adverse/ not significant
X				X		None	See above	Not adverse/ not significant	None	Not adverse/ not significant
X					X	None	See above	Not adverse/ not significant	None	Not adverse/ not significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
	X		X			None	See above	No effect/no impact	None	No effect/no impact
	X			X		Potential surface water impacts could result from accidental spills or leaks along the rail right-of-way Potential water quality impacts from Maintenance and Operating Facility	See above	Potentially adverse/ potentially significant	Compliance with all operating permits and Best Management Practices: 1) using absorbent materials for spills; 2) substituting toxic chemicals with non-toxic chemicals wherever possible; 3) using clarifiers and designated wash areas; 4) ensuring proper handling of potential contaminants; 5) periodic catch basin/drainage inspection and clearing; 6) stenciling catch basin/drainage with "No Dumping. Drains to Ocean," or equivalent; 7) utilizing an efficient irrigation system that minimizes runoff; 8) adhering to appropriate County measures guiding/governing the use of fertilizers and pesticides.	Less than adverse/less than significant
	X				X	See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
		X	X			See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant

Table ES-4
Pasadena Gold Line—Phase II: Operational Long-Term Impacts Summary

Alternative			Project Phase			Environmental Effect/Impact	Regulatory Compliance and/or Permit(s)	NEPA Effect Level/ CEQA Impact Level	Potential Mitigation	Effect Level/Impact Level After Mitigation
TSM	LRT, DBL	LRT, TPL	Ph I	Ph II Seg 1	Ph II Seg 2					
		X		X		See above	See above	Potentially adverse/ potentially significant	See above	Less than adverse/less than significant
		X			X	See above	See above	Potentially adverse	See above	Less than adverse/less than significant

ES-7 SUMMARY OF IMPACTS BY CITY

Impacts are presented only for the LRT build alternatives.

ES-7.1 City of Pasadena

ES-7.1.1 Construction Period

There were no adverse/significant impacts identified for the issues of Acquisitions and Displacements, Air Quality, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Executive Orders, Hazardous Materials, Land Use and Planning, Noise and Vibration, Safety and Security, Socioeconomics, Traffic and Transportation, Utility Disruptions and Relocations, Visual Impacts, and Water/Water Quality.

ES-7.1.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Air Quality, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of Best Management Practices (BMPs) during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.

- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC (traffic control) system, and prohibiting left-hand turns at intersections along the alignment.

- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.2 City of Arcadia

ES-7.2.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Cultural Resources, Energy, Land Use and Planning, Railroad Operations, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during construction. Additional draft mitigation measures to reduce impact levels are summarized below.

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds above 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities..
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.
- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes, using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.2.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.3 City of Monrovia

ES-7.3.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Cultural Resources, Energy, Land Use and Planning, , and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Railroad Operations, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds above 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.

- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.3.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.

- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.4 City of Duarte

ES-7.4.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Cultural Resources, Energy, Land Use and Planning, Railroad Operations, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Socioeconomics, Safety and Security, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.
- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.4.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.5 City of Irwindale

ES-7.5.1 Construction Period

There were no adverse/significant impacts identified for Community Facilities and Services, Cultural Resources, Energy, Land Use and Planning, Noise and Vibration, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Biological Resources, Hazardous Materials, Safety and Security, Socioeconomics, Railroad Operations, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Biological Resources—flagging sensitive areas and active nests, limiting construction to non-breeding season, ensuring proper construction vehicle maintenance, and overseeing debris removal.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Railroad operations—replacing the 6,000 foot long siding in Irwindale at another location in the BNSF network.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements..
- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-3 (Biological Resources), 3-9 (Hazardous Materials), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.5.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Railroad Operations, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Railroad operations—replacing the 6,000 foot long siding in Irwindale at another location in the BNSF network.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.6 City of Azusa

ES-7.6.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Cultural Resources, Energy, Land Use and Planning, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Railroad Operations, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.

- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.6.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Socioeconomics, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Railroad Operations Safety and Security, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.

- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-7 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.7 City of Glendora

ES-7.7.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Cultural Resources, Energy, Land Use and Planning, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Railroad Operations, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.

- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.7.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Railroad Operations, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to

improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.

- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.8 City of San Dimas

ES-7.8.1 Construction Period

There were no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Cultural Resources, Energy, Land Use and Planning, , and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Railroad Operations, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.

- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.8.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Railroad Operations, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to

improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.

- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.9 City of La Verne

ES-7.9.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Cultural Resources, Energy, Land Use and Planning, , and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Railroad Operations, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.

- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.9.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Railroad Operations, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Railroad Operations—to avoid constrained operating schedules under which freight service would occur during LRT non-revenue hours because of a Double Track Configuration, implement strategies for the delivery and/or pick- up of goods via trucks.. Alternatively, implement the Triple Track Option, which would not require a constraint on freight service to LRT non-revenue hours.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.

- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.10 City of Pomona

ES-7.10.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Land Use and Planning, Railroad Operations, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Hazardous Materials, Noise and Vibration, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation meaures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.
- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 Air Quality, 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.10.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Air Quality, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.

- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.

- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.

- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.

- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.11 City of Claremont

ES-7.11.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Cultural Resource, Energy, Land Use and Planning, Railroad Operations, and Utility Disruptions and Relocations.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Community Facilities and Services, Hazardous Materials, Noise and Vibration, Safety and Security, Socioeconomics, Traffic and Transportation, Visual Impacts, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following drat mitigation meaures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Community Facilities and Services—applying air quality and noise and vibration mitigation to reduce potential impacts to adjoining facilities.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Visual Impacts—ensuring voluntary compliance with local ordinances.
- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 Air Quality, 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), 3-17 (Visual Impacts), and 3-18 (Water/Water Quality).

ES-7.11.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-2 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.12 City of Montclair

ES-7.12.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Land Use and Planning, Railroad Operations, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, Hazardous Materials, Noise and Vibration, Safety and Security, Socioeconomics, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measure:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance.
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements,3-2 Air Quality, 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.12.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-12 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.13 City of Upland

ES-7.13.1 Construction Period

There were no adverse/significant impacts identified for Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Land Use and Planning, Railroad Operations, and Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Acquisitions and Displacements, Air Quality, , Hazardous Materials, Noise and Vibration, Safety and Security, Socioeconomics, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by the following draft mitigation measures:

- Acquisitions and Displacements—ensuring regulatory compliance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, which provides for purchase at fair market value and relocation assistance
- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Hazardous Materials—performing removal and disposal procedures, recycling, overseeing onsite reuse, sampling soils and containing contaminated soils, providing qualified personnel and equipment for disposal, and abating for asbestos and lead.
- Noise and Vibration—limiting construction activities to weekday hours (7 a.m. to 6 pm, typically) to the extent possible, voluntarily complying with all local regulations and guidelines for construction activities, complying with specific property line noise limits, to the extent possible.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA construction standards, delineating and separating construction zone boundaries using temporary fencing, using construction zone flaggers, and employing 24-hour private security on site.
- Socioeconomics—ensuring access to residential and business properties via Worksite Traffic Control Plans.
- Traffic and Transportation—developing Worksite Traffic Control Plans in conjunction with each city and within Los Angeles County to accommodate required pedestrian and traffic movements.
- Water/Water Quality—installing check dams and filter berms to protect drainage ways; placing chemical stabilizers, mulch, seed, or sod; using geotextiles or gradient terraces to protect slopes; using silt fences and temporary diversion dikes to protect construction area entrances; using onsite dust control measures; stabilizing construction area entrances; and adhering to appropriate regulatory measures governing the use of fertilizers, pesticides, and soil amendments.

Details are reported in sections 3-1 (Acquisitions and Displacements), 3-2 (Air Quality), 3-4 (Community Facilities and Services), 3-9 (Hazardous Materials), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-14 (Socioeconomics), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-7.13.2 Operational Period

There are no adverse/significant impacts identified for Acquisitions and Displacements, Biological Resources, Community Facilities and Services, Cultural Resources, Energy, Geologic-Seismic, Hazardous Materials, Land Use and Planning, Railroad Operations, Socioeconomics, Utility Disruptions and Relocations, and Visual Impacts.

Potentially adverse/significant impacts were identified for Air Quality, Noise and Vibration, Safety and Security, Traffic and Transportation, and Water/Water Quality, each of which can be mitigated to less than adverse/less than significant by regulatory compliance and use of BMPs during operations. Additional draft mitigation measures to reduce impact levels are summarized below.

- Air Quality—ensuring regulatory compliance with LACMTA's Systems Design Criteria and Standards, minimizing onsite diesel equipment, using electric equipment when possible, properly maintaining all diesel equipment, providing construction staging areas, covering all hauled materials, sweeping site access points, providing fugitive dust control, phasing activities to minimize concurrent dust-generating activities within a 2,500-foot radius, and suspending operations during first- and second-stage smog alerts and during high winds greater than 25 miles per hour.
- Noise and Vibration—building noise barriers and installing sound insulation, relocating crossovers or special trackwork at crossovers, reducing speeds in sensitive areas, separating grades or closing grade crossings at problem intersections. Vibration impacts can be further reduced by reducing speeds in sensitive areas, installing ballast mats, underlying track with tire shred or recycled rubber chips, using floating slabs, relocating crossovers or special trackwork at crossovers, and acquiring property or easements.
- Safety and Security—ensuring regulatory compliance with OSHA and CAL/OSHA safety standards; providing crossing protection; overseeing proper design of platforms and the surrounding area to minimize interactions with trains; providing four-gate intersections at problem at-grade crossings; providing additional safety measures such as lighting, cover, open designs, bike lockers, emergency telephones, and PA systems; and providing additional police and private security or enacting neighborhood watch programs.
- Traffic and Transportation—modifying intersection geometries, changing signal operations to improve efficiency, signalizing certain intersections that are currently stop-sign controlled to improve efficiency, incorporating new signals into the ATSAC system, and prohibiting left-hand turns at intersections along the alignment.
- Water/Water Quality—enacting operational BMPs.

Details are reported in sections 3-12 (Air Quality), 3-11 (Noise and Vibration), 3-13 (Safety and Security), 3-15 (Traffic and Transportation), and 3-18 (Water/Water Quality).

ES-8 FINANCIAL ANALYIS

The cost of a transportation investment falls into two categories: capital costs and operating and maintenance (O&M) costs. Capital costs are the start-up costs for the project, including the costs of guideway construction, vehicles, and any system facilities necessary before the project can begin operation. O&M costs are the costs associated with the regular running of a new transportation facility. Costs such as labor, vehicle maintenance, and overall facility maintenance all fall into this category.

This section discusses both types of costs, presents the proposed capital financing plan, and then analyzes the Construction Authority's ability to afford the build alternatives.

ES-8.1 Capital Cost Estimates for Build Alternatives

This section summarizes the capital cost estimates for the TSM Alternative, the Full-Build LRT Alternative, and the Build LRT Alternative to the Maintenance Facility. Optional configurations are presented for each build alternative below. The No-Build Alternative does not have any associated capital costs for comparative purposes as they are considered in the overall financial capability of the Construction Authority along with the other alternatives under consideration. The capital cost methodology and capital cost estimates are found in the following two Construction Authority documents: *Construction Cost Methodology* (December 15, 2003, revised January 2004) and *Conceptual Engineering Cost Estimate* (December 19, 2003, revised January 2004) prepared by Korve Engineering and Parsons Brinckerhoff Quade & Douglas.

The capital cost estimates were prepared with all costs expressed in 2003 dollars. Cost estimates are developed by identifying quantities on conceptual drawings and applying standardized rates as defined in the Construction Cost Methodology, the Conceptual Engineering Cost Estimate, the alternatives definitions, and the Engineering Plans and Drawings presented in Volume II. The alignment plans, typical cross sections, and station concepts are included in Volume II. In addition, capital costs for both additional buses (for the TSM Alternatives and additional for the build alternatives) and the LRT vehicles, as well as an estimate for the M&O facility, have been included.

The total capital cost includes allowances for an insurance program, master agreements with agencies, professional services, testing and pre-revenue service, environmental mitigation, and artwork. Additionally, contingency has been included for construction (such as guideway, systems, facilities and stations) and ROW.

Table ES-5 presents the total capital costs (in millions of dollars) for the TSM Alternative and the two build alternatives with a triple-track configuration and a double-track configuration in 2003 dollars. The major difference between the build alternatives is the length of each alternative. The Full-Build LRT Alternative is 23.9 miles long, and the Build LRT Alternative to the Maintenance Facility is 8.7 miles. Both alternatives include the full cost of the M&O facility. The cost for the Full-Build LRT Alternative is between $36.8 million and $42.5 million per mile, depending on the configuration.

TABLE ES-5
CAPITAL COST ESTIMATES

Cost Category	2003 Dollars in Millions					
	Transportation System Management (TSM) Alternative	Full-Build LRT Alternative with 3-Track Configuration	Full-Build LRT Alternative with 2-Track Configuration	Build LRT Alternative to Maintenance Facility with 3-Track Configuration	Build LRT Alternative to Maintenance Facility with 2-Track Configuration	M&O Facility Total
Guideway	$0.0	$269.2	$208.4	$119.9	$96.4	$0.0
M&O Facility	$9.4	$120.8	$120.8	$120.8	$120.8	$120.8
Systems	$0.0	$157.0	$124.1	$53.6	$48.1	$1.3
Stations	$19.8	$57.8	$58.4	$24.2	$24.8	$0.0
Subtotal - Construction	*$29.2*	*$604.8*	*$511.7*	*$318.5*	*$290.1*	*$122.1*
Vehicles	$27.0	$67.1	$67.1	$19.3	$19.3	$0.0
Special Conditions	$1.9	$58.5	$49.3	$30.6	$27.8	$11.9
Right-of-Way	$0.0	$51.3	$51.3	$29.1	$29.1	$22.6
Professional Services	$5.0	$159.2	$134.0	$83.0	$75.4	$32.4
Contingencies	$1.7	$75.3	$67.0	$44.7	$42.1	$19.6
Total Cost	**$64.8**	**$1,016.2**	**$880.4**	**$525.2**	**$483.8**	**$208.6**

Source: Korve Engineering and Parsons Brinckerhoff, 2004

ES-8.2 Maintenance and Operations Facility

The M&O facility has a total estimated capital cost of approximately $208.6 million in 2003 dollars. The proposed M&O facility has been designed to handle the future needs of the total Gold Line from East Los Angeles to Montclair, or approximately 44 miles of LRT operations. The sections on project finance (below) discuss the appropriate allocation of these costs to the Gold Line Phase II project. Based on the proposed operating plan for Phase II, approximately 60 percent of the M&O facility cost would be allocated to the LACMTA for provision of service on the Gold Line Phase I and Eastside Extension projects.

ES-8.3 Operating and Maintenance Costs

O&M cost estimates for the TSM and the LRT build alternatives were determined using the LACMTA's and Foothill Transit's O&M cost model. The cost model was developed to estimate O&M costs for LACMTA's bus and Gold Line operating modes as well Foothill Transit's bus operating mode. The Gold Line Phase II LRT proposed operating plan and the O&M cost estimates in 2003 dollars are found in the following two Construction Authority documents: *LRT Operating Plan and LRT Operating Statistics*

(November 24, 2003) and *Operating and Maintenance Cost Estimates* (December 10, 2003, revised January 2004) prepared by Manuel Padron & Associates and Parsons Brinckerhoff Quade & Douglas.

For the LACMTA services, the O&M costs have been determined using the LACMTA's O&M cost model, as calibrated to LACMTA's fiscal year (FY) 2000–01 adopted budget. This cost model was developed to estimate O&M costs for LACMTA's separate operating modes for bus and urban rail transit (Blue/Gold Line, Green Line, and Red Line), as well as for support department costs related to operations. The LACMTA O&M cost model estimates staffing requirements, labor costs, and non-labor expenses by transit mode and department within each mode. Overhead costs are allocated to the transit modes based on the allocations made for LACMTA's adopted budget. The model uses operating characteristics (e.g., peak vehicles, number of stations, passengers) to determine future costs. As future operating plans change (e.g., new rail lines are constructed), costs change accordingly.

The model meets FTA guidelines for estimating operating costs. These guidelines specify that:

- costs are computed by estimating labor and materials needed to provide a given level of service, and then unit costs are applied to the estimated future labor and material cost items;
- costs are calculated based on operating characteristics for each mode (e.g., Blue/Gold Line train hours) rather than for all modes combined (e.g., systemwide passengers);
- each reported labor and non-labor expense is calculated separately, which ensures that equations are mutually exclusive and cover all operating costs; and
- most cost items are variable, meaning that cost estimates will change with projected changes in service.

The model calculates costs separately for each labor and non-labor item in LACMTA's FY 2001 budget. The driving variables used in the O&M cost model are presented in **Table ES-6.**

TABLE ES-6
OPERATING & MAINTENANCE (O&M) COST MODEL VARIABLES

Input Statistic	MTA Bus	Rail Modes
Annual Boardings (Unlinked Passengers)	X	X
Peak Vehicles	X	X
Active Fleet Vehicles	X	X
Operating Divisions	X	X
Annual Revenue Bus/Car Miles	X	X
Annual Revenue Bus/Train Hours	X	X
Contract/BDOF Service Hours	X	
Route Miles		X
Elevated Stations	X	X
At-Grade Stations	X	X
Subway Stations	X	X
Total Stations		X

Source: Manuel Padron & Associates and Parsons Brinckerhoff, 2004

The LACMTA O&M cost model calculates costs for the entire MTA system of bus and urban rail transit services. Therefore, O&M costs associated with introducing the Gold Line extension alternatives are calculated as incremental O&M costs compared with the No-Build or TSM alternatives.

For Foothill Transit bus services a separate model was developed. This model is based on Foothill Transit's average unit costs for the following key operating cost indicators: revenue buses used in the peak period, revenue bus-miles, and revenue bus-hours. The Foothill Transit O&M cost model is calibrated to 2001 actual costs and operating statistics (peak buses, bus-miles, and bus-hours). The peak buses, bus-miles, and bus-hours generated for the 2025 alternatives are multiplied by Foothill Transit average unit costs to derive the cost of service for each alternative in 2001 dollars.

Since costs for both LACMTA and Foothill Transit are calculated in 2001 dollars, an escalation factor of 1.063 was used to provide costs in 2003 dollars. This escalation factor is based on a 2.9 percent growth rate in FY 2002 and 3.3 percent growth rate for FY 2003, based on the urban Consumer Price Index (CPI-U) for the Los Angeles area. This escalation factor matches the assumptions made by LACMTA in its most recent New Starts submittals to the FTA.

Table ES-7 presents the annual O&M costs for each alternative in 2003 dollars based on the proposed operations in year 2025. The table also shows the incremental O&M costs for each alternative compared to the No-Build and TSM alternatives.

TABLE ES-7
OPERATING & MAINTENANCE COST ESTIMATES

Provider and Mode	2003 Dollars in Millions			
	No Build	Transportation System Management (TSM) Alternative	Full-Build LRT Alternative	Build LRT Alternative to Maintenance Facility
Blue/Gold LRT Lines	$116.16	$116.17	$142.66	$126.02
LACMTA Bus	$906.48	$906.86	$906.93	$906.89
Foothill Transit Bus	$78.97	$88.35	$83.79	$86.57
Total O&M Costs	$1,101.61	$1,111.38	$1,133.38	$1,119.48
Increment to No Build	NA	$9.77	$31.77	$17.87
Increment to TSM	NA	NA	$22.00	$8.10

Source: Manuel Padron & Associates and Parsons Brinckerhoff, 2004

ES-8.4 The Project Finance Plan

This section summarizes the capital and operating financial plans for the alternatives. As the comparatively low capital cost of the TSM Alternative could be integrated into and funded as part of the MTA background bus system, the analysis focuses on the conceptual financial plans for the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility. A description is provided of the proposed revenue sources, commitment of these sources, and schedule of annual outlays planned.

Section ES-7.4.1 describes the proposed uses and sources of funding for the capital and O&M costs of the build alternatives. Section ES-7.4.2 presents the proposed flow of costs and revenues over the 2003 to 2025 period.

ES-8.4.1 Proposed Uses and Sources of Funding

This section describes the proposed uses and sources of funding for the capital and O&M of the build alternatives. To provide a better understanding of the actual funds that would need to be expended and the relative effects of inflation on costs and revenues, the financial analysis is presented in year-of-expenditure (YOE) dollars. YOE dollar values are computed by multiplying base-year dollar values by the compounded escalation factor for the relevant year for the relevant cost factor. For example, in YOE dollars, $1.00 in 2003 is equivalent to $1.03 in 2004, using an inflation rate of 3.0 percent.

The escalation factors used to convert 2003 capital cost estimates to costs in YOE dollars costs were derived from forecasts of the Consumer Price Index (CPI) prepared in August 2003 by the UCLA Anderson School of Business Forecast Report for Los Angeles County. Construction cost changes are obtained from cost indices of the Engineering News Record for the Los Angeles Region, September 2003. The CPI forecast was then adjusted to estimate the Construction Cost Index (CCI) values for the project time horizon, which were calculated as approximately 75 percent of the CPI. This adjustment is based on the cost relationship between changes in consumer prices and construction costs within the Los Angeles region as published by Engineering News Record for the Los Angeles Region, September 2003. Over the 2003–2025 period, the annual CPI is projected to average approximately 2.51 percent and range from a low of 2.36 percent in 2025 to a high of 2.75 percent in 2019. Over the same period, the annual CCI is projected to average approximately 1.88 percent and range from a low of 1.77 percent in 2025 to a high of 2.06 in 2019. This is consistent with MTA's financial forecasting process.

a. Overview of Proposed Uses of Funds

Table ES-8 summarizes the capital costs of the two build alternatives in 2003 constant dollars and in YOE dollars. The costs summarized are composed of the total capital costs, including allowances for professional services, project contingencies, and prior expenditures on right-of-way, as well as interest costs incurred on bridge loans provided or secured by the Construction Authority in anticipation of receipt of FTA New Start funds. As shown in the table, over the FY 2003–2025 period, the capital cost of the Full-Build LRT Alternative is $1,016.2 million in 2003 dollars and $1,182.2 million in YOE dollars. The capital cost of the Build LRT Alternative to the Maintenance Facility is $525.2 million in 2003 dollars and $582.9 million in YOE dollars. Including prior expenditures on right-of-way and interest costs incurred on the bridge loan, the total project capital costs in YOE dollars are $1,330.7 million and $636.8 million for the Full Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility respectively. These are total project costs that include both the Los Angeles and San Bernardino County shares.

TABLE ES-8
CAPITAL COST OF THE BUILD LRT ALTERNATIVES
IN 2003 DOLLARS AND IN YEAR-OF-EXPENDITURE DOLLARS

Cost Category	Full-Build LRT Alternative with 3-Track Configuration		Build LRT Alternative to Maintenance Facility with 3-Track Configuration	
	2003 Dollars in Millions	YOE Dollars in Millions	2003 Dollars in Millions	YOE Dollars in Millions
Guideway	$269.2	$313.1	$119.9	$131.4
M&O Facility	$120.8	$132.4	$120.8	$132.4
Systems	$157.0	$184.7	$53.6	$58.7
Stations	$57.8	$67.3	$24.2	$26.6
Subtotal - Construction	*$604.8*	*$697.5*	*$318.5*	*$349.1*
Vehicles	$67.1	$82.2	$19.3	$21.9
Special Conditions	$58.5	$67.5	$30.6	$33.5
Right-of-Way	$51.3	$56.8	$29.1	$30.8
Professional Services	$159.2	$190.6	$83.0	$91.7
Contingencies	$75.3	$87.6	$44.7	$55.9
Total Capital Cost	**$1,016.2**	**$1,182.2**	**$525.2**	**$582.9**
Interest Cost	$0.0	$41.5	$0.0	$21.8
Prior Expenditure for Right-of-Way	$0.0	$107.0	$0.0	$32.1
TOTAL PROJECT COST	**$1,016.2**	**$1,330.7**	**$525.2**	**$636.8**

Source: Korve Engineering and Parsons Brinckerhoff, 2004

Table ES-9 summarizes the proposed uses and sources of funds for the capital and operations and maintenance of the build alternatives over the 2003–2025 period. Including both capital and O&M costs, the total cost of the Full-Build LRT Alternative is $1,815.8 million (YOE $), of which $1,330.7 million is for capital and $485.1 million is for O&M. Included in the capital cost are $101.9 million in prior expenditure for the acquisition of the railroad ROW and $41.5 million in interest costs incurred on the bridge loan.

Including both capital and O&M costs, the total cost of the Build LRT Alternative to the Maintenance Facility is $940.3 million (YOE $), of which $636.8 million is for capital and $303.5 million is for O&M over the initial fifteen year period of operations. Included in the capital cost are $32.1 million in prior expenditures for the acquisition of the railroad ROW and $21.8 million in interest costs incurred on the bridge loan. These are included in the total project cost for each alternative.

The capital costs would be shared by two county-level jurisdictions, each with a separate funding plan. For this reason, the cash flows distinguish between the costs and revenues for each count. The Los Angeles County share is approximately 95.0 percent of the capital costs of the Full-Build LRT Alternative and approximately 98.0 percent of the capital costs of the Build LRT Alternative to the Maintenance Facility. Of the $1,330.7 million in capital cost for the Full-Build LRT Alternative, $1,264.2 million is the Los Angeles County share and $66.5 million is the San Bernardino County share. Of the $636.8 million in capital cost of the Build LRT Alternative to the Maintenance Facility, $625.2 is the Los Angeles County share and $11.6 million is the San Bernardino County share.

Table ES-9 also summarizes the incremental O&M costs of the build alternatives over the No-Build Alternative over the 2010–2025 period in which the LRT project would be in operation. Of the $485.1

million in O&M costs for the Full-Build LRT Alternative, $402.8 million (83.0 percent) are for LRT service, $72.5 million (15 percent) are for bus service provided by Foothill Transit, and $9.8 million (2 percent) are for MTA bus service. Of the $303.5 million in O&M costs for the Build LRT Alternative to the Maintenance Facility, $167.2 million (55.1 percent) are for LRT service, $129.5 million (42.7 percent are for bus service provided by Foothill Transit, and $6.8 million (2.2 percent) are for MTA bus service.

TABLE ES-9
PROPOSED SOURCES AND USES OF FUNDING
FISCAL YEAR 2003–2025
(IN YEAR-OF-EXPENDITURE DOLLARS, MILLIONS)

	Full-Build LRT Alternative	Build LRT Alternative to Maintenance Facility
USES OF FUNDS		
LA County Capital Costs		
Construction and Procurement	$857.7	$426.6
Professional Services	$180.1	$89.9
Project Contingency	$80.3	$54.8
Total Project Capital Cost	***$1,120.8***	***$571.3***
Prior Expenditure for Right-of-Way	$101.9	$32.1
Interest Cost	$41.5	$21.8
Subtotal, LA County Capital Costs	***$1,264.2***	***$625.2***
SB County Capital Costs		
Construction and Procurement	$46.2	$8.7
Professional Services	$10.5	$1.8
Project Contingency	$4.6	$1.1
Total Project Capital Cost	***$61.4***	***$11.6***
Prior Expenditure for Right-of-Way	$5.1	
Interest Cost		
Subtotal, SB County Capital Costs	***$66.5***	***$11.6***
TOTAL CAPITAL COSTS	***$1,330.7***	***$636.8***
SOURCES OF CAPITAL FUNDS		
LA County Capital Funding Sources		
Federal		
FTA Section 5309 New Starts	$581.1	$296.5
FTA Section 5309 Bus and Bus-Related Intermodal	$20.0	$10.0
FHWA TCSP	$2.9	$2.9
CMAQ	$10.0	$10.0
State		
State Funds (Proposition 192 Seismic Bond)	$11.5	$11.5
Local		
Countywide Sales Tax Funds	$484.8	$242.2
Corridor Cities Contribution	$52.0	$20.0

TABLE ES-9 *continued*
PROPOSED SOURCES AND USES OF FUNDING
FISCAL YEAR 2003–2025
(IN YEAR-OF-EXPENDITURE DOLLARS, MILLIONS)

	Full-Build LRT Alternative	Build LRT Alternative to Maintenance Facility
Prior Expenditure for Right-of-Way	$101.9	$32.1
Subtotal, LA County Capital Sources	$1,264.2	625.2
Surplus (Deficit) before Bridge Loan		
Gross Bridge Loan Proceeds	$128.1	$139.0
Bridge Loan Principal Payment	-$128.1	-$139.0
Interest (5%)	-$41.5	-$21.8
SB County Capital Funding Sources		
Federal		
FTA Section 5309 New Starts	$30.7	$5.8
Local		
SANBAG Local	$30.7	$5.8
Prior Expenditure for Right-of-Way	$5.1	
Subtotal, SB County Capital Sources	***$66.5***	***$11.6***
TOTAL CAPITAL FUNDING SOURCES	***$1,330.7***	***$636.8***
O&M COSTS AND REVENUES		
O&M COSTS		
LRT	$402.8	$167.2
MTA Bus	$9.8	$6.8
Foothill Transit	$72.5	$129.5
Total O&M Costs	***$485.1***	***$303.5***
SOURCES OF O&M FUNDS		
LRT Farebox Revenues	$112.8	$46.8
Bus Farebox Revenues	$323.0	$38.2
MTA Local Funds	$349.3	$218.5
TOAL O&M Sources	***$485.1***	***$303.5***

Notes:
Includes MTA's 60% share of the maintenance facility capital cost ($125.1 million) and prior MTA and SANBAG local expenditures for right-of-way
"Special Conditions" includes environmental mitigation, master cooperative agreements, project insurance, start-up and testing costs
"Professional Services" includes engineering, construction management, agency costs
Source: Sharon Greene & Associates, 2004

b. Overview of Proposed Sources of Funds

This section focuses on the proposed sources of funding for the build alternatives over the 2003–2025 period. Capital funding sources are described first, followed by a description of O&M funding sources.

Capital Funding Sources

Table ES-10 and **Figure ES-52** illustrate the variety of revenue sources proposed to fund the capital costs of the build alternatives. These sources consist of:

Federal Sources:

- FTA Section 5309 New Starts
- FTA Section 5309 Bus and Bus-Related Intermodal
- FHWA Congestion Mitigation and Air Quality (CMAQ)
- FHWA Transportation and Community and Systems Preservation Program (TCSP)

State Sources:

- State Funds (Proposition 192 Seismic Bond)

Local Sources:

- Corridor Cities Contributions
- Countywide Sales Tax Funds
- Prior Expenditure for Right-of-Way

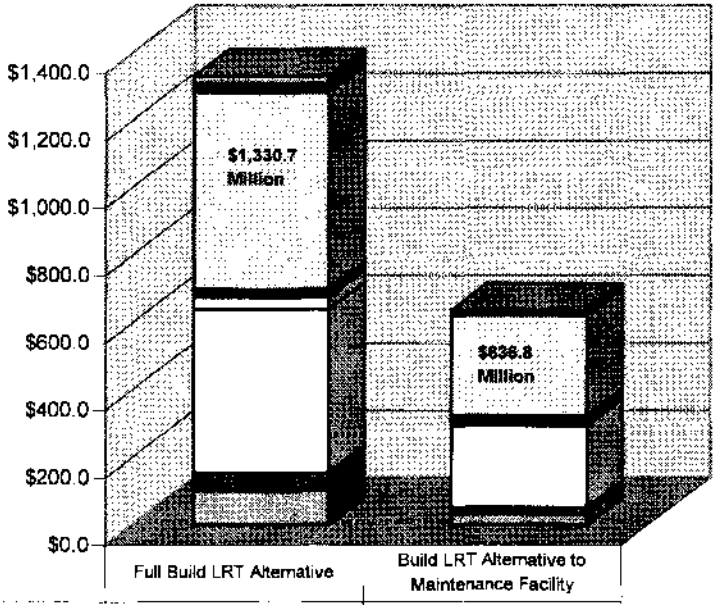
TABLE ES-10
PROPOSED CAPITAL REVENUE SOURCES
(IN YEAR-OF-EXPENDITURE DOLLARS)

	FULL-BUILD LRT ALTERNATIVE		BUILD LRT ALTERNATIVE TO MAINTENANCE FACILITY	
	YOE Dollars, Millions	Percent of Total	YOE Dollars, Millions	Percent of Total
LOS ANGELES COUNTY				
CAPITAL COSTS				
Project Capital Cost	$1,120.8		$571.3	
Prior Expenditure for Right-of-Way	$101.9		$32.1	
Interest Cost	$41.5		$21.8	
Total Project Capital Cost	**$1,264.2**		**$625.2**	
CAPITAL REVENUES				
Federal		**48.6%**		**51.1%**
5309 New Starts	$581.1	46.0%	$296.5	47.4%
5309 Bus and Bus Related Intermodal	$20.0	1.6%	$10.0	1.6%

TABLE ES-10 *continued*
PROPOSED CAPITAL REVENUE SOURCES
(IN YEAR-OF-EXPENDITURE DOLLARS)

FHWA TCSP	$2.9	0.2%	$2.9	0.5%
CMAQ	$10.0	0.8%	$10.0	1.6%
State		**0.9%**		**1.8%**
Bridge Fund Balance (existing $)	$11.5	0.9%	$11.5	1.8%
Local		**50.5%**		**47.1%**
Countywide Sales Tax Funds	$484.8	38.3%	$242.2	38.7%
Corridor Cities Contribution	$52.0	4.1%	$20.0	3.2%
Prior Expenditure for Right-of-Way	$101.9	8.1%	$32.1	5.2%
TOTAL CAPITAL SOURCES	**$1,264.2**	**100.0%**	**$625.2**	**100.0%**
SAN BERNARDINO COUNTY				
CAPITAL COSTS				
Project Capital Cost	$61.4		$11.6	
Prior Expenditure for Right-of-Way	$5.1			
Interest Cost				
Total Capital Cost	**$66.5**		**$11.6**	
CAPITAL REVENUES				
Federal				
5309 New Starts	$30.7	46.2%	$5.8	50.0%
Local				
SANBAG Local	$30.7	46.2%	$5.8	50.0%
Prior Expenditure for Right-of-Way	$5.1	7.6%		
TOTAL CAPITAL SOURCES	**$66.5**	**100.0%**	**$11.6**	**100.0%**

Note: Includes MTA's 60 percent share of the maintenance facility capital cost ($125.1 million) and prior MTA and SANBAG local expenditures for right-of-way.
Source: Sharon Greene & Associates, 2004



	Full Build LRT Alternative	Build LRT Alternative to Maintenance Facility
5309 Bus and Bus Related Intermodal	$20.0	$10.0
5309 New Starts (San Bernardino County)	$30.7	$5.8
5309 New Starts (LA County)	$581.1	$296.5
FHWA TCSP	$2.9	$2.9
CMAQ	$10.0	$10.0
State (Proposition 192 Seismic Bond)	$11.5	$11.5
SANBAG Local	$35.8	$5.8
Countywide Sales Tax Funds	$484.8	$242.2
Corridor Cities Contribution	$52.0	$20.0
Prior Local Expenditure for Right of Way	$101.9	$32.1

Source: Sharon Greene & Associates, 2004

FIGURE ES-52: SUMMARY OF CAPITAL RESOURCES IN YOE DOLLARS

Of the sources proposed for the Los Angeles County share, federal sources comprise 48.6 percent of the capital revenues proposed for the Full-Build LRT Alternative and 51.1 percent of the revenues for the Build LRT Alternative to the Maintenance Facility. The predominant federal source is FTA Section 5309 New Starts funding, which comprises 46.0 percent and 47.4 percent of the capital revenues for the Full-Build LRT Alternative and Build LRT Alternative to the Maintenance Facility respectively. State sources contribute between 1 and 2 percent of total revenues. Local sources comprise 50.5 percent and 47.1 percent of the revenues for the two build alternatives respectively. The predominant local source is countywide sales tax funds.

Of the sources proposed for the San Bernardino County share, federal sources comprise 46.2 percent of the capital revenues for the Full-LRT Build Alternative and 50.0 percent of the revenues for the Build LRT Alternative to the Maintenance Facility. All federal funding for the San Bernardino share is proposed to be derived from FTA New Starts funds. The balance of funding is proposed to be provided from local sources.

Each of the proposed capital funding sources is described below.

Federal Sources for Capital

Federal sources proposed for capital consist of FTA Section 5309 New Start funds, FTA Section 5309 Bus and Bus-Related Intermodal funds, FHWA CMAQ program, and FHWA TCSP program.

FTA Section 5309 New Start Funds

Under this program, FTA provides federal discretionary funding for proposed fixed guideway New Starts and extensions. New Starts funds represent 46.0 percent of the funding for the Full-Build LRT Alternative and 47.4 percent of the Build LRT Alternative to the Maintenance Facility, or $611.8 million and $302.3 million for the alternatives respectively. The Construction Authority will coordinate with San Bernardino Associated Governments in securing New Starts funding for the Gold Line extension.

For the portion of the alternatives allocated to Los Angeles County, this source is proposed to provide 46.0 percent of the capital funding for the Full-Build LRT Alternative and 47.4 percent for the Build LRT Alternative to the Maintenance Facility. The total level of FTA New Starts proposed for the Los Angeles County share is $581.1 million for the Full-Build LRT Alternative and $296.5 for the Build LRT Alternative to the Maintenance Facility. Of these totals, $4.0 million in FTA New Starts funding was authorized in the 2004 federal budget. An additional $30.7 million and $5.8 million in FTA New Starts funding is proposed for the San Bernardino County share, representing 46.2 percent and 50.0 percent of the capital funding for the San Bernardino County portions of these alternatives. The Section 5309 shares for these build alternatives, total and by county, are below the 50% maximum share objective for New Starts program contributions.

Over the 2004–2009 period, the annual level of New Starts funds proposed for the Gold Line extension is not to exceed $30 million. Higher levels of New Starts funding are proposed for the Gold Line extension beginning in 2010. This annual limitation on the level of FTA New Starts funds to be received will require that the Construction Authority provide or secure annual bridge loans that would be repaid with FTA New Starts funds received after completion of construction. Higher levels of New Starts funding are projected to be available for the Gold Line extension beginning in 2010 (see **Table ES-11**). This higher level of New Starts funding eliminates the need for any further bridge loan financing of the project implementation schedule.

TABLE ES-11
ANNUAL DRAWDOWN LEVELS OF NEW STARTS FUNDING PROPOSED OVER THE 2004–2016 PERIOD (IN YEAR-OF-EXPENDITURE DOLLARS, MILLIONS)

Fiscal Year	FULL-BUILD LRT ALTERNATIVE		BUILD LRT ALTERNATIVE TO MAINTENANCE FACILITY	
	LOS ANGELES COUNTY	SAN BERNARDINO COUNTY	LOS ANGELES COUNTY	SAN BERNARDINO COUNTY
2005	$ 4.0		$ 4.0	
2006	$27.3	$1.0	$27.1	$1.0
2007	$30.0	$1.1	$30.0	$1.1
2008	$30.0	$1.8	$30.0	$1.8
2009	$30.0	$1.1	$30.0	$1.1
2010	$36.6	$0.7	$36.5	$0.7
2011	$75.0	$3.1	$60.4	
2012	$89.0	$4.7	$78.5	
2013	$70.0	$8.7		
2014	$70.0	$5.1		
2015	$70.0	$3.3		
2016	$49.2			
Total	**$581.1**	**$30.7**	**$296.5**	**$5.8**

Note: revenues not rounded
Source: Sharon Greene & Associates, 2004

FTA Section 5309 Bus and Bus-Related Intermodal Funds

Under this program, FTA provides federal discretionary funding for bus and bus-related capital projects, including construction or rehabilitation of facilities and acquisition of vehicles. FTA Section 5309 bus funds are proposed to fund intermodal transfer facilities, transportation centers, shelters, and related uses along the Gold Line extension. A total of $20 million in FTA Section 5309 bus funding is proposed for the Full-Build LRT Alternative, with $10 million proposed for the Build LRT Alternative to the Maintenance Facility.

FHWA CMAQ Funds

A total of $10 million in CMAQ funding is proposed for both build alternatives. These funds would be received in 2008.

FHWA TCSP Funds

The Construction Authority was awarded $2.9 million in funding through the TCSP program. These funds are expected to be available for expenditure in 2005. These funds have been authorized to San Gabriel Valley Council of Governments (COG) as the local transportation funding organization, and the COG has agreed to assign these funds to the project in its capital program.

State Sources for Capital

The Construction Authority received state funds through the Proposition 192 Seismic Retrofit and Replacement Bond program. These funds will be expended on the extension beginning in 2003. A total of $11.5 million in such funding is proposed in both LRT build alternatives.

Local Sources for Capital

Local sources are projected to provide $638.7 million and $294.3 million for the Los Angeles portions of the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility respectively, representing 50.5 percent and 47.1 percent of proposed capital revenues. Local funding is also proposed to fund the San Bernardino County portion of the alternatives. Local funds are proposed to provide $35.8 million (53.8 percent) of capital funding for the San Bernardino County portion of the Full-Build LRT Alternative and $5.8 million (50.0 percent) for the Build LRT Alternative to the Maintenance Facility.

The sources of Los Angeles County funding consist of contributions from the corridor cities, revenues from countywide sales taxes, and credit for prior local expenditures made to acquire the railroad right-of-way. In addition, the Construction Authority would provide or secure bridge financing, which would be repaid with future receipt of FTA New Starts funds. Local funding for the San Bernardino County share would be provided through the proposed extension of the Measure I county sales tax program to be considered by county voters in November 2004.

Corridor Cities Contribution

The local jurisdictions along the Gold Line Phase II corridor have indicated their commitment to assist in funding the capital cost of the project. Approximately 4.1 and 3.2 percent of capital revenues are proposed to be derived from the corridor cities, with $52.0 million for the Full-Build LRT Alternative and $20.0 million proposed for the Build LRT Alternative to the Maintenance Facility.

Local jurisdictions could potentially use a variety of funding sources for their contributions. Among these are Proposition A "25 Percent Local Return" sales tax funds, Proposition C "20 Percent Local Return" sales tax funds, local gas tax subventions, tax increment financing revenues from redevelopment, and joint development revenue sources.

Countywide Sales Tax Funds

Currently, the MTA relies on three existing sales tax-based revenue sources: Proposition A, Proposition C, and the Transportation Development Act (TDA). Propositions A and C are each projected to generate $565.8 million in 2004 and $596.5 million in 2005, with TDA forecasted to generate $288.1 million in 2004 and $303.8 million in 2005. The MTA receives, programs, and allocates these funds and audits their usage. In addition, enabling legislation was passed in 2003 authorizing the MTA to place an interim sales tax on the ballot. As described below, portions of these sources could be used to fund the Los Angeles County share of the Gold Line Phase II. San Bernardino County Measure I sales tax funds are proposed for use in funding the San Bernardino County share of the alternatives.

Proposition A is a half-cent sales tax for public transit approved by Los Angeles County voters in 1980. Of the revenues generated annually, 25 percent are distributed back to the cities and county of Los Angeles on a per capita basis, 35 percent are used for rail development in Los Angeles County as specified on the Proposition A Rail Corridor Map and for rail operations, and 40 percent are set aside by MTA for discretionary programs related to bus capital and operations. As a designated Proposition A corridor, the Gold Line extension is eligible to receive Proposition A rail development funds.

Proposition C is a half-cent sales tax for public transportation purposes approved by the voters in 1990. Of the revenues generated, 5 percent is for rail and bus security, 10 percent is for commuter rail and transit centers, 25 percent is for transit-related improvements to streets and highways, 20 percent is for local return for transit use, and 40 percent is for discretionary programs to improve and expand rail and bus transit services. The MTA Reform and Accountability Act was approved by the voters in 1998 permitting the expenditure of Proposition C funds for transit improvements to rail rights-of-way.

TDA authorizes the use of 0.25 percent of the state sales tax for transportation purposes. The MTA allocates TDA funds to municipal transit operators based on established criteria and formulas. Before allocation, 1 percent of TDA funds are set aside for MTA administrative costs and 0.75 percent for transportation planning and programming by the Southern California Association of Governments. Of the remaining funds, up to 2 percent are for bicycle and pedestrian facilities, up to 93 percent are allocated to municipal operators for transit capital and operations, and up to 4.8 percent are for transit and paratransit services provided under contract.

Pending resolution of the state budget deficit, transportation agencies across California have been affected by the state's interim actions of deferring transportation funding allocations and borrowing funds from the State Transportation Improvement Program. As a possible method to keep existing and proposed capital projects and programs within Los Angeles County moving forward, Senator Murray proposed legislation authorizing an interim 0.5 percent transactions and use tax (sales tax) for transportation. The bill, SB 314, was passed by the legislature and signed by the governor in October 2003.

SB 314 authorizes the MTA to impose a 0.5 percent sales tax for 6½ years or less to fund specified transportation-related purposes designated as capital projects or capital programs. The bill conditions the imposition of the tax upon voter approval as otherwise required by law. The bill requires the MTA to prepare an expenditure plan prior to submitting the ordinance to voters, describing the projects and programs, their cost, and funding sources.

Based on the capital plan contained in SB 314, the Metro Gold Line (Pasadena to Irwindale) Light Rail Transit Extension would receive "...the sum of three hundred twenty-eight million dollars ($328,000,000). This project shall be completed by 2012 and shall be the second priority for federal funding received for the capital projects specified" in the legislation.

County sales tax funds are also proposed for use in San Bernardino County. Approved by county voters in 1989, San Bernardino County's Measure I is a half-cent sales tax authorized for a 20-year period to fund a defined multimodal transportation expenditure program. In advance of the 2009 sunset year, the extension of the Measure I program will be considered by county voters in November 2004.

Prior Expenditure for Right-of-Way

In 1992, the MTA and SANBAG purchased the Pasadena Subdivision railroad right-of-way within their jurisdictions. The acquisition was 100 percent funded with MTA Proposition A sales tax funds, SANBAG Measure I sales tax funds, and State Proposition 116 rail bond funds, with no federal funding used. In YOE dollars, the escalated cost of the right-of-way is $107.0 million for the Full-Build LRT Alternative and $32.1 million for the Build LRT Alternative to the Maintenance Facility.

The proposed capital financial plan calls for this prior expenditure of funds to be credited as part of the non-federal match for the Gold Line extension project.

Bridge Financing

For purposes of the capital financial plan, bridge financing is needed to address cash flow issues resulting from the anticipated availability of FTA Section 5309 New Starts funding. As corridor costs will be incurred before all of the required funds are available, the Construction Authority is assumed to provide or secure some form of bridge financing such as Commercial Paper. Debt issuance is anticipated in 2007 through 2010, and interest rates are conservatively assumed to be 5 percent, consistent with MTA assumptions. The short-term loans total $128.1 million and $139.0 million for the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility respectively. The loans would be fully repaid in 2011 and 2012 with FTA Section 5309 New Starts funding received after completion of construction. Interest expense for repayment of the bridge loan is eligible for federal New Starts funding and has been incorporated into the project capital cash flows.

Revenue Sources for Operations and Maintenance

Table ES-12 summarizes the costs and the revenue sources proposed to fund the incremental O&M costs associated with the build alternatives. As shown in the table, a total of $485.1 million and $303.5 million in incremental O&M costs are projected over the FY 2010–2025 period for the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility respectively. These costs consist of three components: LRT, incremental MTA bus service, and incremental Foothill Transit bus service.

Approximately 83.0 percent of the incremental O&M costs of the Full-Build LRT Alternative are attributable to the extension of the Gold Line LRT service. With its reduced miles of LRT service and greater reliance on Foothill Transit buses, the Build LRT Alternative to the Maintenance Facility has O&M costs that are divided between LRT (55.1 percent) and Foothill Transit bus (42.7 percent).

TABLE ES-12
PROPOSED OPERATING AND MAINTENANCE
FUNDING FISCAL YEARS 2003–2025
(IN YEAR-OF-EXPENDITURE DOLLARS)

	Full-Build LRT Alternative		Build LRT Alternative to Maintenance Facility	
	Cost	Percent	Cost	Percent
O&M COSTS & REVENUES				
O&M COSTS				
LRT	$402.8	83.0%	$167.2	55.1%
MTA Bus	$9.8	2.0%	$6.8	2.2%
Foothill Transit	$72.5	14.9%	$129.5	42.7%
Total O&M Costs	***$485.1***	***100.0%***	***$202.5***	***100.0%***
SOURCES OF O&M FUNDS				
LRT Farebox Revenues	$112.8	23.3%	$46.8	15.4%
Bus Farebox Revenue	$23.0	4.7%	$38.2	12.6%
MTA Local Funds	$349.3	72.0%	$218.5	72.0%
Total O&M Sources	***$485.1***	***100.0%***	***$303.5***	***100.0%***

Source: Sharon Greene & Associates, 2004

Incremental O&M costs are projected to grow annually over the 2010–2025 period. **Table ES-13** summarizes the increases in O&M costs at key intervals in 2003 dollars and in YOE dollars. In constant 2003 dollars, the annual O&M costs of the Full-Build LRT Alternative are projected to be $4.2 million in 2010, increasing to $19.6 million per year in 2015 and $31.8 million in 2025. In constant 2003 dollars, the annual O&M costs of the Build LRT Alternative to the Maintenance Facility are projected to be $6.5 million in 2010, increasing to $10.9 million per year in 2015 and $17.9 million in 2025.

TABLE ES-13
INCREMENTAL OPERATING AND MAINTENANCE COSTS OVER NO BUILD IN FY 2010, FY 2015, FY 2025 (IN YEAR-OF-EXPENDITURE DOLLARS)

Fiscal Year	Full-Build LRT Alternative		Build LRT Alternative to Maintenance Center	
	2003 $	Year-of-Expenditure $	2003 $	Year-of-Expenditure $
FY 2010				
LRT	$3.0	$3.6	$2.9	$3.5
MTA Bus	$0.4	$0.5	$0.2	$0.2
Foothill Transit	$0.8	$1.0	$3.4	$4.1
Total	***$4.2***	***$5.0***	***$6.5***	***$7.8***
FY 2015				
LRT	$16.3	$22.2	$6.1	$8.3
MTA Bus	$0.4	$0.5	$0.2	$0.3
Foothill Transit	$2.9	$4.0	$4.6	$6.2
Total	***$19.6***	***$26.7***	***$10.9***	***$14.9***
FY 2025				
LRT	$26.5	$46.4	$9.9	$17.3
MTA Bus	$0.4	$0.8	$0.4	$0.7
Foothill Transit	$4.8	$8.4	$7.6	$13.3
Total	***$31.8***	***$55.6***	***$17.9***	***$31.3***

Source: Sharon Greene & Associates, 2004

Funding for the O&M costs of the build alternatives is proposed to be derived from three sources. These sources are Gold Line Phase II LRT fare revenues, MTA and Foothill Transit bus fare revenues, and MTA operating support.

Fare Revenues

Fares comprise an average of 27.5 percent of MTA bus operations revenues, 26.2 percent for municipal operators, and 23.4 percent for MTA rail operations revenues under the "Long Range Transportation Plan Financial Forecasting Model, February 7, 2003," based on current fare revenue assumptions. Fare recovery is assumed to adjust in FY 2004 and thereafter, reflecting changes in fare media types. Fare recovery adjustments are based on the CPI rate, opening of new projects and transit corridors, and fare media projections (cash, monthly pass usage increase or decrease, and universal fare card). Within the O&M financial plan, fare revenues are projected to reach 28 percent of O&M costs.

Over the 2010–2025 period for the Full-Build LRT Alternative, LRT fare revenues are projected to fund a total of $112.8 million, 23.3 percent of total O&M costs. Bus fare revenues are projected to total $23.0 million and fund 4.7 percent of total O&M costs. The 72.0 percent balance of O&M revenues is proposed to be derived from MTA local funds.

With respect to the Build LRT Alternative to the Maintenance Facility, LRT fare revenues are projected to fund a total of $46.8 million, 15.4 percent of total O&M costs. Bus fare revenues are projected to total $38.2 million and fund 12.6 percent of total O&M costs. The 72.0-percent balance of O&M revenues is proposed to be derived from MTA local funds.

MTA Operating Support

Over the 2010–2025 period, MTA operating support is proposed to fund a total of $349.3 million (72.0 percent) of total O&M costs. In 2003 constant dollars, this is equivalent to approximately $22.9 million and $12.9 million per year in 2025 for the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility respectively. This level of operating support would be funded as part of the funding MTA currently provides for operation of public transportation services, totaling in the billions of dollars.

MTA operations and maintenance support is provided from a variety of revenue sources. Key sources of operating funds are described below.

Reliance on Sales Tax-Based Revenues

The MTA relies on the three sales tax-based revenue sources described earlier: Proposition A, Proposition C, and TDA. Propositions A and C sales tax revenues account for 29.2% of the total MTA bus operations and 52.4% of MTA rail operations over the financial plan period. Based on the MTA Long Range Financial Model updated in August 2003, the specific uses of the sales tax-based revenues are as follows:

Proposition A Half-Cent Sales Tax. MTA rail operations are funded in part by the Proposition A 35% rail program. MTA bus operations are funded in part by the Proposition A 40% discretionary program. Approximately 31% of the available Proposition A revenues fund MTA bus and rail operations through the financial forecasting model period of 2025.

Proposition C Half-Cent Sales Tax. The Proposition C 40% discretionary program funds a portion of the MTA bus and rail operations along with the Proposition C 5% security funds. These Proposition C funds would contribute approximately 13% of the total MTA bus operations funding and approximately 15% of rail operations funding through 2025.

Transportation Development Act. A statewide 0.25-percent sales tax is provided to counties for transportation purposes under TDA. Under Article 4 of the act, funds can be used for transit operations or capital purposes. Currently, approximately $265 million is generated annually for Article 4 purposes. TDA funds about 29.6% of MTA bus operations.

Congestion Mitigation and Air Quality Improvement Program

CMAQ funds can be used for the first three years of operating expenses of new or expansion transit service, such as the Gold Line LRT project. A total of approximately $169 million is planned for use on the operations of all new rail transit corridors from FY 2004 to FY 2025.

Section 5307

Under TEA-21, FTA grant recipients may use Section 5307 formula funds to pay for preventive maintenance costs. MTA is using these flexible funds for eligible bus and rail preventive maintenance costs in the operating budget. Approximately 9.2% of the MTA bus operations costs would be funded with this source through 2025.

Other Revenues

MTA has historically pursued one-time revenues from a variety of sources, such as the sale of surplus assets, lapsed funds from other programs, and fund balance transfers. Specific one-time revenues, such as anticipated lease-leaseback arrangements and the liquidation of reserve funds that are no longer required, are also included.

ES-8.4.2 Proposed Flow of Costs and Revenues from 2003–2025

Pro forma, year-by-year cash flow analyses were conducted to assess the overall adequacy of revenues to cover the proposed capital and operations and maintenance costs associated with the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility. **Table ES-14** and **Table ES-15** contain the cash flow analyses of the two alternatives respectively.

The cash flow models used in the financial assessment define the magnitude, timing, and type of expenditure for which revenues may be required. The cash flow models consist of four basic components: Operating Costs, Capital Costs, Operating Revenues, and Capital Revenues, each of which has subcomponents. With respect to the capital and operating revenues, consideration was given to the types of costs eligible to receive particular sources of funding, as well as potential legal restrictions and/or matching requirements associated with each revenue source.

TABLE ES-14
FULL-BUILD LRT ALTERNATIVE (TRIPLE TRACK)
ESCALATED CAPITAL COSTS CASHFLOW IN MILLIONS OF YEAR-OF-EXPENDITURE DOLLARS
OPERATING DATES: NOVEMBER 2009 TO IRWINDALE; APRIL 2014 TO MONTCLAIR

USES OF FUNDS	Pre-2003	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	Total	Percent of Total
Escalation Rate Factor		1.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												
LOS ANGELES COUNTY USES AND SOURCES																										
CAPITAL COSTS AND REVENUES																										
Construction & Procurement																										
Guideways		0.0	0.0	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												[illegible]	[illegible]
Yard and Shop		0.0	0.0	0.0	0.0	39.2	[illegible]	46.2	[illegible]	0.0	0.0	[illegible]	[illegible]												[illegible]	[illegible]
Systems		0.0	0.0	0.0	[illegible]	[illegible]	21.4	17.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												[illegible]	[illegible]
Stations		0.0	0.0	0.0	0.0	[illegible]	[illegible]	8.0	[illegible]	0.0	15.2	[illegible]	[illegible]												[illegible]	[illegible]
Vehicles		0.0	0.0	[illegible]	[illegible]	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.5												[illegible]	[illegible]
Special Conditions		0.5	0.5	[illegible]	[illegible]	[illegible]	13.1	[illegible]	[illegible]	4.5	[illegible]	[illegible]	[illegible]												[illegible]	[illegible]
Right of Way (including prior expenditures)		[illegible]	[illegible]	[illegible]	26.1	[illegible]	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												[illegible]	[illegible]
Subtotal Construction and Procurement		**0.0**	**0.0**	**0.0**	**26.1**	**81.6**	**143.7**	**131.1**	**69.8**	**91.0**	**113.8**	**147.6**	**94.1**	**0.0**	**0.0**										**867.7**	**77**
Professional Service		[illegible]	3.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]											[illegible]	[illegible]
Project Contingency		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												[illegible]	[illegible]
Total Project Capital Cost	***0.0***	***3.2***	***3.8***	***11.4***	***44.8***	***105.7***	***183.5***	***169.8***	***101.7***	***69.4***	***135.4***	***171.2***	***117.0***	***4.7***	***0.0***										***1,120.8***	***100***
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]											[illegible]	
Prior Expenditures for Right-of-Way	[illegible]																								[illegible]	
TOTAL CAPITAL COST	**101.9**	**3.2**	**3.8**	**11.4**	**44.6**	**106.9**	**186.9**	**174.9**	**108.1**	**75.0**	**141.0**	**176.8**	**122.6**	**7.2**											**1,264.2**	
SOURCES OF CAPITAL FUNDS																										
Prior Local Expenditures for Right-of-Way	[illegible]																								[illegible]	[illegible]
Corridor Cities Contributions					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]												[illegible]	[illegible]
State Funds (Proposition 192 [illegible])		[illegible]	[illegible]	[illegible]																					[illegible]	1
[illegible]							[illegible]																		[illegible]	1
[illegible]				[illegible]																					[illegible]	[illegible]
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]										[illegible]	[illegible]
[illegible]						[illegible]	[illegible]			[illegible]	[illegible]														[illegible]	[illegible]

TABLE ES-14 *continued (page 2 of 3)*
FULL-BUILD LRT ALTERNATIVE (TRIPLE TRACK)
ESCALATED CAPITAL COSTS CASHFLOW IN MILLIONS OF YEAR-OF-EXPENDITURE DOLLARS
OPERATING DATES: NOVEMBER 2009 TO IRWINDALE; APRIL 2014 TO MONTCLAIR

USES OF FUNDS	Pre-2003	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	Total	Percent of Total
Escalation Rate Factor		1.00	2.09% 1.0209	2.18% 1.043	2.15% 1.066	1.97% 1.087	1.91% 1.107	2.04% 1.130	1.99% 1.152	2.11% 1.177	2.16% 1.202	2.26% 1.229	2.16% 1.256	2.12% 1.282												
Countywide Sales Tax					33.5	33.0	100.7	103.2	41.6	11.1	41.5	96.3	43.9												484.8	38
TOTAL CAPITAL SOURCES	**101.9**	**3.2**	**3.8**	**11.4**	**44.6**	**73.2**	**153.2**	**141.2**	**61.0**	**81.1**	**141.0**	**176.8**	**122.6**	**70.0**	**49.2**										**1,264.2**	**100**
Surplus (Deficit) before Bridge Loan	0.0	0.0	0.0	0.0	0.0	-32.0	-30.3	-28.6	-20.7	21.7	5.6	5.6	5.6	65.3	49.2											
Gross Bridge Loan Proceeds						33.7	32.7	33.7	27.1	0.0	0.0														128.1	
Bridge Loan Principal Payment										-16.1				-62.8	49.2										128.1	
Bridge Loan Principal Balance	0.0	0.0	0.0	0.0	0.0	33.7	67.4	101.0	128.1	112.0	112.0	112.0	112.0	49.2	0.0											
Interest (5%)	0.0	0.0	0.0	0.0	0.0	-1.7	-3.4	-5.1	6.4	-5.6	-5.6	-5.6	5.6	-2.5	0.0										-41.5	
Net Surplus (Deficit) after Bridge Loan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										0.0	
O&M COSTS & REVENUES																										
O&M COSTS																										
LRT									3.6	5.5	6.1	6.8	11.1	23.2	24.2	26.3	28.5	30.8	33.2	35.6	38.2	40.9	43.6	46.4	402.8	83
MTA Bus									0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	9.6	2
Foothill Transit Bus									1.0	1.0	1.0	1.0	1.8	4.0	4.3	4.7	5.1	5.5	6.0	6.4	6.9	7.4	7.9	8.4	72.5	15
Total O&M Costs									***5.0***	***7.0***	***7.6***	***8.3***	***13.4***	***26.7***	***29.1***	***31.6***	***34.2***	***36.8***	***39.8***	***42.8***	***45.8***	***49.0***	***52.3***	***55.6***	***485.1***	***100***
SOURCES OF O&M FUNDS																										
LRT Farebox Revenues									1.0	1.5	1.7	1.9	3.1	6.2	6.8	7.4	8.0	8.6	9.3	10.0	10.7	11.4	12.2	13.0	112.8	23
Bus Farebox Revenues									0.4	0.4	0.4	0.4	0.5	1.3	1.4	1.5	1.6	1.7	1.8	2.0	2.1	2.3	2.4	2.6	23.0	5
MTA Local Funds									3.6	5.0	5.5	6.0	9.5	19.2	21.0	22.7	24.6	26.6	28.7	30.9	33.0	35.3	37.6	40.1	349.3	72
TOTAL O&M SOURCES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**5.0**	**7.0**	**7.6**	**8.3**	**13.4**	**26.7**	**29.1**	**31.6**	**34.2**	**36.9**	**39.8**	**42.9**	**45.8**	**49.0**	**52.3**	**55.6**	**485.1**	**100**
SAN BERNARDINO COUNTY USES AND SOURCES																										
CAPITAL COSTS AND REVENUES																										
Construction and Procurement																										
Guideways		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.0	8.3	4.2	2.2											20.7	34
Yard and Shop		0.0	0.0	0.0	0.6	1.3	2.7	1.4	0.7	0.0	0.0	0.0	0.0	0.0											6.7	11
Systems		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.9	1.9	4.0	2.0	1.0											10.1	16
Stations		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.9	0.5	0.2											2.3	4
Vehicles		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																0.0	0
Special Conditions		0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.1	0.3	0.6	1.3	0.7	0.3											3.9	6
Right-of-Way		0.0	0.0	0.0	0.9	0.3	0.0	0.0	0.0	1.0	0.3														2.5	4

TABLE ES-14 *continued (page 3 of 3)*
FULL-BUILD LRT ALTERNATIVE (TRIPLE TRACK)
ESCALATED CAPITAL COSTS CASHFLOW IN MILLIONS OF YEAR-OF-EXPENDITURE DOLLARS
OPERATING DATES: NOVEMBER 2009 TO IRWINDALE; APRIL 2014 TO MONTCLAIR

USES OF FUNDS	Pre-2003	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	Total	Percent of Total
Escalation Rate Factor		1.00	2.99% 1.0299	2.94% 1.042	2.15% 1.065	1.97% 1.087	1.91% 1.107	2.01% 1.130	1.99% 1.152	2.11% 1.177	2.76% 1.209	2.20% 1.235	2.03% 1.261	2.12% 1.287												
Subtotal Construction and Procurement	0.0	0.0	0.0	0.0	1.6	1.8	3.0	1.8	0.8	4.5	7.4	14.5	7.4	3.8											46.2	75
Professional Services		0.0	0.0	0.0	0.3	0.4	0.4	0.4	0.4	1.1	1.2	1.7	1.8	1.8											10.5	17
Special Conditions		0.0	0.0	0.0	0.0	0.1	0.4	0.3	0.3	0.6	0.8	1.0	1.1	1.1											4.8	8
Total Project Capital Cost	**0.0**	**0.0**	**0.0**	**0.0**	**2.0**	**2.2**	**3.7**	**2.3**	**1.5**	**6.1**	**9.5**	**17.3**	**10.2**	**6.7**											**61.4**	**100**
Escalated Cost																										
Prior Expenditures for Right-of-Way	5.1																								5.1	
TOTAL CAPITAL COST	**5.1**	**0.0**	**0.0**	**0.0**	**2.0**	**2.2**	**3.7**	**2.3**	**1.5**	**6.1**	**9.5**	**17.3**	**10.2**	**6.7**											**66.5**	
SOURCES OF CAPITAL FUNDS																										
Sanbag Funds	5.1	0.0	0.0	0.0	1.6	1.1	1.8	1.1	0.7	3.1	4.1	8.2	5.1	3.8											35.2	53
2009 New Starts		0.0	0.0	0.0	1.6	1.1	1.8	1.1	0.7	3.1	4.1	8.7	5.1	2.3											31.3	47
TOTAL CAPITAL SOURCES	**5.1**	**0.0**	**0.0**	**0.0**	**2.0**	**2.2**	**3.7**	**2.3**	**1.5**	**6.1**	**9.5**	**17.3**	**10.2**	**6.7**											**66.5**	
Net Surplus (Deficit)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0											0.0	

Notes:
1. Includes MTA's 50% share of the maintenance facility capital cost ($125.13 million) and prior MTA and SANBAG local expenditures for right-of-way ($101.3 million MTA and $5.9 million SANBAG).
2. "Special Conditions" includes environmental mitigation, master cooperative agreements, project insurance, start-up and testing costs.
3. "Professional Services" includes engineering, construction management, and agency costs.

Source: Sharon Greene & Associates, 2004

TABLE ES-15
BUILD ALTERNATIVE TO MAINTENANCE FACILITY (TRIPLE TRACK)
ESCALATED CAPITAL COSTS CASHFLOW IN MILLIONS OF YEAR-OF-EXPENDITURE DOLLARS
REVENUE OPERATING DATE: NOVEMBER 2009

USES OF FUNDS	Pre-2003	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	Total	Percent of Total
LOS ANGELES COUNTY USES AND SOURCES																										
CAPITAL COSTS AND REVENUES																										
Construction and Procurement																										
Guideways		0.0	0.0	0.0	0.0	25.6	35.2	31.3	26.0																131.4	23
Yard and Shop		0.0	0.0	0.0	0.0	29.2	50.2	46.2	0.0																125.6	22
Systems		0.0	0.0	0.0	0.0	11.5	21.4	17.0	8.7																58.6	10
Stations		0.0	0.0	0.0	0.0	5.2	10.6	8.0	2.8																26.6	5
Vehicles		0.0	0.0	0.0	0.0	0.0	0.0	8.0	13.9																21.9	4
Special Conditions		0.0	0.0	0.0	0.0	6.4	13.1	8.4	5.0																32.9	6
Right-of-Way (including prior expenditures)		0.0	0.0	0.0	26.1	3.5	0.0	0.0	0.0																29.6	5
Subtotal Construction and Procurement		**0.0**	**0.0**	**0.0**	**26.1**	**61.8**	**143.7**	**119.8**	**56.4**	**0.0**															**426.6**	**75**
Professional Services		3.2	3.8	11.4	13.5	15.2	16.4	13.3	9.9																[illegible]	15
Project Contingencies		0.0	0.0	0.0	5.0	7.6	13.5	13.6	12.0	4.5															56.1	10
Total Project Capital Cost	**0.0**	**3.2**	**3.8**	**11.4**	**44.6**	**106.2**	**173.6**	**146.7**	**78.3**	**4.5**															**571.9**	**100**
Interest Cost		0.0	0.0	0.0	0.0	1.3	3.6	5.5	7.6	3.9															21.8	
Prior Expenditures for Right-of-Way	32.1																								32.1	
TOTAL CAPITAL COST	**32.1**	**3.2**	**3.8**	**11.4**	**44.6**	**107.0**	**177.2**	**152.2**	**85.9**	**8.4**															**625.2**	
SOURCES OF CAPITAL FUNDS																										
Prior Local Expenditures for Right-of-Way	32.1																								32.1	5
Corridor Cities Contribution					3.6	5.2	7.5	3.3																	20.0	3
State Funds (Proposition 1A/ Seismic Bond)		3.2	3.8	4.5																					11.5	2
CMAQ							10.0																		10.0	2
FHWA TCSP				2.9																					2.9	0
5309 New Starts				4.5	27.1	30.5	30.0	30.0	30.5	60.4	78.5														290.5	47
5309 Bus and Bus Related						5.0	5.0																		10	2
Countywide Sales Tax					13.7	30.0	88.3	82.5	18.9	8.5															[illegible]	38
TOTAL CAPITAL SOURCES	**32.1**	**3.2**	**3.8**	**11.4**	**44.6**	**70.6**	**140.8**	**116.8**	**55.4**	**68.9**	**78.5**														**625.2**	**100**
Surplus (Deficit) before Bridge Loan						-36.4	-36.4	-35.4	-29.9	64.4	76.5														[illegible]	
Gross Bridge Loan Proceeds						36.4	36.4	36.4	29.9																139.0	
Bridge Loan Principal Payment										-60.5	-78.5														-139.0	
Bridge Loan Principal Balance						36.4	72.8	109.1	139.0	78.5																
Interest (5%)						-1.3	-3.6	-5.5	-7.6	-3.9	0.9														-21.8	
Net Surplus (Deficit) after Bridge Loan																										

TABLE ES-15 *continued*
BUILD ALTERNATIVE TO MAINTENANCE FACILITY (TRIPLE TRACK)
ESCALATED CAPITAL COSTS CASHFLOW IN MILLIONS OF YEAR-OF-EXPENDITURE DOLLARS
REVENUE OPERATING DATE: NOVEMBER 2009

USES OF FUNDS	Pre-2003	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	Total	Percent of Total
O&M COSTS & REVENUES																										
O&M COSTS																										
LRT									3.5	5.4	6.1	6.8	7.5	8.3	9.1	9.8	10.6	11.5	12.4	13.3	14.2	15.2	16.2	17.3	167.2	55
MTA Bus									0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	6.8	2
Foothill Transit Bus									4.1	4.4	4.9	5.3	5.7	6.2	6.8	7.4	8.0	8.7	9.4	10.1	10.9	11.7	12.5	13.5	129.5	43
Total O&M Costs									7.8	10.1	11.2	12.4	13.6	14.9	16.2	17.6	19.1	20.7	22.3	24.0	25.7	27.5	29.4	31.3	303.5	100
SOURCES OF O&M																										
LRT Farebox Revenues									1.0	1.5	1.7	1.9	2.1	2.3	2.5	2.7	3.0	3.2	3.5	3.7	4.0	4.3	4.5	4.8	46.8	15
Bus Farebox Revenues									1.2	1.3	1.4	1.6	1.7	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.7	3.9	38.5	13
MTA Local Funds									5.6	7.3	8.1	8.9	9.8	10.7	11.7	12.7	13.7	14.9	16.0	17.3	18.5	19.8	21.1	22.5	218.5	72
TOTAL O&M SOURCES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**7.8**	**10.1**	**11.2**	**12.4**	**13.6**	**14.9**	**16.2**	**17.6**	**19.1**	**20.7**	**22.3**	**24.0**	**25.7**	**27.5**	**29.4**	**31.3**	**303.5**	**100**
SAN BERNARDINO COUNTY USES AND SOURCES																										
CAPITAL COSTS AND REVENUES																										
Construction and Procurement																										
Guideways																									0.0	0
Yard and Shop					0.6	1.3	2.7	1.1	0.7																6.7	58
Systems																									0.1	1
Stations																									0.0	0
Vehicles																									0.0	0
Special Conditions					0.1	0.1	0.3	0.1	0.1																0.7	6
Right-of-Way					0.9	0.3																			1.2	10
Subtotal Construction and Procurement	**0.0**	**0.0**	**0.0**	**0.0**	**1.6**	**1.8**	**3.0**	**1.3**	**0.8**																**8.7**	**75**
Professional Service					0.3	0.4	0.4	0.4	0.4																1.9	16
Project Contingencies						0.1	0.3	0.3	0.3																1.1	10
Total Project Capital Cost					2.0	2.2	3.7	2.3	1.5																11.6	100
Interest Cost																										
TOTAL CAPITAL COST	**0.0**	**0.0**	**0.0**	**0.0**	**2.0**	**2.2**	**3.7**	**2.3**	**1.5**																**11.6**	
Prior Expenditures for Right-of-Way																										
SOURCES OF CAPITAL FUNDS																									5.6	
SANBAG Local					1.0	1.1	1.8	1.1	0.7																	
5309 New Starts					1.0	1.1	1.8	1.1	0.7																5.6	
TOTAL CAPITAL SOURCES	**0.0**	**0.0**	**0.0**	**0.0**	**2.0**	**2.2**	**3.7**	**2.3**	**1.5**																**11.6**	
Net Surplus (Deficit)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																	

Notes:

1. Includes MTA's 50% share of the maintenance facility capital cost ($125.13 million) and prior MTA expenditure for right-of-way ($32.1 million).
2. "Special Conditions" includes environmental mitigation, master cooperative agreements, project insurance, start-up and testing costs.
3. "Professional Services" includes engineering, construction management, and agency costs.

Source: Sharon Greene & Associates, 2004.

Figures ES-53 through ES-55 illustrate the flow of costs proposed over the 2003–2025 period. **Figures ES-53 and ES-54** indicate the annual cost drawdowns for the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility respectively. As shown in the figures, peak expenditures are proposed to occur in 2008, 2009, and 2013 for the Full-Build LRT Alternative and in 2008 and 2009 for the Build LRT Alternative to the Maintenance Facility.

Figure ES-55 illustrates the annual build-up of O&M costs over the period. As shown in the figure, over the 2009–2014 period, O&M costs are projected to be relatively similar for both build alternatives. With the extension of revenue service to Montclair under the Full-Build LRT Alternative, O&M costs increase approximately 80 percent in comparison to the Build LRT Alternative to the Maintenance Facility.

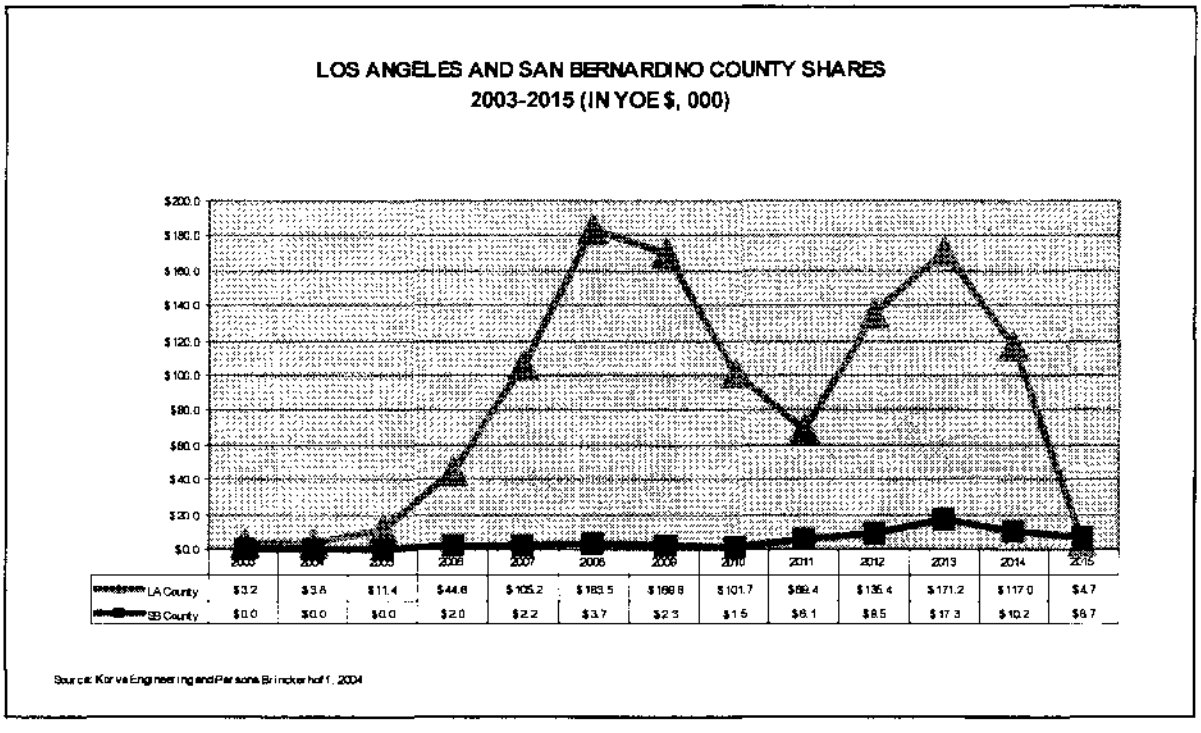


FIGURE ES-53: FULL-BUILD LRT ALTERNATIVE SUMMARY OF CAPITAL COSTS BY YEAR

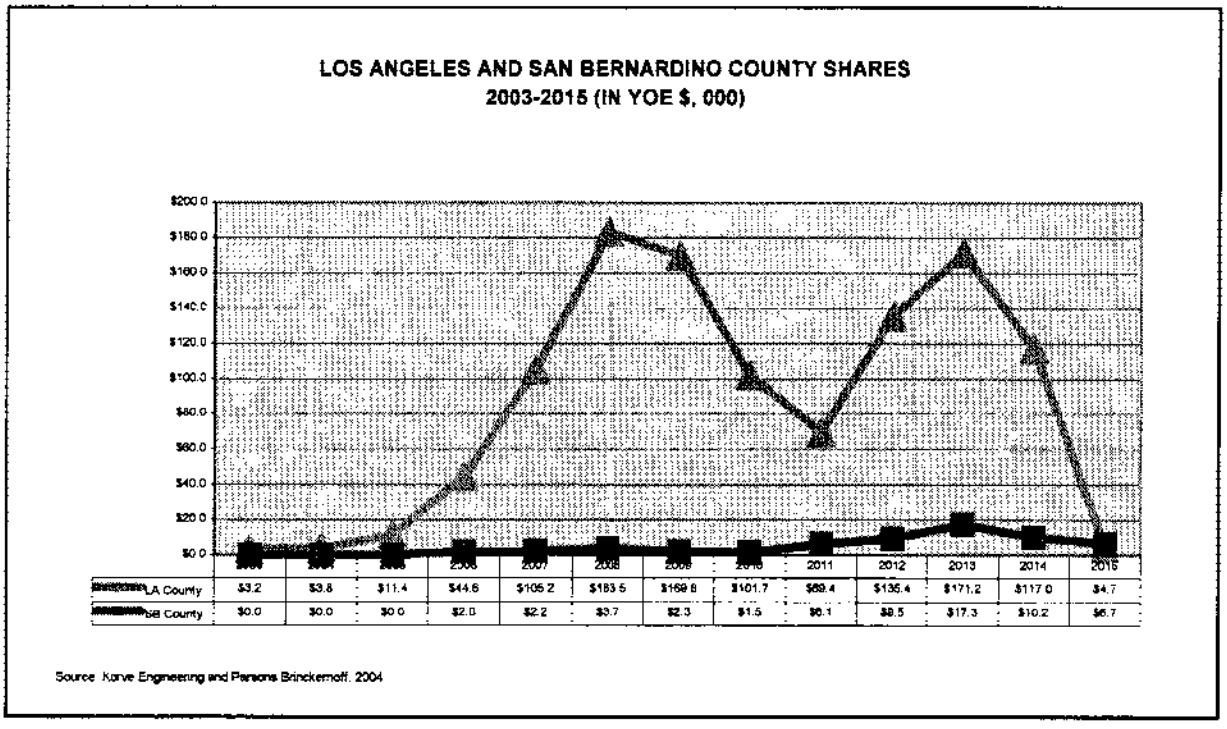


FIGURE ES-54: BUILD LRT ALTERNATIVE TO MAINTENANCE FACILITY SUMMARY OF CAPITAL COSTS BY YEAR

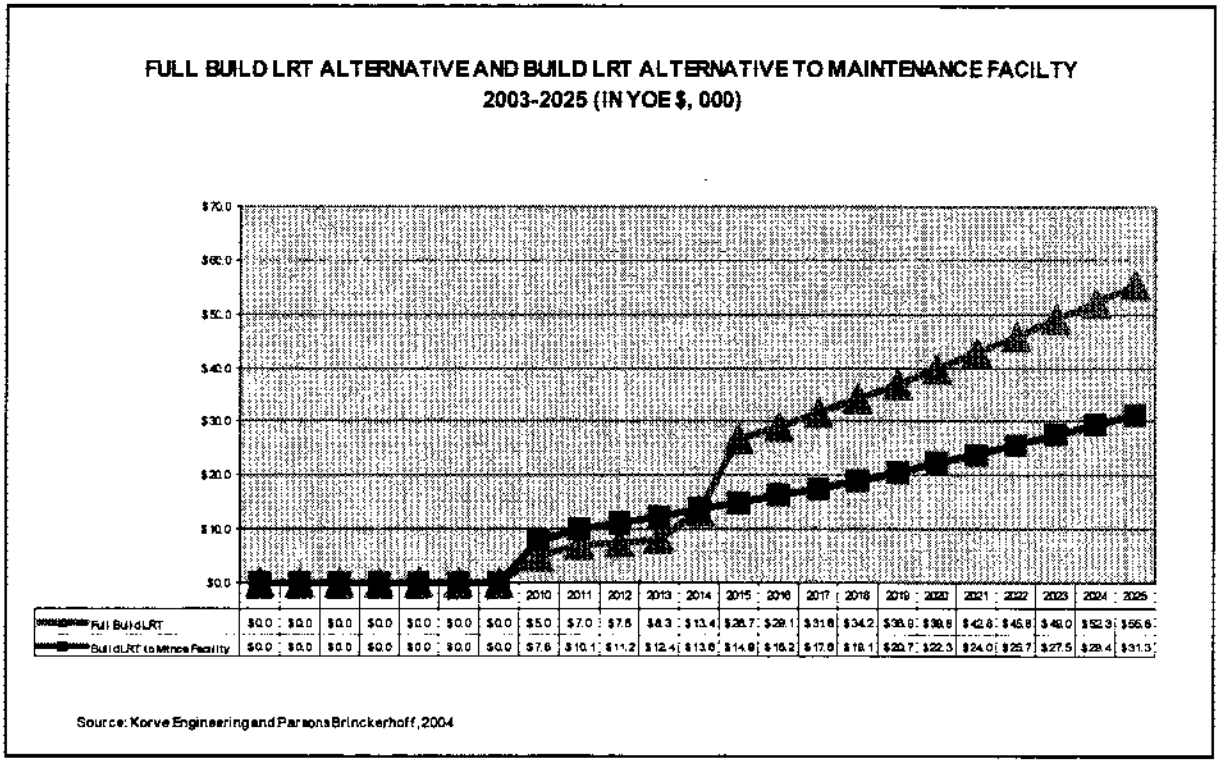


FIGURE ES-55: SUMMARY OF O&M COSTS BY YEAR

ES-8.5 Financial Capability to Build and Operate

The twenty-two-year cash flows indicate the timing and magnitude of the proposed funding resources required to implement and operate the build alternatives. As shown in the cash flows, federal and non-federal capital revenues are proposed to construct the build alternatives and initiate revenue service in the 2010 timeframe for service to the Maintenance Facility and in the 2014 timeframe for full operation.

ES-8.6 Comparative Analysis of Alternatives

This section provides a variety of measures to evaluate and compare the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility to the TSM and No-Build alternatives. These measures are consistent with the FTA guidelines for assessing and evaluating major investments. **Table ES-16** summarizes the categories and measures included in this section.

TABLE ES-16
COMPARATIVE ANALYSIS OF ALTERNATIVES

Effectiveness in Improving Mobility	Corridor Goals and Objectives
	Ridership – New Transit Trips
	Travel Time Savings
Cost-Effectiveness	Incremental Cost per Incremental Hour of Transportation System User Benefit
Operating Efficiencies	Operating Cost per Passenger Mile
Equity	Discussion of Demographic Factors

Other analyses and discussion for FTA measures related to air quality and land use can be found in Chapter 3. This section ends with a discussion of the trade-offs between the No-Build, TSM, and the build alternatives.

ES-8.6.1 Effectiveness in Improving Mobility

Various elements serve as indicators of improved mobility including responsiveness to goals and objectives and transportation problems and deficiencies identified in Section ES-2. Ridership describes the amount of people using the proposed transit alternatives in 2025, as estimated through a transportation demand model. Travel time savings assess the annual value of time saved for transit users as a result of the proposed transit alternatives.

a. Corridor Goals and Objectives

In addition to the evaluation factors discussed below, the TSM Alternative, the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility relate to the goals and objectives presented in Section ES-2 and Table ES-1. Throughout the planning development process these goals and objectives have been at the forefront of the alternatives development, analysis, and selection process. The nine goals are listed below:

- To locate stations that facilitate cities' visions for land use and development around transit stations and adjoining activity centers,
- To create a system that creates/adds identity and attractiveness to San Gabriel Valley cities,
- To complement other existing transit in the corridor and optimize previous investments,
- To reduce auto dependency,
- To improve mobility and provide connectivity to regional and local transit systems,
- To implement a project within a reasonable period of time,
- To develop a cost-effective transit system,
- To improve air quality and preserve and protect the natural and man-made environment, and
- To work collaboratively with local cities throughout the project development process.

In addition to responding to the corridor's goals and objectives the alternatives directly related to assisting in solving the transportation problems that have been identified in the corridor. These problems and issues are presented in Section ES-2. The LRT Build alternatives respond most strongly to the goals, objectives, and problems within the corridor. The TSM Alternative provides a quality bus development option but is not as strong in addressing the goals, objectives, and problems within the corridor.

b. Ridership

For all proposed projects and alternatives, transit ridership is a function of travel time and cost. All else being equal, the faster technologies attract more riders. The speed is usually a function of both the technology and the physical conditions in which it has to operate. Longer segments have higher ridership because they service a larger area, incorporate more stations, and potentially reduce the number of transfers.

Transit ridership has been estimated for the Full-Build LRT Alternative, the Build LRT Alternative to the Maintenance Facility, the TSM Alternative, and the No-Build Alternative using the latest MTA travel simulation model, based on the forecast year of 2025. The alternatives definitions are described in Chapter 2 and the model runs are discussed in Section 3-15, Traffic and Transportation.

The major measure of effectiveness of transit ridership for comparison between alternatives is the number of new "transit" trips compared to the No-Build Alternative. Compared to the No-Build Alternative, the TSM Alternative attracted 3,100 new transit trips; the Build LRT Alternative to the Maintenance Facility, 8,600 new transit trips; and the Full-Build LRT Alternative, 18,100 new transit trips. In addition, the usage of the expanded and extended Gold Line is increased by the build alternatives. The daily boardings in 2025 would increase from 59,000 in the No-Build and TSM alternatives to approximately 79,000 for the Full-Build LRT Alternative and to approximately 66,500 for the Build LRT Alternative to the Maintenance Facility.

c. Travel Time Savings

The travel time savings measure is defined as the total travel time savings for transit riders that would be expected to result from the build alternatives and the TSM Alternative in the forecast year (2025), compared to the No-Build Alternative. Compared to the No-Build Alternative, the TSM Alternative would save transit riders almost 1 million hours per year; the Build LRT Alternative to the Maintenance Facility, 2.1 million hours per year; and the Full-Build LRT Alternative, 3.9 million hours per year. In addition FTA also compares the effectiveness of the build alternatives compared to the TSM Alternative. Compared to the TSM Alternative, the Build LRT Alternative to the Maintenance Facility would save transit riders 1.1 million hours per year and the Full-Build LRT Alternative almost 3.1 million hours per year.

d. Efficiency (Cost-Effectiveness)

Cost-effectiveness is a measure used to evaluate how the costs of a transit project alternative (for both construction and operation) compare to the expected benefits. Over the last few years FTA has revised the cost-effectiveness measure and changed the measure of benefits from "new transit trips" to "transportation system user benefits or travel time benefits in annual hours" for the proposed alternatives. FTA's change reflects their decision that the cost per hour of transportation system user benefits is a preferable measure for cost-effectiveness (as compared to the former measure of cost per new transit trip), as it (1) captures the benefits that accrue to all transit system users (including existing transit riders); (2) better reflects the underlying reason for ridership increases: improvements in travel time; (3) incorporates and considers the nature of the service being provided by the proposed project (for example, the measure distinguishes the benefits of long vs. short trips); and (4) does not penalize those agencies which are already providing a high level of transit service in a corridor for which a major capital investment is proposed.

FTA's cost-effectiveness criterion is measured by the incremental cost per hour of transportation system user benefit in the forecast year for the build alternatives compared to the No-Build and TSM alternatives. This measure is based on the annualized total capital investment and annual operating and maintenance (O&M) costs divided by the annual hours of transportation system user benefits.

To calculate the change in capital cost, project costs, discussed in Section ES-7.4.1, were aggregated according to their assumed useful life and annualized accordingly, using FTA annualization factors shown in **Table ES-17.**

TABLE ES-17
LIFE CYCLE ASSUMPTIONS

Project Element	Useful Life	Annualization Factor
Right-of-way	100 years	0.070
Structures, trackwork, signals, electrification	30 years	0.081
Light rail vehicles	25 years	0.086
Buses	12 years	0.126

Source: Technical Guidance for Section 5309 New Starts Criteria, FTA, June 2003

Table ES-18 presents the 2025 annualized cost and benefit values and the resulting cost-effectiveness for the build alternatives compared to the No-Build and TSM alternatives.

TABLE ES-18
COST-EFFECTIVENESS—INCREMENTAL COST PER HOUR OF TRANSPORTATION SYSTEM USER BENEFIT

Factor	Alternatives					
	No Build	TSM Alternative	Full Build LRT Alternative with 3 Tracks	Full Build LRT Alternative with 2 Tracks	Build LRT Alternative to Maintenance Facility with 3 Tracks	Build LRT Alternative to Maintenance Facility with 2 Tracks
Annualized capital cost (million $)	$0.0	$6.46	$72.18	$61.18	$32.91	$29.55
Total systemwide annual O&M cost (million $)	$1,101.61	$1,111.38	$1,133.38	$1,133.38	$1,119.47	$1,119.47
Total annualized cost in forecast year (2025) (million $)	$1,101.61	$1,117.84	$1,205.56	$1,194.56	$1,152.38	$1,149.02
Incremental annualized cost compared to No Build (million $)	N/A.	$16.23	$103.95	$92.95	$50.77	$47.41
Incremental annualized cost compared to TSM (million $)	N/A.	N/A.	$87.72	$76.72	$34.54	$31.18
Annual hours of user benefit compared to No Build (million)	NA	0.98	3.93	3.93	2.09	2.09
Annual hours of user benefit compared to TSM (million)	N/A.	N/A.	3.09	3.09	1.13	1.13
Cost-effectiveness to No Build	N/A	**$16.56**	**$26.45**	**$23.65**	**$24.29**	**$22.68**
Cost-effectiveness to TSM	N/A	N/A	**$28.39**	**$24.82**	**$30.56**	**$27.59**

Source: Parsons Brinckerhoff, 2004

e. Operating Efficiency

The FTA uses a single measure of the operating efficiencies criterion, which is the change in operating cost per passenger mile for the entire regional transit system. The basic calculation involves dividing the system annual operating and maintenance cost for the transit service by the system annual passenger miles projected for the year 2025. System annual passenger miles are produced from the MTA travel forecasting model for each alternative for the forecast year of 2025. The No-Build Alternative has an operating cost per passenger mile of approximately $0.362. All of the alternatives have approximately the same operating cost per passenger with the Full-Build LRT Alternative being slightly lower than the No-Build and TSM alternatives.

f. Equity Considerations

Equity considerations generally fall into three interrelated classes: (1) the extent to which the transportation investments improve transportation service to various population segments (i.e., the extent to which transit improvements benefit the transit dependent); (2) the distribution of project costs across the population through the funding mechanisms used for the local construction and operation; and (3) the incidence of significant environmental impacts. In addition, Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that federal agencies consider and address disproportionately high adverse environmental effects of proposed federal projects on the health and environment of minority and low-income populations to the greatest extent practicable by law. Section 3-14.2.8 (Environmental Justice) of this document discusses the equity and environmental consideration for the study corridor and the alternatives under consideration. Section 8 (Public Outreach) of this document discusses the extensive outreach program to all groups that have been part of the planning process.

The No-Build and TSM alternatives would not offer the study area residents and businesses the enhanced mobility, regional connectivity, and accessibility provided by the Full Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility as stated in the goals and objectives and the statement of purpose and need.

The Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility provide many benefits related to equity, accessibility to opportunities, mobility improvements, economic revitalization, employment opportunities, federal, state, and local funds for construction, and additional funds for the operating and maintenance cost of the LRT and expanded bus services.

For instance, both build alternatives provide increased accessibility for corridor residents to the major regional employment center in Pasadena, and via Phase I of the Gold Line to employment in central Los Angeles. The build alternatives also provide connection among the activity centers in the corridor cities. These activity centers, described in Chapter 3, Section 3-14 (Socioeconomics), also include such major employers and community assets as hospitals and universities.

Planning by corridor cities indicate their interest and commitment to economic development/ redevelopment in the vicinity of proposed LRT stations. The build alternatives provide an impetus to support planned growth in each of the cities on an equitable basis: the level of service for each city is the same.

Table ES-19 summarizes the significant transportation characteristics related to the alternatives.

TABLE ES- 19
SUMMARY OF SIGNIFICANT TRANSPORTATION CHARACTERISTICS

Factor	Alternatives					
	No Build	TSM Alternative	Full Build LRT Alternative with 3-Tracks	Full Build LRT Alternative with 2-Tracks	Build LRT Alternative to Maintenance Facility with 3-Tracks	Build LRT Alternative to Maintenance Facility with 2-Tracks
Capital Cost (million $)	$0.0	$64.8	$1,016.2	$880.4	$525.2	$483.8
Annual O&M Cost compared to No Build (million $)	N/A.	$9.77	$31.77	$31.77	$17.86	$17.86
Annual Hours of Transit User Benefit compared to No Build (million)	NA	0.98	3.93	3.93	2.09	2.09
Daily New Transit Trips compared to No Build	N/A.	3,100	18,100	18,100	8,600	8,600
Annual New Transit Trips compared to No Build (millions)	N/A.	0.99	5.79	5.79	2.75	2.75
Annual New Transit Passenger Miles compared to No Build (millions)	N/A.	7.09	79.03	79.03	18.35	18.35

Source: Parsons Brinckerhoff, 2004

ES-8.6.2 Trade-Offs between Alternatives

The trade-offs between the No-Build and TSM alternatives and the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility alternatives are that the No-Build and TSM alternatives would involve fewer environmental impacts, but would not provide an enhanced level of mobility and accessibility to the ethnically diverse and minority communities along the corridor. The Full Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility alternatives would, on the hand, provide improved access to a broader range of employment, shopping, educational, and cultural opportunities, consistent with the goals and objectives discussed above and in Chapter 1. The longer Full-Build LRT Alternative would provide the most benefits as it provides LRT service to all the communities along the corridor.

The financial trade-offs between the Full-Build LRT Alternative and the Build LRT Alternative to the Maintenance Facility alternatives and the No-Build and TSM alternatives are directly related to the ability of the region and the local communities in concert with the federal and state governments to adequately fund the construction and operation of the build alternatives as discussed in Sections 5-1.3 and 5-1.4.

From a mobility standpoint the Full-Build LRT Alternative provides the greatest improvements to mobility for the residents and businesses along the corridor and is the most-effective in satisfying the goals and objectives for the corridor.

ES-9 PROPOSED FINDINGS

The environmental analysis process indicated that there would be no remainder adverse effects under the National Environmental Policy Act and no remainder significant impacts under the California Environmental Quality Act when identified impacts were considered in light of (1) necessary environmental permits that would be obtained for construction and operation, (2) use of typical Best Management Practices during construction and, (3) mitigation measures identified in this document.

The proposed project would not be inconsistent with applicable Executive Orders.

The proposed project would not make use of Section 4(f) properties.

The proposed project would be financially feasible to build and operate.

The project would have residual air quality impacts during the construction period.

ES-10 AGENCY COORDINATION

The proposed project was presented to responsible federal agencies with jurisdiction over and or interest in the proposed project through the NEPA and CEQA scoping process. In addition to issuance of the NOI by the FTA in the Federal Register on July 9, 2003, the Authority mailed a NOP to federal, state, and local agencies on June 26, 2003 via a trackable delivery service (UPS, 2nd Day Air). The NOP included an IS Checklist that identified anticipated project impacts (see section ES-2.2, Environmental Process of this document for more information).

Two meetings were held with the Federal Transit Administration in the fall of 2003 during the DEIS/DEIR process. These meetings were attended by representatives from FTA, the Construction Authority, and the consultant team. The purpose of the meetings were to discuss the project and schedule, as well as any other potential issues.

Consultation and coordination with the California Air Resources Board and the Public Utilities Commission have been initiated. A letter was sent to the Native American Heritage Commission on October 10, 2003, requesting the contact information for tribal representatives who may have an interest in the proposed project. The Native American Commission responded with the information requested and the Native Americans were placed on the scoping mailing list, thus receiving Notices of Preparation and Initial Study Checklists.

FTA sent a letter to the California SHPO on September 16, 2003, initiating Section 106 consultation. Notice of Preparation (NOP) letters were sent to the listed Native American groups and individuals on July 30, 2003.

The following agencies were consulted during the preparation of the Draft Environmental Impact Statement /Draft Environmental Impact Report:

- Southern California Association of Governments (SCAG)
- San Bernardino Associated Governments (SANBAG)
- San Gabriel Valley Council of Governments (SGVCOG)
- County of Los Angeles, County Supervisor, Office of Gloria Molina
- Los Angeles County Metropolitan Transportation Authority
- Southern California Regional Rail Authority (Metrolink)
- Foothill Transit
- Pomona Valley Transit Authority
- Azusa Pacific University
- Citrus College
- Claremont University Consortium
- Fairplex
- Los Angeles County Arboretum
- Azusa Unified School District
- Duarte Unified School District
- Monrovia Unified School District
- City of South Pasadena
- City of Pasadena
- City of Arcadia
- City of Monrovia
- City of Duarte
- City of Irwindale
- City of Azusa
- City of Glendora
- City of San Dimas
- City of La Verne
- City of Pomona
- City of Claremont
- City of Montclair
- City of Upland.

Three cycles of meetings with the individual cities occurred following scoping. The first round of meetings included a detailed project briefing including the four alternatives under consideration, collection and discussion of planning and traffic data that had been requested prior to the meeting, discussion of public and city issues raised during and subsequent to scoping, identification of potential station and parking locations, discussion of public outreach needs, and review of the project schedule.

The second round of meetings reviewed the results of early conceptual engineering and focused on proposed station layouts, parking locations and forecasted parking demand.

The third round of meetings included copies of the projects' purpose and need statement, alternatives descriptions, and conceptual engineering drawings. A preview of environmental impacts, such as probable locations of soundwalls and traffic impacts, was presented, along with potential mitigation. The third round also included review of the overall schedule and identification of potential public hearing dates and formats.

ES-11 PUBLIC INVOLVEMENT AND COMMENT

ES-11.1 Scoping Meetings

The length of the study corridor both provided and required opportunities to conduct extended community outreach. Since there would be stations in each corridor city, coordination between the public, cities, businesses and agencies has been extensive. The economically and ethnically diverse project area compelled the project team to utilize a multimedia approach to ensure that communities were aware of the project study and were provide opportunities to provide input for the environmental impact analyses. Outreach extensive mailings, newspaper advertisements, as well as staff participation during neighborhood and business association meetings, briefings for elected officials, and posting project information and meeting dates on the Construction Authority's website. To distribute information about the environmental process and to invite attendance at upcoming meetings the project website, postal mail announcements, multi-lingual newspaper advertisements, postings at the Los Angeles Clerk, and the San Bernardino County Clerk's Office, postings on the California State Clearinghouse website, and the Federal Register were utilized.

A stakeholder database was developed by researching the Los Angeles County Assessor records, San Bernardino County Assessor's office, and the United States post office mail routes for residents, property owners, and business owners along the study corridor. In addition, the database of interested parties from Gold Line Phase I was incorporated, as well as names provided during consultation with elected officials who represented the area. The database was updated after each meeting, presentation and briefing to include those participants who left their name, mailing and email address contact information with the project team.

All five Scoping meetings were publicized at the same time, giving the public a choice regarding which meeting to attend. In total, approximately 23,000 postcards, and 414 Notice of Preparation and Notice of Intents were sent to residents and business owners along the study corridor, as well as to interested parties, responsible agencies and elected officials.

Project information has been posted on the authority's website, www.metrogoldline.org. It includes project information such as completed reports, meeting information, and a way to contact the Construction Authority to comment on the project. The website has been updated as new information is available. All comments submitted have been responded to either directly, fulfilling the request, or have been considered in the environmental process. Chapter 8 includes a table that summarizes comments received and indicates where in the DEIS/DEIR the issues raised are discussed.

The five scoping meetings (four for the general public and one for agencies) were held in an open house format with information stations and illustrated display boards. The meetings were staffed by members representing the Construction Authority and the project consultant team, all of whom were well versed about the proposed project and potential environmental impacts. In addition to answering questions at the meeting, staff invited attendees to submit their comments in writing. Comment forms were provided at each Scoping meeting. Chinese and Spanish interpreters were present at the meeting for non-English speaking members of the public. Project fact sheets were also provided in English and Spanish.

Additionally, Spanish- and Mandarin Chinese-speaking team members were available for facilitating community participation

Recorded attendance at the scoping meetings was 217 persons.

ES-11.2 Other Meetings

Meetings with other interested parties along the alignment to provide information about the project and project alternatives while the DEIS/DEIR was in preparation:

Azusa Downtown Business Association

Burlington Northern Santa Fe Railway Company

City of Hope National Medical Center

Fiesta Floats

Hillcrest

Miller Brewing Company

Santa Anita Racetrack

Wal-mart (Monrovia).

ES-11.3 Draft EIR/EIS Public Meetings

FTA and the Construction Authority issued Notices of Availability (NOA) and set a 45-day circulation period for agencies and the public to review this DEIS/DEIR and to submit comments. The circulation period is between May 7 and June 21, 2004.

This DEIS/DEIR is being issued to agencies and the public for review and comment for a 45-day period. That period is May 7 to June 21, 2004. Documents and/or Notices of Availability were distributed to the mailing list that was used for Scoping and updated throughout the time period in which the DEIS/DEIR was being developed. Document distribution and noticing under CEQA occurred the week on April 27-30, 2004 and included newspaper notices of the availability of the DEIS/DEIR in the Los Angeles Times and the San Gabriel Valley Tribune on April 30, 2004. The Notice of Availability under NEPA was published in the Federal Register on May 7, 2004. The advertisements and notices included locations at which copies of the documents were available and the schedule of public hearings.

Copies of the DEIS/DEIR were placed in the public libraries in the cities of Los Angeles, South Pasadena, Pasadena, Arcadia, Monrovia, Irwindale, Azusa, Glendora, San Dimas, LA Verne, Pomona, Claremont, Montclair and Upland. Copies were also placed at the offices of the Construction Authority and the San Gabriel Valley Council of Governments. An electronic copy of the was posted on the Construction Authority's website. Links to this site were placed on the websites of LACMTA and the cities along the study corridor.

Additionally, a Construction Authority Newsletter/Notice of Availability is being distributed to more than 23,000 addresses, which includes all properties within 300 feet either side of the proposed LRT alignment. This Newsletter/Notice of Availability is also being sent to all agencies/persons receiving documents or notices the week of April 27-30.

During the 45-day public review and comment period, public hearings are being held in cities along the entire Phase II study corridor, as well as in the cities of Los Angeles and South Pasadena.

GOLD LINE PHASE II DEIS/DEIR PUBLIC HEARING SCHEDULE		
Date	**Location**	**Time/Format**
Wed., May 19	Claremont Council Chambers 225 Second St., Claremont	5-7 pm - Open House 7:00 pm - Presentation & Public Hearing with Traffic & Transportation Commission
Thur., May 20	Teen and Family Center 241 W. Dawson Ave., Glendora	5:30-6:30 pm - Open House 6:30 pm - Presentation & Public Hearing. Town Hall format with City Council and Transportation Commission
Wed., May 26	Duarte Community Center 1600 Huntington Dr., Duarte	6:00 pm – Open House
Tues., June 1	Ramona Hall Community Center 4580 N. Figueroa St., Los Angeles	5:30 – 7:30 – Open House & Public Hearing
Thur., June 3	Monrovia Community Center 119 W. Palm, Monrovia	6-8 pm – Open House
Mon., June 7	Montclair Council Chambers 5111 Benito St., Montclair	5-7 pm - Open House 7:00 pm - Presentation & Public Hearing
Tues., June 8	San Dimas Council Chambers 245 E Bonita Ave., San Dimas	5:30 pm- Open House 7:00 pm - Presentation & Public Hearing
Wed., June 9	La Verne Council Chambers 3660 D St., La Verne	5:30-6:30 pm - Open House 6:30 pm - Presentation & Public Hearing with Planning Commission
Wed., June 9	Due to seismic refit, city hall will be closed. Call 626-744-4009 for location	5:15-6:15 pm - Open House 6:15 pm - Public Hearing with Planning Commission
Thur., June 10	South Pasadena Council Chambers 1424 Mission St., So. Pasadena	6:30-7:30 pm - Open House 7:30 pm - Presentation & Public Hearing
Mon., June 14	Ganesha Park Community Center 1575 N. White Ave., Pomona	6-8:30 pm - Open House
Mon., June 14	Arcadia Council Chambers 240 Huntington Dr., Arcadia	7:00 pm - Presentation & Public Hearing
Tues., June 15	Irwindale Council Chambers 5050 N. Irwindale, Irwindale	5-6 pm - Open House 6:00 pm - Presentation & Public Hearing
Wed., June 16	Azusa Council Chambers 213 E. Foothill Blvd., Azusa	6:30 pm - Open House 7:30 pm - Presentation & Public Hearing with Planning Commission
Thurs. June 17	Duarte Community Center 1600 Huntington Dr., Duarte	4:30 pm Presentation & Public Hearing with San Gabriel Valley Council of Governments Joint Powers Authority

The NOA provides a list of all means and addresses at which comments can be submitted: These include:

- Written comments to the FTA.
- Written comment to the Construction Authority postal addresses (i.e., 625 Fair Oaks, Suite 200, South Pasadena, CA, 91030)

- E-mail comments to the Construction Authority website: eircomments@metrogoldline.org
- Written comments by fax (626-799-888599)
- Written comments at any public hearing or meeting,
- Dictated comments at any public hearing or meeting.

All comments submitted at the Public Hearings, or by other written means during the circulation period, will be considered by FTA and the Construction Authority. Substantive comments will be responded to in the Final EIS/EIR, which is anticipated to be released in mid-2005.

ES-12 ISSUES TO BE RESOLVED/AREAS OF CONTROVERSY

ES-12.1 Issues to be Resolved

There are several issues to be resolved by the Construction Authority in order to define the parameters of work to be accomplished in the next phase of project development, Preliminary Engineering and Final EIS/EIR. These issues are:

- Selection of a Locally Preferred Alternative (LPA). This is typically the alternative which best addresses the Purpose and Needs and Goals and Objectives for the study area;
- Approval of the elements of the alternative to be addressed during Preliminary Engineering. . This approval can be of the alternative and elements as it described in this draft document, or the definition of the alternative can be modified to include variations, a combination of elements, localized options, or other matters raised during the public and agency review and comment process. The environmental impacts of the selected alternative at the end of the Preliminary Engineering phase are reported in the Final EIS/EIR; and
- Approval of an initial financial plan to support the LPA.

ES-12.2 Areas of Controversy

Based on comments received during Scoping meetings in 2003, the areas of controversy for the proposed project focused on potential impacts associated with the LRT alternatives. The top three issues (along with the typical concerns raised) were:

- Noise: requested noise walls; stated that whistle-blowing is unnecessary; concerned about construction noise.
- Parking and traffic: stated the need for adequate parking; concerned about the impact of grade crossings; requested transportation centers so cars are kept out of downtown.
- Aesthetics: concerned about the appearance of the catenary wires and poles; suggested landscape treatments for the route.

Other comments addressed in a general, non-specific manner: safety; station design and location; loss of privacy alignment design; lighting; property values; community impacts; operational hours; drainage impacts; and alignment suggestions.

The analyses included in this DEIS/DEIR indicate that Railroad Operations, one of the Double Track configuration options would lead to constrained operating schedules under which freight service would occur during LRT non-revenue hours. This constraint is likely to be of great concern to the freight operator (BNSF). Also, those businesses now served via railroad could be affected if their needs cannot be met by delivery and/or pick-up of goods via trucks. An alterative would be to implement the Triple Track option, which would not require a constraint on freight service to LRT non-revenue hours. This option has higher capital costs than the Double Track configuration with constrained freight operations, including the need for a new bridge across the San Gabriel River for the third track.

ES-13 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An environmentally superior alternative needs to be identified under CEQA. Although the No-Build and TSM Alternatives would involve fewer local environmental impacts, they would not provide the desired levels of mobility and accessibility and reliability for the corridor communities, nor would they contribute as substantially to regional air quality conformity as the LRT Alternatives.

The Full-Build LRT Alternative is the environmentally superior alternative that addresses corridor transportation needs because it provides the greatest relief to east–west corridor traffic, enhances corridor and regional air quality, and supports the development/redevelopment of local employment and residential nodes that would further help reduce east–west and regional traffic. The alternative would serve 13 cities. There are no remainder adverse effects under NEPA or remainder significant impacts under CEQA when considered in light of (1) the necessary environmental permits that would be obtained for construction and operation, (2) use of typical Best Management Practices during construction and, (3) mitigation measures identified in this document.

The Build LRT Alternative to Maintenance Facility provides many of the same benefits, but to a lesser degree because it is serves only six cites.

ES-14 PERMITS AND APPROVALS

The following agencies may use the EIR in the event that permits or discretionary approvals from these agencies are required for the proposed project:

- California Department of Fish and Game: *Streambed Alteration Agreement (1601)*
- California Department of Toxic Substances Control: *Disposal of hazardous materials*
- California Department of Transportation: *Approvals regarding bridge protection, encroachment permit for construction*
- California Public Utilities Commission: *Grade Crossings General Order 88A*
- California Transportation Commission: *Project Funding*
- Corridor Cities: *Permits for street construction and utility relocations; railroad bridges over flood control channels*
- Los Angeles County and San Bernardino Flood Control Districts: *Permits for railroad bridges over flood control channels*
- Los Angeles County Metropolitan Transportation Authority: *Project funding*
- Los Angeles and Santa Ana Regional Water Quality Control Boards: *401 Water Quality Certification; National Pollutant Discharge Elimination System (NPDES) Permit*s

- South Coast Air Quality Management District: *Air quality permits (construction period)*
- US Army Corps of Engineers: *404 Permit (Clean Water Act); Permits for San Gabriel River railroad bridge*
- US Fish & Wildlife Service: Possible consultation process.

ES-15 NEXT STEPS

Seek agency and public comments on this DEIS/DEIR (see Section ES-11.3 above)

Following consideration of comments and selection of an LPA, the Construction Authority will seek the permission of the FTA to enter into Preliminary Engineering.

During Preliminary Engineering, overall system design will be advanced to the degree necessary for the environmental impact analyses to be made that are required for the Final EIS/EIR.

Environmental analyses will be updated to reflect the results of Preliminary Engineering.

Comments on the DEIS/DEIR will be considered and responses prepared for inclusion in the Final EIS/EIR

Cost estimates and financial planning will be refined and updated, and will be included in the Final EIS/EIR

The Construction Authority may seek federal and other funding for further steps in the implementation process, including Final Design and Construction.

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