

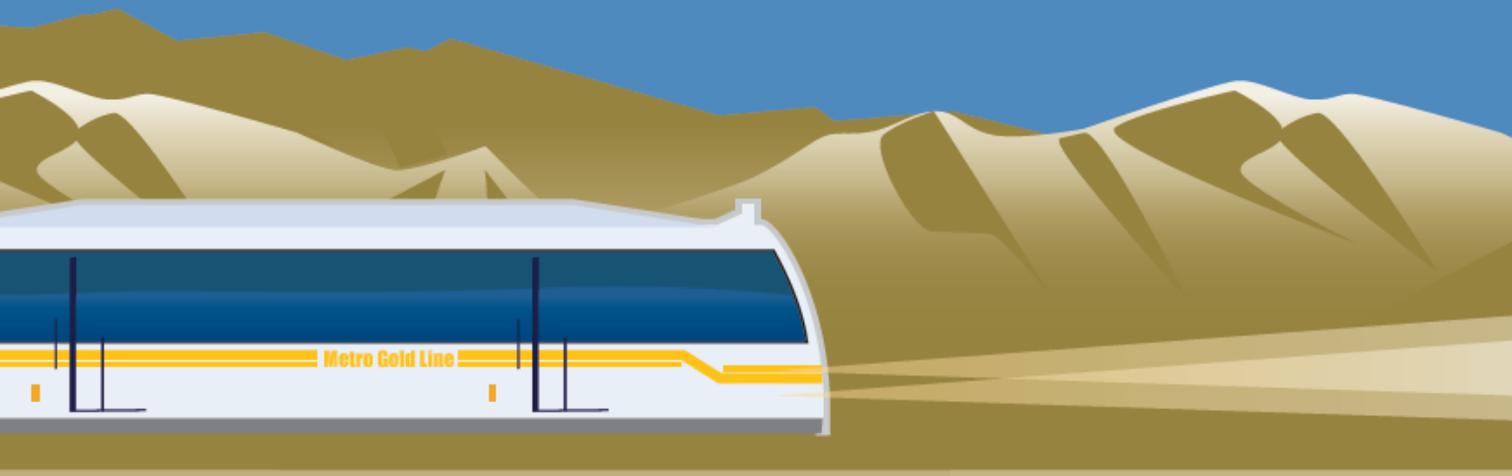


Strategic Planning Study Report for Metro Gold Line Foothill Extension to LA/Ontario International Airport

Prepared for:
Metro Gold Line Foothill Extension Construction Authority

Funded by:
San Bernardino Associated Governments
and Southern California Association of Governments

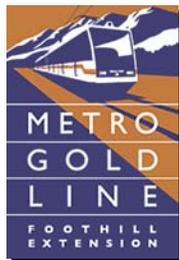
Prepared by:
KOA Corporation | December 2008



STRATEGIC PLANNING STUDY REPORT
FOR
METRO GOLD LINE FOOTHILL EXTENSION
TO LA/ONTARIO INTERNATIONAL AIRPORT

PREPARED FOR

Metro Gold Line Foothill Extension Construction Authority



Funded By

San Bernardino Associated Governments

and

The Southern California Association of Governments

December 2008

ACKNOWLEDGMENTS:

Metro Gold Line Foothill Extension Construction Authority

Southern California Association of Governments

San Bernardino Associated Governments

San Bernardino County Board of Supervisors

Los Angeles World Airports

PREPARED BY:

KOA Corporation

In Association with:

STV Incorporated

J.L. Patterson & Associates, INC.

Consensus Planning Group, Inc.

CITYWORKS DESIGN

Table of Contents

EXECUTIVE SUMMARY	E-1
BACKGROUND	E-1
PLANNING TEAM APPROACH AND PUBLIC OUTREACH	E-1
THE ALIGNMENTS	E-2
ADDITIONAL STUDY CONSIDERATIONS.....	E-3
PRELIMINARY COST ESTIMATE	E-3
CHAPTER 1. INTRODUCTION	1
PURPOSE	1
HISTORY AND BACKGROUND OF THE PROJECT.....	1
GOALS AND OBJECTIVES OF THIS STUDY	1
INITIAL ASSESSMENT OF PRELIMINARY ALIGNMENTS	2
STUDY PROCESS.....	2
NEXT STEPS	3
CHAPTER 2. STUDY FRAMEWORK AND METHODOLOGY	4
APPROACH	4
COORDINATION WITH METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY	4
COORDINATION WITH STAKEHOLDER COMMITTEE AND OTHER PUBLIC ENTITIES.....	4
PUBLIC INPUT AND CONSENSUS BUILDING PROCESS	5
STUDY AREA BOUNDARY	11
PRELIMINARY ALIGNMENT ALTERNATIVE IDENTIFICATION AND REFINEMENT PROCEDURE	11
TECHNICAL ANALYSIS METHODOLOGY.....	13
DESCRIPTIONS AND STATEMENT OF OVERALL STUDY FORMALITY	15
CHAPTER 3. FORMULATION AND DEVELOPMENT OF PRELIMINARY ALIGNMENT ALTERNATIVES.....	16
STUDY PROCESS.....	16
INITIAL ASSESSMENT OF PRELIMINARY ALIGNMENTS	16
DEVELOPMENT AND EVALUATION OF 13 ALTERNATIVE ALIGNMENTS	22
SELECTION FOR 7 VIABLE ALIGNMENTS.....	26
REFINEMENT TO 3 FINAL ALIGNMENTS BY TECHNICAL ADVISORY COMMITTEE.....	37
FINAL REVIEW OF ALTERNATIVE ALIGNMENTS BY THE ADVISORY COMMITTEE	39
CHAPTER 4. REFINED EVALUATION OF THE THREE ALTERNATIVE FINALISTS	42
ALIGNMENT 2A CHALLENGES AND OPPORTUNITIES.....	42
ALIGNMENT 2B CHALLENGES AND OPPORTUNITIES	46
ALIGNMENT 3B CHALLENGES AND OPPORTUNITIES	49
STATION CONSIDERATIONS	51
PRELIMINARY GOLD LINE SYSTEM RIDERSHIP FORECAST	64
RIDERSHIP PROJECTION METHODOLOGY FROM METRO'S REGIONAL MODEL.....	64
AIRPORT PASSENGER RIDERSHIP PROJECTION METHODOLOGY	67
PRELIMINARY ALIGNMENT LAYOUT PLAN	67
PRELIMINARY COST ESTIMATE	68

CHAPTER 5. PUBLIC OUTREACH.....	82
INTRODUCTION TO PUBLIC OUTREACH STRATEGY	82
OUTREACH PROGRAM INFRASTRUCTURE	82
COMMUNITY OUTREACH ACTIVITIES	84
MEDIA OUTREACH	87
COMMUNITY FEEDBACK.....	89
SUMMARY OF PUBLIC OUTREACH ACTIVITIES.....	92
CHAPTER 6. FUTURE ACTION PLANS	93
SUBSEQUENT PROJECT ACTIVITIES	93
NOTIFICATION OF INTENT TO CONDUCT AN AA.....	93
PURPOSE AND NEEDS STATEMENT.....	94
GOALS AND OBJECTIVES.....	94
PUBLIC OUTREACH.....	94
DEVELOPING ALTERNATIVES.....	94
DETAILED DEFINITION OF ALTERNATIVES.....	95
EVALUATION OF ALTERNATIVES.....	96
FTA’S EVALUATION OF THE LPA.....	96
ENGINEERING & CONSTRUCTION	97
FUNDING IMPLICATIONS	98
PROJECT OPPORTUNITIES AND CHALLENGES.....	99

List of Figures

FIGURE E-1 – ALIGNMENTS 2A AND 3B	E-4
FIGURE 2-1 – PROJECT STUDY AREA	12
FIGURE 3-1 – THREE INITIAL CANDIDATE ROUTES	18
FIGURE 3-2 – MAJOR ACTIVITY CENTERS	21
FIGURE 3-3 – THIRTEEN ALTERNATIVE ALIGNMENTS	24
FIGURE 3-4 – ALIGNMENT 1	29
FIGURE 3-5 – ALIGNMENT 2A	30
FIGURE 3-6 - ALIGNMENT 2B	31
FIGURE 3-7 - ALIGNMENT 2C	32
FIGURE 3-8 - ALIGNMENT 3A	34
FIGURE 3-9 - ALIGNMENT 3B	35
FIGURE 3-10 - ALIGNMENT 3C	36
FIGURE 3-11 – THREE FINAL ALTERNATIVES	41
FIGURE 4-1 – METROLINK RIGHT_OF_WAY ALTERNATIVE	43
FIGURE 4-2 – CUCAMONGA CHANNEL ALTERNATIVE	45
FIGURE 4-3 – VINEYARD AVENUE CENTERLINE ALTERNATIVE	47
FIGURE 4-4 – VINEYARD AVENUE CURBSIDE ALTERNATIVE	48
FIGURE 4-5 – BALDWIN PARK BRANCH ALTERNATIVE	50
FIGURE 4-6 – FOOTHILL BOULEVARD ALTERNATIVE	52
FIGURE 4-7 – METROLINK UPLAND CONCEPTUAL STATION PLAN	54
FIGURE 4-8 – METROLINK UPLAND CONCEPTUAL STATION PLAN	55
FIGURE 4-9 – GROVE AVENUE CONCEPTUAL PLAN	57
FIGURE 4-10 – LA/ONTARIO INTERNATIONAL AIRPORT MULTI-MODAL TERMINUS STATION CONCEPTUAL LAYOUT (ALIGNMENT 2A)	59
FIGURE 4-11 – MOUNTAIN AVENUE BALDWIN PARK BRANCH STATION PLAN	61
FIGURE 4-12 – UPLAND DOWNTOWN CONCEPTUAL STATION PLAN	63
FIGURE 4-13 - SEGMENT KEY MAP	69

FIGURE 4-14 - SEGMENT 1	70
FIGURE 4-15 - SEGMENT 2	71
FIGURE 4-16 - SEGMENT 3	72
FIGURE 4-17 - SEGMENT 4	73
FIGURE 4-18 - SEGMENT 5	74
FIGURE 4-19 – SEGMENT 6	75
FIGURE 4-20 – SEGMENT 7	76
FIGURE 4-21 – SEGMENT 8	77
FIGURE 4-22 – SEGMENT 9	78
FIGURE 4-23 – PROPOSED FLYOVER	79

List of Tables

TABLE 2-1 - SUMMARY OF STAKEHOLDERS' AND PUBLIC MEETINGS	7
TABLE 3-1 – THIRTEEN ALTERNATIVE ALIGNMENTS	23
TABLE 3-2 - SUMMARY OF SEVEN REFINED ALTERNATIVE ALIGNMENT	37
TABLE 3-3 – TYPICAL ALTERNATIVE SCORING SHEET	38
TABLE 3-4 –ALTERNATIVE ALIGNMENT EVALUATION SUMMARY	39
TABLE 4-1 - STATION PARKING AVAILABILITY	66
TABLE 4-2 - ESTIMATED 2030 BOARDINGS	67
TABLE 4-3 - PRELIMINARY COST ESTIMATE FOR ALIGNMENT 2A	80
TABLE 4-4 - PRELIMINARY COST ESTIMATE FOR ALIGNMENT 3B	81

Appendices (Provided Under Separate Cover)

Appendix A3-1 – Scores and Rankings from Individual TAC Member Organizations
Appendix A4-1– Detailed Regional Model Output
Appendix A5-1 - Project databases
Appendix A5-2 - Hotline/ e-mail logs
Appendix A5-3 - Website content
Appendix A5-4 - Public information materials
Appendix A5-5 - Elected official update letters
Appendix A5-6 - Meeting notes
Appendix A5-7 - Meeting notices
Appendix A5-8 - Community meeting sign-in sheets
Appendix A5-9 - Press releases and media advisories
Appendix A5-10 - Media coverage
Appendix A5-11 - Community feedback

Executive Summary

The Metro Gold Line Foothill Extension to LA/Ontario International Airport Strategic Planning Study (Study) was commissioned in November, 2007. This Study evaluated conceptual light rail routes to determine publicly acceptable, technically sound, and cost effective alternatives for extending Metro Gold Line service nearly eight miles east of its proposed terminus in Montclair, to the LA/Ontario International Airport. A Project Study Team (PST) joined with community stakeholders to address technical issues, environmental concerns, right-of-way, station locations, passenger forecasts, cost implications, and potential termini of the proposed alignments. Funding was provided through grants from The Southern California Association of Governments (SCAG) and San Bernardino Associated Governments (SANBAG). The Study serves as an important first step for undertaking further detailed technical analyses toward a regional project poised for federal financial consideration.

Background

The need and potential for a public transit connection to the LA/Ontario International Airport was articulated by San Gabriel Valley residents and businesses throughout the public comment period of the Foothill Extension DEIS/DEIR process. This public viewpoint directly complemented major passenger development goals within LA/Ontario International Airport's 2030 master plan as well as Los Angeles World Airport's objectives to grow passenger use from 7 million (2006) to its full capacity of 30 million. The City of Ontario was also in the midst of re-envisioning and adapting land use plans surrounding the Airport that would support the inclusion of a public transit system.

A unique aspect of the project was the opportunity for Los Angeles County and San Bernardino County to pool resources and experience to collaboratively plan and fund a seamless light rail extension that would provide significant mutual transit and economic benefits.

Planning Team Approach and Public Outreach

Two committees were created to participate in the study process. First, a Technical Advisory Committee (TAC) was created to facilitate coordination among the cities in the study area and to oversee the PST's development of viable alternative alignments. The TAC was comprised of representatives from cities and regulatory agencies that could be affected by the proposed light rail link to the LA/Ontario International Airport. Second, the Ontario Advisory Committee (AC) invited the participation of elected officials and leaders from stakeholder agencies representing communities along the proposed alignments. The PST met with the AC on an "as needed" basis to disseminate the PST's progress.

Public outreach began with a press conference in October, 2007 at the LA/Ontario International Airport to formally launch the Study. Three open house sessions were held in the cities of Ontario, Rancho Cucamonga, and Upland during a two-week period in early 2008 where the PST presented the proposed alignments conveyed the merits and limitations of each, solicited feedback, and received recommendations for alternative alignments. A second round of public outreach meetings was held in June 2008 to present the final three proposed alignments. Other venues for public input included a dedicated website for the Metro Gold Line Foothill Extension to LA/Ontario International Airport Strategic Planning Study and a community hotline. The website disseminated information about the Study, updated the status of the Study, and provided a venue for the public to comment on the potential

alignments.

The Alignments

In advance of the Study, the Metro Gold Line Foothill Extension Construction Authority had identified three potential alignments to be used as a starting point for the initial assessment. These included:

Alignment 1 - The **Baldwin Park Branch/Milliken** or **Blue** alignment would extend eastward from the proposed Montclair station following the abandoned Baldwin Park Branch right-of-way, owned by SANBAG, adjacent to a contiguous recreational trail. This potential alignment would run parallel Baseline Road to Milliken Avenue before turning southward on Milliken Avenue. The alignment would continue at street level and over Interstate 10 (I-10) to Airport Drive before turning west towards LA/Ontario International Airport where it terminates. The Baldwin Park Branch alignment was previously referred to as the Pacific Electric Trail (PE Trail) in the course of this Study.

Alignment 2 - The **Metrolink/Cucamonga Channel** or **Red** alignment would travel eastward using the existing Metrolink right-of-way, owned by SANBAG, parallel to West 8th Street to a location where the track meets Cucamonga Channel east of Vineyard Avenue. The alignment would then turn southward following the Cucamonga Channel crossing over Interstate 10 (I-10) to the proposed terminus at the LA/Ontario International Airport.

Alignment 3 - The **Metrolink/Euclid/Holt** or **Green** alignment would travel eastward using the existing Metrolink right-of-way, owned by SANBAG, to Euclid Avenue and turn southward in the wide median of Euclid Avenue for 2.3 miles. Thereafter, the alignment would turn east on either I-10 or a corridor between Holt Boulevard and State Street until the proposed terminus at LA/Ontario International Airport.

The initial assessment of the alignments revealed certain limitations and challenges identified by the PST in one-on-one meetings with stakeholder representatives of the various agencies and public officials. A southern alignment of the Metro Gold Line Foothill Extension (either the Red alignment or Green alignment) would have to cross the Metrolink mainline at some point outside the Montclair station which would necessitate a grade separation between the two rail systems. Finally, any alignments that would cross the I-10 freeway interchange, which is inevitable, would pose significant traffic operations and engineering conflicts.

The three initial routes expanded to thirteen (13) potential alignments. The expanded alignments incorporated comments and technical feedback on service areas, travel time, potential cost, public and private right-of-way, traffic operation impacts, and safety.

The PST presented the thirteen potential alignments to the public at the open houses for their review, comments and recommendations. The key positive attributes identified by stakeholders included overwhelming support of the concept of extending Metro Gold Line Foothill Extension to the Airport, utilizing existing rail rights-of-way, stations located near business areas, Metro Gold Line's connection to downtown Los Angeles, cost savings of using Metro Gold Line compared to the Metrolink, and providing transit service for elderly and visually impaired residents. The negative attributes raised by the community were the potential displacement of residences, the length of time to complete the project, the use of the Baldwin Park Branch right-of-way, and stations along the freeway.

The list was refined to seven (7) more viable and sound alignments to be scored by the TAC for twenty specific items related to **alignment, circulation and mobility, environmental factors, land use issues, and policy issues**. The TAC rankings were forwarded to the Advisory Committee (AC) for review, and the final three alignments selected by the AC to be advanced to the detailed technical analysis were:

1. **Alignment 2A- Metrolink/Cucamonga Channel**
2. **Alignment 2B- Metrolink/Vineyard/Holt**
3. **Alignment 3B- Baldwin Park Branch/Cucamonga Channel**

Additional Study Considerations

Factors that were considered when determining potential light rail **station locations** included existing and future development, right-of-way, potential traffic impacts (particularly for at-grade crossings with major arterials), safety, parking potential, opportunities for transit-oriented development, transit attractors, and spacing between stations. In all, thirteen locations on the three alignments were identified and subsequently evaluated as desirable stations.

Potential ridership on these three candidate alignments (2A, 2B, and 3B), were evaluated. Ridership forecast were derived from two separate methodologies. The first part of the forecast was developed from the LA Metro's Corridors Base model which analyzed and projected ridership based on a number of trip purposes including Home Based Work Trips, Home Based University Trips, Home Based Other Trips, and Non-Home Based Trips. The second part of the forecast considers the LA/Ontario International Airport projections to serve approximately 30 million passengers annually by 2030. Total Metro Gold Line ridership to be considered in 2030 would be the sum of trips from the regional transportation and the Airport passenger estimate.

On average, approximately 14,000 daily boardings would occur between the Montclair TransCenter station and the LA/Ontario International Airport Terminus station on any one of the three final candidate alignments by the year of 2030.

A series of **alignment and station layout plans** were developed for analyzing the engineering feasibility and to ascertain the constructability of the candidate alignments. The plans have been developed for Alignments 2A and 3B and are shown on Figure E-1.

Preliminary Cost Estimate

Development and construction costs from the Gold Line Phase II DEIS / DEIR were used as the basis to develop a more refined construction cost estimate for alignments 2A and 3B. The refined year of 2008 project cost estimate, including planning, design, construction, right-of-way, and contingency cost, for the two alignments is:

- Alignment 2A- \$308,700,000
- Alignment 3B- \$399,800,000

Following this Planning Study, an Alternatives Analysis (AA) will be conducted to examine the full range of alternative routes, technologies, and configurations for the extending Metro Gold Line service east to the LA/Ontario International Airport, and to recommend a Locally Preferred Alternative (LPA) to be carried forward into engineering and construction.

Chapter I. Introduction

Purpose

The Metro Gold Line Foothill Extension to LA/Ontario International Airport Strategic Planning Study documents the analysis being undertaken by the Metro Gold Line Foothill Extension Construction Authority (Construction Authority) to evaluate alternative alignments for an extension of the Metro Gold Line (MGL) from Montclair to the LA/Ontario International Airport. The main goal of this extension would be to capitalize on the success of the existing MGL and other transit services to improve mobility for San Gabriel Valley and western San Bernardino County residents and workers.

The eastern San Gabriel Valley and western San Bernardino County is served by transit lines provided by Foothill Transit and Omnitrans. In addition, the Southern California Regional Rail Authority (SCRRA) operates the San Bernardino Line of the Metrolink commuter rail service through the study area with stations in Montclair, Upland and Rancho Cucamonga.

History and Background of the Project

Phase II of the Pasadena to Montclair Light Rail Project, referred to as the Foothill Extension, is an approximate 24-mile east-west light rail extension of the Metro Gold Line Phase I. The alignment generally follows the foothills of the San Gabriel Mountains from east Pasadena to Montclair. The Project begins just east of the existing Metro Gold Line Sierra Madre Villa Station in Pasadena and runs along the former Burlington Northern Santa Fe (BNSF) railroad right-of-way, generally paralleling Interstate 210 (I-210). The Foothill Extension will connect the cities of Arcadia, Monrovia, Duarte, Irwindale, Azusa, Glendora, San Dimas, La Verne, Pomona, Claremont, and Montclair.

The Foothill Extension is planned to begin operations in 2013 from Pasadena to Azusa. This Project will include stations and associated parking facilities, a heavy maintenance facility, widening of existing bridge structures to accommodate up to three tracks, at-grade crossings with gate protection, and an extension of the existing Metro Gold Line Phase I power, signaling and communications systems.

Goals and Objectives of this Study

The Construction Authority in conjunction with the Metro Gold Line Phase II Joint Powers Authority (JPA), San Bernardino Associated Governments (SANBAG) and Southern California Association of Governments (SCAG) are exploring possible extensions of the proposed Metro Gold Line Foothill Extension Project to the east of the planned terminus station in Montclair with the express primary purposes of creating a future light rail transit extension to the LA/Ontario International Airport.

Ultimately, the goal of this Strategic Planning Study is to develop preliminary alternatives that can be considered in a future Alternatives Analysis Phase with the Federal Transportation

Administration (FTA) in order to seek discretionary funds available through FTA's Section 5309 grant program, and move into a project development process.

Initial Assessment of Preliminary Alignments

The Construction Authority's preliminary candidate routes were the starting point for the initial assessment. Three (3) alignments were identified by the Construction Authority as potential candidate alignments based on likely transit demand and alignments that would require the least right-of-way and generate significant transit demand.

These three candidate routes, along with other viable routings and routing variations were studied in considerable depth. The goal of the technical evaluation of the candidate alignments was to conduct a detailed assessment of the screened candidate alignments in order to make final recommendations for federal funding. In order to develop viable alternatives for review and consideration by key stakeholders, the technical evaluation was based on a set of criteria that included:

- Travel and mobility benefits
- Financial considerations
- Environmental Impacts
- Economic and land use considerations
- Policy support

Study Process

The study process was designed to be a collaborative "grass-roots" planning effort so as to achieve the Study's and the Construction Authority's goals. The Project Study Team (PST) developed alternative alignments based on numerous criteria. The criteria began as general planning level assessments and became more specific as the Study progressed. The initial criteria were based on critical factors that all alignments would have to meet to be viable. Subsequent criteria were developed with the Construction Authority and the Technical Advisory Committee (TAC) members that were used in the evaluation of the alignments. City officials, staff from public agencies, and the public at-large were also presented with the alignments throughout the study process to receive comments and recommendations. By employing these techniques, the PST was able to build consensus and devise alignments that addressed the concerns of the community, city officials, and public agencies.

The PST conducted a series of monthly coordination meetings with the Construction Authority throughout the course of the study and met with numerous public agencies and elected officials to coordinate the efforts of this project with other long range transportation projects currently under consideration in the region such as the high speed rail project to the LA/Ontario

International Airport, for example. A Technical Advisory Committee (TAC) was created to facilitate coordination among the cities in the study area to provide local agency level input into the development of the alternative alignments being considered. The TAC was comprised of representatives from cities and regulatory agencies that could be affected by the proposed project and included the cities of Montclair, Ontario, Rancho Cucamonga, and Upland as well as San Bernardino Associated Governments (SANBAG), Southern California Association of Governments (SCAG), Los Angeles World Airports (LAWA), Los Angeles County Metropolitan Transportation Agency (Metro), Metrolink, Caltrans and the San Bernardino County Flood Control District.

In addition to the TAC, an Advisory Committee (AC) was established to assist the PST in its analysis efforts. The AC members consisted of elected officials and leaders from the stakeholder agencies in the study area whose jurisdictions could be affected by the proposed alignment alternatives. In addition to the TAC, the PST also met with the Advisory Committee (AC) on an “as needed” basis to disseminate the PST’s progress.

The PST also made interim presentations to public agencies at various times throughout the study to incorporate feedback thereby garnering support. Three open house sessions were held in the Cities of Ontario, Rancho Cucamonga, and Upland at the onset of the Study in early 2008 and again in June 2008 to present the final four proposed alignments. These open houses allowed the public an opportunity to voice their concerns and interact directly with the PST. A dedicated website for the Metro Gold Line Foothill Extension to LA/Ontario International Airport Extension Study and a community hotline were also implemented.

Next Steps

Following this Study the Construction Authority will conduct a more detailed Alternatives Analysis that follows the procedures for a Regionally Significant Transportation Investment Study (RSTIS), formerly known as a Major Investment Study (MIS), so that recommended improvements may be eligible for potential federal funds as well as state and local funds. The RSTIS process begins with the identification and detailed assessment of the need for a transportation improvement. It then evaluates a range of improvement alternatives that would satisfy mobility needs, complemented by a significant level of community participation in the evaluation process, and results in a recommendation for a locally preferred alternative (LPA). The RSTIS will evaluate future conditions in the year 2030 if nothing is implemented beyond planned improvements (the No Project Alternative). It will also evaluate lower-cost transportation systems management (TSM) improvements as well as physical improvements and transit service enhancements on one or more north-south corridors.

Chapter 2. Study Framework and Methodology

Approach

To successfully conduct and complete a Strategic Planning Study for the extension of the Gold Line from Montclair to the LA/Ontario International Airport, it is imperative to not only provide a sound technical analysis result but also present ample opportunities and forums for all stakeholders and the public at large to voice their input to the decision making process. The Project Study Team (PST) presented the framework of the study and formation of the study methodology, provided technical analysis and recommendations to facilitate the stakeholder and public input process. Through public outreach and stakeholder input, recommendations from the PST were adjusted and enhanced to reflect the community's and key stakeholder's sentiments and concerns. As a result, throughout the various stages of the Study, the stakeholders and the public had sufficient opportunities to play a significant role in the analysis and decision making process. In fact, the majority of the public's input was considered very valuable to the study process and was incorporated in the evaluation of the alignment alternatives. The PST worked closely with the Technical Advisory Committee (TAC) for technical input, and with the stakeholders, such as the municipalities within the study area, as well as other key public agencies to absorb voices from all parties. Three sets of public outreach meetings were held at the beginning, during and at the conclusion of this Study to receive input and report findings to the public. Furthermore, the Advisory Committee (AC), comprised of elected officials of the stakeholder agencies also provided input and directives at milestones of the study process.

Coordination with Metro Gold Line Foothill Extension Construction Authority

The Metro Gold Line Foothill Extension to LA/Ontario International Airport Extension PST conducted a series of monthly coordination meetings with the Construction Authority throughout the study period. The monthly meetings with the Construction Authority were held beginning in January 2008 to share input from stakeholders and the public at-large, to discuss alternative alignments, and receive feedback on alternative alignments that were preliminarily identified and evaluated.

Coordination with Stakeholder Committee and Other Public Entities

The Project Study Team met with numerous public agencies and elected officials to coordinate the potential Metro Gold Line Foothill Extension to LA/Ontario International Airport with other long range transportation projects in the region. The TAC was created to facilitate coordination among the cities in the study area and oversee the Project Study Team's development of viable alternative alignments. The TAC centralized input and discussed pertinent jurisdictional issues relative to the candidate alignments. The TAC was comprised of representatives from cities and regulatory agencies that could be affected by the proposed Metro Gold Line Foothill Extension to LA/Ontario International Airport including the Cities of Montclair, Ontario, Rancho Cucamonga, and Upland as well as San Bernardino Associated Governments (SANBAG), Southern California Association of Governments (SCAG), Los Angeles World Airports (LAWA), Los Angeles County Metropolitan Transportation Agency (Metro), Metrolink, San Bernardino County Flood Control District, and Caltrans. Meetings were held with the Project Study

team and TAC beginning in January 2008 and at such time when it was deemed necessary for their input. The primary role of the TAC was to ensure the Study's objectives to deliver viable preliminary alignments that are technically sound and could be considered for funding by the Federal Transit Administration. From January 2008 to May 2008, the Project Study team made three presentations to the TAC.

A number of one-on-one meetings were held from December 2007 to January 2008 with staff and officials from SANBAG, Upland, Montclair, LA Metro, Ontario, Metrolink, Caltrans, Los Angeles World Airports, and Rancho Cucamonga. The meetings were an informal exchange of information and discourse on the preliminary alignments where issues specific to each entity were discussed. Among the issues that were discussed were right-of-way, potential ridership, station locations, and potential termini of the preliminary alignments. Long range transportation projects, key developments such as the LA/Ontario International Airport, general land uses, and the relative potential impact of the Airport Expansion to the Metro Gold Line Foothill Extension were also discussed. The outcome of these initial meetings bore new considerations that were incorporated into the design of the potential alternative alignments. Other meetings were more formal in nature including formal presentations to the Rancho Cucamonga City Council and Planning Commission and SANBAG Rail Committee, for example.

The PST also met with the Advisory Committee (AC) on an "as needed" basis to disseminate the PST's progress. The AC members consisted of elected officials from the study boundary that could affect the proposed alignment alternatives.

Public Input and Consensus Building Process

Early involvement and multiple opportunities for exchange with the community and public agencies were viewed as key components to a successful outcome of the Study. The Planning Study incorporated public and community input throughout the study's duration to ensure that the recommended alignments would address as many issues and concerns as possible with the ultimate goal of having the project embraced by the public. Three open house sessions were held in the Cities of Ontario, Rancho Cucamonga, and Upland during a two-week period in early 2008. Residents of these communities were invited to the open house sessions where the Project team presented the proposed alignments, conveyed the merits and limitations of each, solicited feedback, and received recommendations for alternative alignments. A second set of public outreach meetings was held in June 2008 to present the final four proposed alignments. A final round of open houses was held in December 2008 to present the conclusions the Study and its two final recommended route options, as well as discuss next steps and receive final community feedback. The public forums were one mechanism for the public to voice their concerns and interact directly with the PST. Other venues for public input included a dedicated website for the Metro Gold Line Foothill Extension to LA/Ontario International Airport and a community hotline. The website disseminated information about the Study, updated the status of the Study, and provided a venue for the public to comment on the potential alignments. The public outreach process is discussed and presented in detail in Chapter 5.

Meetings with elected officials and key public agencies were also an integral part of the consensus building process. The TAC meetings facilitated coordination, information exchange, and problem solving because each community and public agency had a forum to present specific concerns to one another. The PST also made interim presentations to public agencies at various times throughout the study to incorporate their feedback thereby garnering additional support. As the number of proposed alignments became more refined, the PST met with specific agencies and public officials that would potentially be affected. The PST met with the San Bernardino County Department of Public Works in July 2008. This meeting was held to specifically establish contact with the Flood Control group to review the potential of using the Cucamonga Channel right-of-way for light rail construction and to explore whether challenges or fatal flaws exist within the channel alignment for the potential construction of a light rail line, and to share the preliminary thinking and direction of the Study.

Table 2-1 summarizes all the meetings and outreach effort that took place during the duration of this Study.

Table 2-1 - Summary of Stakeholders' and Public Meetings

Entity/Agency	Date of Meeting	Entity/Agency Attendees	Purpose of Meeting
Gold Line Construction Authority	11/20/2007	Habib Balian, Jerry Sims, Crandal Jue, Mike Bair (SANBAG)	Project Kick-off Meeting
Metrolink	12/06/2007	Darell Maxey, Ron Mathieu, Dan Garrero, Naresh Patel	Initial Stakeholder Input
SANBAG	12/07/2007	Mike Bair, Carl Schiermeyer, Victoria Baker	Initial Stakeholder Input
City of Upland	12/17/2007	Anthony La	Initial Stakeholder Input
City of Montclair	12/17/2007	Mike Hudson, Steve Lustro, Melinda Flores	Initial Stakeholder Input
SCAG	12/18/2007	Rich Marcias/Bob Huddy	Initial Stakeholder Input
LA Metro	12/18/2007	Linda Hui/Bruce Shelburne	Initial Stakeholder Input
City of Ontario	12/18/2007	Tom Danna/John Sullivan	Initial Stakeholder Input
Metrolink	1/08/2008	Darrell Maxey, Dan Garrero, Naresh Patel	Initial Stakeholder Input

Table 2.1 - Summary of Stakeholders' and Public Meetings (Continued)

Entity/Agency	Date of Meeting	Entity/Agency Attendees	Purpose of Meeting
Caltrans District 8	1/17/2008	Dan Kopulsky, Patrick Halley, Greg Ramirez,	Initial Stakeholder Input
City of Rancho Cucamonga	1/24/2008	Mahdi Aluzri, Jon Gillespie, Jerry Dyer	Initial Stakeholder Input
Technical Advisory Committee Meeting	1/24/2008	Gold Line TAC Members	Presentation of Preliminary Alternatives
LAWA	1/22/2008	Barbara Martinoff, Eileen Schoetzow, Patrick Tomcheck,	Initial Stakeholder Input
City of Ontario	1/28/2008	Gregory C. Devereaux, Louis Abi-Youness, Otto Kroutil, Tom Danna	Discussion of Ontario's Concern on Alternatives
Advisory Committee	2/12/2008	Policy Committee Members	Review of Preliminary Alternatives
City of Rancho Cucamonga	2/20/2008	Don Kurth, Mayor Diane Williams, Rex Gutierrez, Staff	Review of Preliminary Alternatives
First Public Meeting (Upland)	2/28/2008	Public-at-Large	Present Preliminary Alternatives

Table 2.1 - Summary of Stakeholders' and Public Meetings (Continued)

Entity/Agency	Date of Meeting	Entity/Agency Attendees	Purpose of Meeting
First Public Meeting (Ontario)	3/05/2008	Public-at-Large	Present Preliminary Alternatives
First Public Meeting (Rancho Cucamonga)	3/06/2008	Public-at-Large	Present Preliminary Alternatives
Ontario Chamber of Commerce	3/13/2008	Chamber Transportation Committee	Presentation/Input from Commerce Community
SANBAG Rail Committee	3/20/2008	Committee Members	Presentation/Input from Members
Technical Advisory Committee	4/03/2007	TAC Members	Ranking of Preliminary Alternatives
Caltrans District 8	4/14/2008	Bill Mosby, Director of Planning/ Patrick Halley	Briefing to Caltrans Planning Staff Members
Rancho Cucamonga	4/16/2008	City Council/ Planning Commission/ Staff	Presentation/Input from City Council
Advisory Committee	5/01/2008	Policy Committee Members	Finalizing Refined Alternatives
City of Ontario	6/17/2008	Tom Danna/Staff	Review Public Presentation Material
City of Rancho Cucamonga	6/17/2008	Mahdi Aluzri, Jon Gillespie, Staff	Review Public Presentation Material

Table 2.1 - Summary of Stakeholders' and Public Meetings (Continued)

Entity/Agency	Date of Meeting	Entity/Agency Attendees	Purpose of Meeting
Second Ontario Public Meeting	6/18/2008	Public-at-Large	Review Refined Alternatives
Second Upland Public Meeting	6/19/2008	Public-at-Large	Review Refined Alternatives
Second Rancho Cucamonga Public Meeting	6/24/2008	Public-at-Large	Review Refined Alternatives
City of Montclair	7/01/08	Mike Hudson	Review Refined Alternatives
San Bernardino County Department of Public Works	7/08/2008	Kenneth Eke, Michael Fox, Marty Mish, Melissa Walker, Jim Borcuk	Review ROW & Construction Issues within Cucamonga Channel
SANBAG Rail Committee	11/20/2008	Committee Members	Presentation of draft study/Input from Members
Advisory Committee	11/20/2008	Committee Members	Presentation of draft study/Input from Members
Third Upland Public Meeting	12/03/2008	Public-at-Large	Review Final Alternatives
Third Rancho Cucamonga Public Meeting	12/04/2008	Public-at-Large	Review Final Alternatives
Coordination Meeting with City of Rancho Cucamonga	12/18/2008	Capital Improvement & Engineering Staff Members	Review Alignment Impacts to Bike Trail Improvement Project

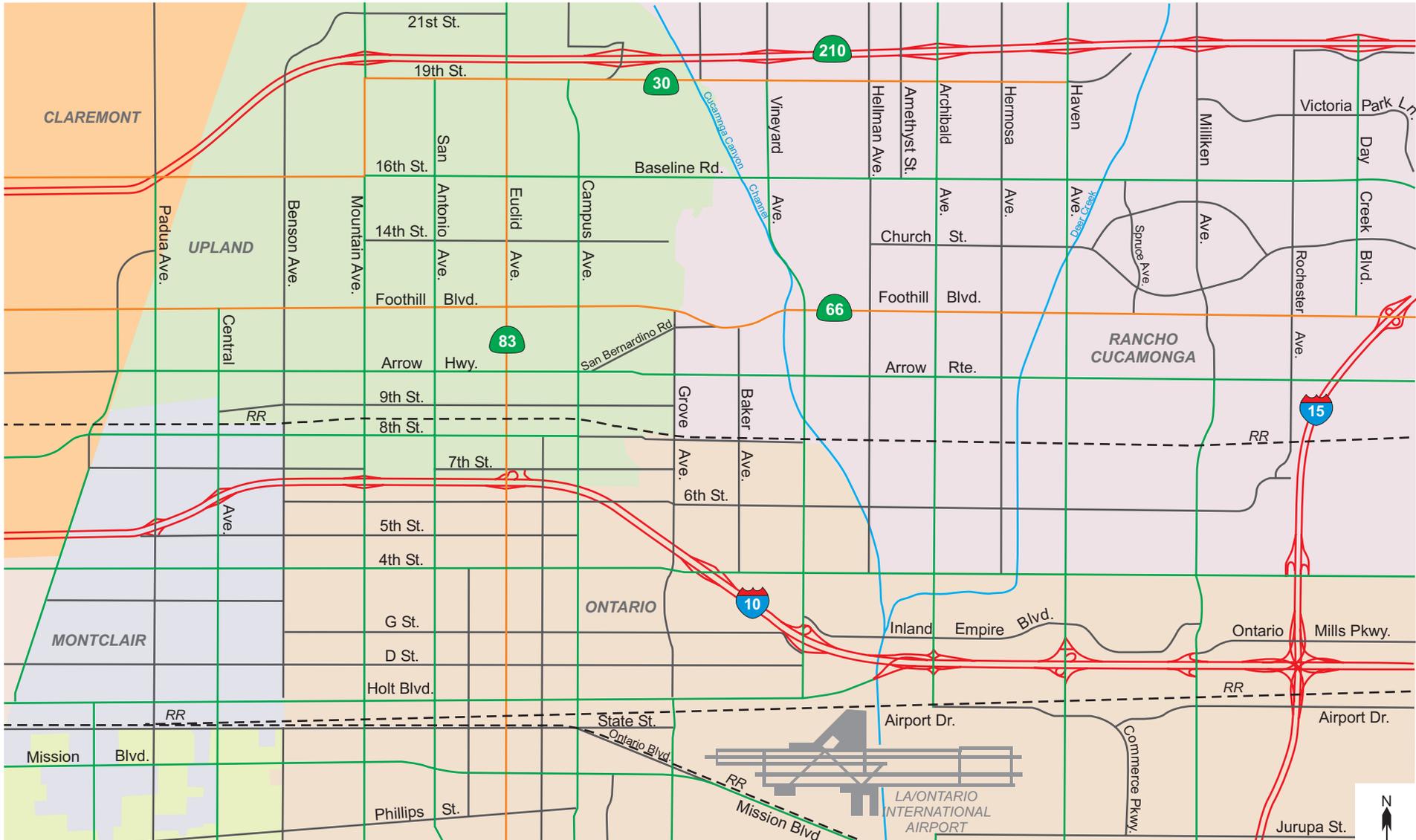
Study Area Boundary

The study area for the Metro Gold Line Foothill Extension to LA/Ontario International Airport Planning Study includes the Cities of Montclair, Ontario, Rancho Cucamonga, and Upland as shown in Figure 2-1. Montclair is the planned terminus of the Foothill Extension. The cities of Upland and Rancho Cucamonga are northeast of Montclair along the foothills of the San Gabriel Mountains. The study area is general bounded by I-210 to the north, I-15 to the east, and Mission Boulevard to the south. The study area is bisected by Interstate 10 and any preferred alignment would have to extend across I-10 to reach to the LA/Ontario International Airport.

Preliminary Alignment Alternative Identification and Refinement Procedure

The PST was tasked with analyzing the feasibility of the three preliminary alignments initially identified by the Construction Authority, as well as analyzing and identifying additional potential alignments. The process used to evaluate the alignments began with analyzing major flaws of the preliminary alignments and identifying broad technical, socio-economic and environmental issues. The PST developed alignment alternatives largely based on input from public agencies and communities. Alternative alignments were then proposed and presented to the public at-large and public agencies for feedback. This feedback was used to further refine the alternative alignments. Finally, the appropriate evaluation criteria were identified and then applied to each of the alternative alignments to make the final alignment selections. The refinement process generated final candidate alignments to be constructible, publically acceptable, and operationally feasible.

The limitations and opportunities of the original proposed alignments were identified. Based on this initial assessment and with feedback from the public agencies, the PST expanded the proposed alignments from the original three ranked alignments to thirteen alternative alignments. The alternative alignments considered broad regional issues such as providing service to activity centers and business districts and incorporated feedback from the community and public agencies. In addition, the alternative alignments were developed on the basis of specific right-of-way issues, land uses, and design considerations. During the first public outreach meeting, the thirteen alternative alignments were presented to the public and pertinent agencies to solicit feedback. The alignments were evaluated on their technical merits to refine (i.e. reduce) the number being studied. Evaluation criteria were developed with the concurrence of the TAC to further reduce the number of feasible alignments. The evaluation criteria pertained to travel and mobility of the light rail system, financial considerations, potential environmental impacts, economic and land use considerations, and local policy objectives. The evaluation criteria were applied to each alignment to reduce the proposed alignments from thirteen to seven. The PST and the TAC considered the technical merits of each alignment and public feedback to rank the proposed 7 alignments. With input from the Advisory Committee, the top three ranked alternative alignments were selected for further technical analysis.



The three candidate alignments were examined in greater detail to provide final recommendations. Chapter 3 discusses the formulation and evaluation process of the proposed alignments in greater detail.

Technical Analysis Methodology

The technical merits of each proposed alignment were analyzed to identify limitations and potential roadblocks to eliminate undesirable alignments. The criteria were based on constructability of the Metro Gold Line Foothill Extension light rail line, potential traffic operational impacts, land use planning issues, and environmental factors. A formalized evaluation process was used to select the final proposed alignments.

Constructability

The challenge of constructability for the proposed alignments was to identify potential impediments that could affect the design of the light rail system. Right-of-way issues were key constraints in the initial assessment of the preliminary alignments and development of subsequent alternate routes. The PST examined the amount of space required by at-grade versus elevated light rail alternatives, public versus private right-of-way, and existing land uses.

Specific right-of-way considerations included the following:

- Accommodate the proposed light rail extension within Metrolink right-of-way at Montclair terminus
- Examine right-of-way of existing and proposed developments
- Examine right-of-way of existing roadways and the Cucamonga Channel
- Evaluate right-of-way requirement for future station construction
- Identify public versus private right-of-way
- Assess jurisdictional right-of-way issues pertaining to Caltrans, Baldwin Park Branch alignment (SANBAG), and Metrolink

Constructability also included a preliminary determination of the light rail system's design feasibility. Potential designs were determined for each candidate alignment based on the limitations of the alignment's physical environment. A mixed flow design would use the median of existing roadways for the light rail tracks with the light rail train operating adjacent to vehicular traffic. An elevated rail design alternative would run the light rail on a track above and separated from vehicular traffic. The light rail system of one proposed alignment would operate adjacent to and within the existing Cucamonga Channel. The designs of the proposed alignments were driven by geographical features, land uses, and right-of-way considerations that ultimately affected their viability and desirability.

Traffic Engineering and Operations

The PST examined major traffic engineering issues that could arise for each of the proposed alignments. The assessment identified several traffic engineering issues to be considered: disruption to traffic flow particularly on major arterials, impacts to the levels of service at intersections and on roadway segments, traffic management at transition points, station access and egress, and safety issues. Proposed alignments in proximity to major arterials could have detrimental impacts to the arterial's traffic flow if increased volumes occur near stations. Light rail crossings that would intersect the roadways at-grade would increase vehicular delay and denigrate the intersection's level of service. The segment capacity for roadways would be decreased if the proposed alignment necessitated using existing travel lanes for the light rail track. Transition points between the light rail and vehicular traffic would present unique challenges for traffic management, as well.

The PST also identified key safety issues that each alignment would have to address. Each alignment would have particular vehicular, pedestrian, and bike safety considerations. Station access and egress were also identified factors that would require specific traffic engineering. Locations and numbers of potential park and ride facilities at stations are integral parts of the overall traffic engineering consideration for station planning.

Planning Considerations

Planning considerations were taken into account during the preliminary assessment and subsequent review of proposed alignments. The planning issues that were identified contributed towards the selection of alignments that would be functional and effective. The PST identified major land use considerations, studied the alignment for linkages and fit, identified potential environmental concerns, and conducted travel demand forecasts.

Land use issues were critical in the assessment of the preliminary alignment and in developing new alternatives that would be viable and physically feasible. Most alignments under consideration were physically constrained by existing land uses, future developments, and roadways, making identification of constraints instrumental in the assessment of the alignments. The Study incorporated planned land uses within the study area based on each city's General Plan as well as specific future development potential. The PST also incorporated information from Los Angeles World Airports for the future development of the LA/Ontario International Airport.

Another vital planning component that was identified pertained to linkages of the proposed alignments to transit attractors and other regional transportation systems. The PST worked with city staff of all participating cities to identify clustered activities that would likely be transit attractors. The activity centers included major shopping centers, civic centers, and transportation centers within each city of the study area. The activity centers were compared

to the preliminary alignments to ensure there would be sufficient attractions to generate transit demand. The Study considered linkages to major access and egress networks such as bike paths, major arterials, and freeways to examine access to the proposed light rail extension.

Potential environmental concerns were identified as factors for the alignment assessment. These factors would play an important role in the final preferred Alternative Analysis. Under this stage of the strategic planning effort, the primary objective of the environmental review is to study and identify any potential fatal flaw for the construction of a light rail line. Furthermore, the potential environmental impacts of various alignments were compared in the ranking process. Some of the more visible environmental factors included the level of noise that would be generated by the proposed light rail, the amount of vibration that may be generated, potential impacts to recreation facilities, and the aesthetics of the light rail system which could have a detrimental effect on the quality of life of residents and stakeholders.

Evaluation Criteria

The TAC and PST considered numerous factors to assist with the final selection of alignments. The evaluation criteria were refined to twenty factors among five major evaluation categories that pertained to alignment issues, circulation and mobility factors, environmental factors, land use issues, and policy issues. Each TAC member agency representative assigned a numerical rating from 1 to 5, with 1="strongly negative" and 5="strongly positive" for each evaluation factor for a specific candidate alignment. The scores of the seven alignments were ranked based on the total points assigned. The alignments with the three highest scores were selected for a final detailed analysis.

Descriptions and Statement of Overall Study Formality

The process and formality of this Metro Gold Line Foothill Extension Strategic Planning Study is unique in that public opinion and stakeholder input were given heavy consideration in the study process and outcome. The primary purpose of creating this Study document is to provide a guideline to conduct a more streamlined federally mandated Alternative Analysis of a locally preferred alignment. Because of our extensive grass roots public involvement process for this Strategic Study, most of the project issues had been brought out and discussed in great detail. During the alignment alternative refinement process, each of the stakeholders had an equal opportunity to voice their concerns and cast their input into an action plan. While some issues had received understanding and consent from the public and stakeholders, other issues may remain unresolved which will require further refinement and compromise in the future.

Chapter 3. Formulation and Development of Preliminary Alignment Alternatives

This chapter discusses the iterative process that was applied in the formulation and development of the preliminary alignment alternatives as part of this Study. As noted in the introduction, the goal of this Strategic Planning Study was to develop preliminary alignment alternatives that would serve the LA/Ontario International Airport from the planned Montclair terminus for the Metro Gold Line Foothill Extension. The recommended alignments that were studied in this effort need to be acceptable to the public and surrounding communities and will require sufficient ridership to be a viable light rail system. Ultimately, the alignments would be presented to the Federal Transit Administration (FTA) of the US Department of Transportation for funding consideration.

Study Process

The study process was designed to be a collaborative planning effort in order to achieve the Study's goals. The PST developed alternative alignments based on numerous criteria. The criteria began as general planning level assessments and became more specific as the Study progressed. The initial criteria were based on critical factors that all alignments would have to meet to be viable. Subsequent criteria were developed with the Construction Authority and the Technical Advisory Committee (TAC) members that were used in the evaluation of the alignments. City officials, staff from public agencies, and the public at-large were shown the alignments throughout the study process so the PST could receive their comments and recommendations for consideration. By employing these techniques, the PST was able to build consensus and devise alignments that addressed many of the concerns of the community, city officials, and public agencies.

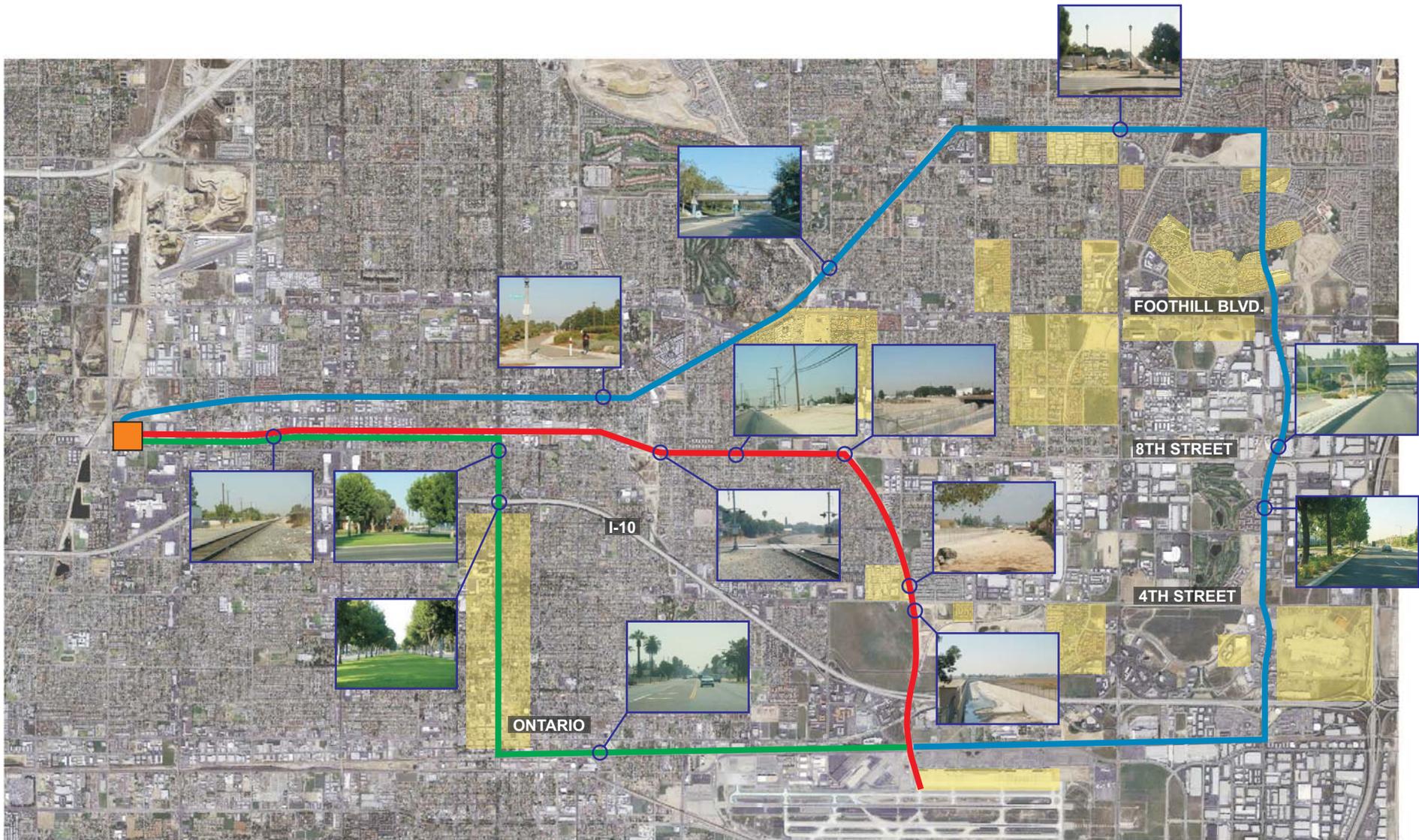
The PST used a variety of mechanisms to collaborate with stakeholders. Site visits, one-on-one meetings, public forums, and work sessions were used to assess the proposed alignments. The purpose of the field reviews was to visually assess the physical conditions, surrounding environment and opportunities and constraints associated with each alignment that could potentially affect the technical design and ultimate constructability of a specific alternative. One-on-one meetings that were held with public agencies and city officials identified major design and operational limitations of the preliminary alignments such as right-of-way, land uses, traffic impacts and cross-jurisdictional operations. The initial discussions that were held with public agencies also provided insight for the alternative alignments that were taken into consideration in the subsequent analysis. Early coordination and information exchange among city, state, and federal agencies was critical since the proposed light rail system extension would traverse several cities and jurisdictions. Public feedback was incorporated from numerous public sources that included open house sessions, surveys, and website comments.

Initial Assessment of Preliminary Alignments

The Construction Authority's preliminary candidate routes were the starting point for the

initial assessment. Three (3) alignments were identified by the Construction Authority as potential candidate alignments based on likely transit demand and alignments that would require the least right-of-way and generate significant transit demand. The three initial candidate routes are shown in Figure 3-1 and are described in detail in the following paragraphs.

- **Alignment 1 - The Baldwin Park Branch/Milliken or Blue** alignment would run through the northerly section of the study area including Montclair, Upland, and Rancho Cucamonga before terminating at the LA/Ontario International Airport. The Blue alignment would extend eastward from the proposed Montclair station following the Baldwin Park Branch right-of-way which has a contiguous recreational trail partially completed and programmed to be constructed. San Bernardino Associated Governments (SANBAG) is the owner of the Baldwin Park Branch right-of-way. This potential alignment would be located within the railroad right-of-way paralleling West Arrow Highway to Grove Avenue and would extend northeasterly to Archibald Avenue on the north side of Baseline Road. It would then run parallel to Baseline Road to Milliken Avenue before turning southward on Milliken Avenue. The alignment would continue at street level and over Interstate 10 (I-10) to Airport Drive before turning west towards the LA/Ontario International Airport where it would terminate. The total linear alignment would be approximately 17 miles. The Baldwin Park Branch alignment was previously referred to as the Pacific Electric Trail (PE Trail) in the course of this Study.
- **Alignment 2 - The Metrolink/Cucamonga Channel or Red** alignment would run through the central section of the study area in Montclair, Upland, Ontario and Rancho Cucamonga before terminating at the LA/Ontario International Airport. The Red alignment would travel eastward using the existing Metrolink right-of-way parallel to West 8th Street to a location where the track meets the Cucamonga Channel east of Vineyard Avenue. The alignment would then turn southward following the Cucamonga Channel to the proposed terminus at the LA/Ontario International Airport. SANBAG is the owner of the Metrolink right-of-way. This potential alignment would be approximately 8 miles in length.
- **Alignment 3 - The Metrolink/Euclid/Holt or Green** alignment would run through the southern section of the study area in Montclair and Ontario before terminating at the LA/Ontario International Airport. The Green alignment would travel eastward using the existing Metrolink right-of-way until it intersects Euclid Avenue. The alignment would turn southward and extend along the wide median of Euclid Avenue for about 2.3 miles. Thereafter, the alignment would turn east on I-10 or a “corridor” between Holt Boulevard and State Street until it reaches the proposed terminus at the LA/Ontario International Airport. This potential alignment would be approximately 8.5 miles in length.



LEGEND

- Alternatives by the Construction Authority
- Alternatives by the Construction Authority
- Alternatives by the Construction Authority
- Concentrated Travel Demand Areas



The PST identified critical factors used to assess the Construction Authority's alignments and to help develop other alternative alignments. These factors were identified as "make or break" criteria for the initial evaluation. The PST identified constructability, traffic engineering and operations, environmental issues, regional planning, and threshold travel demand as the initial criteria. The technical challenge of constructability pertained to building a light rail system within a densely populated study area limited by existing physical conditions and attributes of the alignments, right-of-way limitations, and encroachment on existing and planned redevelopment projects. Right-of-way acquisition would have been affected by existing development and its limitations on the availability of land, jurisdictional ownership, and the light rail system's design requirements.

All of the candidate alignments needed to meet minimum right-of-way and operating requirements and had to accommodate both existing and planned developments. Other critical factors included traffic engineering and operations issues. Key traffic related factors included addressing any potential reduction to intersection and roadway capacities, identifying potential impacts at key transition points, and addressing vehicular and pedestrian safety in conjunction with the light rail systems' operations and access/egress to adjacent properties. Environmental issues included major concerns for noise and vibration, impacts to recreational facilities, and other aesthetics.

The candidate alignments also considered routes of other existing and proposed rail systems and operations, transit centers, and transit stations to ensure regional connectivity. For example, there are other significant regional transportation projects and proposals that may affect the outcome of this Study. Regional transportation plans such as the master planning effort for the LA/Ontario International Airport and proposed California High Speed Rail Project, as well as proposals to expand the number of existing Metrolink tracks, needed to be incorporated into the plans for the proposed alignments. The planned terminus at the LA/Ontario International Airport should be at an intermodal station connecting the Gold Line with the LA/Ontario International Airport, the proposed California High Speed Rail station as well as other feeder bus systems. The eastern terminus at the proposed Montclair station is addressed in this Study as well.

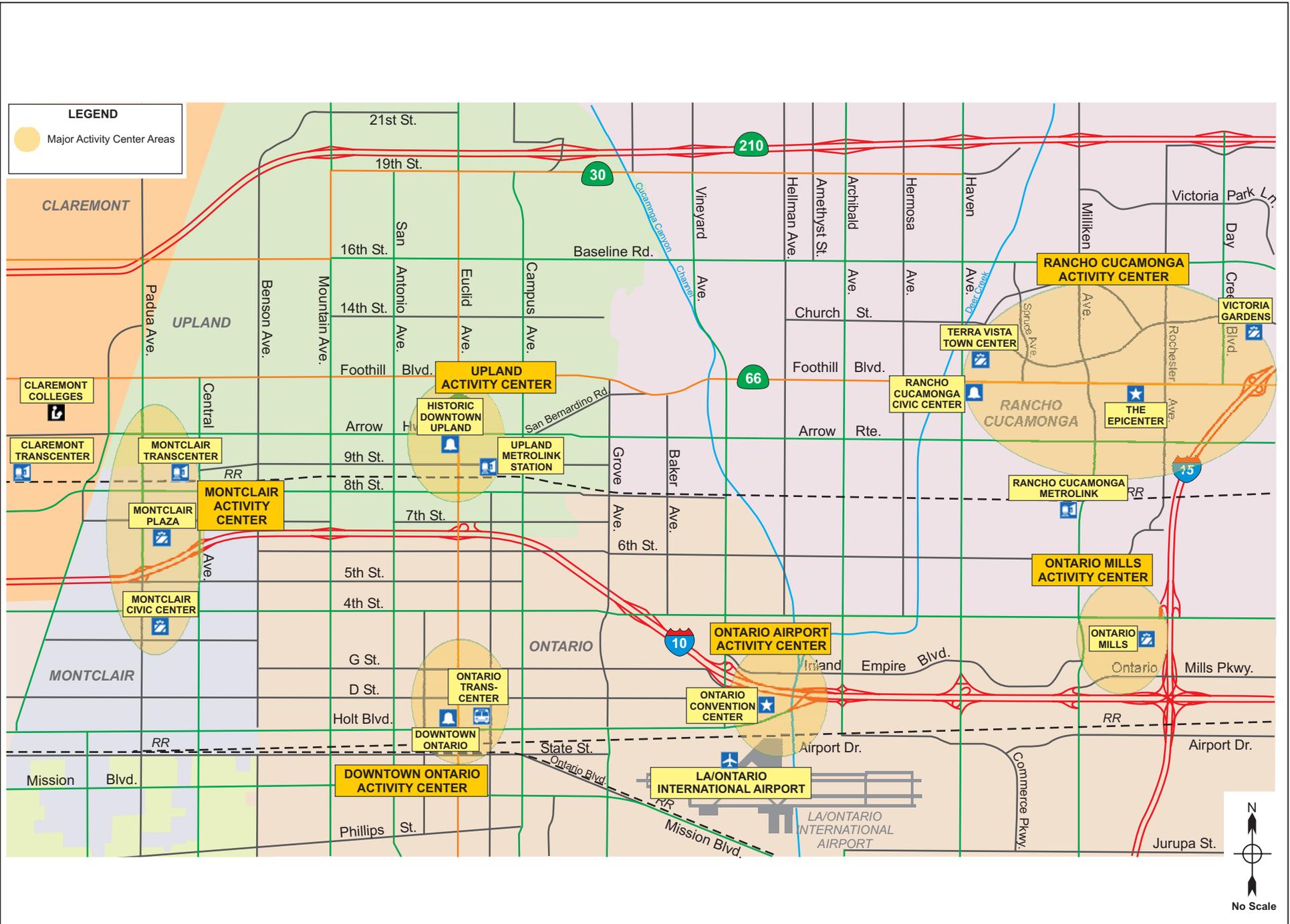
It is also important that the alignments be located in proximity to transit attractors and reflects transit ridership preferences in order to be a viable alternative. A key factor for the alignments was determining a transit route that would generate sufficient ridership to be sustainable. The PST initially addressed the issue of transit ridership by identifying major activity centers within the study area that could be key attractors for transit ridership.

Six activity centers were geographically clustered in the study area that included major regional shopping centers, convention centers, town centers, and major transit hubs (e.g. transfer centers and Metrolink stations). The Montclair activity center included the Montclair Civic Center, Montclair Plaza, and Montclair TransCenter. The Upland activity center included the historic downtown area and Upland Metrolink station. The City of Ontario had three activity

centers along the potential alignments. The Downtown Ontario activity center included the downtown area of Ontario along Euclid Avenue and Ontario Transfer Center. The LA/Ontario International Airport activity center included the LA/Ontario International Airport and adjacent Ontario Convention Center. Finally, the Ontario Mills activity center was centered on the Ontario Mills shopping area. The Rancho Cucamonga activity center included the Rancho Cucamonga Metrolink Station, the Rancho Cucamonga Civic Center, The Epicenter, Terra Vista Town Center, and Victoria Gardens. These activity centers were identified through the review of land use maps, discussion with city staff and officials, field reconnaissance, traffic volumes, and the PST's familiarity with the area. The proximity of each proposed alignment to the activity centers was examined throughout the Study. Figure 3-2 shows the activity centers that were identified for this Study.

It should be noted the initial assessment of the alignments revealed certain limitations and challenges with each alignment. The major limitations of each initial alignment are described in the following paragraphs.

- **Blue Alignment** - The length and path of the proposed Blue alignment to the LA/Ontario International Airport were major flaws of this alignment. The length of the route, approximately seventeen (17) miles long, would require significant transit time for air travelers using the LA/Ontario International Airport. The long route would adversely impact and escalate operations and maintenance costs. Those planned developments identified along the proposed Blue alignment would either limit right-of-way or make the alignment highly infeasible. Residents along the corridor would likely oppose the alignment because of an existing bike path that would be adjacent to the proposed alignment. Also, that portion of the alignment on the Baldwin Park Branch right-of-way is located entirely within residential neighborhoods. In addition, the planned redevelopment of North Montclair would be adjacent to this proposed alignment. Potential ridership may or may not increase accordingly with the increase of mileage of the system.
- **Red Alignment** - The proposed Red alignment that follows the Metrolink corridor and Cucamonga Channel has some right-of-way issues. The Gold Line light rail tracks west of the Montclair Station, as it is designed, are on the north side of the Metrolink tracks. This proposed Red alignment would require the relocation of the Metrolink tracks east of the Montclair TransCenter and the construction of a light rail fly over to transition the light rail tracks from north to the south of the Metrolink tracks because an at-grade rail crossing of the two systems is not possible. Procuring the requisite right-of-way for station construction was deemed necessary which may be costly because of existing development on either side.



Another right-of-way issue would be at the Montclair TransCenter. Additional right-of-way would need to be obtained to accommodate the tracks, platforms, and grade-separation for the proposed light rail extension. However, it is not likely to be a significant issue since SANBAG owns the right-of-way. Operating the Gold Line extension along the Metrolink San Bernardino Line track is a minor operational issue, but one that will be resolved in earlier phases of the Gold Line. The Cucamonga Channel serves as a flood control channel currently under the jurisdiction of San Bernardino County and there appears to be minimal right-of-way concerns over the potential for light rail construction in the right-of-way.

- **Green Alignment** - This alignment extends easterly on the Metrolink right-of-way to before turning south on Euclid Avenue. This proposed Green alignment would also require the relocation of the Metrolink tracks east of the Montclair TransCenter. Euclid Avenue has a wide landscaped median formally used by the Ontario-San Antonio Heights Railroad Company/Pacific Electric Railroad which operated a street car system between 1895 and 1928. Technically, Euclid Avenue would be an ideal candidate to revitalize a modern day light rail system because of the availability of right-of-way surrounded by dense commercial developments. However, the street's status as a registered historic site, compounded by the concerns of residents and business owners along the street would challenge the feasibility of this alignment. Any construction of an at-grade rail system would cause significant changes to the aesthetics and traffic operations along the existing roadway. Additionally, the Green alignment would have to continue eastward at the south end of Euclid Avenue either on Holt Avenue or on the Union Pacific Railroad right-of-way to reach the LA/Ontario International Airport. Both scenarios would present severe challenges due to lack of roadway width on Holt Avenue and institutional issues with the Union Pacific Railroad.

Other significant issues were identified during the early assessment period in one-on-one meetings with stakeholder representatives, with various agencies, and public officials. Major challenges were identified in these meetings that pertained to the operations of the proposed light rail extension across multiple jurisdictions. A southern alignment of the Gold Line extension (either the Red alignment or Green alignment) would have to cross the Metrolink mainline at some point outside the Montclair station envelope. This junction would necessitate grade separation between the two systems. Any alignments that cross the I-10 freeway interchanges would pose significant traffic operations and engineering conflicts. Nevertheless, an I-10 freeway crossing will be inevitable in any alternative alignment.

Development and Evaluation of 13 Alternative Alignments

Alternative alignments were developed to meet the planning level criteria of the initial evaluation and incorporate feedback received from stakeholder agencies and public officials after a series of meetings. Thirteen (13) potential alignments were developed from the original three alignments to be assessed for the initial screening process. The expanded alignments were

variations on preliminary alignments that incorporated comments and technical feedback on service areas, travel time, potential cost, public and private right-of-way, traffic operation impacts, and safety. The thirteen alternative alignments that were generated were based on the Blue line that followed the Baldwin Park Branch, the Red line that followed the Metrolink alignment, and the Green line that traveled through Ontario. The thirteen alternative alignments are summarized below in Table 3-1 and are depicted in Figure 3-3.

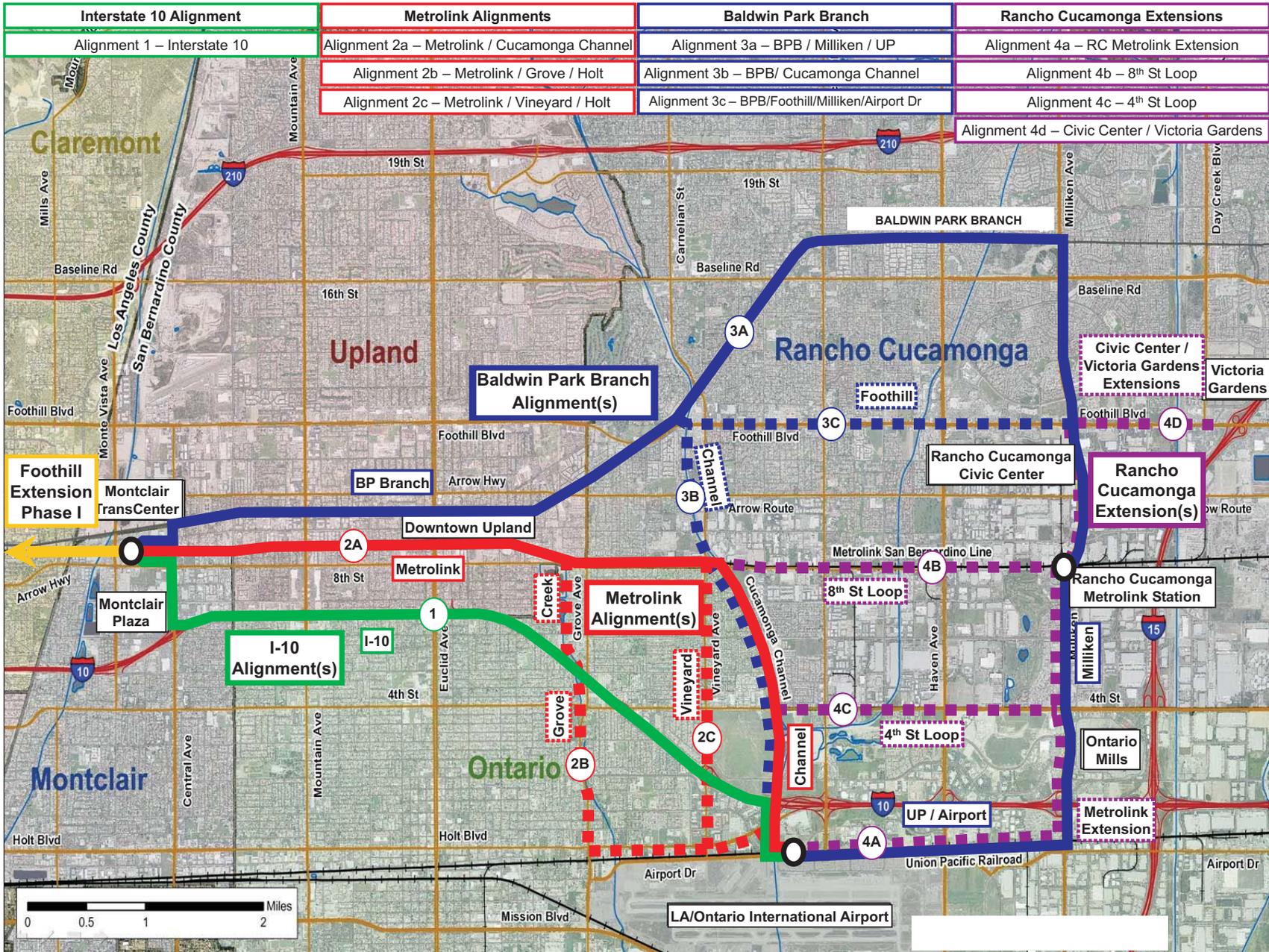
Table 3-1 – Thirteen Alternative Alignments

Alignment # and Color	Alignment	Name of Proposed Alignment
1A Green	Ontario	Metrolink / Central / Holt
1B Green	Ontario	Central / UPRR
1C Green	Ontario	Central / Interstate 10
2A Red	Metrolink	Metrolink / Cucamonga Channel
2B Red	Metrolink	Metrolink / Grove / Holt
2C Red	Metrolink	Metrolink / Vineyard / Holt
3A Blue	Baldwin Park Branch	Baldwin Park Branch / Milliken /
3B Blue	Baldwin Park Branch	Baldwin Park Branch / Cucamonga Channel
3C Blue	Baldwin Park Branch	Baldwin Park / Foothill / Milliken
4A Purple	Rancho Cucamonga Extensions	RC Metrolink Extension
4B Purple	Rancho Cucamonga Extensions	8th St. Loop
4C Purple	Rancho Cucamonga Extensions	4th St. Loop
4D Purple	Rancho Cucamonga Extensions	Civic Center / Victoria Gardens

Green Alignment Group (1A, 1B & 1C)

The objective of including the Green alternative group was to identify alignments that would provide transit service to the heart of the City of Ontario. Alignment alternatives routing through Euclid Avenue were eliminated from consideration based on the historical significance of the roadway and potential objections from citizens and merchants. Two potential alignments were presented that would run within the existing right-of-way of Central Avenue.

Alignment 1A (Central/Holt) would begin at the Montclair Station extending eastward to Central Avenue, turning south on Central Avenue, crossing I-10 and continuing south to Holt Boulevard before turning east and running on Holt Avenue to Guasti, and eventually onto the LA/Ontario International Airport Terminus Station. The total length of Alignment 1A is approximately 7.8 miles.



Alignment IB (Central/UPRR Right-of-way) would also begin at the Montclair Station extending eastward to Central Avenue, turning south on Central Avenue, crossing I-10 and continuing south, passing Holt Boulevard before turning east and running on the south side of the existing right-of-way of the Union Pacific Railroad, and eventually onto the LA/Ontario International Airport Terminus Station. This alignment could encounter major challenges on the sharing of UPRR right-of-way. The total length of alignment IB is approximately 7.8 miles.

Alignment IC (Euclid/Interstate 10) would retain the original Green line alignment traveling east along the Metrolink alignment to Central Avenue then traveling southward to I-10. The alignment would then turn east on an elevated structure erected in the median of I-10 along the entire section of the freeway until the junction at the Cucamonga Channel. The alignment would then turn south following the Cucamonga Channel to reach the LA/Ontario International Airport Terminus Station. Alignment IC would be approximately 6.7 miles in length. This is by far the most costly alternative due to its extensive structural construction.

Red Alignments Group (2A, 2B, & 2C)

The three (3) Red alignment variations were expanded from the original Red alignment with alignment altered east of the Cucamonga Channel. Alignment 2A was the original Red Alignment that followed the Metrolink track east of Montclair Station and turned southward on and paralleled to the Cucamonga Channel. The alternative alignments varied from the original 2A Alignment with different departure points along the Metrolink alignment to travel south. Alignment 2B (Metrolink/Grove/Holt/Guasti) traveled south down Grove Avenue then turned east along Holt Avenue to Guasti and onto the LA/Ontario International Airport Terminus Station. Similarly, Alignment 2C (Metrolink/Vineyard/Holt/Guasti) traveled south down Vineyard Avenue then east along Holt Avenue to Guasti and onto the LA/Ontario International Airport Terminus Station. The original 2A alignment would be approximately 7.2 miles in length, and the two other new Red alignment alternatives would be approximately 7.4 miles long for 2B and approximately 7.6 miles long for 2C.

Blue Alignment Group (3A, 3B, & 3C)

The three (3) Blue alignment variations were derived from the original Blue alignment with deviations being developed east of the Cucamonga Channel. The original alignment was retained (Alignment 3A) and two alternative alignments were added for evaluation. All proposed alignments began at the Montclair terminus and followed the Baldwin Park Branch through Upland up to the junction of Foothill Boulevard near the Cucamonga Channel and Vineyard Avenue. Alignment 3B (Baldwin Park Branch/Cucamonga Channel) then traveled south along the Cucamonga Channel, crossing I-10 to reach the LA/Ontario International Airport Terminus Station. Alignment 3C (Baldwin Park Branch /Foothill/Milliken/UP) traveled east along Foothill Boulevard to Milliken Avenue, then turned south on Milliken Avenue, crossing I-10 to Airport Drive before turning westward to the LA/Ontario International Airport Terminus Station. The original Blue alignment (3A) is approximately 15.2 miles long. The two new Blue

alternatives, Alignment 3B are approximately 8.3 miles in length; and alignment 3C is approximately 13.5 miles in length.

Purple Alignment Group (4A, 4B, 4C & 4D)

From discussions with residents and stakeholders, there was interest among certain sectors of the public that light rail service extending beyond the Airport to serve activity centers in the City of Rancho Cucamonga should be considered and reviewed in this Study. Four “hybrid” alternative alignments were studied and presented to provide additional transit access to Rancho Cucamonga activity centers and to provide transit service to air travelers living north and northeast of the LA/Ontario International Airport.

Alignment 4A (Rancho Cucamonga Metrolink Extension) would extend the light rail system from the LA/Ontario International Airport Terminus Station eastward on Airport Drive, turning north to the Rancho Cucamonga Metrolink Station. Alignment 4B would continue Alignment 2A eastward on and along the Metrolink San Bernardino line right-of-way to the Rancho Cucamonga Metrolink Station at Milliken Avenue before turning south on Milliken Avenue, crossing over the I-10 bridge to Airport Drive, then turning west to the LA/Ontario International Airport Terminus Station. Loop operations could be considered to continue Alignment 4A northerly along the Cucamonga Channel to 8th Street/Metrolink junction. Alignment 4C is a replica of 4B except it would use 4th Street for the loop instead of 8th Street. Alignment 4D reflects the desire of the community to provide service to the Victoria Gardens commercial area. The 4D Alignment would be the extension from the Rancho Cucamonga Metrolink Station northerly to Foothill Blvd. and turning east to reach the Victoria Gardens commercial center. 4D could be combined with any one of the three purple group alignments, 4A, 4B and 4C.

Selection for 7 Viable Alignments

The PST presented the thirteen potential alignments to the public for comments and recommendations as the first step to help refine and reduce the number of candidate alignments to seven (7) for thorough technical evaluation. The intent of the public outreach program was to engage the public in the development of the alignments as a means of building consensus and incorporate recommendations in the next round of analysis. Three public outreach sessions were held in February and March of 2008 at public meeting spaces in Upland, Ontario, and Rancho Cucamonga. The PST presented the thirteen alignments, discussed the preliminary criteria, and addressed public concerns.

The results of the public comments that were received were combined with stakeholder feedback from agencies to thoroughly address key project issues and provide direction to distill the thirteen alignments down to seven. Key positive attributes identified by stakeholders included general support for a light rail extension to the LA/Ontario International Airport, using alignments that would use the existing rail right-of-way, stations that would be located near

business areas, Metro Gold Line's connection to downtown Los Angeles, cost savings of using Metro Gold Line compared to Metrolink, and providing transit service for elderly and visually impaired residents. Negative attributes were the potential displacement of residences, the length of time to complete the project, and the use of the Baldwin Park Branch right-of-way (perceived to possibly endanger bicyclists and pedestrians along the path), and stations along the freeway. Stakeholders ranked their desired connections to local activity centers to evaluate the proposed alignments. The LA/Ontario International Airport, Downtown Upland, Victoria Gardens, Ontario Mills, Downtown Ontario, and Rancho Cucamonga Metrolink Station were the areas most desired for light rail service by residents.

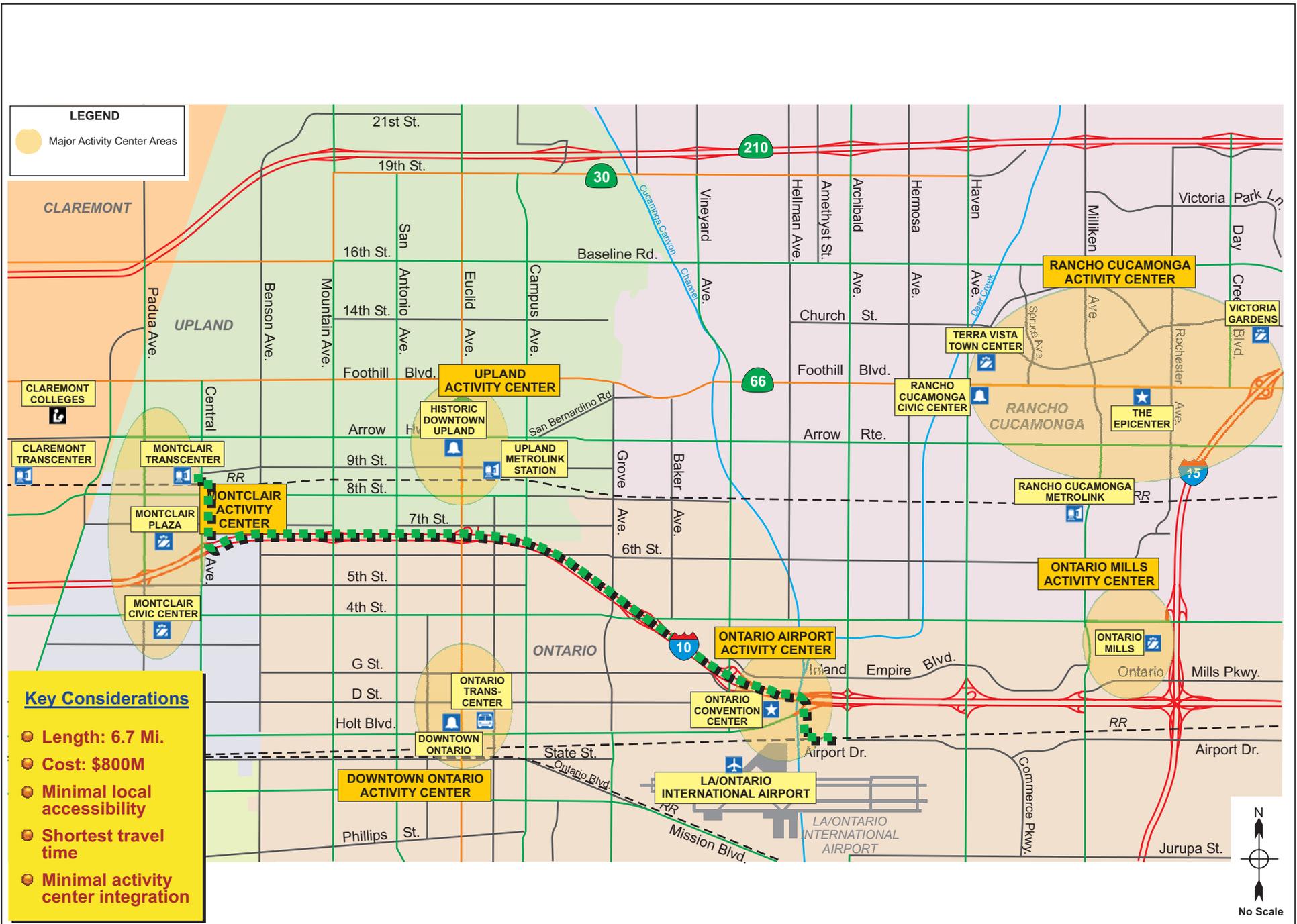
More specifically, Alignments 1A, 1B, 4A, 4B 4C and 4D were eliminated from further consideration due to following specific reasons:

- 1A & 1B- Central Avenue is not a viable corridor for light rail service due to low density development, and potential traffic impacts on the streets traffic carrying capacity. Holt Boulevard is narrow with minimal potential for widening to accommodate additional light rail construction. It was agreed that the potential for sharing right-of-way with UPRR is unlikely. Additionally, travel time for these two alignments would be substantially higher because the operation would be at-grade competing with surface traffic demands.
- The primary reason to eliminate all Group 4 alignments was that these alignments contradicted with the main objective of this project, which is to connect the light rail system from Montclair to the LA/Ontario International Airport. It was agreed that given the substantial amount of additional cost to construct and extend these loop services for what would likely be limited local travel demand, as well as nearby commercial activities, it would be difficult to justify this alternative.

The next step included developing a more detailed plan of the seven (7) alignments to meet the initial planning criteria, reflect feedback from the public and public agencies, and accommodate long range land use and transportation plans in the study area. The resulting seven alignments ranged from approximately seven miles to fifteen miles in length with preliminary estimated costs ranging from \$275 million to \$800 million. One proposed alignment would serve the Ontario area, three proposed alignments were based on the Metrolink alignments and three proposed alignments followed the Baldwin Park Branch. Two of the three original alignment alternatives (Alignments 2A and 3A) were retained.

The length of the alignment, estimated cost, and critical considerations were identified for each candidate alignment. For ease of identification, numerical order of the 7 alignments was renumbered in sequence. Key components for each alignment include the following:

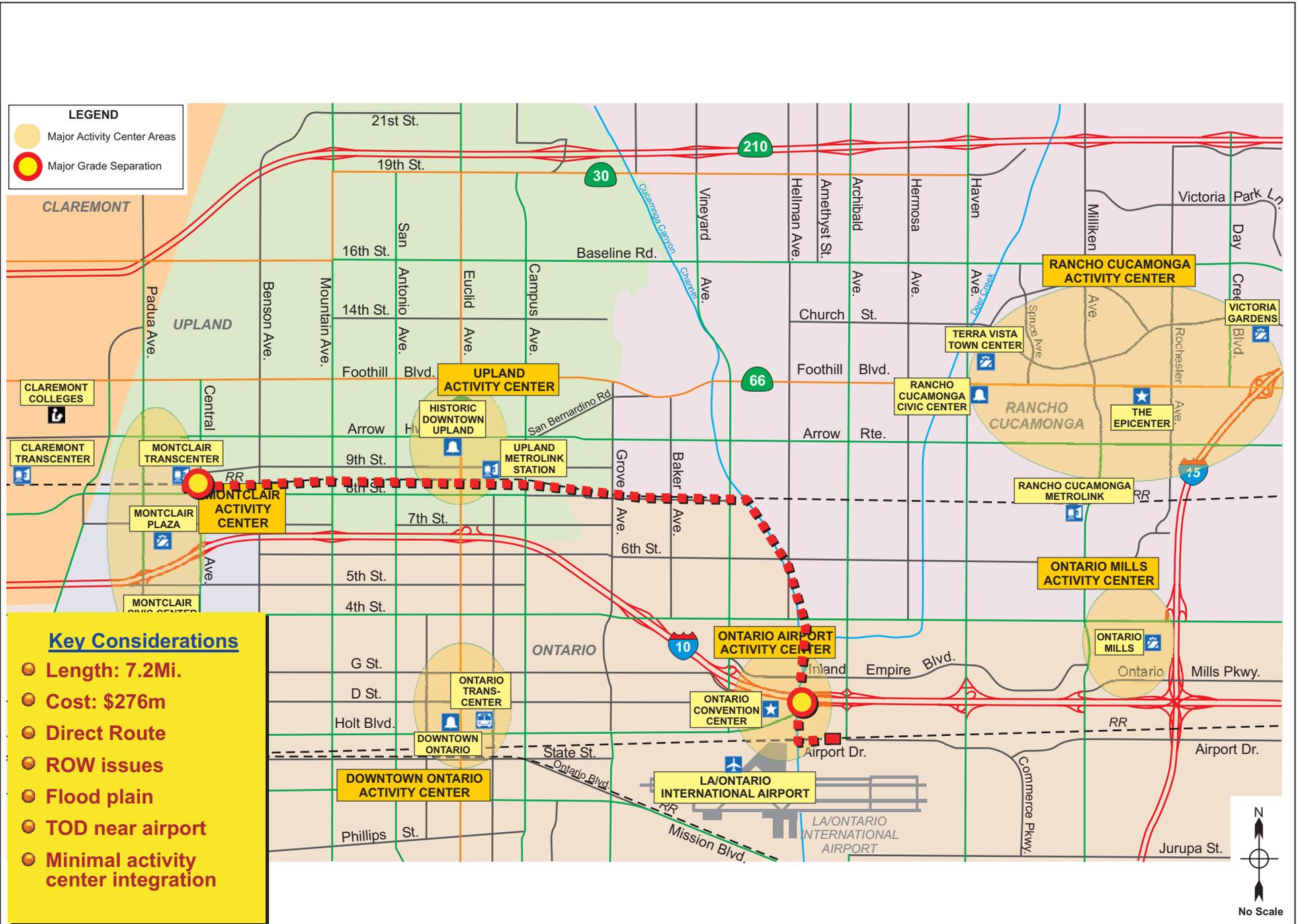
- Alignment 1 would be required to construct an elevated structure, including two elevated stations above the I-10 Freeway because of limited right-of-way. Although the alignment has the shortest distance of the seven alignments and perhaps the shortest system travel time, the above-grade design would have resulted in the highest cost of all alignments estimated to be around \$800 million. This alignment has minimal local accessibility and integration of the activity centers (see Figure 3-4)
- Alignment 2A, which was retained as it was originally proposed, would have the lowest estimated preliminary cost at \$275 million. This alignment would be a direct route to the LA/Ontario International Airport with a short travel time but with potential right-of-way constraints at stations, potential environmental issues and its location along the flood plain. There is a large potential 210-acre development area in Ontario just north of the Airport, known as the Meredith development project, which this alignment would directly serve as well (see Figure 3-5).
- Alignment 2B (previously designated as Alignment 2C) would run east along the Metrolink alignment and then south along Vineyard Avenue. The alignment would have many of the same considerations at Alignment 2A – a direct route to the LA/Ontario International Airport with relatively short travel time to the LA/Ontario International Airport, potential right-of-way constraints at stations, and the advantage of connecting the 210-acre future development project. One of the more significant issues with this alignment would be the impact to the heavily travelled Vineyard Avenue, as the dual track light rail system will require a minimum of 30 feet of width along Vineyard Avenue and 50 feet of width at the station areas. This would severely constrain the capacity of Vineyard Avenue and would require the acquisition of additional right-of-way from properties on both sides of Vineyard Avenue (see Figure 3-6).
- Alignment 2C was a combination of the Metrolink/Rancho Cucamonga route (Alignment 2A) and Alignment 4D to provide transit service to some of the major activity centers in Ontario (Ontario Mills) and Rancho Cucamonga (Victoria Gardens), as well as the connection to the Rancho Cucamonga Metrolink Station. This alignment would be a direct route to the LA/Ontario International Airport and would also serve riders in the Rancho Cucamonga area. Key issues included those as identified in Alignment 2A. In addition, traffic impacts on Milliken Avenue would be significant as the system would operate at-grade with surface streets and the traffic capacity would be substantially reduced (see Figure 3-7).

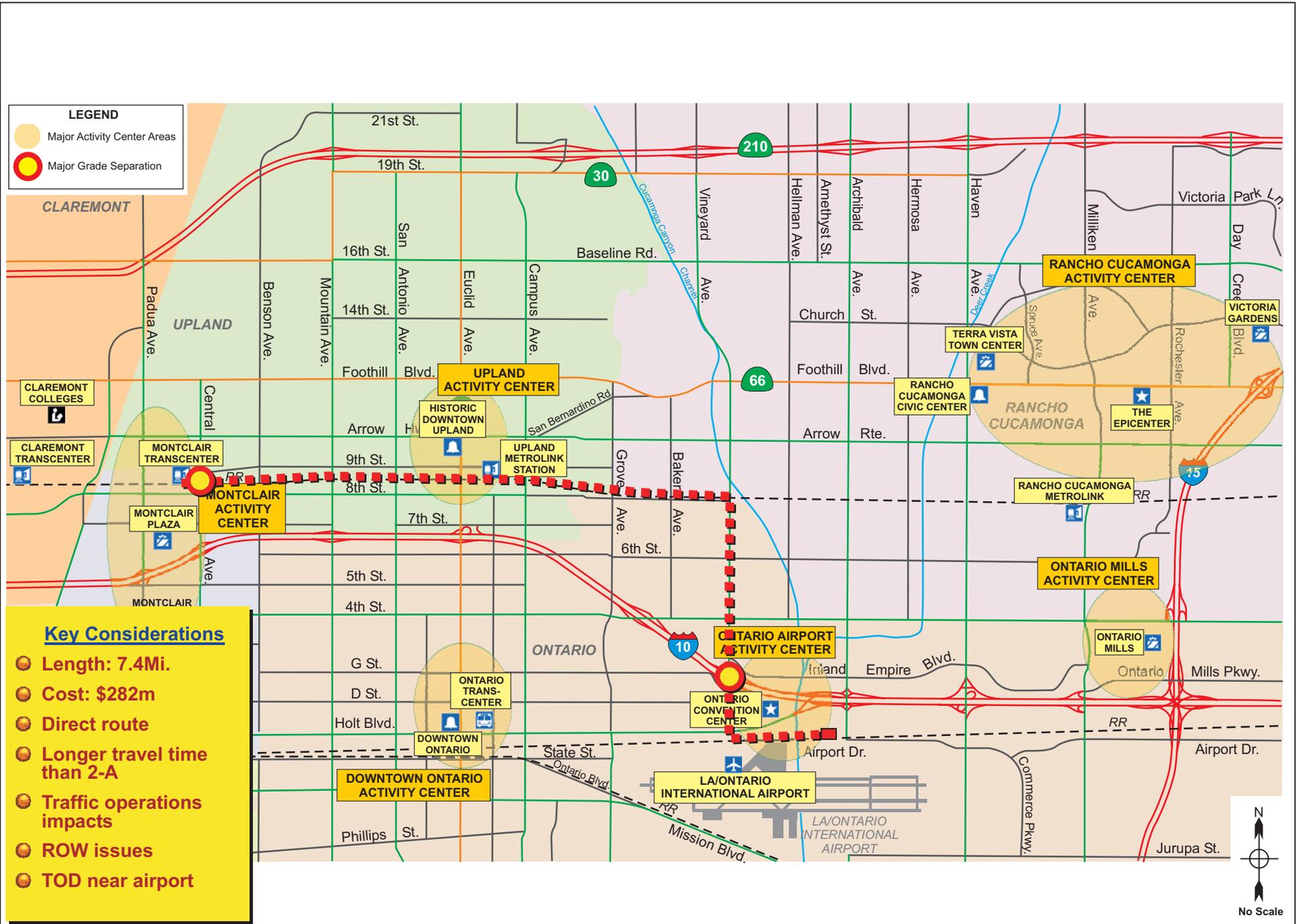


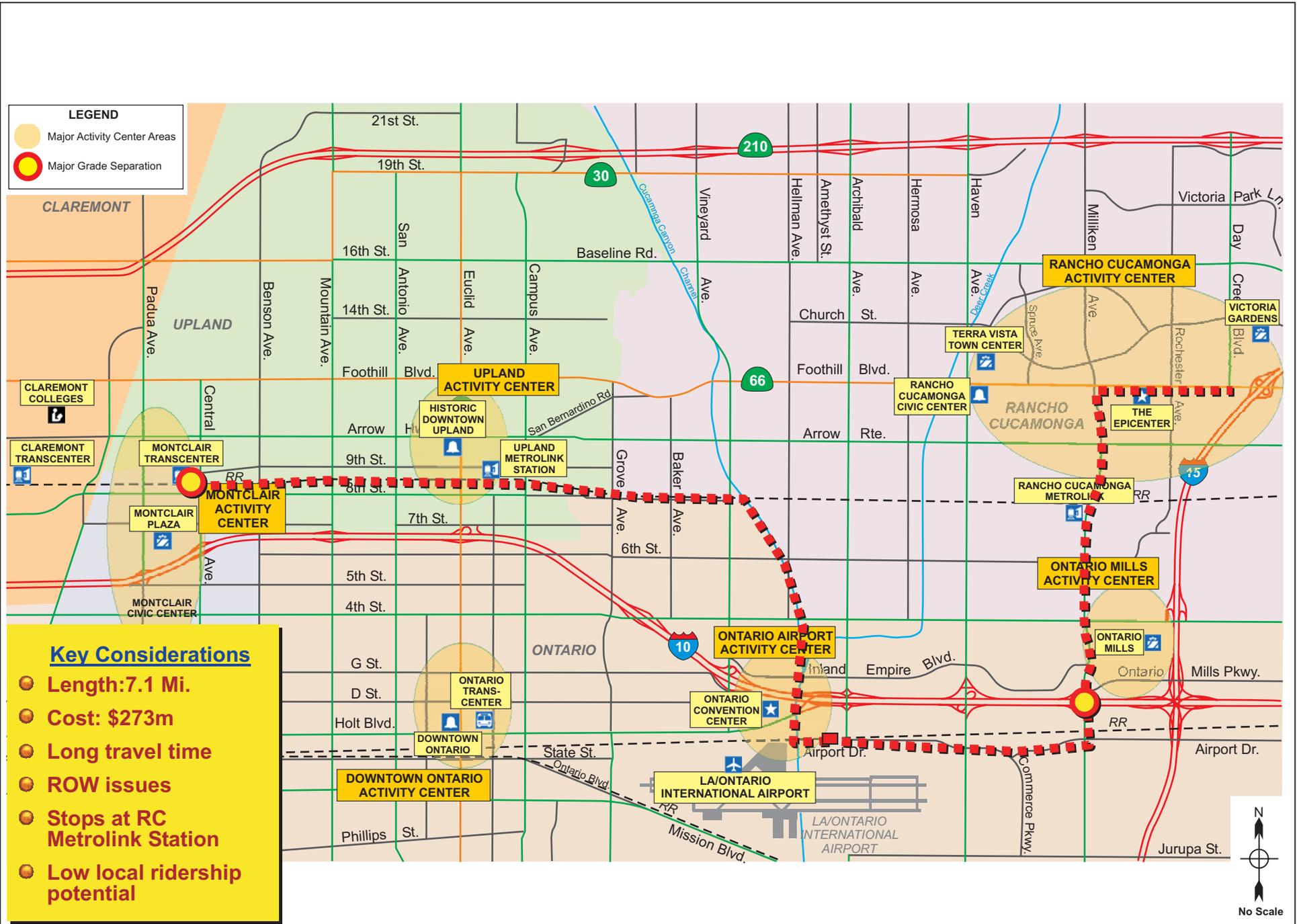
LEGEND
 Major Activity Center Areas

Key Considerations

- Length: 6.7 Mi.
- Cost: \$800M
- Minimal local accessibility
- Shortest travel time
- Minimal activity center integration

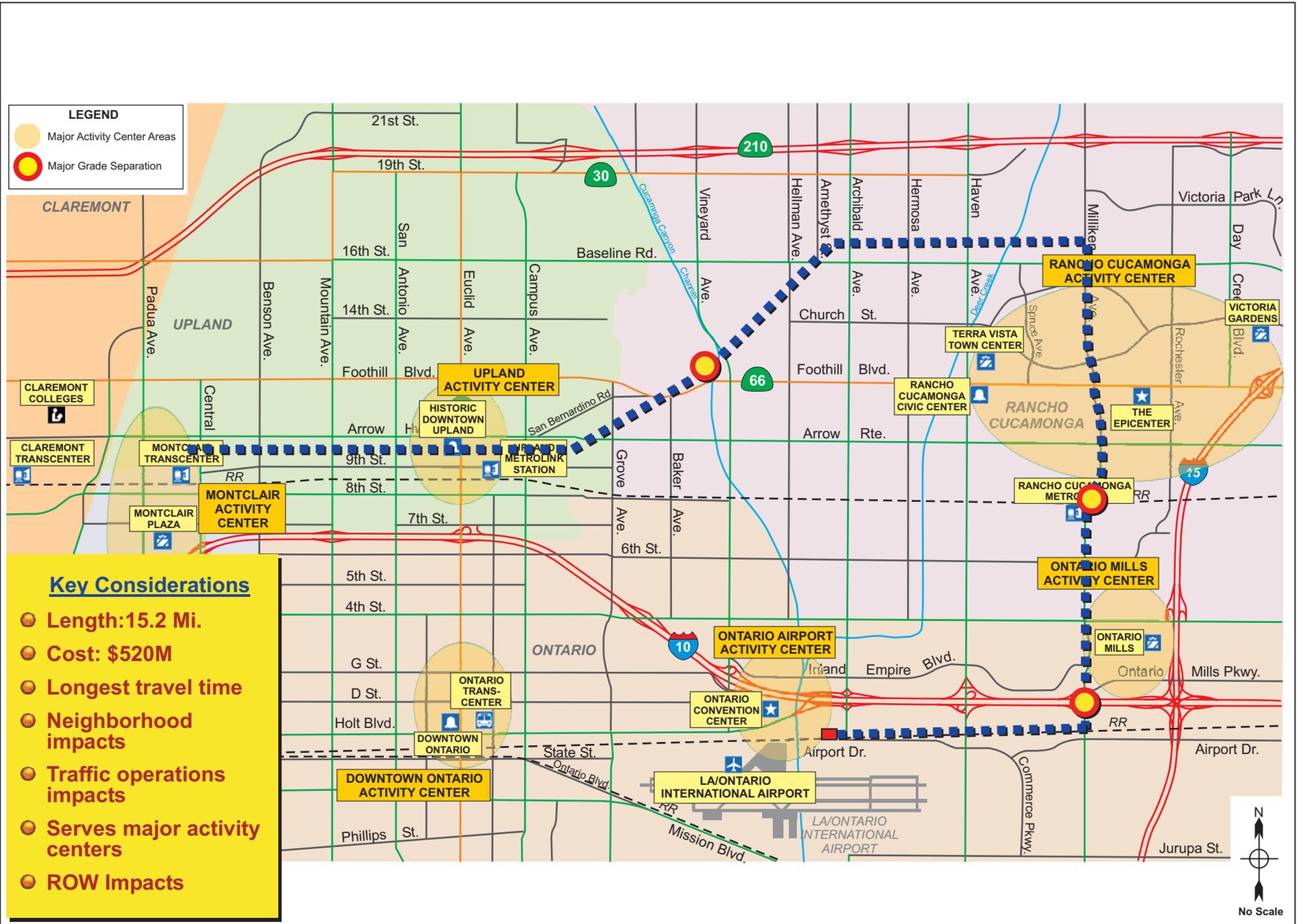






- Alignment 3A was retained from the original Blue alignment that would result in the longest route at 15.2 miles and the second highest cost at \$545 million. Although this alignment would serve several activity centers, it would also have the longest travel time, have significant right-of-way issues, and generate significant noise impacts to neighboring residences and communities. This alternative would defy the primary objective of this project as longer travel time generally discourages the Airport bound patrons to use the system (see Figure 3-8).
- Alignment 3B was the shortest and least costly of the “Blue” alignments. Alignment 3B would have served the Upland and the LA/Ontario International Airport activity centers via the Baldwin Park Branch right-of-way and the Cucamonga Channel. The key considerations for this alignment included the impacts to residences abutting the trail, design challenge in the transition area on Foothill Blvd. between the trail and the Channel (see Figure 3-9).
- Alignment 3C was a variation of 3A and would have served the same activity centers as Alignment 3A via a shorter route. Its system length would be 13.5 miles in lieu of 15.2 miles as with alignment 3A. Major alignment considerations were the potential traffic impacts on both Foothill Blvd. and Milliken Ave., both of which are the major arterial streets in the City of Rancho Cucamonga, and the excessive travel time it would take to reach the Airport (see Figure 3-10).

The most significant components of these 7 alignments were identified. Table 3-2 summarizes the estimated length, estimated cost, and key considerations for the seven alignments below:



LEGEND

- Major Activity Center Areas
- Major Grade Separation

Key Considerations

- Length: 15.2 Mi.
- Cost: \$520M
- Longest travel time
- Neighborhood impacts
- Traffic operations impacts
- Serves major activity centers
- ROW Impacts



Table 3-2 - Summary of Seven Refined Alternative Alignment

Line	Alignment	Name of Alignment	Proposed	Estimated Length (miles)	Preliminary Estimated Cost (\$ millions)	Key Considerations
1	Green	Ontario	Interstate 10	6.7	\$800	Minimum local accessibility, shortest travel time, minimal activity center integration, Expensive
2A	Red	Metrolink	Metrolink / Cucamonga Channel	7.2	\$275	Direct route, short travel time, Right-of-way, noise, Induce development
2B	Red	Metrolink	Metrolink / Vineyard / Holt	7.4	\$280	Short travel time, right-of-way, traffic impacts on Vineyard, Induce development
2C	Red	Metrolink	Metrolink/Cucamonga Channel / Milliken / Victoria Gardens	13.5	\$495	Service beyond airport, traffic impacts on Milliken, costly
3A	Blue	Baldwin Park Branch	Baldwin Park Branch/ Milliken / Airport Drive	15.2	\$545	Longest route, least attractive to airport users, environmental concerns on trail
3B	Blue	Baldwin Park Branch	Baldwin Park Branch/ Cucamonga Channel	8.3	\$340	Short travel time, design and environmental challenges at transition area on Foothill Blvd
3C	Blue	Baldwin Park Branch	Baldwin Park Branch/ Foothill / Milliken / Airport Drive	13.5	\$495	Long travel time to airport, traffic impacts on Foothill Blvd and Milliken Avenue

Refinement to 3 Final Alignments by Technical Advisory Committee

To ensure that fair and collaborative results could be reached by all participating stakeholders, evaluation criteria used to select the final three alignments were developed in collaboration with the Construction Authority and TAC members. A list of possible evaluation criteria was developed over the course of several meetings with stakeholder agencies that identified travel and mobility, financial considerations, environmental impacts, economic and land use considerations, and policy support as the main factors.

The criteria were refined from twenty-seven factors to twenty specific items related to alignment, circulation and mobility, environmental factors, land use issues, and policy issues. Alignment criteria evaluated right-of-way needs, travel time to the LA/Ontario International Airport, estimated costs, and future expansion opportunities. Circulation and mobility criteria addressed the projected impacts to local traffic, transit service connectivity, parking availability, and pedestrian and bicycle access. Environmental criteria evaluated flood plain issues, potential neighborhood impacts, noise, air quality, and the compatibility to the physical environment. Land use factors included potential displacement for residents and businesses, potential economic and transportation oriented development, and compatibility to land use plans. Policy issues addressed more global factors such as regional mobility goals, institutional objectives, public support, and interagency compatibility. These criteria were applied to the seven

proposed alignments to select the final three alignments that would have a detailed analysis. The ranking procedure can be described as follows:

1. Each one of the 20 factors under the 5 major categories were given the same weighting
2. Each factor carried a score from 1 to 5 with 1 being the “strongly negative” and 5 being the “strongly positive”
3. Each TAC member organization would score on all 20 factors by using their own technical knowledge, perception, and familiarity on the proposed alignment
4. Each TAC member organization would score on all 7 candidate alignments. The scores for each criterion were added together for a total alignment score. The total alignment score could be a maximum of 100 points if the alignment were to receive the highest score (“strongly positive”) for all twenty evaluation criteria. The resulting overall score reflected the rankings of each alignment by each agency.
5. The PST compiled and summed up all the scores from all TAC member organizations to determine the rankings and identify the top three alignments

The evaluation process for the seven alignments included representatives from the San Bernardino County Board of Supervisors, San Bernardino Associated Governments (SANBAG), Los Angeles World Airports, and the cities of Montclair, Ontario, Rancho Cucamonga, and Upland. LA Metro took part in the evaluation selection process but was a non-voting participant. Table 3-3 illustrates a typical scoring sheet used in the process.

Table 3-3 – Typical Alternative Scoring Sheet

GOLD LINE FOOTHILL EXTENSION ALTERNATIVE ALIGNMENT REFINEMENT EVALUATION CRITERIA			
Element	Evaluation Criteria	Notes/Considerations	Score
1. Alignment	Right of Way Needs		
	Travel Time to Ontario Airport		
	Costs		
	Future Expansion Opportunities		
2. Circulation and Mobility	Level of Local Traffic Impacts Generated		
	Transit Service Connectivity		
	Parking Availability		
	Ease of Pedestrian and Bicycle Access		
3. Environmental	Neighborhood Impacts		
	Sensitive Air Quality Receptors		
	Physical Impacts		
	Floodplain Issues		
4. Land Use	Potential Displacement of Residences		
	Potential Displacement of Businesses		
	TOD Development Opportunities		
	Smart Growth		
5. Policy Issues	Regional Mobility Goals		
	Compatibility with Land Use Plans		
	Community Support		
	Economic Viability		
		Total	0
Scoring Guidelines:	Scoring Criteria:	Points	
The highest possible score is 100 points. The top three alignment alternatives will be carried forward for more detailed study.	Strongly Negative	1	
	Somewhat Negative	2	
	Neutral	3	
	Somewhat Positive	4	
	Strongly Positive	5	

The alignments receiving the highest scores were the Metrolink/ Cucamonga Channel/ Rancho Cucamonga Civic Center/Victoria Gardens alignment (Alignment 2C), Metrolink/ Cucamonga Channel (Alignment 2A), and Metrolink/Vineyard/Holt alignment (Alignment 2B). Final scores and ranking from the TAC evaluation process is shown on Table 3-4, the scores and rankings for from individual TAC member organization is included in [Appendix A3-1](#).

Table 3-4 –Alternative Alignment Evaluation Summary

Alignment	Total	
	Score	Rank
Alignment 1: Interstate 10	328	7
Alignment 2A: Metrolink Cucamonga Channel	486	2
Alignment 2B: Metrolink/Vineyard/Holt	466	3
Alignment 2C: Metrolink/Cucamonga Channel/ Rancho Cucamonga Civic Center/ Victoria Gardens	494	1
Alignment 3A: PE Trail/Milliken/Airport Drive	361	5
Alignment 3B: PE Trail/Cucamonga Channel	444	4
Alignment 3C: PE Trail/Foothill/Milliken/ Airport Drive	361	5

Final Review of Alternative Alignments by the Advisory Committee

The PST presented the process and findings of the evaluation process to the Advisory Committee (AC), comprised of elected officials and leaders from the stakeholder agencies for final review and recommendation. The AC generally concurred with the findings. However, the AC was concerned over the viability and feasibility of including Alignment 2C in the final analysis. While they concurred that Alignment 2C provided needed service to the two largest activity centers in the area which could generate more ridership to the overall system, they also understood that it contradicted with the primary objective of this project, which was to terminate the system at the LA/Ontario International Airport. Furthermore, if this alignment alternative was selected to be one or the only locally preferred alternative, competition for Federal funding could be challenging due to its cost and other restrictive considerations. Because of that concern, the AC decided to remove Alignment 2C from further consideration and replace it with Alignment 3C, the fourth ranked alternative. Therefore, the final three alignments to be carried on to the detailed technical study were determined to be:

- **Alignment 2A- Metrolink/Cucamonga Channel**
- **Alignment 2B- Metrolink/Vineyard/Holt**
- **Alignment 3B- Baldwin Park Branch/Cucamonga Channel**

Figure 3-11 graphically illustrates the three (3) finalists of the Metro Gold Line Foothill Extension to LA/Ontario International Airport selected for more detailed technical analysis in this Strategic Study.



Chapter 4. Refined Evaluation of the Three Alternative Finalists

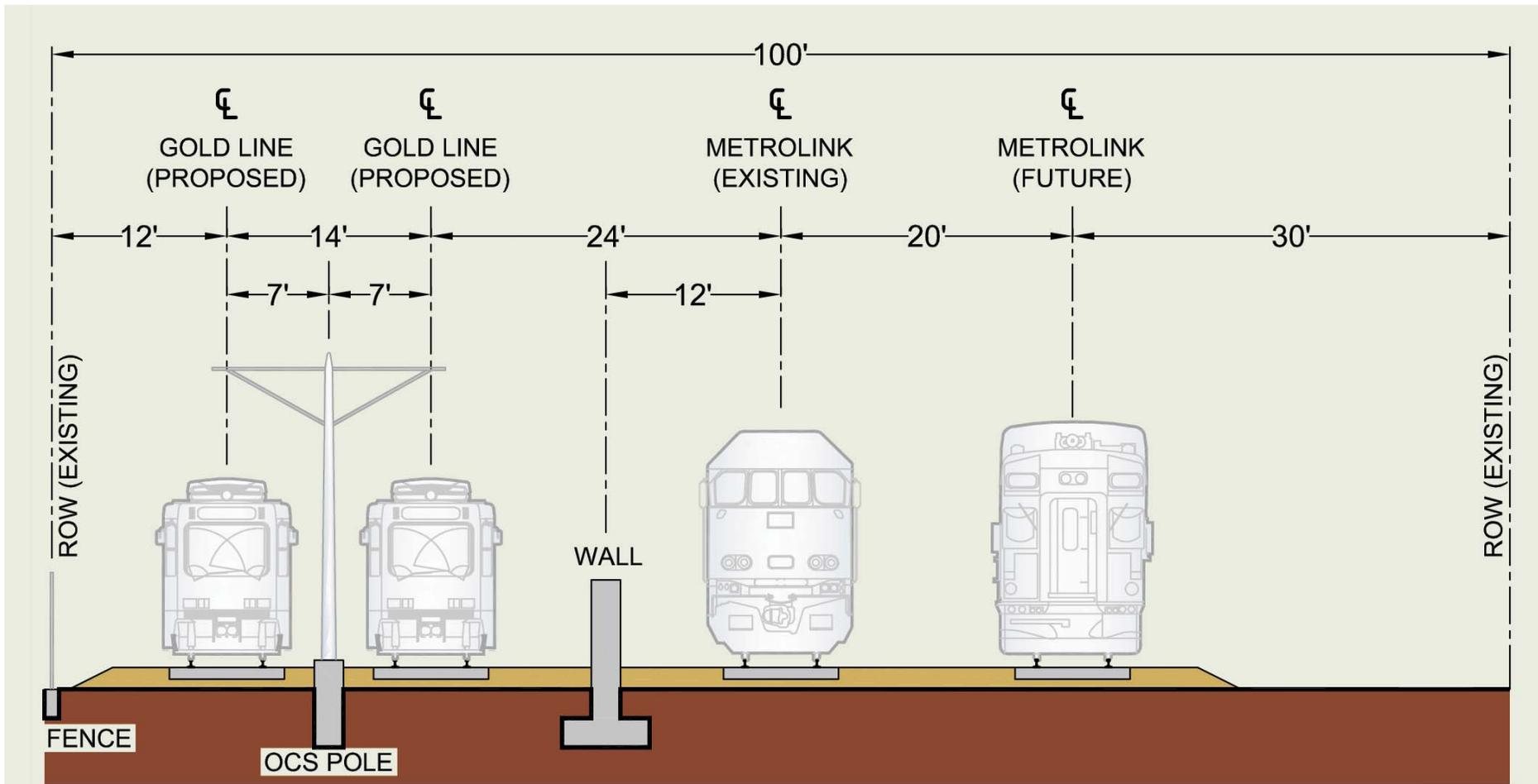
The goal of the technical evaluation was to conduct a more detailed assessment of the screened candidate alignments so that a more intelligent strategic decision can be made on the direction of the follow-up federally mandated study procedure. The final three candidate alignments included Alignment 2A (Metrolink/Cucamonga Channel), Alignment 2B (Metrolink/Vineyard), and Alignment 3B (Baldwin Park Branch/Cucamonga Channel). The final assessment delved into the engineering feasibility of the alignments, station locations, specific right-of-way issues, refined cost estimates, and potential traffic impacts in greater detail than the previous planning level process. The final evaluation process also identified potential station locations for each alignment, estimated the location and size of future park & ride facilities at each station, created conceptual prototypes for stations, and assessed ridership demand forecasts by using the LA Metro's Corridors Base model, coupling that with light rail ridership information from other light rail systems currently in operation and serving airports.

The design for each alignment had to incorporate numerous constraints associated with existing and future development, limited right-of-way, geophysical environment, and demographics. Field visits were made to visually assess existing conditions along each finalist alignment. The three final alignments shared many physical similarities. Both Alignments 2A and 2B would travel in an east-west direction within the Metrolink San Bernardino Line's (SANBAG) right-of-way for a large portion of the total routes. The alignments are similar in length; Alignments 2A and 2B would be approximately 7.31 miles and 7.39 miles in length, respectively, and Alignment 3B would be approximately 8.56 miles in length.

The proposed light rail tracks from La Verne will be located on the north side of Metrolink tracks at the Montclair station. For Alignments 2A and 2B using the Metrolink right-of-way, the light rail system will need to be shifted to the south side of the Metrolink tracks at some point so that the alignment can continue on southward. Consequently, a flyover to realign the tracks east of the Montclair TransCenter to the south side of the Metrolink tracks will be required. Physically, it would be ideal to construct the flyover between Central Avenue and Benson Avenue where it abuts a less dense industrial area.

Alignment 2A Challenges and Opportunities

The detailed assessment of the final alignments revealed challenges and opportunities unique to each alignment. Alignment 2A (Metrolink/Cucamonga Channel) would operate within the Metrolink San Bernardino Line's (SANBAG) right-of-way until the junction of Vineyard Avenue and Cucamonga Channel. Cross sections of Alignment 2A show the proposed light rail system along the shared Metrolink right-of-way and along the Cucamonga Channel. The cross section of Alignment 2A indicates the 100' right-of-way would be shared by the Metrolink and Gold Line tracks separated by a concrete barrier. The Metrolink system would continue to provide two travel lanes within a 62' span and the Gold Line light rail system would operate two travel lanes adjacent to the Metrolink system within a 38' span (see Figure 4-1 for details).

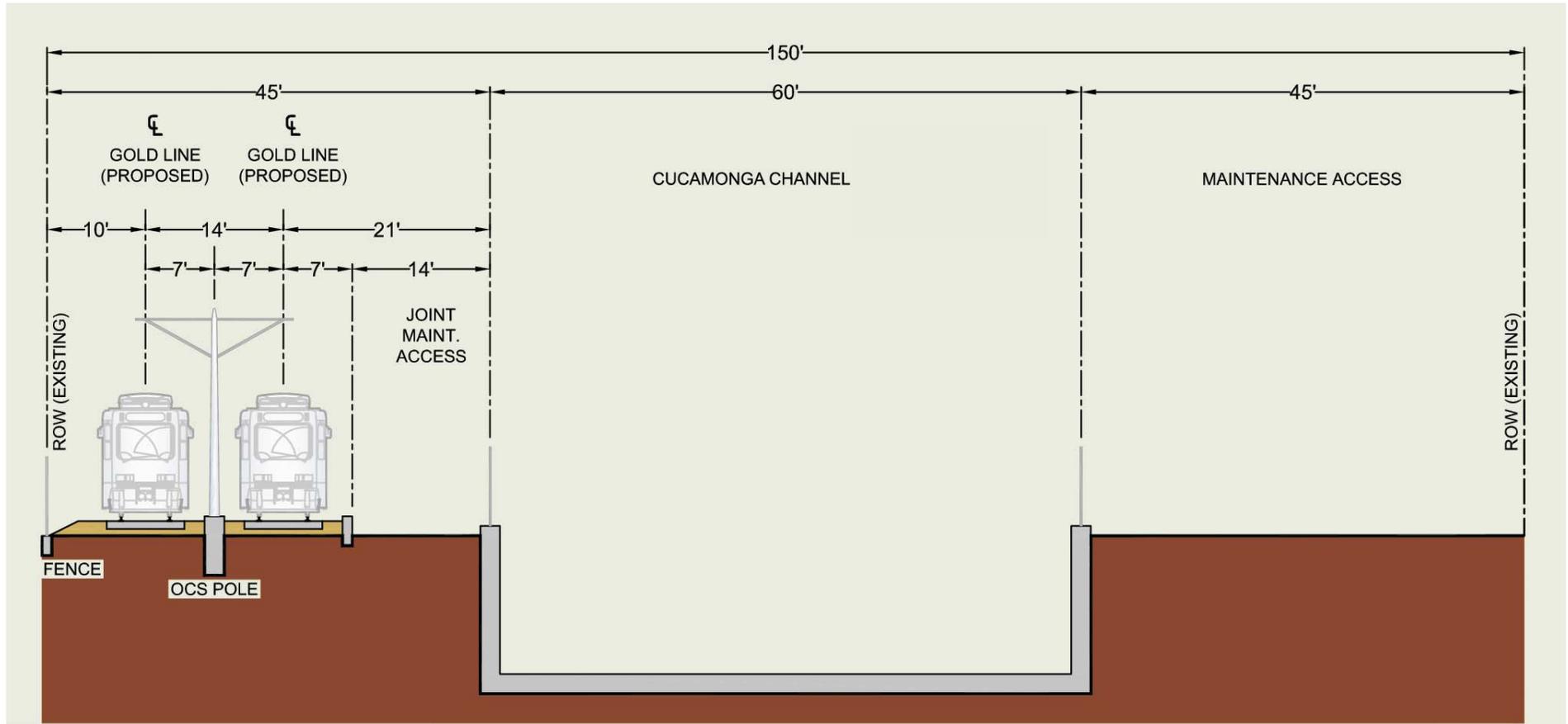


PRELIMINARY CONCEPT - NOT FOR CONSTRUCTION

Additional right-of-way would be needed at the station locations. The cross section of Alignment 2A along the Cucamonga Channel would be located on the east side of the Cucamonga Channel for the most part north of 4th Street and would shift to the west side at or around 4th Street to accommodate the large tract of potential developable land. The light rail tracks would be contained within a 45' right-of-way including two light rail tracks and a 20' maintenance access road. The fixed right-of-way for the Cucamonga Channel throughout the route would facilitate the alignment's design (see Figure 4-2 for details).

The portion of the alignment along the Cucamonga Channel would present unique challenges and opportunities. Initial research and interactions with engineering managers from the San Bernardino County Department of Public Works revealed that:

- The initial right-of-way for the Cucamonga Channel was acquired solely with County funds. The fact that no Federal funds were utilized for its development meant the process could bypass the substantial Federal requirements for granting the permit for light rail construction
- The 100-year storm can be completely contained within the channel itself and the flood plain does not extend beyond the Cucamonga Channel
- Cucamonga Channel width is fixed all the way through
- Typically, a 14 ft wide access road is adequate on both sides of the channel for ordinary maintenance vehicles, but a boom truck will require a 20 ft wide roadway. An access road for channel maintenance is required on both sides of the channel
- Prior to laying the tracks, side drains from existing and future developments should be installed perpendicular to the tracks to avoid future construction problems
- To provide adequate vehicular access to the maintenance road, turnarounds and crossings from east to west will be required as part of the overall design consideration. Access to the channel maintenance road will be provided at all accessible points
- There are no major and visible environmental issues along the channel aside from the potential noise that would be generated by the light rail operation
- Because the Flood Control Division is an independent fiscal agency, the Flood Control Division will be compensated with the fair market value of any right-of-way to be acquired along the channel for light rail construction



PRELIMINARY CONCEPT - NOT FOR CONSTRUCTION

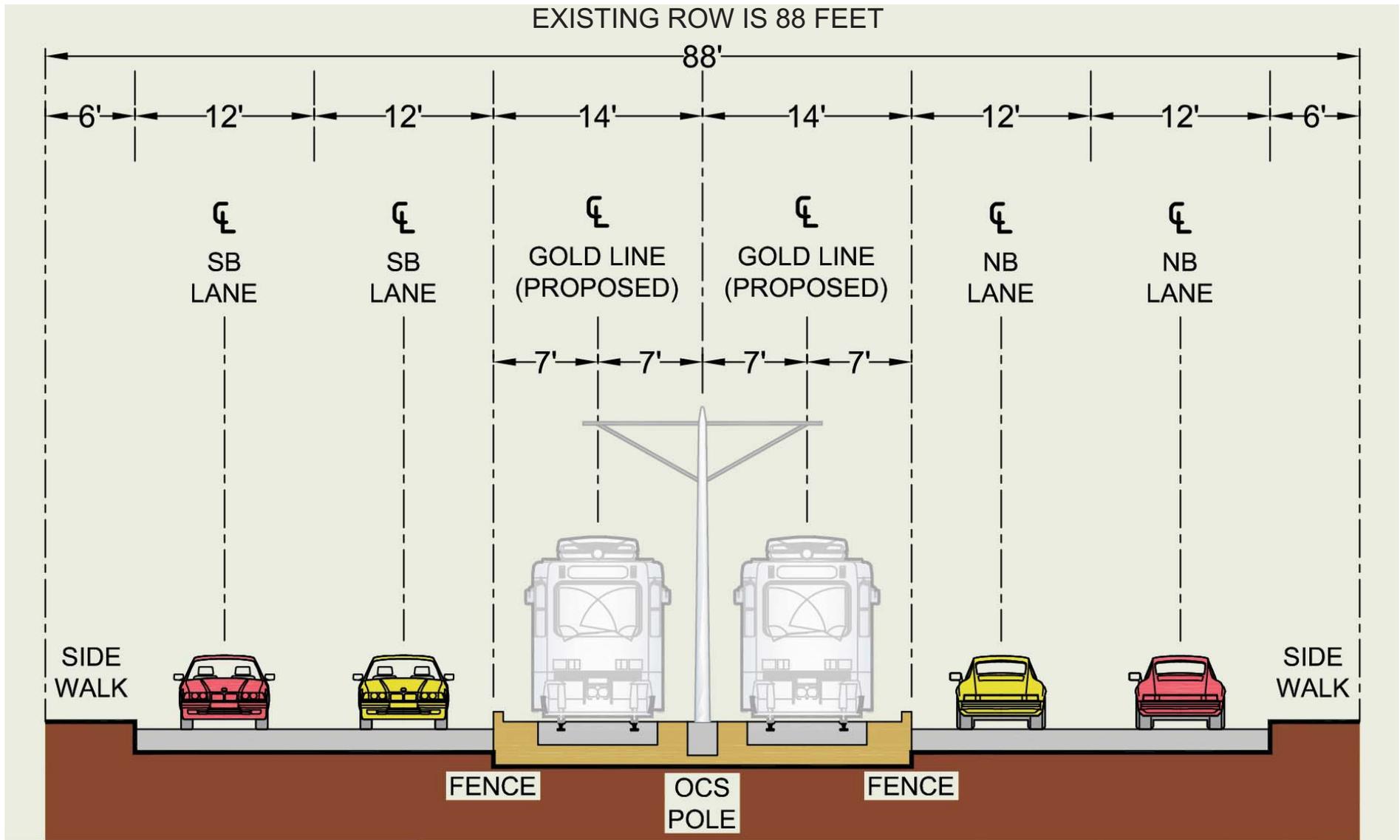
- Protocol between the Flood Control Division and the future light rail operator on maintenance procedure for both entities will have to be considered during the design and construction phase of the project
- At this point, in principal, the County Flood Control would not object to the proposal of constructing a light rail system on the bank of Cucamonga Channel provided that all requirements, technical and administrative concerns are satisfied

One of the more costly construction items for Alignment 2A would be the overpass over I-10. Underpass construction would not be feasible due to the flood plain boundary unless tunneling is considered. Therefore, only an overpass structure was considered for this Study.

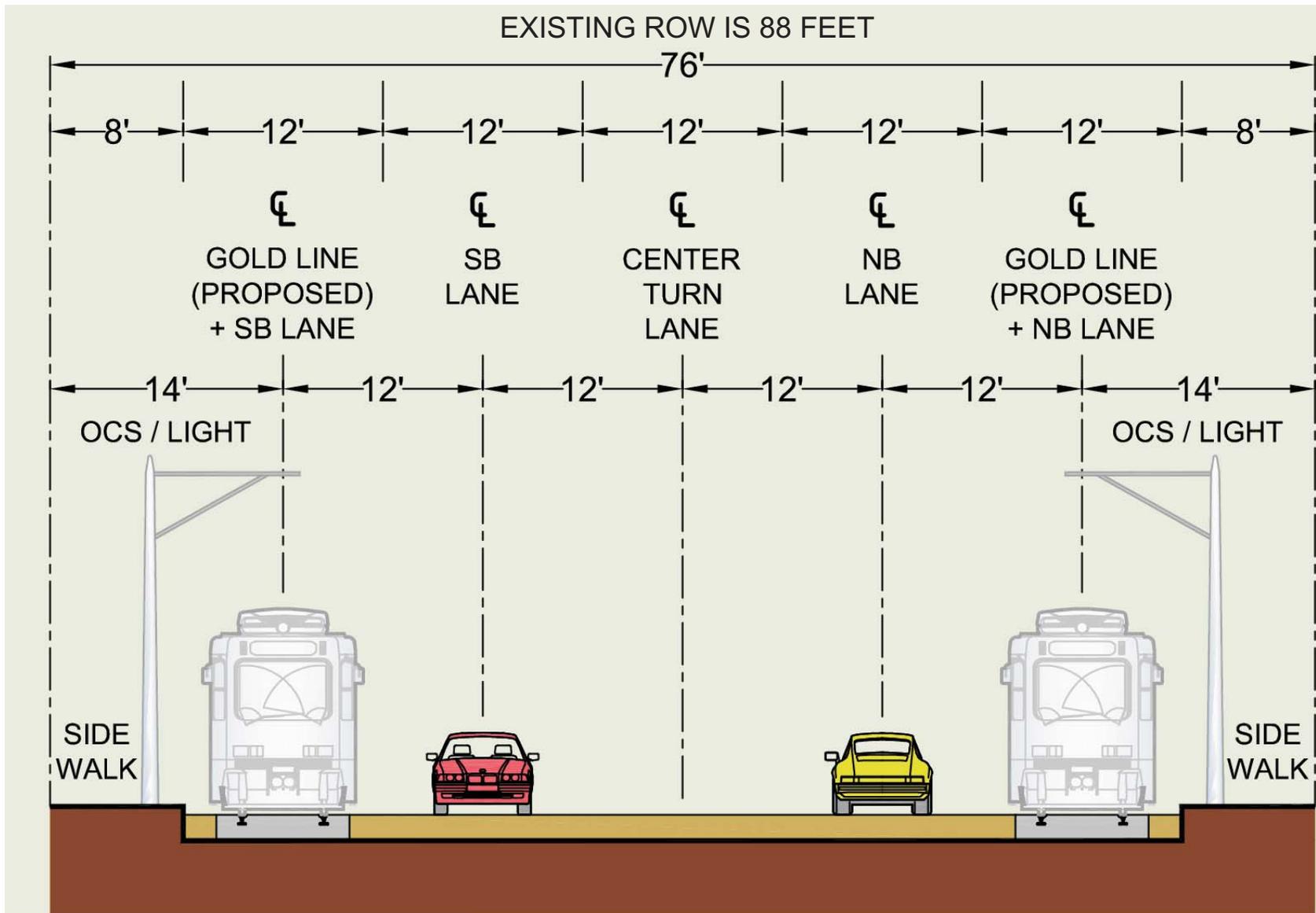
Alignment 2B Challenges and Opportunities

Alignment 2B (Metrolink/Vineyard) would provide light rail service to Montclair, Ontario Convention Center, and the LA/Ontario International Airport activity centers. Alignment 2B would have the same challenges and opportunities as Alignment 2A for the shared Metrolink right-of-way. However, the portion of the alignment along Vineyard Avenue would pose different challenges. There is limited right-of-way on Vineyard Avenue between 4th and 8th Streets that would constrain the light rail system's design. The light rail system would traverse along Vineyard Avenue which would impact traffic operations.

The cross section for the Metrolink leg of the alignment, shown previously in Figure 4-1 for Alignment 2A, would be identical for Alignment 2B. The cross section shows the 100' right-of-way that would be shared by the Metrolink and Gold Line tracks separated by a concrete barrier. Figures 4-3 (centered alignment) and 4-4 (curbside alignment) show cross sections along Vineyard Avenue that reflect the options for a shared right-of-way at-grade track design on Vineyard Avenue. The center line light rail design would provide four 12-foot travel lanes for vehicles with two travel lanes each for northbound and southbound traffic, two 6-foot sidewalks, and two 14-foot light rail tracks operating where the street median exists. The roadway and light rail system would require a minimum width of 88' which would barely be contained within the existing 88' right-of-way. The curb side light rail design would provide four 12-foot travel lanes for vehicles with two travel lanes each for northbound and southbound traffic, two 8-foot sidewalks, and two 12-foot light rail tracks operating on the perimeter of a minimum 76' which could be contained within the existing right-of-way on Vineyard Avenue. However, two separate curbside tracks would create severe traffic operational problems. Realistically, the Vineyard Avenue alignment could create several severe challenges:



PRELIMINARY CONCEPT - NOT FOR CONSTRUCTION



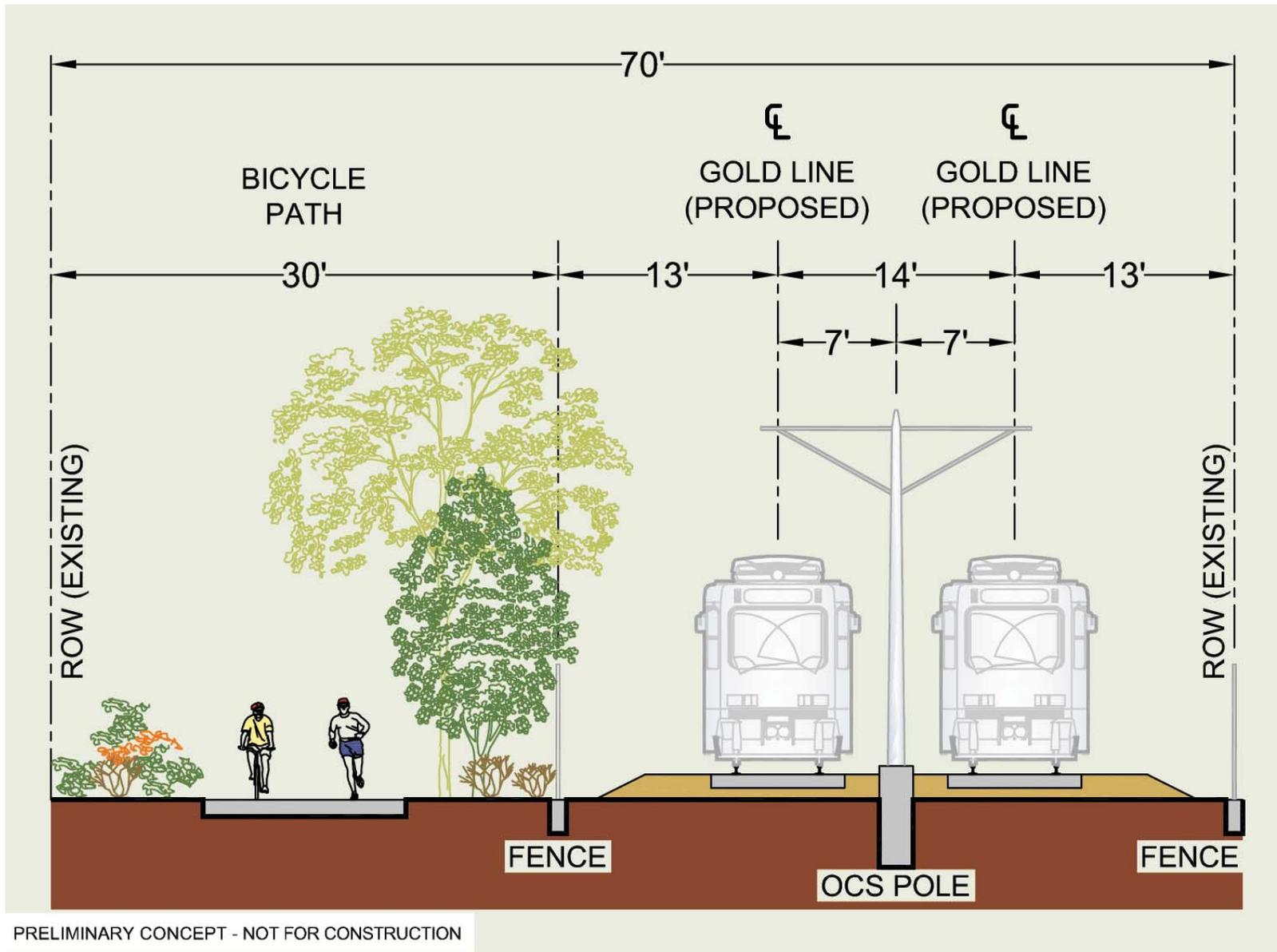
PRELIMINARY CONCEPT - NOT FOR CONSTRUCTION

- Traffic turning lanes at the intersections would have to be eliminated due to right-of-way constraints which could cause major traffic operational problems along Vineyard Avenue. Preliminary analysis indicated that based on the current peak hour traffic volume, traffic operations would be below level of service D and F at major intersections, such as 8th Street, 6th Street, 4th Street, I-10, and East Convention Center Way. An additional 14 ft right-of-way would be required if a single left-turn lane were to be provided at the major intersections, in addition to light rail construction.
- That section of Vineyard Avenue between 4th Street and 8th Street is primarily located in a tranquil residential area. A curbside alignment would place the light rail line too close to the houses, while the center line alignment would require an additional 8' to 10' right-of-way width which is virtually impossible throughout. From an environmental perspective, this alignment could face severe challenges.
- The existing Vineyard Avenue Bridge over I-10 would be widened to accommodate the light rail line's construction to provide for sufficient levels of service for vehicular traffic in the interchange area, provided the light rail line would be constructed at-grade with the bridge. It would be costly if a separate structure is considered to operate the light rail line independently.

Alignment 3B Challenges and Opportunities

Alignment 3B would be the longest alignment of the final three candidate alignments at 8.5 miles. This alignment would have the longest travel time of the final three candidate alignments. Alignment 3B would serve the Montclair, Downtown Upland, and the LA/Ontario International Airport activity centers.

A typical cross section of Alignment 3B where it shares the right-of-way with the bike path is illustrated in Figure 4-5. The portion of Alignment 3B that would operate within the existing 70' Baldwin Park Branch right-of-way would be separated by a bike path with two lanes and a fence. The light rail line would have two tracks separated by an overhead catenary system (OCS) pole and would be enclosed with fences on both sides to ensure vehicular and pedestrian safety. The two light rail tracks of the light rail system would operate within a 40' span. The existing bike trail would remain within the remaining 30' width. The OCS pole system would separate the bi-directional travel lanes of the light rail tracks. Typically, there would be minimal construction issues related to the alignment following the Baldwin Park Branch right-of-way. Environmental concerns would primarily consist of noise and vibration and would be among the major issues to address.



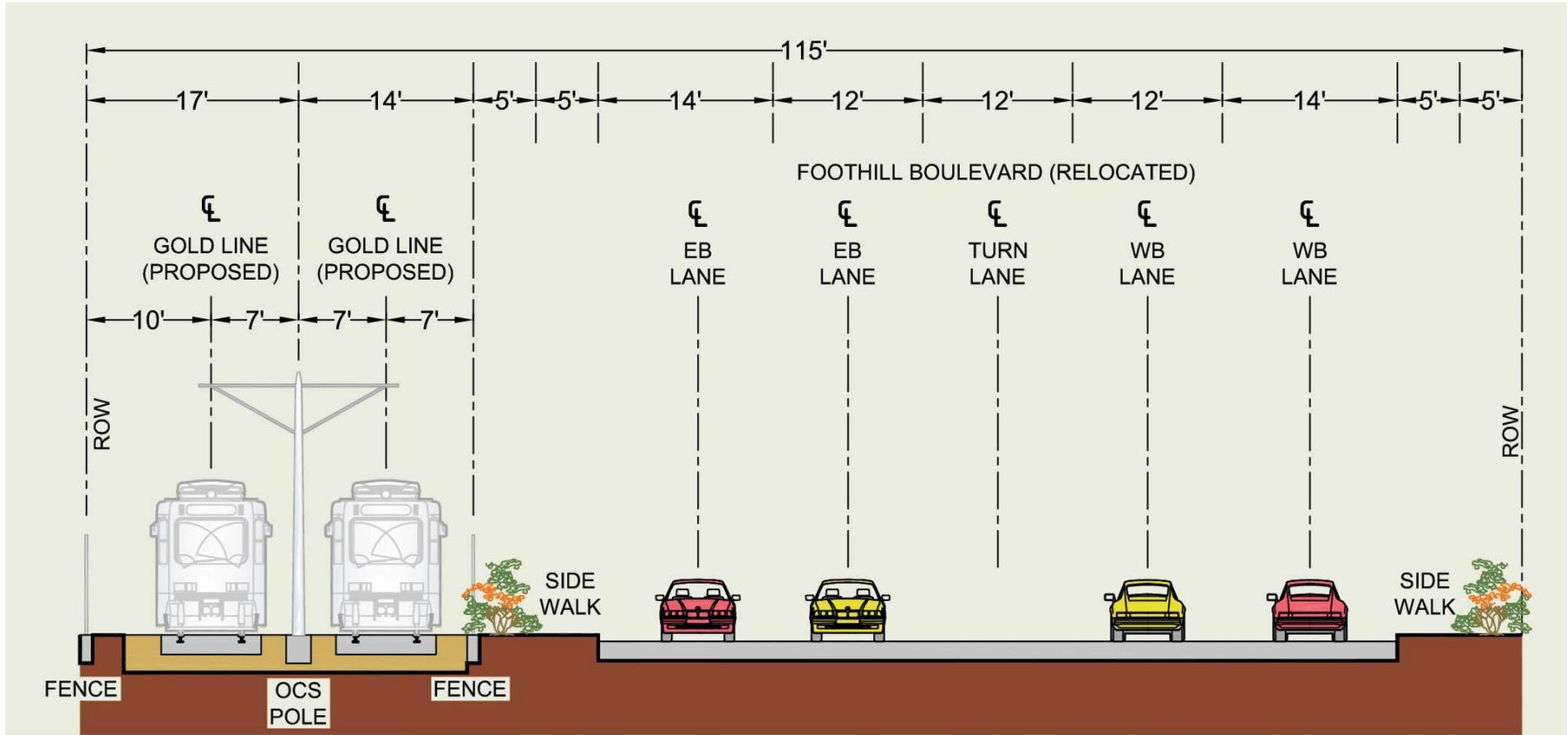
A major project challenge on Alignment 3B would be on the 2,200' section of Foothill Blvd. between Baker Avenue and the Cucamonga Channel. The proposed alignment of 3B would be to shift the alignment off the Baldwin Park Branch right-of-way at Foothill Blvd and extend it at-grade with Foothill Blvd in the vicinity of Baker Avenue on the south and continue on to the Cucamonga Channel before turning south on the east side of the channel bank. Foothill Blvd. is a major regional arterial street and its traffic serving capacity cannot be compromised. One viable solution to accommodate both facilities would be to shift Foothill Boulevard approximately 30' to the north towards the vacant land area and vacate the southern 30' for light rail construction. This would be the least costly alternative to construct this segment of Alignment 3B.

Towards the conclusion of this Study, the City of Rancho Cucamonga requested a coordination meeting with the PST to review the segment of Alignment 3B along Foothill Boulevard. The City had just begun preparing a new Baldwin Park Branch bike trail design and construction plans within the proposed Gold Line Alignment 3B right-of-way. In reevaluating the alignment as well as potential community, environmental and construction related issues, the City believes it would be more advantageous to continue Alignment 3A northward over Foothill Boulevard. This would result in the alignment extending northward and parallel to the south edge of the bike trail for a longer distance than the current concept before crossing Foothill Boulevard again in a southerly direction to touch down at grade within the Cucamonga Channel right-of-way. Although this alternative will likely increase construction costs substantially due to the need to construct additional overpass structures, the PST has acknowledged that this alignment alternative should be examined in more detail during the design evaluation of subsequent phases of the Study.

Figure 4-6 graphically illustrates the cross section of 3B through the Foothill Blvd. area.

Station Considerations

Several locations along each alignment were initially identified as potential stations. Factors that were considered for determining station locations included existing and future development, right-of-way needs, potential traffic impacts (particularly for at-grade crossings with major arterials), safety, parking potential, opportunities for transit-oriented development, transit attractors, and spacing between stations. In addition, the station locations would also have to be located in areas with easy local access by foot or bus. The proposed locations were intended to be spaced approximately one mile or more apart, reflecting ideal operating standards in a suburban area. Other specific limitations were factored in as well. Specifically, the terminus of the planned Montclair station would require the light rail tracks to be realigned from the north side of the Metrolink tracks to the south side for Alignments 2A and 2B. Ideally, the required flyover should occur with sufficient spacing prior to the first station.



PRELIMINARY CONCEPT - NOT FOR CONSTRUCTION

There were physical design requirements for each station as well. Each station would require at least 300' in length on tangent track to provide adequate stopping distance for the light rail vehicle and sufficient passenger space for safe platform queuing, ramps for disabled access to the platform, parking, and loading zones for passengers using automobiles, buses, and bikes. Interaction between light rail operations and other modes of transportation, including Metrolink, buses, vehicular traffic, bicycles and pedestrians, should be integrated in the initial planning and ultimate design considerations. In all, thirteen locations on the three alignments were identified and subsequently evaluated as desirable stations. Each potential station along the three candidate alignments is discussed below.

Alignment 2A (Metrolink/Cucamonga Channel)

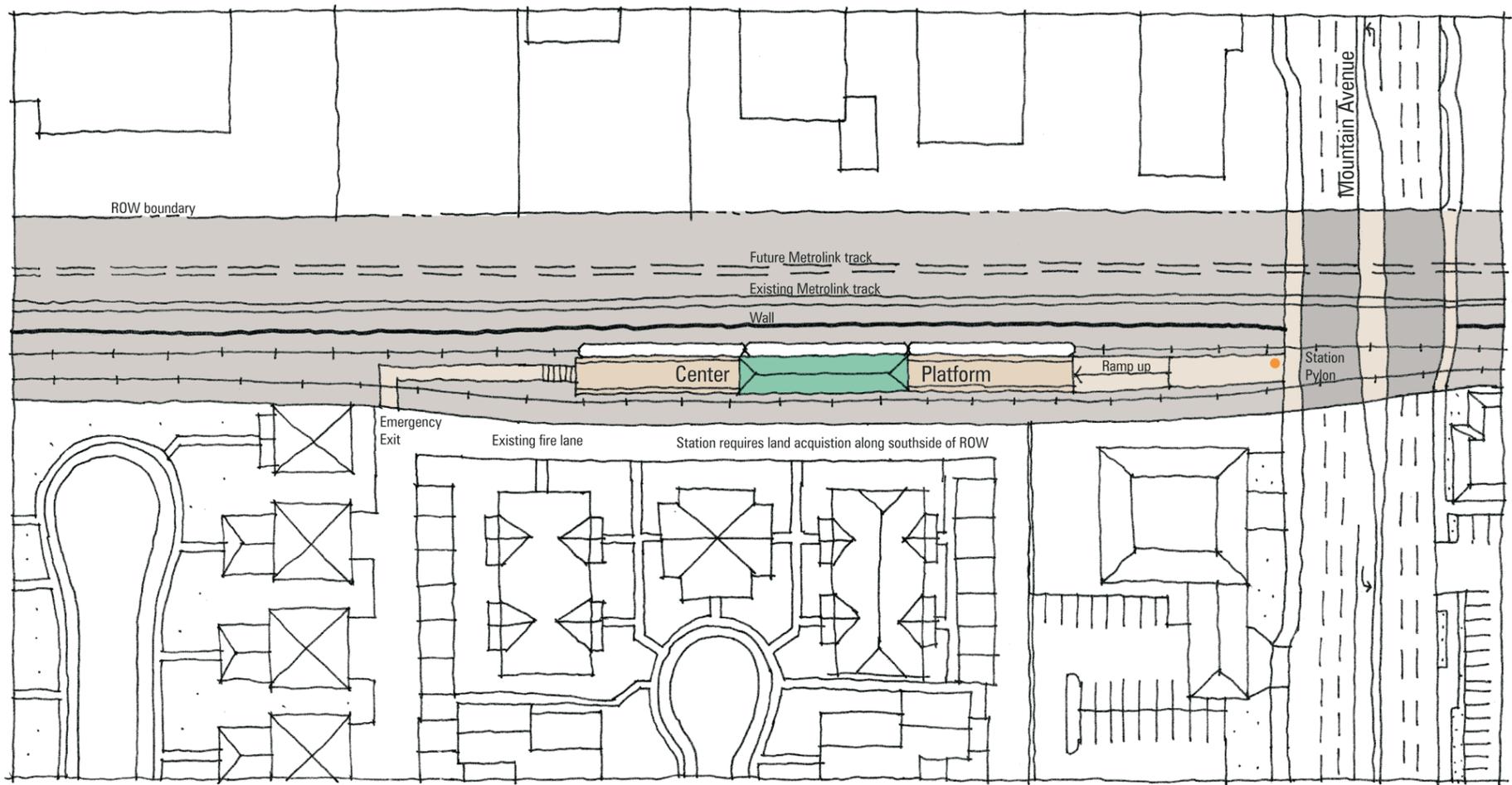
Six station locations were identified and evaluated for Alignment 2A as follows:

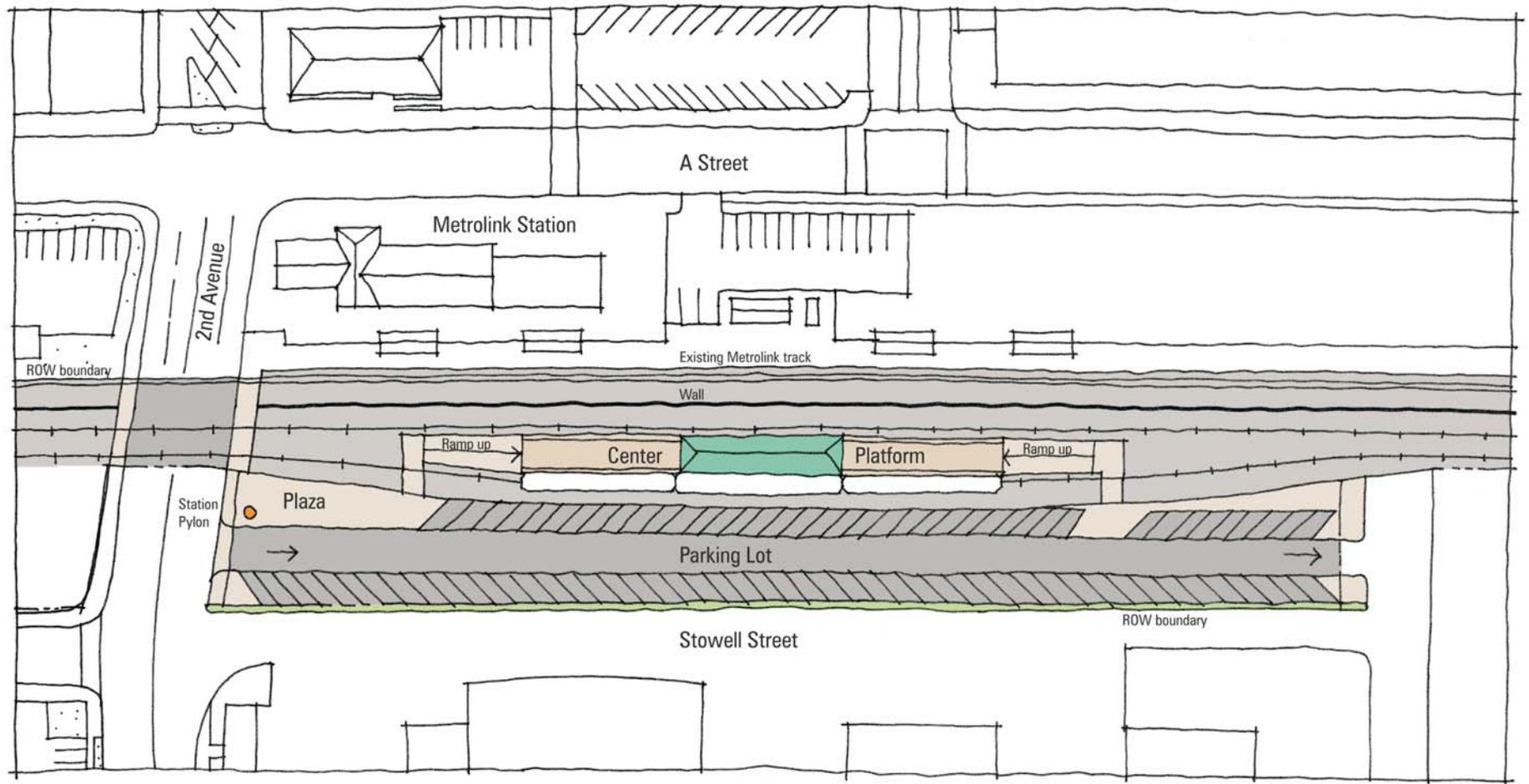
- **Mountain Avenue Station**

The Mountain Avenue Station would be located approximately 1.4 miles east of the Montclair TransCenter. The preferable station location is on the southwest quadrant of Mountain Avenue and the future Metro Gold Line Foothill Extension to LA/Ontario International Airport grade crossing location. There would be significant limitations at this location due to existing development and limited parking availability. The parking lot of a commercial building and the driveway to the carport of an apartment complex may have to be redesigned or relocated to accommodate the station configuration. Existing development would preclude or severely restrict any park & ride facilities in this station area. Figure 4-7 illustrates the conceptual station layout at this location.

- **Upland Station**

The Upland Station would be located approximately 1.4 miles east of the Mountain Avenue Station and approximately 2.8 miles from the Montclair TransCenter. The preferable station location is on the south side of the Metrolink tracks between the existing Metrolink Station and Stowell Street east of 2nd Avenue. Existing development includes an old warehouse that could be used to accommodate the station. Additional park & ride facilities could be made available with the removal of the surrounding environs. SANBAG owns the warehouse and its surrounding areas, therefore, land acquisition should not be an issue. The potential does exist for mixed-use joint development surrounding this station location. Figure 4-8 illustrates the conceptual station layout at this location.





- **Grove Avenue Station**

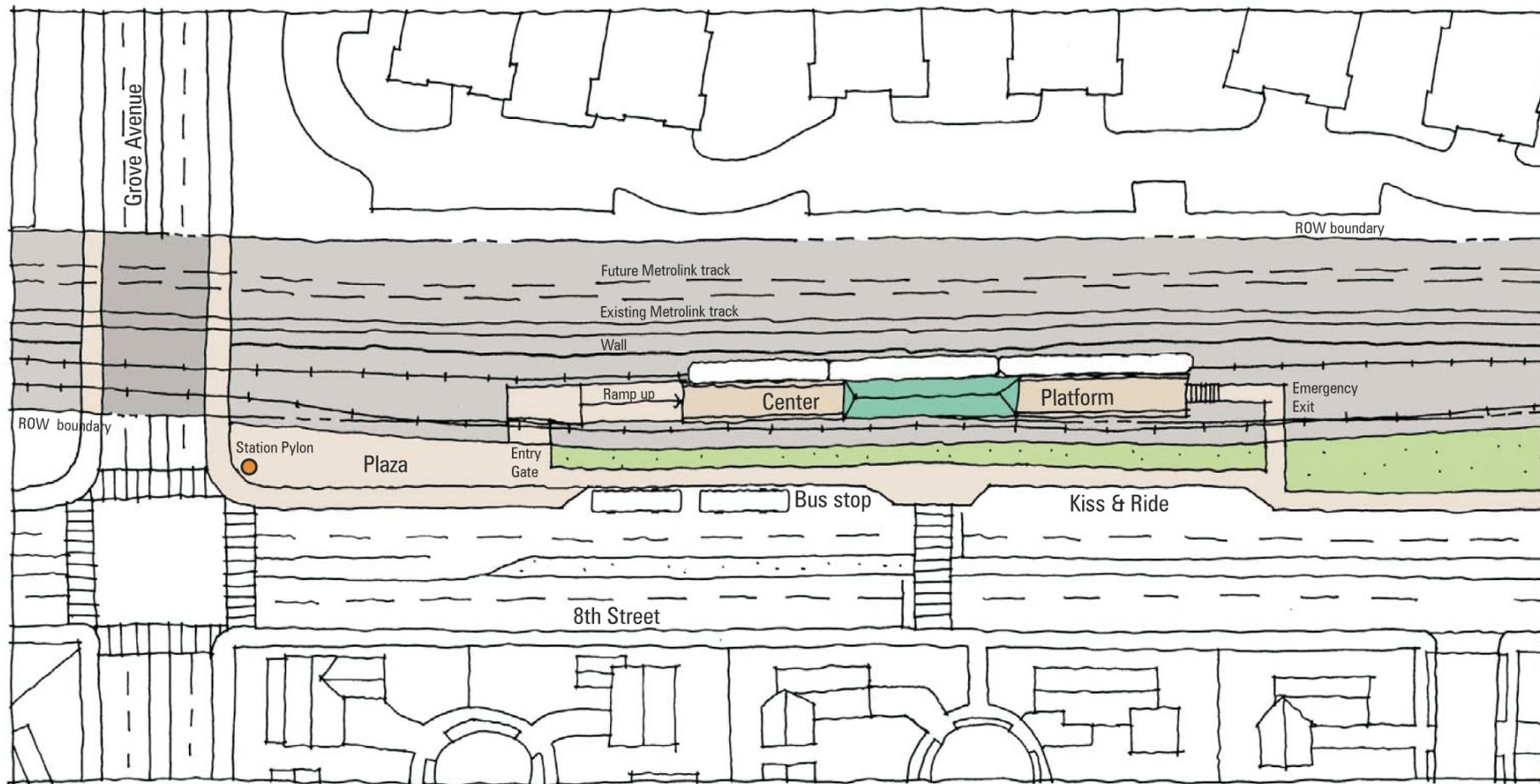
The Grove Avenue Station would be located approximately 1.3 miles from the proposed Upland Station. There are several opportunities on both sides of Grove Avenue south of the Metrolink right-of-way for station construction, park & ride facility, and joint development considerations. A vacant tract of privately owned land with a minimum lot depth of 80' bounded between the Metrolink right-of-way and 8th Street on both sides of Grove Avenue could be used for a potential station and park & ride facilities. Kiss & ride loading bays and feeder bus transfer facilities can be constructed along and on the north side of 8th Street. High density residential developments are situated on both sides of Grove Avenue north of the tracks and are within walking distance of the future station. The proposed Grove Avenue Station could be constructed on either side of Grove Avenue, and Figure 4-9 graphically depicts the conceptual station layout located on the east side of Grove Avenue.

- **8th Street Station**

The 8th Street Station would be located approximately 1.2 miles from the Grove Avenue Station. The ideal station location would be on the northwest corner of a 23-acre triangular shape of vacant land bounded by 8th Street to north and Cucamonga Channel to the west. This location would provide ample opportunity for park & ride facility, feeder bus transfer station, and high density joint development opportunities to accompany the new light rail station. At this location, the alignment will shift southward along Cucamonga Channel.

- **4th Street Station**

The 4th Street Station would be located along Cucamonga Channel approximately 1.1 miles south of the 8th Street Station. This station has many opportunities for transit-oriented development as this station location abuts the 210-acre undeveloped area to the south of 4th Street and west of the Cucamonga Channel. The light rail alignment should be shifted to the west side of Cucamonga Channel prior to 4th Street with the station constructed somewhere along the vacant property on the west side of the channel bank to accommodate future development opportunities. Ideally, the station and its related facilities would be designed and integrated along with the development of this project site when it is finalized.



- **LA/Ontario International Airport Multi-Modal Terminus Station**

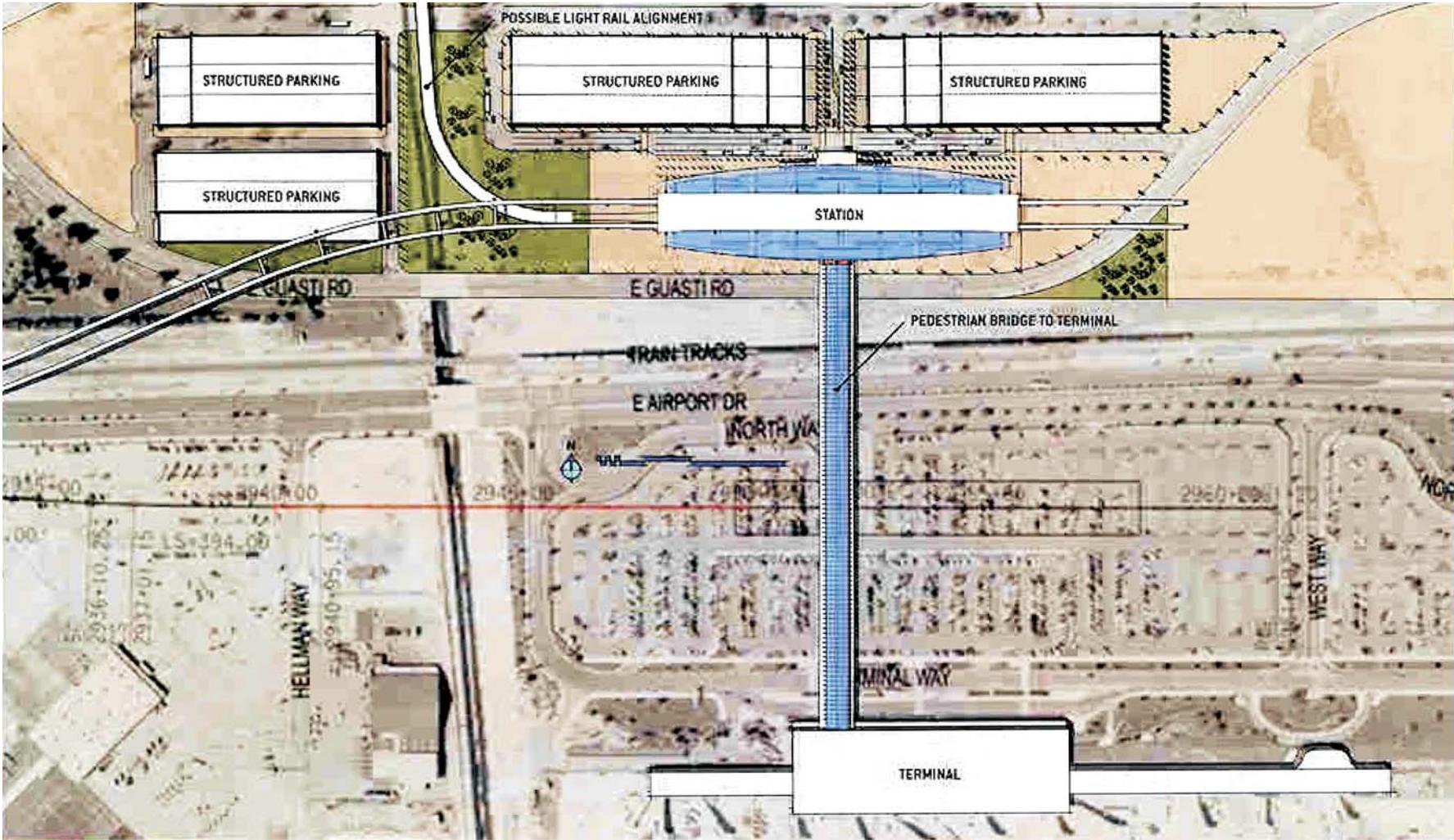
The alignment eventually will shift back to the east of Cucamonga Channel south of Holt Blvd. before heading towards the future LA/Ontario International Airport multi-modal terminal station. This would be the terminal station of the future Gold Line. The terminus of the Gold Line light rail at LA/Ontario International Airport would be at the multi-modal station that has been proposed by LAWA on the north side of Guasti Road between the Cucamonga Channel and Archibald Avenue. The station is proposed to be connected to the existing LA/Ontario International Airport terminal with a pedestrian bridge structure over the existing parking lot. The LA/Ontario International Airport Station would be a multi-modal station providing access to the proposed California High Speed Rail Project and Metro Gold Line. The latest concept for the multi-modal station includes a light rail station at-grade, and a High Speed rail station above the light rail station. A conceptual station layout plan, prepared by others, is included in Figure 4-10 for reference.

Alignment 2B (Metrolink/Vineyard)

Station locations along the Metrolink right-of-way would be identical for Alignments 2A and 2B alike. These stations included Mountain Avenue Station, Upland Station, and the Grove Avenue Station. Major reconstruction and/or right-of-way acquisition may be required to accommodate the light rail operations in the middle of Vineyard Avenue. When considering this alignment, the PST was very mindful of the potential impacts that would be caused by existing and planned development and by station related traffic operations, station size, ingress and egress, and parking when considering potential station locations.

- **8th Street Station**

The 8th Street Station would be located approximately 1.0 mile from the Grove Avenue Station. The alignment would make a 90-degree turn from the Metrolink right-of-way southward towards the center of Vineyard Avenue. An ideal station location would be to the south of 8th Street where a commercial center's existing parking lot fronts Vineyard Avenue. The lot could be reconfigured to provide a raised station platform in the center of the street. The opportunity for any type of park & ride facilities at this site is very limited and pedestrian safety would need to be examined to minimize potential pedestrian-vehicular conflicts. An additional 20' wide by 500' long of right-of-way would be required for the construction of station platform, transition area, and other facilities. A curbside alignment would require a separate station platform for both northbound and southbound trains and this would require more right-of-way, higher construction cost, and substantially worse traffic operational impact.



- **4th Street Station**

The 4th Street Station would be located along Vineyard Avenue approximately 1.0 mile from the 8th Street Station. This location would be on the northwest corner of approximately 210 acres of vacant land waiting to be developed which affords ample opportunities for joint development. This location provides flexibility for the station and the alignment to be placed in the center of Vineyard Avenue or shifted onto the vacant land east of Vineyard to provide more joint development opportunities.

- **Ontario Convention Center Station**

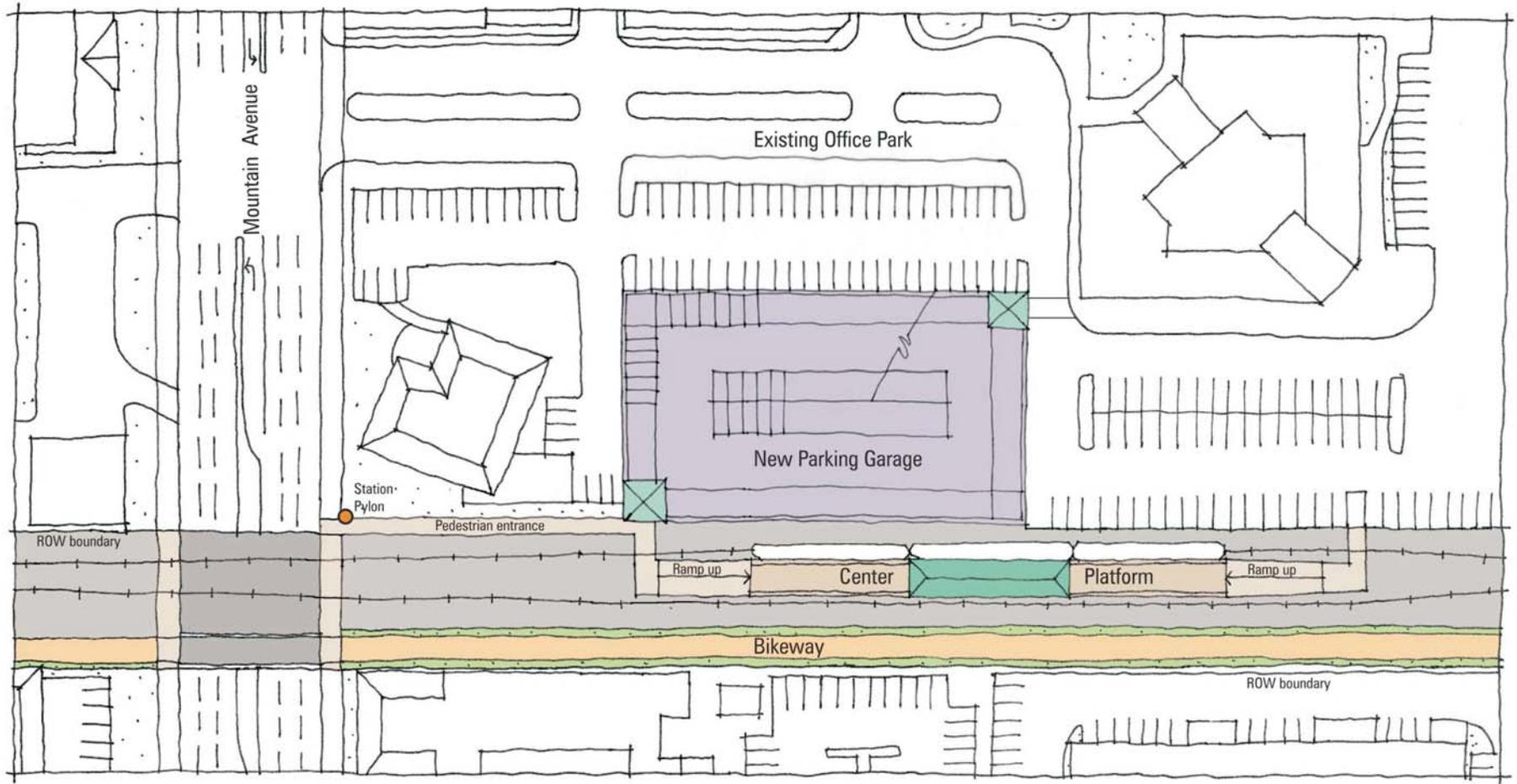
The Ontario Convention Center Station would be located in the vicinity of Convention Center Way and Dearborn Court at approximately 1.0 mile from the 4th Street Station. Although the station would be a short distance from the LA/Ontario International Airport terminal (1/2 mile), it would provide convenient access to the Convention Center and hotel ridership markets. Both the alignment and the station would be located in the center of Convention Center Way.

Alignment 3B (Baldwin Park Branch/Cucamonga Channel)

Alignment 3B would exit the planned terminus at Montclair Station turning north and through the east end of the Metrolink park & ride lot, continuing at-grade until it turns east to join the Baldwin Park Branch right-of-way. The alignment would continue to follow the Baldwin Park Branch to the juncture where Foothill Blvd. intersects the Cucamonga Channel. From Foothill Blvd. on south along the Cucamonga Channel, Alignment 3B would follow the identical station locations with Alignment 2A at 8th Street, 4th Street. Four other stations on Alignment 3A would include:

- **Mountain Avenue Station**

The Mountain Avenue Station would be located approximately 1.4 miles east of the Montclair TransCenter along the Baldwin Park Branch. The preferred location for this station would be at the northeast quadrant of the intersection. The existing Stewart Plaza Office Center could be considered as the anchor for the station. However, modifications to the existing office center parking lot to a larger parking structure would be necessary to accommodate the station facility and additional need for transit patrons' parking, and potentially the replacement of lost parking for the office center. A parking structure situated on the existing parking lot would provide opportunity for park & ride operations at this station location. Unlike the Mountain Avenue Station on alignment 2A & 2B, this station provides more opportunities for ridership growth due to the availability of parking. Figure 4-11 graphically depicts the conceptual layout of this station.



- **Downtown Upland Station**

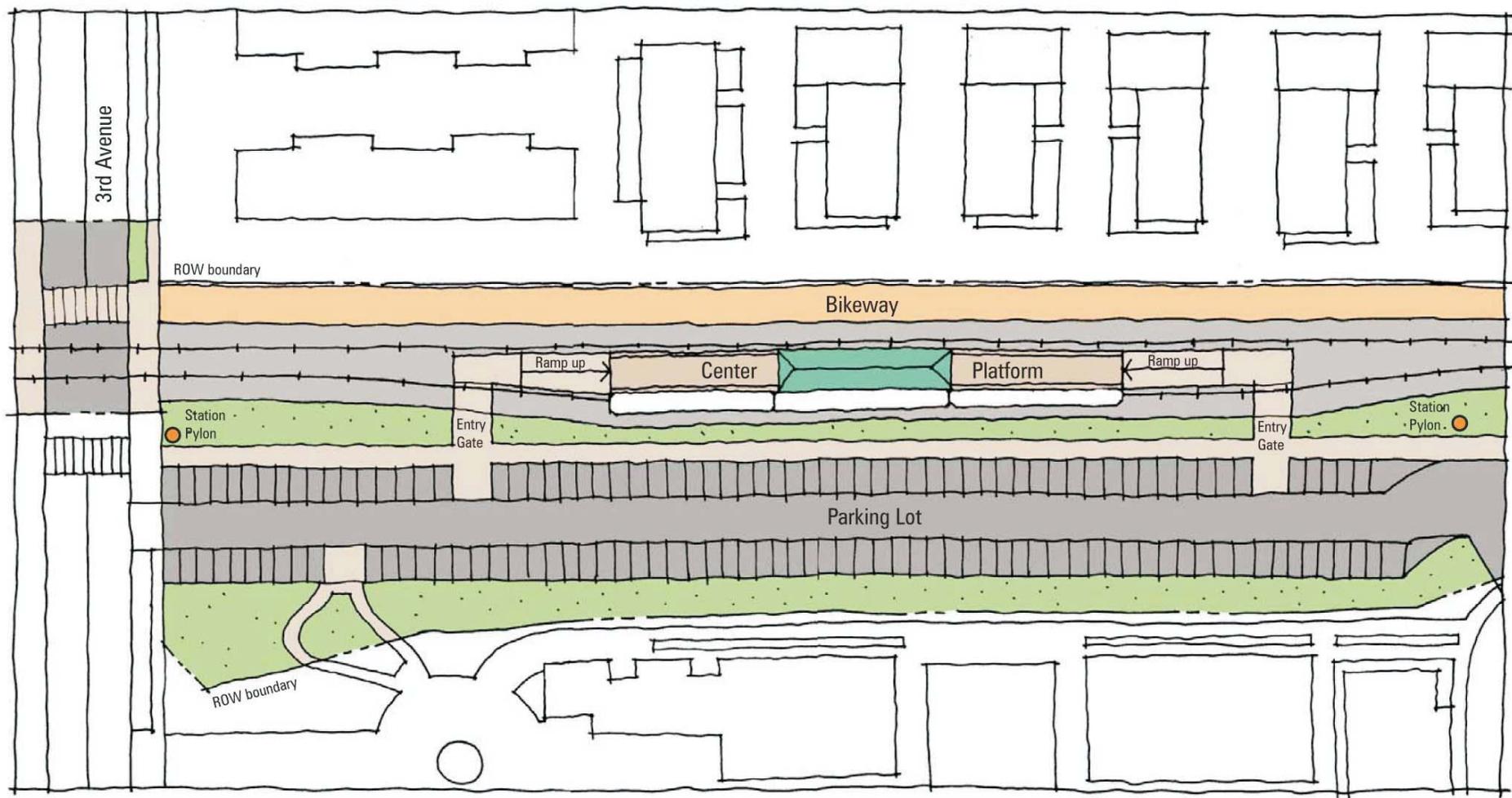
The Downtown Upland Station would be located approximately 1.3 miles from the Mountain Avenue Station. The ideal location for the Downtown Upland station should be located between to the east of 3rd Avenue in the heart of downtown Upland where SANBAG owns the large parking lot to the south. Minimal improvements would be required to provide a park & ride facility for this station. This station could also provide ample opportunity for urban redevelopment in the heart of downtown but will require a very creative Transit Oriented Development (TOD) design effort to provide a mutually beneficial, transit friendly urban environment. Figure 4-12 graphically illustrates the conceptual station layout in Downtown Upland.

- **San Antonio Community Hospital Station**

This station would be located approximately 0.8 of a mile from the Downtown Upland Station. The location at Washington Boulevard and 11th Avenue provides direct access to the hospital but would have limited parking availability. A preferred station site would be on either side of East Arrow Highway where two triangular tracts of land with a total of 2 acres are immediately abutting the alignment and could be considered for future park & ride facilities. In addition, this site provides easy access to the San Antonio Community Hospital, Upland Memorial Park, and the surrounding high density residential area.

- **Foothill Boulevard Station**

This station would be located approximately 0.8 of a mile from the San Antonio Community Hospital Station. There are two options for the Foothill Boulevard Station. The station could be placed at the east side of the existing Baldwin Park Branch Overpass Bridge north of Foothill Boulevard. Connection of the station and the park & ride facility would be via an overhead structure crossing over Foothill Blvd. The station will be at least 20' or more above Foothill Boulevard. The vacant land in the area surrounding this site would be ideal for a potential Park & Ride lot. Because the alignment were to continue at-grade on Foothill Boulevard and then turn southward on Vineyard Avenue at grade, another option would be to place the station south of Foothill Blvd. and utilize the triangular tract of land bordered by Foothill Blvd. and the Baldwin Park Branch for limited passenger parking and loading area.



Preliminary Gold Line System Ridership Forecast

Potential ridership on these three candidate alignments, 2A, 2B, and 3B can be evaluated after the determination of their respective station locations along the entire route. Ridership forecasts were derived from two separate methodologies. The first part of the projection came from the Metro's Corridors Base Model which analyzed and projected the following trip types:

1. Home Based Work Trip
2. Home Based University Trip
3. Home Based Other Trip
4. Non-Home Based Trip

The current Metro's forecasting, however, is not set up and designed to estimate the LA/Ontario International Airport passenger trips which could comprise a large percentage of the total system ridership as it is the largest activity center in the system. The Corridors Base Model does reflect trips made by Airport employees though. In order to estimate future Airport passenger trips that would utilize the Gold Line to reach their destination at the LA/Ontario International Airport, it is assumed that by the year of 2030, LA/Ontario International Airport will be projected to serve approximately 30 million passengers annually. This projection is based on documents from LAWA, SCAG and other pertinent studies that have recently been completed. Daily air passenger trips were calculated from demographic and mode split data from existing models throughout the United States. The total Gold Line ridership to be considered in this Study would be the sum of trips from sub-regional transportation needs and the Airport passenger demand estimates.

Ridership Projection Methodology from Metro's Regional Model

Metro's most recently updated travel forecasting model (the Corridors Base Model) was used in the projection of the preliminary ridership forecast. This model was recently refined and applied for the Los Angeles transit corridor studies. Metro is anticipating future refinement by January 2009.

Since the late 1990's when the nested mode choice model for the Re-Evaluation of the Eastside LRT project was implemented, the model has been enhanced and updated several times. In early 2007, the Metro Model was updated and used for the Construction Authority's New Start Application. This model, which is generally called the Gold Line Model, was re-calibrated for the Year 2005/2006 using information from an on-board survey (as requested by FTA) of the newly opened Metro Gold Line Light Rail Line from Union Station to Pasadena.

In 2008, the model choice component of the Metro Gold Line Model was refined in response to the Federal Transit Administration's (FTA) change in requirements and the state of the practice evolving with respect to travel forecasting for the New Starts Program. Metro, having several projects that may be seeking federal funding, is sensitive to having a model that will produce forecasts that FTA will be able to approve. Several enhancements and adjustments were made, most notably the process that creates walk access links, parking cost, and the re-expansion for the Metro Orange Line Survey. The model has been named the Corridors Base Model.

All the basic input files of the model including highway network, transit network, trip tables and socio-economic data were provided by Metro. The highway and transit networks for future year 2030 alternatives include all the highway and transit services and facilities that existed in year 2007. They also incorporate the committed highway and transit projects in the current Metro Long-Range Transportation Plan and Southern California Association of Government's Regional Transportation Plan. Two new urban rail lines were included into the 2030 transit network; the Gold Line Eastside Extension from Union Station to East LA, and the Exposition LRT Line from 7th/Metro to Culver City.

The three final candidate alignment alternatives were simulated using the Corridors Base Model. The Gold Line is coded as two lines: the first line runs from East LA to Union Station then to Sierra Madre Villa; the second line starts from East LA to Sierra Madre Villa (the existing terminus of Metro Gold Line in Pasadena), then runs further east to the LA/Ontario International Airport. Each line was coded with 10 minute headways in the peak period and 20 minute headways in the off-peak period, providing 5 minute service between East LA and Sierra Madre Villa in the peak period and 10 minute service in the off-peak period.

The three final candidate alignment alternatives are identical in the segment between Sierra Madre Villa and Montclair. This segment is composed of twelve new stations: Arcadia, Monrovia, Duarte, Irwindale, Alameda/Azusa and Citrus/Azusa, Glendora, San Dimas, La Verne, Pomona, Claremont and Montclair. The segment from Montclair to the LA/Ontario International Airport was coded according to the definition and operating plan for the Alignment Alternatives 2A, 2B and 3B.

In Alternative 2A, the extension from Montclair to the LA/Ontario International Airport is along the south side of Metrolink right-of-way to the Cucamonga Channel located east of Vineyard Avenue, and southward to the LA/Ontario International Airport Multi-Modal Terminal Station. Six stations were proposed for this extension: Mountain/8th, Upland (Euclid/8th), Grove Avenue, Cucamonga Channel/8th, Cucamonga Channel/4th and the LA/Ontario International Airport. The distance of the alignment is 7.3 miles and the running time is 11.2 minutes from Montclair to the LA/Ontario International Airport based on the preliminary running speed estimate.

In Alternative 2B, the extension is along the south side of the Metrolink right-of-way to Vineyard Avenue, and southward along Vineyard Ave to Convention Center Way to the LA/Ontario International Airport Multimodal Terminal Station. The seven stations on the extension are: Mountain/8th, Upland (Euclid/8th), Grove Avenue, Vineyard/8th, Vineyard/4th, Convention Center and the LA/Ontario International Airport. From Montclair to Ontario, the distance is 7.4 miles and the running time is 12.4 minutes based on the preliminary running speed estimate.

In Alternative 3B, the extension from Montclair turns north and through the east end of the Metrolink park & ride lot, crossing 9th Street at-grade to the north Metrolink park & ride lot, then turning eastward and following the Baldwin Park Branch right-of-way to the junction of Foothill Boulevard and Cucamonga Channel. The alignment continues southward along the eastside of Cucamonga Channel. Seven stations were proposed for the extension: Mountain/Arrow, Downtown Upland, San Antonio Hospital, Foothill Boulevard, Cucamonga Channel/8th, Cucamonga Channel/4th and the LA/Ontario International Airport. This alternative has the longest extension alignment among the three alternatives: 8.5 miles and 14.2 minutes of running time, the longest journey time based on the preliminary running speed estimate.

Most of the proposed extension stations were coded with potential parking space availability in the model. These potential parking spaces were derived from field inspection, aerial photo examination and knowledge from the existing Gold Line park & ride facilities. Table 4-1 below lists the number of parking spaces by station for each alternative.

Table 4-1 - Station Parking Availability

Alignment 2A		Alignment 2B		Alignment 3B	
Station	Parking Spaces	Station	Parking Spaces	Station	Parking Spaces
Mountain/8th	100	Mountain/8th	100	Mountain/Arrow	300
Upland(Euclid/8th)	300	Upland(Euclid/8th)	300	Upland Downtown	300
Grove Ave	500	Grove	500	San Antonio Hospital	250
		Vineyard/8th	0	Foothill Boulevard	300
Cucamonga Channel/8th	200	Vineyard/4th	500	Cucamonga Channel/8th	200
Cucamonga Channel/4th	500	Convention Center	200	Cucamonga Channel/4th	500
LA/Ontario International Airport	1,500	LA/Ontario International Airport	1,500	LA/Ontario International Airport	1,500

Airport Passenger Ridership Projection Methodology

The Gold Line Model utilized in the estimation of ridership projections does not have an air passenger forecasting component. In order to estimate the number of air passengers that could be expected to utilize the Gold Line extension to the LA/Ontario International Airport, a manual estimation was applied to the Gold Line Extension travel forecasts. The estimation was based on the assumption that in 2030, the LA/Ontario International Airport would have thirty million air passengers. The percentage of origin and destination airline passengers that would travel to and from the LA/Ontario International Airport via the Gold Line was derived using data compiled from airports in the United States served by rail transit facilities. The limited survey data yields an air passenger ridership range of between 7.5 and 9.1 percent of total airline passenger trips (excluding transfers). Utilizing the limited information available from the survey data, a low, medium and high estimate of daily airport passenger ridership was developed and added to the forecasts developed for the Gold Line extension for each alignment alternative. The assignment of air passengers by alignment is summarized in Table 4-2.

Table 4-2 - Estimated 2030 Boardings

Candidate Alignment	Daily Boardings from Metro Model	Daily Boardings for Airport Passengers	Total Gold Line Daily Boardings
2A	11,433	2,482	13,915
2B	11,923	2,557	14,480
3B	11,628	2,505	14,133

The results of the preliminary ridership analysis indicated that potential users of future Gold Line extension system varied only slightly among the three alignment alternatives. On an average, it is expected that approximately 14,000 daily boardings between the Montclair TransCenter station and the Ontario Terminus station on any one of the three final candidate alignments will occur by the year of 2030. It must be noted that a more detailed analysis will be conducted during the follow-up study to refine the forecast. The detailed regional model forecast output is included in [Appendix A4-1](#).

Preliminary Alignment Layout Plan

The PST developed a series of alignment and station layout plans on the aerial photographs for the purpose of analyzing the engineering feasibility and to ascertain the constructability of the candidate alignments. The plans have been developed for Alignments 2A and 3B. Alignment 2B would share the identical alignment with 2A on that portion located within the Metrolink right-of-way. That segment of Alignment 2B which departs from the Metrolink right-of-way southerly along Vineyard Avenue is not included on the plan. Although the Vineyard Avenue alignment could continue to be considered as a viable alternative, it would involve major widening of the roadway and possible relocation of residences. More thorough review of its feasibility should be studied in the follow-up study process.

Preliminary layout plans for Alignments 2A and 3B are included in Figures 4-13 through 4-22, and Figure 4-23 graphically illustrates the layout of major structures of Metrolink flyover (Alignment 2A) and I-10 flyover (Alignments 2A, 2B and 3B).

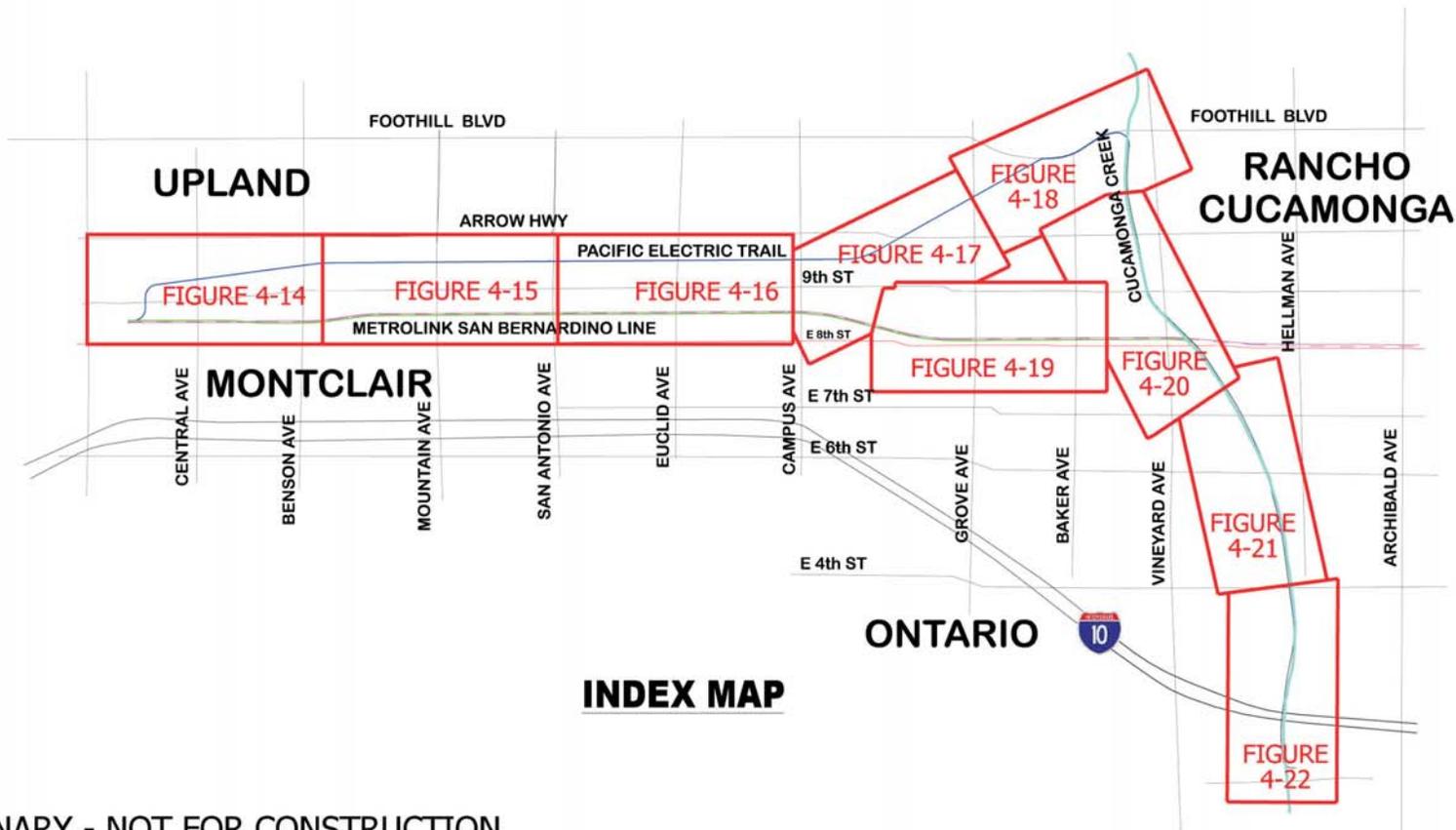
Preliminary Cost Estimate

The Construction Authority provided the PST with construction cost data from recent light rail construction activities in the greater Los Angeles area, and the data were used as the basis to develop a more refined construction cost estimate for Alignments 2A and 3B. The cost projection was partially developed from the preliminary layout plans prepared for this Study Report. The estimated cost was derived using the current year pricing in 2008 dollars without exploration into future inflation scenarios. The refined cost also included a 30% contingency factor for all items estimated. The refined year of 2008 project cost estimate, including planning, design, construction, right-of-way, and contingency cost, for the two alignments is:

- Alignment 2A - \$308,700,000
- Alignment 3B - \$399,800,000

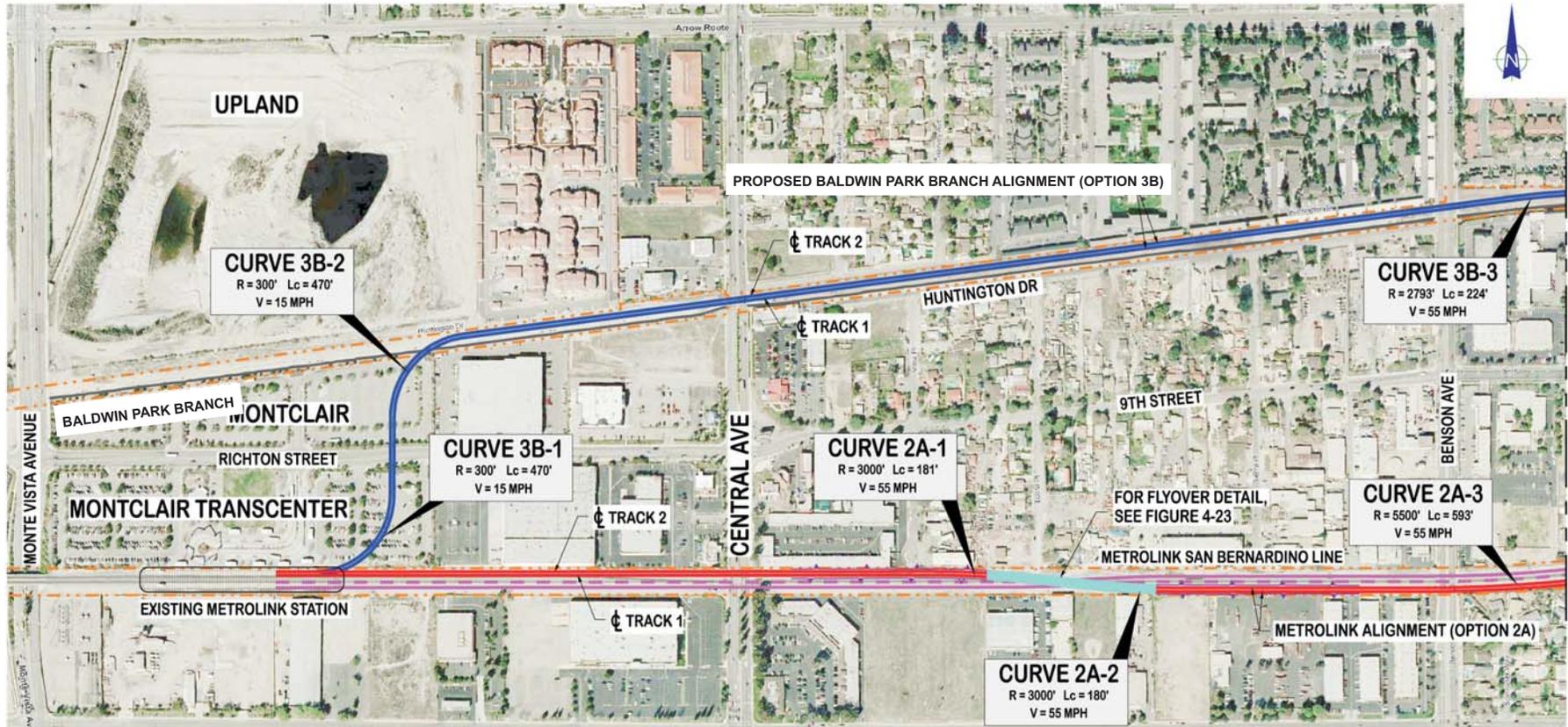
More detailed cost estimates by items and categories are shown on Tables 4-3 and 4-4.

METRO GOLD LINE FOOTHILL EXTENSION LOS ANGELES TO ONTARIO INTERNATIONAL AIRPORT



PRELIMINARY - NOT FOR CONSTRUCTION



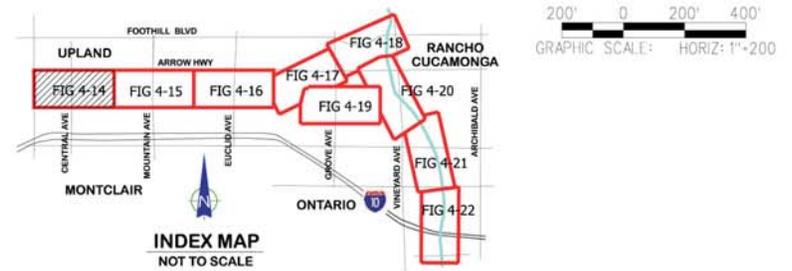


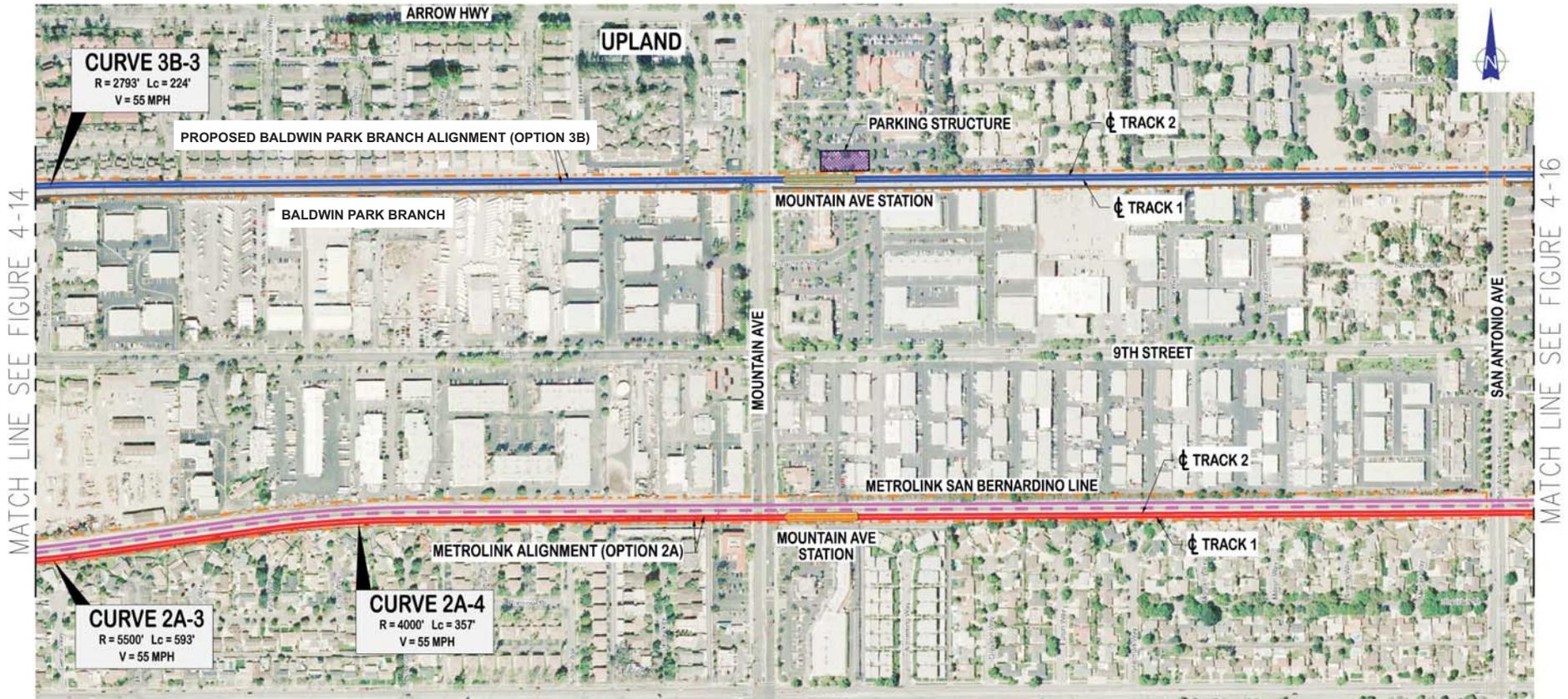
MATCH LINE SEE FIGURE 4-15

LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING R/W
- RETAINING WALL
- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION

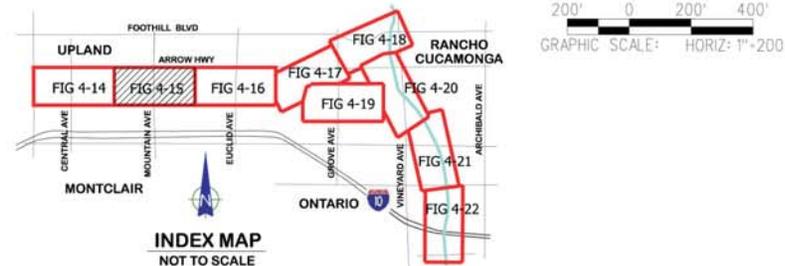


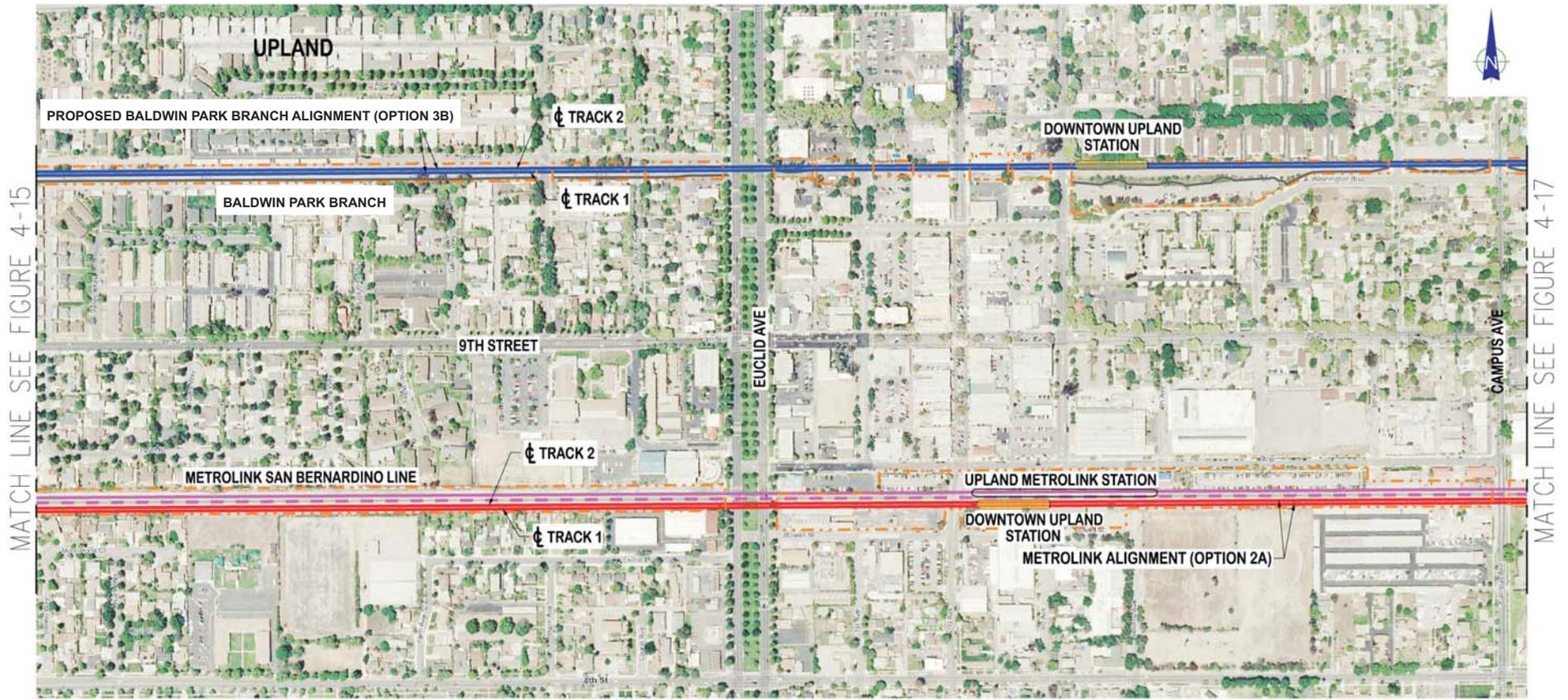


LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING RW
- RETAINING WALL
- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION

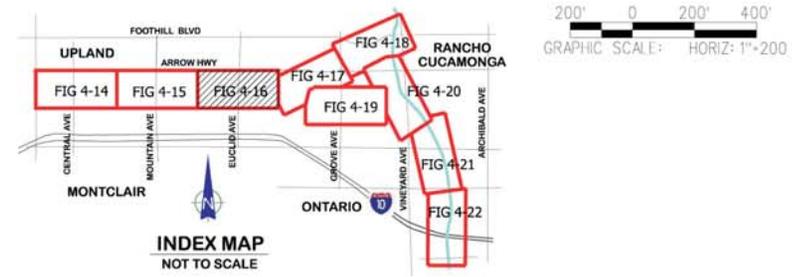


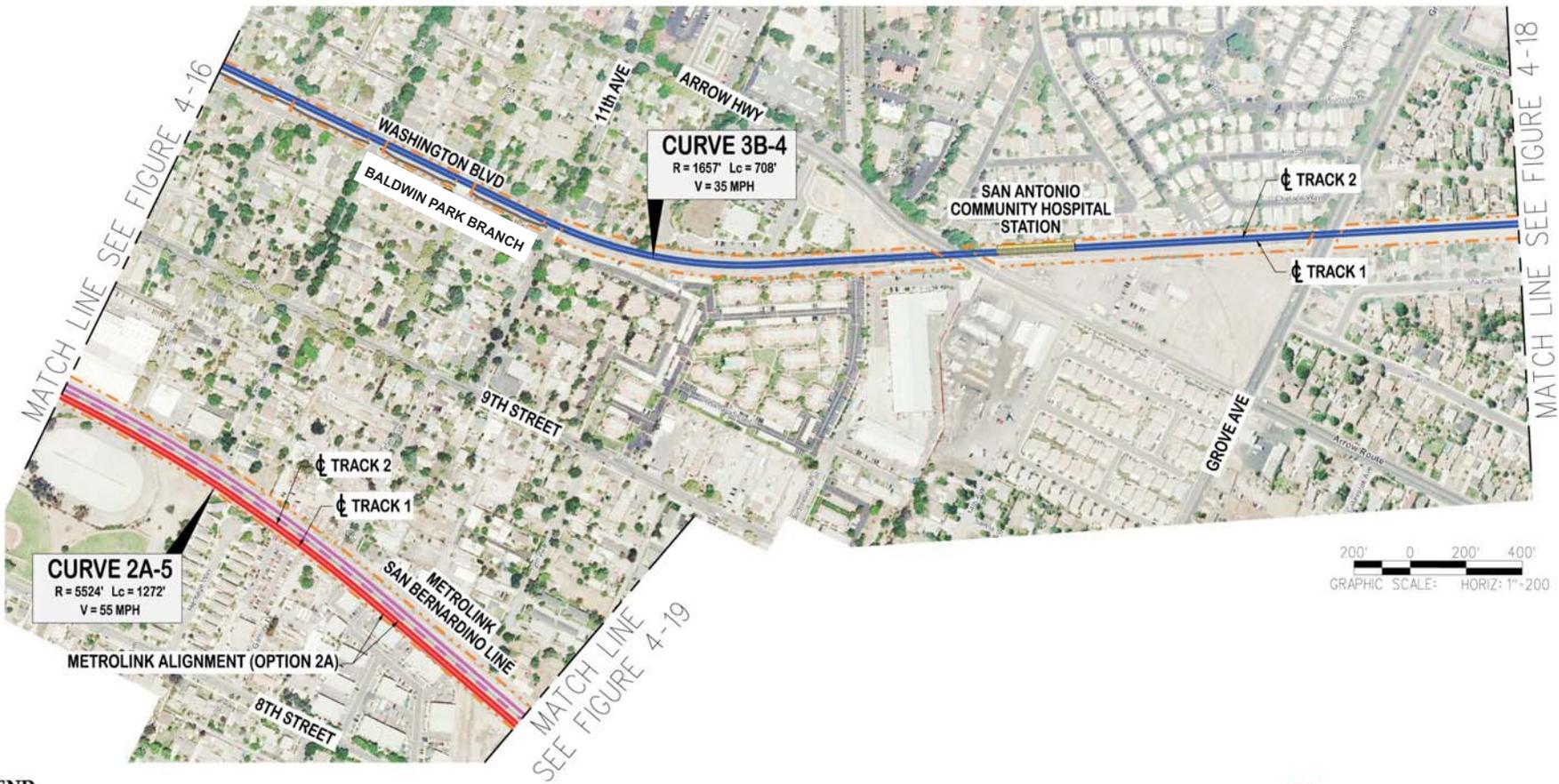


LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- - - EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING RW
- RETAINING WALL
- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION

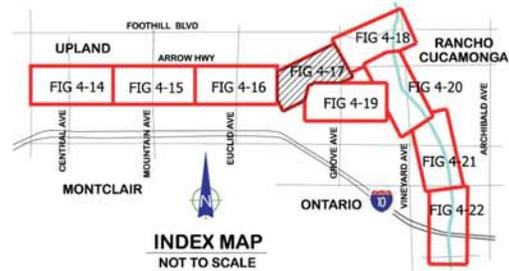


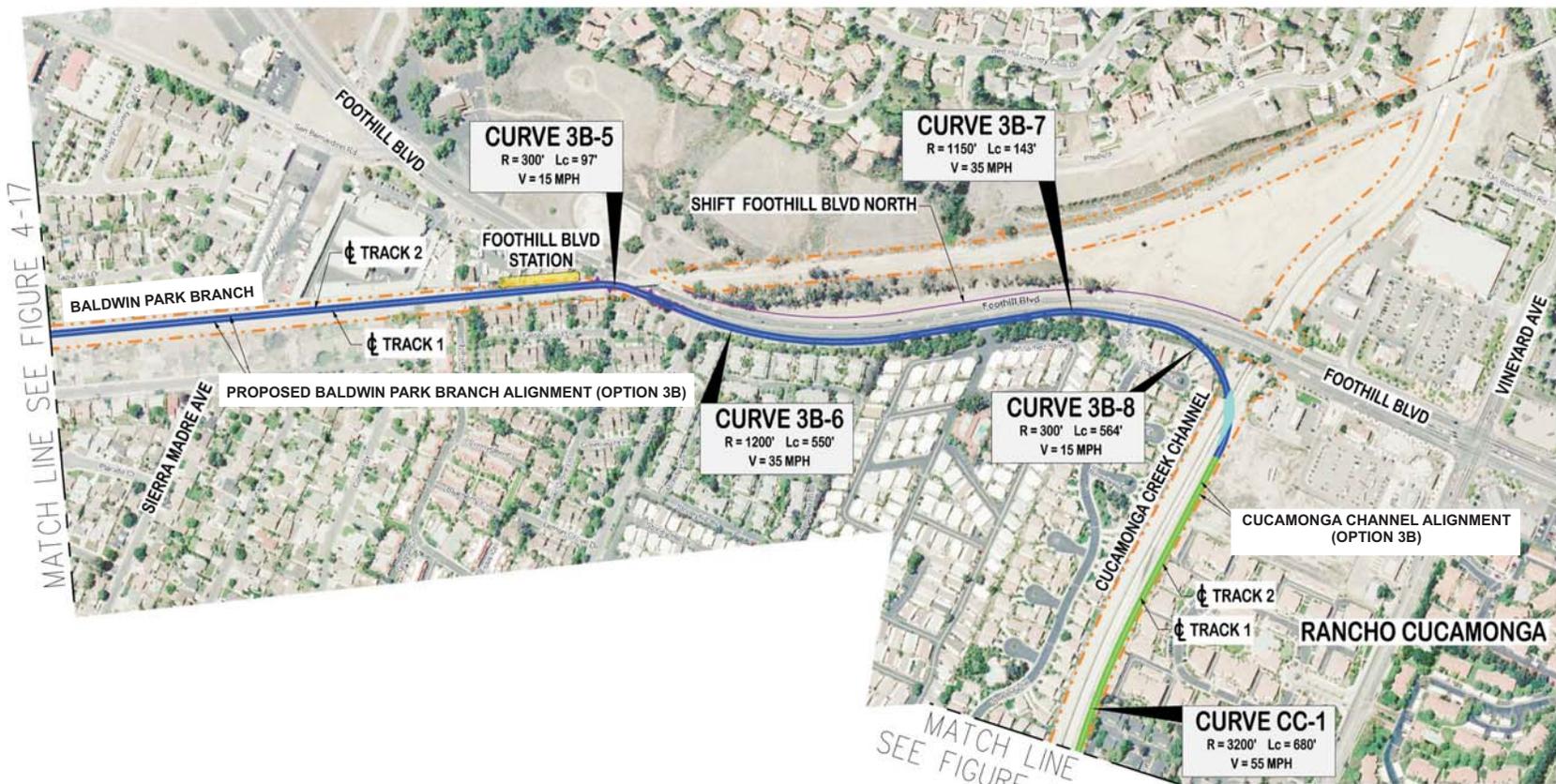


LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- - - EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING R/W
- RETAINING WALL
- ▬ NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION

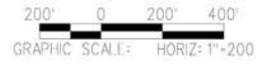
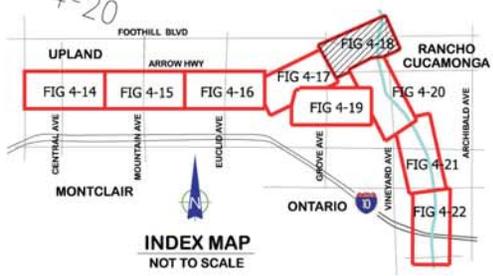




LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- - - EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING R/W
- RETAINING WALL
- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION



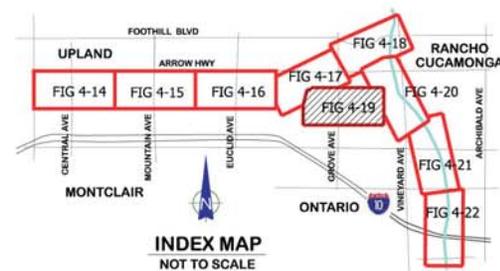


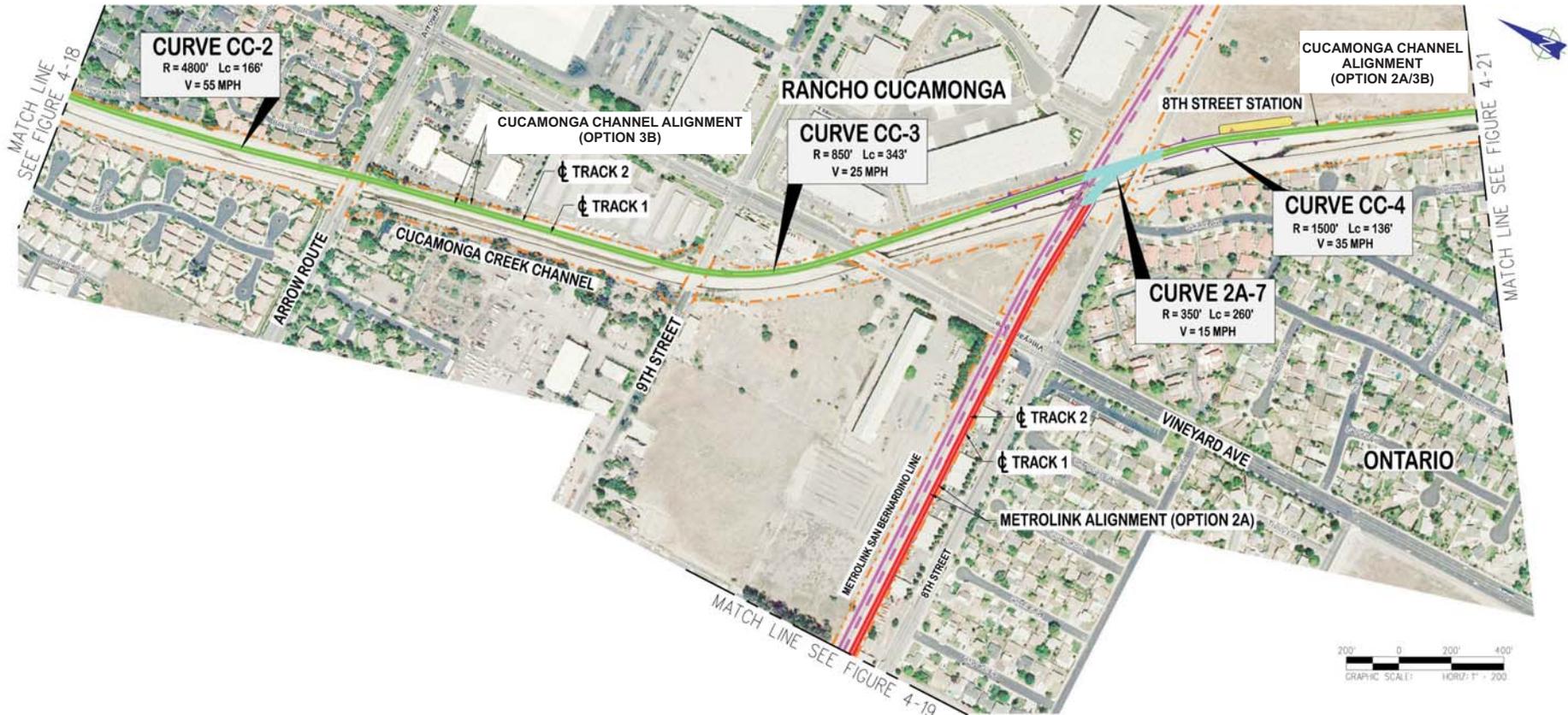
LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- - - EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING R/W
- RETAINING WALL

- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION

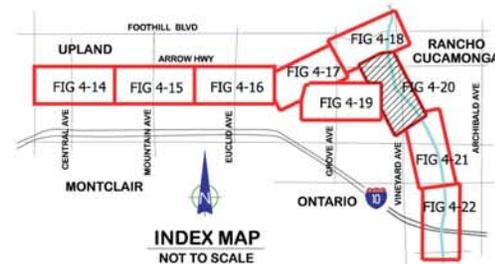




LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING R/W
- RETAINING WALL
- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION





LEGEND

- PROPOSED BALDWIN PARK BRANCH ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CHANNEL ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING R/W
- RETAINING WALL
- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION

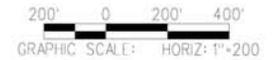
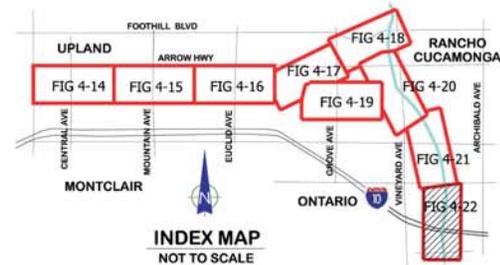


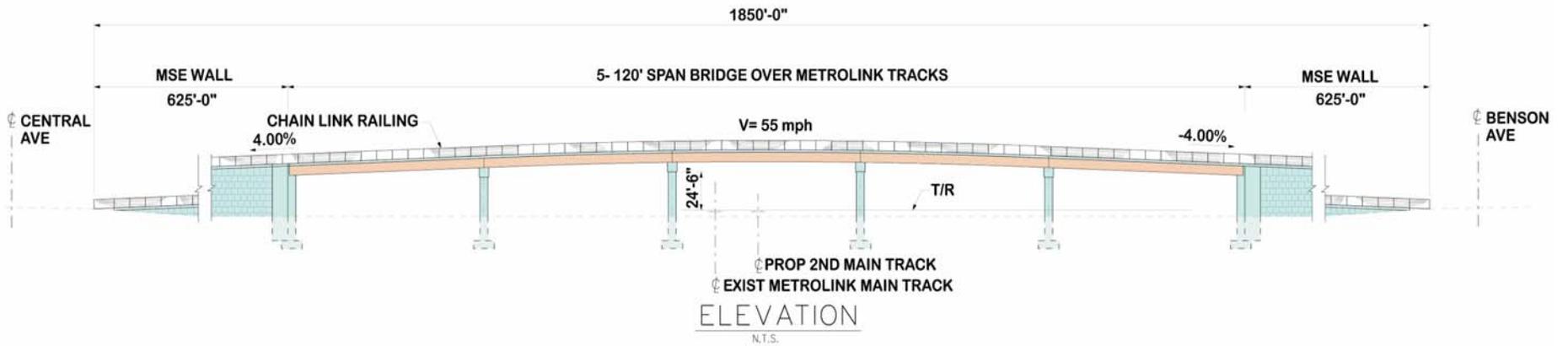


LEGEND

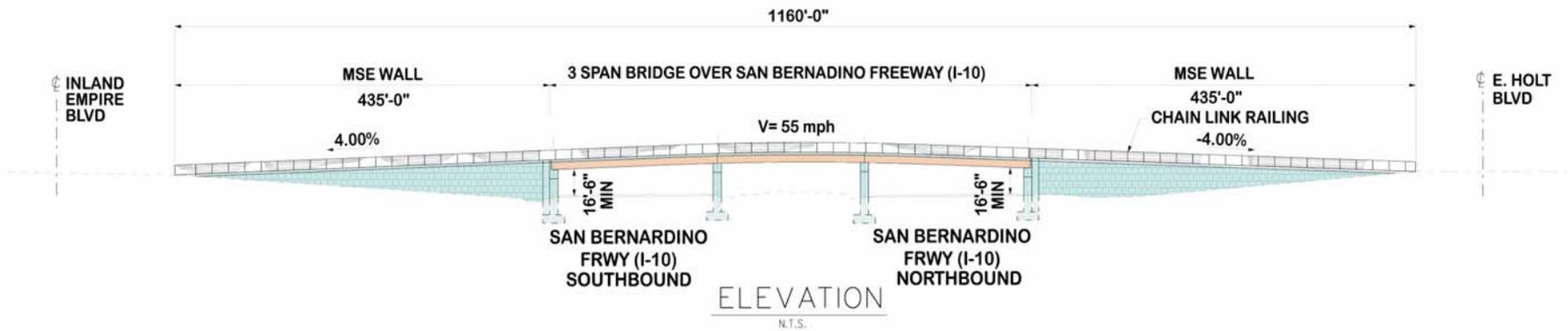
- PROPOSED PACIFIC ELECTRIC TRAIL ALIGNMENT (OPTION 3B)
- PROPOSED METROLINK ALIGNMENT (OPTION 2A)
- PROPOSED CUCAMONGA CREEK ALIGNMENT (OPTION 2A/3B)
- FUTURE METROLINK 2ND MAIN SAN BERNARDINO LINE
- EXISTING METROLINK MAIN TRACK SAN BERNARDINO LINE
- PACIFIC ELECTRIC TRAIL
- - - EXISTING R/W
- RETAINING WALL
- NEW BRIDGE / BRIDGE WIDENING
- EXISTING METROLINK STATION
- PROPOSED STATION
- PROPOSED PARKING STRUCTURE

PRELIMINARY - NOT FOR CONSTRUCTION





PROPOSED METROLINK ALIGNMENT FLYOVER (OPTION 2A)



PROPOSED CUCAMONGA CHANNEL ALIGNMENT FLYOVER (OPTION 2A/3B)

PRELIMINARY - NOT FOR CONSTRUCTION

Table 4-3 - Preliminary Cost Estimate for Alignment 2A

Description	Unit	Year 2008 Unit Cost	Quantity	Cost
STRUCTURES				
Retained Fill	CY	\$ 60	30000	\$ 1,800,000
Major Retaining Wall	LF	\$ 1,450	4900	\$ 7,105,000
Bridge -1 Flyover Metrolink Tracks)	LF	\$ 14,000	600	\$ 8,400,000
Bridge -2 Cucamonga Channel(CC)	LF	\$ 11,000	260	\$ 2,860,000
Bridge -3 (8th Street)	LF	\$ 11,000	350	\$ 3,850,000
Bridge -4 Crossing CC South of Hellman Ave.	LF	\$ 11,000	480	\$ 5,280,000
Bridge -5 (Flyover I-10)	LF	\$ 14,000	300	\$ 4,200,000
Bridge -6 Crossing CC to Ontario Airport Transit Center)	LF	\$ 11,000	140	\$ 1,540,000
TRACKWORK				
Guideway- Double Track	TF	\$ 350	38000	\$ 13,300,000
Street Crossings	EA	\$ 1,700,000	18	\$ 30,600,000
Utility Relocation- Allow 8% Trackwork				\$ 3,512,000
STATIONS				
Stations w/Platform	EA	\$ 1,700,000	5	\$ 8,500,000
Park & Ride facility (At-Grade)				\$ 4,500,000
Fare Collection - Allow 15% of Stations				\$ 1,275,000
Signs & Graphics - Allow 5% of Stations				\$ 425,000
Rail Base - Allow 20% of Trackwork				\$ 8,780,000
SYSTEMS - Allow 55% of Trackwork				\$ 24,145,000
CONSTRUCTION SUB_TOTAL				
				\$ 130,072,000
Environmental Mitigation				
ALLOW - 2% of Construction				\$ 2,601,440
Art in transit				
ALLOW - 0.5% of Construction				\$ 650,360
ROW Acquisition				
ALLOW - 15% of Construction				\$ 19,510,800
Vehicles				
ALLOW - 34% of Construction				\$ -
				\$ 44,224,480
Traffic Control				
ALLOW - .5% of Construction				\$ 650,360
CAPITAL COSTS (A,B,C,D,E,F)				\$ 197,709,440
SOFT COSTS/PROFESSIONAL SERVICES				
PA/ED - 3.5% of Const				\$ 4,552,520
Design - 8% of Const				\$ 10,405,760
Design Services During Const - 4% of Const				\$ 5,202,880
CM - 6% of Const				\$ 7,804,320
PM - 3% of Const				\$ 3,902,160
Agency Cost- 4% of Capital Cost				\$ 7,908,378
PROJECT COST (CAP+Soft)				\$ 237,485,458
PROJECT Contingency -30%				\$ 71,245,637
PROJECT COST (CAP+Soft)+Cont				\$ 308,731,095

Table 4-4 - Preliminary Cost Estimate for Alignment 3B

Description	Unit	Year 2008 Unit Cost	Quantity	Cost
STRUCTURES				
Retained Fill	CY	\$ 60	17000	\$ 1,020,000
Major Retaining Wall	LF	\$ 1,450	3000	\$ 4,350,000
Bridge -1 Foothill BLVD	LF	\$ 11,000	40	\$ 440,000
Bridge - 2 Cucamonga Channel(CC)	LF	\$ 11,000	120	\$ 1,320,000
Bridge -3 (Metrolink and 8th Street)	LF	\$ 11,000	320	\$ 3,520,000
Bridge -4 Crossing CC South of Hellman Ave.	LF	\$ 11,000	480	\$ 5,280,000
Bridge -5 (Flyover I-10)	LF	\$ 14,000	300	\$ 4,200,000
Bridge -6 Crossing CC to Ontario Airport Transit Center)	LF	\$ 11,000	140	\$ 1,540,000
TRACKWORK				
Guideway- Double Track	TF	\$ 350	43000	\$ 15,050,000
STATIONS				
Stations w/Platform	EA	\$ 1,700,000	7	\$ 11,900,000
Park & Ride facility (At-Grade and Parking Structure @ Mountain Ave.)				\$ 8,400,000
Multi-Story Parking Structure	EA	\$ 1	0	\$ -
Fare Collection - Allow 17% of Stations				\$ 2,023,000
Signs & Graphics - Allow 5% of Stations				\$ 595,000
Rail Base - Allow 10% of Trackwork				\$ 7,185,000
SYSTEMS - Allow 55% of Trackwork				\$ 39,517,500
CONSTRUCTION TOTAL				\$ 172,377,000
Environmental Mitigation				
ALLOW - 2% of Construction				\$ 3,447,540
Art in transit				
ALLOW - .05% of Construction				\$ 861,885
ROW Acquisition				
ALLOW - 20% of Construction				\$ 34,475,400
Vehicles				
ALLOW - 25% of Construction				\$ 43,094,250
Traffic Control				
ALLOW - .5% of Construction				\$ 861,885
CAPITAL COSTS (A,B,C,D,E,F)				\$ 255,117,960
SOFT COSTS/PROFESSIONAL SERVICES				
PA/ED - 3.5% of Const				\$ 6,033,195
Design - 8% of Const				\$ 13,790,160
Design Services During Const - 4% of Const				\$ 6,895,080
CM - 6% of Const				\$ 10,342,620
PM - 3% of Const				\$ 5,171,310
Agency Cost- 4% of Capital Cost				\$ 10,204,718
PROJECT COST (CAP+Soft))				\$ 307,555,043
PROJECT Contingency -30%				\$ 92,266,513
PROJECT COST (CAP+Soft)+Cont				\$ 399,821,556

Chapter 5. Public Outreach

Introduction to Public Outreach Strategy

Broad community participation was an important goal of this Study, and an extensive outreach program was conducted to inform and educate the community about the proposal to extend the light rail line to the LA/Ontario International Airport (from its current planned terminus at Montclair's Transit Center) and to provide a variety of opportunities for the community to participate in the process. At major milestones during the study process, the community was provided information on the different options and routes under review and was asked to provide feedback. Community feedback, along with feedback provided by Advisory Committee and Technical Advisory Committee (TAC), was utilized by the PST as input on recommending how to narrow the route options.

The outreach program had the following goals:

- Engage a broad group of stakeholders in the process
- Communicate throughout the process with stakeholders to convey the benefits of forward planning for transportation solutions and the importance of their participation in the process
- Solicit usable feedback that results in an understanding of where there is support or opposition to the concepts and alternatives under consideration, and to identify areas of consensus
- Implement a public involvement program that meets all federal and regional guidelines and compliments the technical study

The remainder of this chapter summarizes the outreach effort that took place from February to December 2008 in support of the Metro Gold Line Foothill Extension to the LA/Ontario International Airport Study, and the feedback received by the community.

Outreach Program Infrastructure

Prior to beginning the formal outreach effort for the Study, the outreach infrastructure was developed. The Study infrastructure included a Study database, hotline, website and public information materials.

Stakeholder Databases

A comprehensive database was developed for the Study that included the following key stakeholders:

- Elected officials
- Large employers
- Major institutions
- Community-based organizations and service clubs

- Business, homeowner and environmental groups
- Media outlets
- Local residents

The initial database consisted of over 800 key stakeholders and media contacts. During Phase I, nearly 25,000 local residents living in Upland, Montclair, Ontario and Rancho Cucamonga were added to the initial database. This expanded database of nearly 26,000 stakeholders received an initial mailer about the Study, its process and how to get involved. During Phase II, the database included only those community members who showed an interest during Phase I in participating in the Study by attending a meeting, calling the hotline, or submitting their information through the website. This resulted in the initial database of key stakeholders being expanded to approximately 1,000 stakeholders during Phase II, each of whom received a mailer updating them on the Study. The database was updated once again following the second phase of the Study, and the final key stakeholder database included over 1,000 local stakeholders. A final mailing was sent to both the expanded key stakeholder database and the local resident list of 25,000 resulting in a mailing to over 26,000 stakeholders during the final phase of the Study.

The database was used throughout the Study for developing mailing lists for meeting notices; sending media advisories and press releases; and keeping track of meeting attendees, on-line commentators and hotline callers. The database was developed at the beginning of the Study, and then updated regularly with new information throughout the process. The final key stakeholder database is included in this report as [Appendix A5-1](#).

Community Hotline - (909) 740-3170

To ensure all members of the public had access to Study information a local telephone hotline was established. The recorded message included information about the Study, upcoming meeting dates and locations, and directed callers to various options such as leaving comments or providing contact information to be added to the mailing list. A hotline log was maintained throughout the Study process, capturing all calls to the hotline and how they were responded to by the Study Team. The hotline message was updated throughout the Study to provide the latest information and calls were returned within 48 hours of receipt. A copy of the hotline call log can be found in [Appendix A5-2](#).

Website - (www.goldline2ontario.com)

A Study website was created to provide the community a venue where stakeholders could access comprehensive Study information and provide feedback. Study materials – such as fact sheets, meeting notices, news articles, maps of the routes under review, and more – were provided on the website.

Additionally, the site allowed participants the opportunity to fill out on-line surveys, provide comments and leave their contact information to be added to the mailing list. Information was updated on the website throughout the Study. [Appendix A5-3](#) contains an overview of the pages and information found on the website at the end of the Study.

Over the course of the Study, a total of over 3,000 hits were recorded on the website, and over 120 on-line surveys and comment forms were completed. Copies of the on-line comment and survey logs can be found in [Appendix A5-11](#).

Public Information Materials

Fact sheets, display boards, comment sheets and surveys, and welcome sheets were developed during each phase of the Study to explain the process, identify the latest options being evaluated, and to receive feedback. The web address and hotline number was prominently displayed on all materials and the importance of community input was highlighted. These materials were used at meetings and presentations, and included on the website. Copies of informational material used during the Study can be found in [Appendix A5-4](#).

Community Outreach Activities

Three phases of public outreach were conducted during the Study. Phase I provided the community an overview of the Study's purpose and process, and introduced the initial set of possible route options. Phase II occurred following the narrowing of those options to the three most feasible and desirable routes, and provided the community a preliminary concept of potential station locations. Phase III occurred following the final recommendation of two preferred routes. Discussed in detail below is the outreach conducted during both phases, which included:

- Briefings for elected officials
- Presentations to community groups
- Community meetings
- Media outreach

Elected Officials Outreach

Elected official involvement was critical to the success of the Study. In addition to keeping elected officials from the cities of Upland, Montclair, Ontario, and Rancho Cucamonga updated through the Study's Advisory Committee, the Study Team kept officials apprised of the Study's progress by sending update letters with meeting notices to officials representing all levels of government in the area and their key staff members, as well as offering overview briefings to the different city councils.

The City of Rancho Cucamonga was the only city that requested a briefing. The City coordinated a Special Joint Meeting of the City Council and Planning Commission on April 16, 2008, at which the Study Team presented the Gold Line Phase I overview and process, community outreach overview and feedback, and received feedback on the initial set of routes. Although follow-up calls were made, no other city requested an individual briefing.

Copies of the elected official update letters can be found in [Appendix A5-5](#). Meeting notes from the Special Joint Meeting of the City Council and Planning Commission in Rancho Cucamonga can be found in [Appendix A5-6](#). The agendas and sign-in sheets for the Advisory Committee and Technical Advisory Committee meetings are also included in [Appendix 5-6](#).

Community Presentations

The PST also encouraged participation by local community groups by providing content for their newsletters regarding the Study, and offering presentations. The Ontario Chamber of Commerce was the only group that requested a presentation. The PST attended the Chamber's March 13, 2008 Board meeting and presented the Study overview and process and encouraged participation by the group's membership. At that meeting, the Board voted to support the concept of connecting the Metro Gold Line to LA/Ontario International Airport. Meeting notes from the Chamber meeting can be found in [Appendix A5-6](#).

Community Meetings

Three series of community meetings were organized during the Study in the cities of Upland, Ontario, and Rancho Cucamonga. The meetings provided stakeholders with an opportunity to learn about the Study, ask PST members questions, and provide comments. An open house format was selected for all meetings, allowing participants the ability to arrive and depart at their own discretion, spending as much time as they desired talking to the team and providing feedback. Stations were set up around the room, which provided information on different aspects of the Study and each meeting had a comment station to receive feedback.

Meeting Noticing: To encourage participation by the community at community meetings, a number of approaches were utilized to notify the community about the meetings, including: direct mail, posting notices at city halls and libraries, paid advertisements in on-line and print media, and inclusion of meeting dates on local city and newspaper community calendars. During Phases I and III, an emphasis was made to send direct mail to stakeholders, resulting in over 26,000 notices being mailed during each phase; while in Phase II, an emphasis was put on media advertising and large ads ran in the San Bernardino Sun (Sun) and Inland Valley Daily Bulletin (IVDB) from June 13-18, 2008 and on June 23, 2008 (both print and on line). Ads also ran in the Sun and IVDB on the days of the meetings (December 3 and 4, 2008) during Phase III.

Copies of the meeting notice, ads and community calendar sections can be found in [Appendix A5-7](#).

Phase I Meetings: The purpose of the Phase I meetings were to introduce the Study and initial route options to the community and to receive their feedback. Meetings were conducted on February 28, March 5 and March 6, 2008 from 6-8:00 p.m. at the following locations:

<u>City of Upland</u> Thursday, February 28, 2008 Andrew Carnegie Library and Cultural Center 123 East D Street Upland, CA 91786	<u>City of Ontario</u> Wednesday, March 5, 2008 Allen G. Smith Educational Services Center 211 West 5 th Street Hill Auditorium Ontario, CA 91764	<u>City of Rancho Cucamonga</u> Thursday, March 6, 2008 James L. Brulte Senior Center 11200 Baseline Road David Dreier Hall Rancho Cucamonga, CA 91701
---	--	--

The meeting format consisted of an open house with the following five stations: welcome/sign-in, Study overview and process, Metro Gold Line overview, alternative routes, and comments. Materials distributed during open house meetings included welcome sheets, fact sheets with the initial set of conceptual routes, and comments sheet. Please see [Appendix A5-4](#) for copies of these materials.

Over 100 people attended these meetings, including 95 community members, 10 elected officials and several members of the media. Sign-in sheets from each meeting can be found in [Appendix A5-8](#).

Phase II Meetings: The purpose of the Phase II meetings was to provide an update on the Study's progress and introduce the narrowed route options and potential station locations to the community, as well as to receive community feedback. Meetings were conducted on June 18, 19 and 24, 2008 from 5:30-7:30 p.m. at the following locations:

<u>City of Upland</u> Thursday, June 19, 2008 Upland First Church of the Nazarene 120 W. Ninth Street Upland, CA 91786	<u>City of Ontario</u> Wednesday, June 18, 2008 Doubletree Hotel 222 North Vineyard Avenue Rainbow Lake Room Ontario, CA 91764	<u>City of Rancho Cucamonga</u> Tuesday, June 24, 2008 James L. Brulte Senior Center 11200 Baseline Road David Dreier Hall Rancho Cucamonga, CA 91701
---	--	---

The meeting format again consisted of an open house with the following five stations: welcome station, Study overview and process, routes under review, potential station concepts and comments. Materials distributed included a fact sheet of the narrowed route options that included a brief summary of the findings from Phase I, and a comment sheet. A copy of these

materials can be found in [Appendix A5-4](#).

A total of 66 stakeholders attended open house meetings during Phase II. Of those that attended, 60 were members of the public, five were elected officials and one was a member of the media. Sign-in sheets from each meeting can be found in [Appendix A5-8](#).

Phase III Meetings: The purpose of the Phase III meetings was to provide the community an overview of the Study and its two final recommended route options, as well as discuss next steps and receive final community feedback. Meetings were conducted on December 3 and 4, 2008 from 5:00-7:30 p.m. at the following locations.

<p><u>City of Upland</u> Wednesday, December 3, 2008 Andrew Carnegie Library and Cultural Center 123 East "D" Street Upland, CA 91786</p>	<p><u>City of Rancho Cucamonga</u> Thursday, December 4, 2008 James L. Brulte Senior Center 11200 Baseline Road David Dreier Hall Rancho Cucamonga, CA 91701</p>
--	--

The meeting format consisted of an open house with the following five stations: welcome station, Study overview and process, final routes, potential station concepts and comments. Materials distributed included a fact sheet of the final recommended route options, and a comment sheet. A copy of these materials can be found in [Appendix A5-4](#).

A total of 79 stakeholders attended open house meetings during Phase III. Of those that attended, 72 were members of the public, five were elected officials and two were members of the media. Sign-in sheets from each meeting can be found in [Appendix A5-8](#).

Media Outreach

To broaden the reach of the community involvement program, extensive outreach was conducted with the local media. In addition to press releases and media advisories being sent out at major milestones (copies of which are found in [Appendix A5-9](#)), briefings were conducted with key reporters and on-line and print advertising was purchased. The following print, television and radio outlets were kept up to date on the Study:

- San Bernardino Sun
- Inland Valley Daily Bulletin
- The Press Enterprise
- Los Angeles Times Inland Empire Edition
- Claremont Courier
- Pasadena Star News
- Inland Empire Hispanic News
- Inland Valley News
- San Gabriel Valley Tribune
- The Westside Story Newspaper
- Precinct Reporter

-
-
- American News
 - Inland Empire Business Journal
 - Inland Empire Magazine
 - Inland Empire Community News Newspapers
 - La Prensa
 - News Digest
 - The Business Press
 - Westside Story
 - KFWB –AM
 - KNX-AM
 - KVCR-TV
 - KCBS-TV
 - KPXN-TV
 - KSCI-TV
 - KRCA-TV

The Study received extensive coverage by the media. The proposal to extend the Gold Line to the LA/Ontario International Airport, the potential routes under review, community meeting dates and the importance of community participation were all covered by the local media. The following highlights some of the coverage by print media during the Study (copies of articles can be found in [Appendix A5-10](#)):

Phase I:

- The San Bernardino Sun, Latest news, online section (2/26/08)
- The San Bernardino Sun, Events calendar, online section from (2/25/08) – (3/7/08)
- The Inland Valley Daily Bulletin online calendar section from (2/25/08) – (3/7/08)
- City of Upland website, Alerts, online (2/27/08)
- The San Bernardino Sun and Inland Valley Daily Bulletin, “Gold Line: Where? Public input sought on 3 possible routes” by Andrea Bennett (03/01/08)
- The San Bernardino Sun and the Inland Valley Daily Bulletin, “Upland in good shape for rail” by Lori Consalvo (03/01/08)
- The San Bernardino Sun, No more macaroni grilling, David Allen’s Column (3/13/08)

Phase II:

- Press Enterprise, “Metro extension to airport to be reviewed”, Regional briefs, by Imran Ghori (6/16/07)
- Inland Valley Daily Bulletin, In Brief, Andrea Bennett (6/17/08)
- Inland Valley Daily Bulletin, Editorial, “Foothill Extension Metro Should fund Gold Line” (6/25/08)
- San Bernardino Sun, On-Line and Print Advertisements (June 13, 14, 15, 17, 18 and 23, 2008)
- Inland Valley Daily Bulletin, On-Line and Print Advertisements (June 13, 14, 15, 17, 18 and 23, 2008)

Phase III

- Inland Valley Daily Bulletin, “Two routes identified for rail extension to Ontario airport by Lisa Marquez (12/02/08) – also ran in the San Bernardino Sun and Contra Costa Times
- Market Watch, “Study Concludes Extending Light Rail to LA/Ontario International Airport is Feasible; Two Routes are Recommended for Further Analysis” Press Release (12/03/08)
- LA Street Blog, “Will Gold Line Get Extended to Ontario Airport,” Posted by Damien Newton (12/03/08)
- Metro Magazine, “Study: Extending rail to L.A./Ontario airport feasible” Industry News (12/04/08)
- Press Enterprise, “Study finds light rail extension to Ontario feasible,” by Imran Ghori (12/06/08)
- The San Bernardino Sun (on-line news alert), “Rancho Cucamonga, Upland open houses share proposed Metro Gold Line Routes,” by Joe Smilor (12/07/08)
- Inland News Today, “New Line to Ontario Airport proposed” (12/08/08)

Community Feedback

Nearly 260 stakeholders provided feedback regarding the proposed routes and station locations during Phases I and II of the Study. Comments were received via in-person comments at meetings, presentations and briefings; comment sheets from community meetings; calls to the community hotline; and completed website surveys and comment forms. Below is an overview of the feedback received during the three Study phases:

Phase I

During Phase I, over 130 stakeholders provided feedback. The one area of consensus during this phase was the overwhelming support for extending the final terminus of the Metro Gold Line from Montclair to the LA/Ontario International Airport. Over 80 percent of stakeholders agreed that this was an important connection for the area; and of the many local activity centers throughout the Study area, the one that had nearly unanimous support for being connected to the light rail line. Other desired connections included Downtown Upland, Victoria Gardens, Ontario Mills, the Rancho Cucamonga Metrolink station, and Downtown Ontario.

A variety of different opinions were voiced about the best route to use to get to the Airport. In general, stakeholders favored the routes that would have the least impact on existing homes, that utilized existing rights-of-way, and that connected to local business districts. On the other hand, stakeholders were not in favor of displacing homes, affecting Baldwin Park Branch bike

and pedestrian trail, and having stations on the freeway.

A copy of the Phase I completed comment sheets, on-line surveys and on-line comment forms can be found in [Appendix A5-11](#).

Phase II

A total of 60 stakeholders provided feedback to the Study Team during Phase II. Although no overall consensus was reached about the best route to use to get to the Airport during this phase, the route that received the greatest number of supportive comments was the Metrolink/Cucamonga Channel Route (which was favored by nearly 38 percent by those providing feedback on their preference). The second most favored route, supported by 28 percent of the commentators, was the Baldwin Park Branch/Cucamonga Channel Route.

Stakeholders expressed that the Metrolink/Cucamonga Channel route option (utilizing the Metrolink and Cucamonga Channel rights-of-way) was the most favorable route because it:

- Used existing right-of-way
- Would be less costly to build
- Provided less disruption to nearby homes and local streets
- Would not disrupt the Baldwin Park Branch recreational trail
- Would connect to Ontario's downtown, where a significant amount of density is under development

Stakeholders also expressed support for the use of the Baldwin Park Branch/Cucamonga Channel route option (which follows the Baldwin Park Branch and Cucamonga Channel rights-of-way) because it is:

- Closest to residents
- Would serve Rancho Cucamonga
- Utilizes existing rights-of-way
- Would be a direct route to the Airport

The least favored route was any use of the Vineyard Avenue alignment, receiving only 16 percent of the route preference. Reasons given to not support this route included:

- It is potentially the most time consuming and most expensive option
- Would have the greatest impact on adjacent uses
- Would require a significant amount of right-of-way acquisition

A copy of the Phase II completed comment sheets, on-line surveys and on-line comment forms

can be found in [Appendix A5-11](#).

Phase III

During Phase III, nearly 70 stakeholders provided feedback. As with previous phases, almost all commentators supported extending the final terminus to the Airport. Of the two final recommended route options, the majority of commentators preferred Route 2A (Metrolink/Cucamonga Channel), over Route 3B (Baldwin Park Branch/Cucamonga Channel), as it was believed to be:

- Less expensive to build
- Less impacting on nearby neighborhoods
- Less impacting on the existing Baldwin Park Branch bike/pedestrian trail (PE Trail) and the future Route 66 Trailhead park (at Foothill/Trail)

Of those that preferred Route 3B, the potential connection to local services was cited as a benefit to moving forward with this route.

Overall concerns raised by commentators included:

- Noise
- Traffic/grade crossings
- Affects on property values
- Safety
- Historic homes in Upland
- Impacts on the Baldwin Park Branch Trail

Although not specifically stated on the comment sheets, it is believed that these concerns were mostly related to Route 3B, as the route would be closer to homes and neighborhoods.

A number of suggestions were also provided by stakeholders. They included:

- Trains should accommodate luggage
- Parking needs to be built near stations
- Stations should have restrooms, and they need to be maintained
- A station should be added at Vineyard Avenue, if Route 2B moves forward

A copy of the Phase III completed comment sheets and on-line comment forms can be found in [Appendix A5-11](#).

Summary of Public Outreach Activities

Community outreach was an important aspect of the Study evaluating the feasibility and best route to use to extend the Metro Gold Line from its current planned terminus in Montclair to the LA/Ontario International Airport. Hundreds of people participated in the process during two phases of outreach by attending meetings and presentations, completing on-line surveys and comment forms, and by calling and commenting on the community hotline.

The one area of consensus throughout the Study was an overwhelming agreement that the extension of the light rail line to the Airport was a good idea. A variety of opinions were provided about the best route to use to connect the two points.

The technical team utilized the feedback as they narrowed the route options between Phases I and II, and in making the final recommendations. The team responded to community feedback by continuing forward the most direct and quickest routes to the Airport, those that maximized use of existing rights-of-way, had the least impact on existing homes and businesses, and served (rather than bypassing) local communities.

Chapter 6. Future Action Plans

This Strategic Planning Study serves as an important first step in a long-term process required to study, design and introduce Gold Line service east to the LA/Ontario International Airport. This chapter describes the future steps that will be needed to progress the project through the planning stages, including subsequent planning activities, funding strategies, and major opportunities and challenges.

Subsequent Project Activities

The next step for most planning projects after initial strategic planning studies is a full Alternatives Analysis (AA). An AA study is the formal basis for examining the full range of alternative routes, technologies, and configurations for a study area, and culminates in the recommendation of a Locally Preferred Alternative (LPA) to be carried forward into engineering and construction. Most large transit projects seek funding from the Federal Transit Administration (FTA) New Starts program, in which case there is an established local transportation planning process that must be followed during the study. This process is described in the following paragraphs.

FTA's Alternative Analysis process is a bridge between systems planning and project development. The AA study is intended to provide information to local decision makers in analyzing various alternatives that will best serve the needs of the corridor. The AA process is designed to address the following questions:

- What are the potential problems in a corridor?
- What are viable options for addressing these problems?
- What are their costs?
- What are their benefits?

Although the AA study is to a large extent a locally managed process and local agencies have broad latitude in conducting the analysis, FTA has specific guidelines that must be addressed throughout the alternative analysis process.

Notification of Intent to Conduct an AA

FTA wants to be involved early in the AA process to advise the local agencies in addressing technical and procedural issues, ensure that sound planning practices are used throughout the study and FTA procedures and guidance are followed. To assist local agencies in the AA process, FTA seeks to have an understanding of the project, the purpose and potential alternatives. Agencies undertaking an AA are to notify their FTA Regional Office in writing of such studies. The Regional Office will work with FTA's Office of Planning in reviewing the proposed study and provide recommendations and technical assistance to the local agencies. The Notification of Intent memorandum should be approximately 10 to 15 pages and include:

- A description of study area
- Existing transportation problems and needs
- Study goals and objectives
- Preliminary evaluation from previous analyses
- Development of alternatives that will be studied

Purpose and Needs Statement

Developing a Purpose and Needs Statement is a critical step in the outset of the AA process. The Purpose and Needs Statement provides a clear understanding of the transportation and mobility problems within a corridor, problems and issues of communities along the corridor, and an understanding of the socio-economic/environmental conditions. Working with the various stakeholders and community outreach meetings, the AA study will define the purpose and needs that will lead to goals and objectives for the study.

Goals and Objectives

Building upon the purpose and needs for the study, specific goals and objects will be developed. Stakeholders and members of the community are asked to provide input and comment on the projects goals and objectives. These goals and objectives provide direction to ensure that the results of the study address the issues identified in the Purpose and Needs Statement.

Public Outreach

Throughout the AA process, public outreach meetings will be held to provide a status of the projects and solicit public comments and concerns, similar to the two public outreach sessions that were conducted in this Strategic Planning Study.

Developing Alternatives

Throughout the planning process, decisions are made by narrowing the options in selecting the best corridor / project. The study must identify a broad range of reasonable alternatives to address the problems in the corridor. The alternatives must:

- Address the purpose and need for considering a major transportation investment
- Include the necessary baseline options
- Include all reasonable modes, alignments and technologies
- Be consistent with the National Environmental Protection Act (NEPA) environmental process

Although the definition of alternatives is determined by local needs and the goals and objectives, FTA's guidelines require the development of baseline alternatives against which to compare the build alternatives. AA studies for potential federally-funded projects should include the following alternatives:

- **The No-Build Alternative:** The No-Build alternative defines the existing conditions in the study area along with funded and programmed projects that are reasonably expected to be implemented in the near future. The alternative serves to define the corridor if no new action is taken, and serves as the baseline alternative for environmental purposes.
- **TSM Alternative:** TSM alternatives are relatively low cost options to address problems in the study area without a major new guideway project. The TSM alternative emphasizes transportation system upgrades such as intersection improvements, minor road widening, bus route restructuring and improvement, expanded park & ride facilities, express and limited-stop bus service, and signalization improvements. These low cost options serve as the baseline against which build alternatives are evaluated against for FTA modeling purposes.
- **Build Alternatives:** A wide variety of technologies and operating plans can be evaluated as build alternatives. While more expensive than TSM alternatives and generally having environmental impacts that have to be mitigated, the Build Alternatives also offer substantial benefits to riders over existing roads. In general, the FTA recommends that an AA examine the following modes unless they do not meet the purpose and need of the project:
 - Express Bus (usually covered by TSM alternative)
 - Bus Rapid Transit (BRT) on dedicated guideway
 - Light Rail Transit (LRT)/Diesel Multiple Unit (DMU)
 - Heavy Rail Transit (HRT) (subway/elevated)
 - Commuter Rail

Detailed Definition of Alternatives

Throughout the AA process, the definition of the alternatives being studied is continually refined. System analysis develops *conceptual definitions* that include the identification of preliminary alignments and operating strategies. Conceptual definitions are used in the scoping process to identify the range of options to be considered and to shape the technical scope of work for the AA.

Early in the AA process, a more *detailed definition* of each alternative is conducted. Using the local transit / highway agencies' design standards, horizontal and vertical alignments, station locations, engineering issues, environmental impacts and capital/operating costs, a detailed

definition alternative report is developed. The report describes the service levels, operating plans and policies for each alternative in the opening and forecast years. The operating plans describe routes, station locations, headways, speeds of service and feeder service. Policy options, institutional arrangements and financial strategies should also be described relevant to the alternatives. Some alternatives may drop from further analysis if the detailed analysis shows that they have a fatal flaw or do not address the purpose and need for the corridor.

The final definition of alternatives consists of the plan and profile drawings, cross-section drawings for various line segments, conceptual station drawings and conceptual engineering. More detailed analysis of capital and operating costs and operating plans are included.

Evaluation of Alternatives

Based on the results of the definition of alternatives, the local agencies analyze each alternative considering the goals and needs of the corridor, NEPA requirements, the operating and capital costs, other technical issues and local concerns, a Locally Preferred Alternative (LPA) is adopted. The LPA must be included in fiscally constrained long-range plan and an approved Transportation Improvement Program.

FTA's Evaluation of the LPA

FTA will review the AA process and evaluate the LPA. FTA's evaluation includes a review of the information submitted to support each proposed project and an assignment of a rating to each evaluation criterion. Based on these criteria-specific ratings, FTA develops an overall rating for the project.

New Starts projects are justified based on a comprehensive review of the following criteria:

- **Mobility Improvements** - User benefits per passenger mile; transit dependents using the project and transit dependents per passenger mile
- **Environmental Benefits** – EPA Air Quality
- **Transit Supportive Land Use** – Existing land use; transit supportive plans and policies; performance and impacts of policies
- **Cost Effectiveness** – Incremental cost per hour of transportation system user benefit

In addition, the lead agency for a project is judged based on the following criteria:

- **Technical Capacity** – The transit agency must demonstrate that it has the technical capacity to implement the project. Technical capacity refers to being able to construct, manage, operate and carry out all federal, state and local requirements
- **Project Management Plan** – The transit agency must develop a working project management plan including an implementation schedule

- **Financial Capacity** – The agency must demonstrate that it has the financial capacity to implement and operate the project without hindering its existing transit service. All funding sources available and anticipated to construct and operate the system must be identified

Projects are rated on a five-point scale from Low to High based on these criteria, with a project needing at least an overall medium rating to progress into Preliminary Engineering

Environmental Process

The AA process laid out by the FTA ensures that alternatives considered be in compliance with all NEPA requirements. Scoping meetings are held to introduce the alternative analysis process to the local agencies and community and to solicit feedback from the various stakeholders on the process, environmental concerns and possible alternatives. An Environmental Impact Statement (EIS) or Environmental Assessment (EA) will fully describe site-specific environmental impacts and will identify specific mitigation measures to address those impacts and will incorporate design practices to avoid and minimize potential adverse environmental impacts. Impact areas to be addressed include:

- Transportation impacts, safety and security, land use and zoning
- Secondary development, land acquisitions, displacements, and relocations, cultural resource impacts, including impacts on historical and archaeological resources and parklands/recreation areas
- Neighborhood compatibility and environmental justice
- Natural resource impacts including air quality, wetlands, water resources, noise, vibration, energy, wildlife and ecosystems, including endangered species

Measures to avoid, minimize and mitigate all adverse impacts will be identified and evaluated.

In California, a parallel environmental process is undertaken to meet the requirements of the California Environmental Quality Act (CEQA). The CEQA process is similar to the NEPA process, with its output being an Environmental Impact Report (EIR).

Engineering & Construction

An LPA that has been included in the region's fiscally-constrained Long Range Plan and Transportation Improvement Program and has received an overall medium rating or better from the FTA is eligible to seek permission to enter Preliminary Engineering (PE). In addition, most projects also receive a Record of Decision (ROD) for their final environmental studies before entering PE, although this is not a requirement. PE is the first stage of detailed design work, and is followed by Final Design, Construction, and Operation.

Funding Implications

One of the most important and most challenging components of any transit project is identifying and securing funding. Without funding constraints, it would be possible to design and implement a project in a short period of time. But with the limited source of money available for infrastructure projects in the metropolitan Los Angeles region, California, and the United States, funding constraints are usually the prime drivers of the project schedule.

Funding generally needs to be identified and committed by the end of the AA stage of the development process. There are a variety of sources that can be used to assemble a funding program for a project, as described below.

Federal Funding Sources

FTA Section 5309 New Starts: The federal government funds major transit projects through the FTA's New Starts Program. This program, whose qualifications were described in detail in the previous section, generally provides no more than 80% of the funding for approved transit projects

FTA Section 5309 Small Starts: The Small Starts program was implemented in the early 2000's to provide a streamlined process for funding small transit projects. To be eligible, projects need to have an overall cost less than \$250 million, and can receive up to \$75 million in Small Starts funding. The Gold Line LRT Extension to the LA/Ontario International Airport will likely have an overall project cost that exceeds the Small Starts thresholds, but if a viable shorter operating segment or lower-cost mode is chosen as part of a phased implementation, the Small Starts program could be a possible funding source.

FTA Section 5307 / 5309 Formula Funds: The FTA disburses funding to urban areas with operating rail transit systems (including San Bernardino County) for capital. This funding is generally based on the length of the existing transit line and frequency of service, and could make up a small portion of the Gold Line Extension's funding program.

Federal Flexible Programs: Can provide for small portions of the project budget with federal flexible sources, including:

- Congestion Management and Air Quality (CMAQ)
- Surface Transportation Program (STP)

State Funding Sources

The State of California provides several programs to fund transit projects, with the largest being the State Transportation Improvement Program (STIP) and Statewide Transit Assistance Funds (STA). Funding for these programs is provided by gasoline taxes and sales taxes on

gasoline and diesel purchases. Generally, these sources are used to fund approximately 20% of the project cost for major transit projects. But in the past decade, these programs have been extremely unreliable sources of funding due to repeated transfers of transportation funds to other programs by the state government. While state funding should be used for a portion of the project costs, it may be an unreliable source of funding if current state budget trends continue.

Local Funding Sources

Measure I – The main local source of funding for transportation in San Bernardino County is the Measure I quarter cent sales tax. Passed in 1989 and extended in 2004, this funding source can possibly provide for the local match to state and federal funding.

Los Angeles World Airports (LAWA) – Given the crucial connection the Gold Line Extension provides to the LA/Ontario International Airport, it may be eligible for local funding intended to improve Airport access. LAWA, which operates the LA/Ontario International Airport in addition to Los Angeles International Airport (LAX), may be in a position to contribute to a portion of the project's funding.

Local Cities – Stations for the Gold Line Extension will serve as important activity centers for the cities through which it runs. Cities may be able to provide funding for improvements to infrastructure in station areas, such as landscaping, parking, traffic signals, and other amenities.

Private Funding – Private entities may be able to contribute to small portions of the project's financing. Examples include right-of-way donations, shared parking facilities, and other areas where private entities see a possible benefit from the project. Joint development projects focusing on transit oriented development are another instrument that could be employed.

Project Opportunities and Challenges

There are several key areas of the project which will provide for major opportunities or present major challenges during future planning and design stages. Several of these key opportunities and challenges are described below:

Station Area Development: Stations along the Gold Line Extension are seen as key focal points for development in the corridor cities. Several of these areas are already the site of major interest for new development, including the Montclair TransCenter, downtown Upland, and the I-10/LA/Ontario International Airport area. The Gold Line Extension can provide a key transportation link in these areas to better serve new activity centers. Coordination should continue with key stakeholders in the station areas to ensure that their plans accommodate future transit service. Conversely, some established neighborhoods may not be supportive of new development near stations. In these areas, care will be needed to provide service to these residents without major impacts to the existing community fabric.

Baldwin Park Branch: The public meetings along the corridor were attended by a large number of residents who lived near the Baldwin Park Branch and were unaware of its status as a potential transit corridor until recently. The Baldwin Park Branch corridor is seen mainly as a recreation asset by most residents who are unaware of its previous and potential future use for transit purposes. If the Baldwin Park Branch Alignment is advanced through the AA study process, there needs to be a robust outreach effort to educate residents of the right-of-way's heritage as an interurban line, that there is land currently set aside for future transit usage, and the configuration and impacts of any alternatives.

Airport Access: The opportunities presented by providing access to the LA/Ontario International Airport cannot be understated. There are currently only very limited transit links to all airports in the greater Los Angeles metropolitan area, as opposed to most of the rest of the country and the world where transit serves a significant percentage of the airport market. The airport access potential with the Gold Line Extension provides a significant milestone in the Los Angeles area much more than would otherwise be only for an approximately 8-mile light rail extension.

Metrolink: The Metrolink San Bernardino Line is a very important transportation link through the study area currently, and any alternatives using the Metrolink alignment will need to be designed and constructed to minimize impacts to the existing service. In addition, transfers to/and from Metrolink at the Montclair and Upland stations will be an important project aspect, since many trips to downtown Los Angeles and surrounding areas will be much quicker on Metrolink compared to the locally-oriented Gold Line service. If designed and implemented correctly, Metrolink and the Gold Line can work together to improve access to the Airport and in the Study corridor.

Right-of-Way: The Gold Line Extension is fortunate to have existing publicly-owned right-of-way to follow for nearly its entire route. The acquisition of new right-of-way is usually a time-consuming and costly process, and the Gold Line Extension is at an advantage by being able to keep acquisitions to a minimum, primarily around the station area.

Cucamonga Channel: The Cucamonga Channel right-of-way, owned by the San Bernardino County Flood Control District, allows for a relatively low-impact north-south route through an otherwise heavily built-up area. But given that the Channel is a major flood control facility, the Extension will need to be designed through this area with great care to ensure it does not negatively impact flood control capabilities.

Key Environmental Impacts: There are several potential environmental impacts that rank higher than others for importance. They include:

- **Traffic / Safety Impacts at Grade Crossings & Intersections** – Given its generally at-grade configuration, the Gold Line Extension will have a large number of at-grade crossings. Traffic impacts and potential safety issues will be of concern in these areas.
- **Noise / Vibration Impacts on Residential Neighborhoods:** The Gold Line Extension will be running past residential communities for much of its length. While LRT vehicles are relatively quiet, there may still be noise impacts at curves and grade crossings.
- **Air Quality Improvements:** Given the major air quality problems in the Inland Empire, projects such as the Gold Line Extension that would provide low-emission transportation options will be seen very favorably by stakeholders and the public. This aspect of the project should be emphasized as much as possible.