

# Section 3

## Environmental Analysis

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### 3.1 INTRODUCTION

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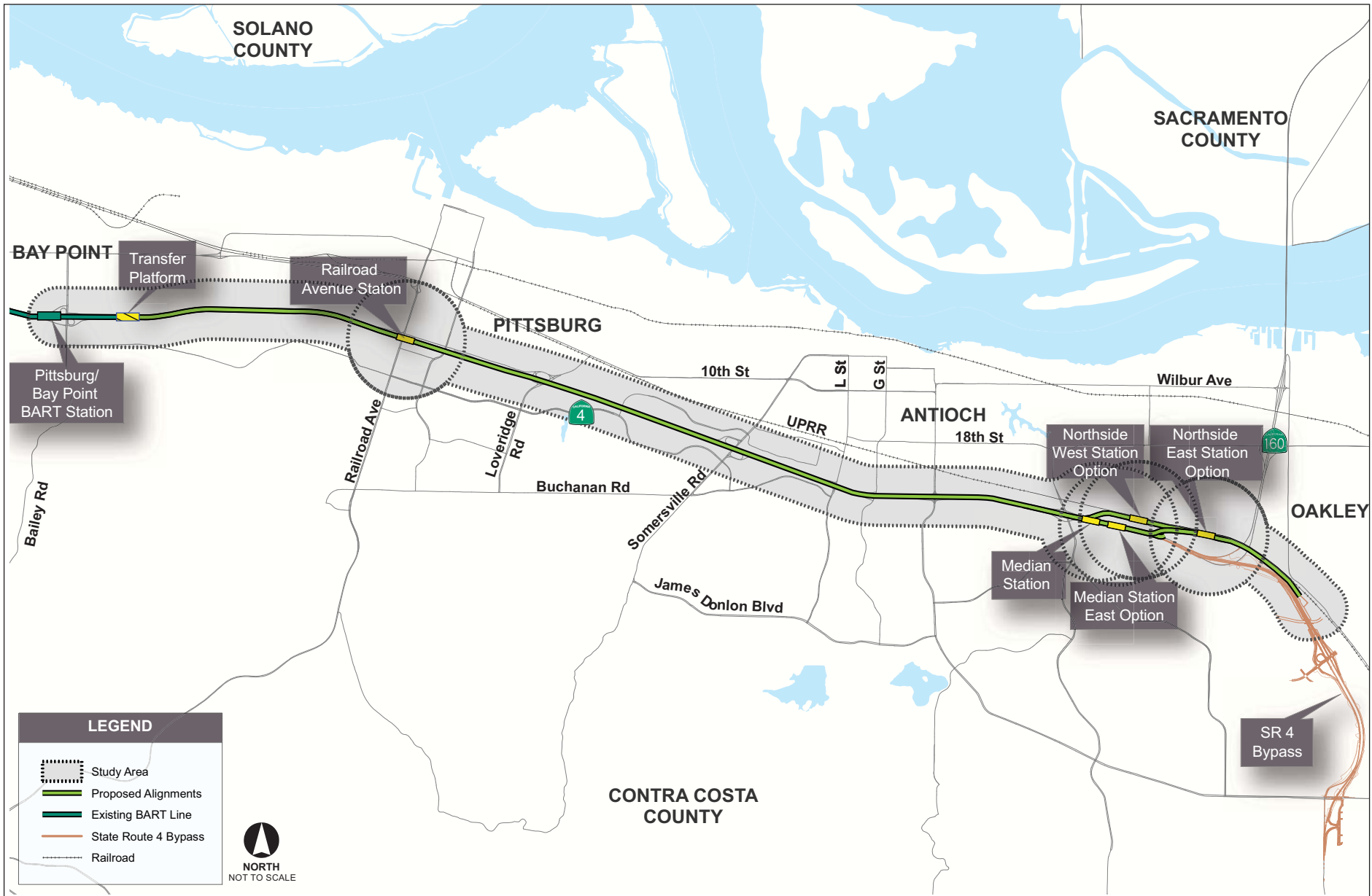
This section presents an overview to the environmental analysis chapter, and provides background information that will assist the reader in understanding the analysis. First, the study area and project corridor are described. Next, the organization of the environmental analysis is described, as well as the methodology used to determine, classify, and present the environmental impacts of the Proposed Project.

#### Study Area and Project Corridor

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The Proposed Project lies within the eastern portion of Contra Costa County, which is situated in the nine-county region referred to as the San Francisco Bay Area. The “study area” focuses on a corridor along State Route 4 (SR 4) between the Pittsburg/Bay Point BART Station in the unincorporated community of Bay Point near the City of Pittsburg and State Route 160 (SR 160) at the eastern end of the City of Antioch (see Figure 3.1-1). Approximately 10 miles in length, the study area is centered on SR 4 and is bound by primarily single family residential uses and large-scale community and regional shopping centers. Industrial uses are concentrated on both sides of SR 4 at the eastern end of the City of Pittsburg, and large undeveloped areas occur on the north side of SR 4 in the City of Antioch.

The Proposed Project would operate within the SR 4 median, between the Pittsburg/Bay Point BART Station, the current terminus of BART service in Contra Costa County, and an area east of the Hillcrest Avenue interchange. In this Draft EIR, the “project corridor” is defined as an area approximately one-quarter of a mile on either side of the project alignment, and a half-mile radius around the two proposed stations, at Railroad Avenue in the City of Pittsburg and east of Hillcrest Avenue in the City of Antioch. The project corridor is illustrated in Figure 3.1-1. The project corridor is used in this Draft EIR for the study of site-specific impacts, such as the loss of sensitive resources (for example, aesthetic, biological, and cultural features), land acquisition and displacement of structures, utilities relocation, local traffic and circulation impacts, access to properties, and impacts on local geo-seismic, hydrologic, air quality, and noise conditions.



Source: PBS&J, 2008.

**PROJECT CORRIDOR**  
**FIGURE 3.1-1**

## **Organization of the Environmental Analyses**

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This section is organized by environmental issue (e.g., traffic, land use, visual quality, cultural resources, etc.). Fourteen separate issues are presented in this section. In order to assist the public in identifying particular issues of interest, a page numbering convention has been employed to distinguish each topic. The pagination system consists of three parts: section-subsection-page; for example, page 3.2-2 represents Section 3 (Environmental Analysis), Subsection 3.2 (Transportation), and page 2. In addition, the issue is identified in the header at the top of each page for easy reference.

For each environmental issue addressed in Sections 3.2 through 3.15, this Draft EIR is organized into the topics described below.

**Introduction.** The introduction presents the reader with an overview to the topic and the critical issues and concerns that are considered in the analysis.

**Existing Conditions.** This discussion presents existing conditions for each environmental issue. As noted in Section 1, Introduction, two Notices of Preparation (NOPs) were prepared for the Proposed Project (Appendix A). The first NOP was prepared in 2005 and announced preparation of an EIR for a larger project that encompassed the entire project corridor, approximately 23 miles from the Pittsburg/Bay Point BART Station, east through the cities of Pittsburg and Antioch, then southeast through the cities of Oakley and Brentwood, and terminating in the unincorporated communities of Byron/Discovery Bay. The second NOP was released March 2008, which reflects the proposed shorter, 10-mile initial extension described in Sections 1 and 2 of this document. In order to reflect the most recent project context, existing conditions were updated when the revised environmental analysis commenced. The setting information for most sections focuses on the project corridor where impacts from the Proposed Project are most expected to occur. However, for more regional topics such as transportation and air quality, the existing conditions include data for a larger study area.

A discussion of “Applicable Policies and Regulations” has been included in the description of the existing conditions. This subsection identifies relevant public plans and policies and appropriate federal, state, and local regulations governing the topic under discussion. Within the affected cities, their respective general plans provide the basis for local land use and development policies.

As noted in some of the individual sections that follow, under state law (Government Code Section 53090 et seq.), BART is not required to comply with local land use policies and ordinances. However, discussion of these policies and ordinances is provided to understand the extent to which the Proposed Project is consistent with local plans, policies, and ordinances.

**Impact Assessment and Mitigation Measures.** This discussion considers how the existing conditions would be affected by the Proposed Project. This discussion is organized in the fashion described below.

*Standards of Significance.* The “standards of significance” describe the criteria by which an impact is declared significant and therefore in need of mitigation (i.e., actions to minimize the effects). These criteria are largely based on suggestions from the California Environmental Quality Act (CEQA) Guidelines, or where possible, criteria are based on state or federal standards. For example, air quality significance criteria, or thresholds, are based on the state and federal ambient air quality standards; noise significance thresholds are likewise based on criteria defined by the Federal Transit Administration (FTA). In other cases, such as for visual resources, the significance criteria are based on professional standards.

*Methodology.* The analysis of impacts for some of the topics may warrant use of specialized models, techniques, or methodologies. In such cases, the methodology for analyzing environmental impacts is presented. For example, the air quality analysis, which relies on a number of meteorological and traffic assumptions and on various air pollutant dispersion models, contains a description of these assumptions and the methodology adopted. More detailed information on methodology can be found in the background technical reports that support many of the topics; a list of these background reports is presented in Section 1 of this document.

*Project-Specific Environmental Analysis.* The environmental analysis identifies and describes the effects of the Proposed Project. The Proposed Project includes the Median Station at Hillcrest Avenue, the primary maintenance activities in the median of SR 4, and a maintenance annex on about 2.8 acres north of SR 4.

Environmental impacts are identified as the incremental changes that would be caused by the Proposed Project to the existing, or “baseline,” environmental conditions as of the date of the 2008 NOP. These effects are classified as follows:

- *Significant Impacts (S)* include adverse impacts that exceed the identified standards of significance. For example, air emissions that exceed federal ambient air quality standards would be a significant adverse impact.
- *Potentially Significant Impacts (PS)* include those impacts where it is not precisely clear whether a significant effect would occur; the analysis in these instances conservatively assesses the reasonably foreseeable worst-case effects, but the discussion acknowledges that there is uncertainty regarding the extent of the impact. For example, to determine visual impacts for the Proposed Project requires information on the design of the vehicles and architectural treatment of the stations. Lack of information on these details precludes a definitive statement about whether the proposed DMU technology and facilities would contrast substantially with the surrounding environment, and therefore the analysis assumes that there would be a potential for a significant effect, in the absence of clear evidence otherwise.

- *Less-than-significant Impacts (LTS)* include adverse effects that do not exceed the identified standards of significance. For example, changes in traffic congestion at an intersection from a free-flowing level of service to one where average delays may be ten seconds would be perceptible but would not represent a significant change in intersection operations. Similarly, if the ambient noise levels increased because of project operations, but the noise levels did not exceed FTA's criteria, the effect would not be considered significant.
- *No Impact (NI)* includes conditions when the Proposed Project would not result in any impact at all. For example, if there are no significant historic resources or faults within the project corridor, impacts to cultural resources or effects from ground rupture, respectively, would not be anticipated.
- *Beneficial Impacts (B)* include effects that enhance or improve an existing condition. For example, reduction in fuel consumption in the region due to fewer automobiles on the road with implementation of the Proposed Project would constitute a beneficial effect in terms of energy use and conservation.

For each impact identified as being significantly or potentially significantly adverse, this Draft EIR suggests mitigation measures to reduce or eliminate the negative effect of the Proposed Project. The discussion indicates whether the mitigation measures individually or collectively would reduce effects to a less-than-significant level. However, an additional effect is classified as follows:

- *Significant and Unavoidable Impacts (SU)* include those effects for which mitigation measures would not successfully reduce impacts to a less-than-significant level. For example, temporary construction noise impacts would be considered a significant and unavoidable impact because uncertainty about equipment to be used limits an ability to propose appropriate equipment noise mitigation measures.

*Hillcrest Avenue Station Options Analysis.* At the Hillcrest Avenue Station, there are alternative locations for the station and the associated maintenance facilities. This section indicates whether the impacts for the three station options (Northside West, Northside East, and Median Station East) are similar or different than those identified for the proposed Median Station. If the impacts are different, then this section presents the magnitude of the impacts and how they vary from those resulting from the Median Station.

*Cumulative Analysis.* To fully understand the environmental implications of a proposed project, CEQA requires that a proposed project be examined for its cumulative effects in conjunction with other reasonably foreseeable projects, as well as its individual effects on the existing environment. Cumulative effects must be considered because, even if the Proposed Project has an insignificant impact by itself, its small contribution together with the contributions of other projects can add up to an impact that collectively exceeds the standard of significance. On the other hand, if the combination of the Proposed Project's contribution, together with those of other projects, does not exceed the significance standard, then the

cumulative impact is insignificant. In addition, if the proposed project does not make any contribution to an adverse impact, it does not have a significant cumulative impact, even though the effects of other projects may be cumulatively significant.

The cumulative context for the Proposed Project considers all known regional development projects including three particular contributors to potential cumulative effects: Caltrans SR 4 widening project, growth in the project corridor as forecast by the Association of Bay Area Governments, and additional growth around the Railroad Avenue and Hillcrest Avenue Station sites, where Pittsburg and Antioch are preparing Ridership Development Plans (RDPs). The approximate timeframe for implementation of these projects is from the present to the year 2030. In addition, for some portions of the project corridor near the Union Pacific Right-of-way (UP ROW), Union Pacific has informed the City of Antioch that it intends to resume the use of the Mococo Line for freight rail traffic. Certain impacts associated with greater activity along this rail line could contribute to the impacts of the Proposed Project; for example, increased air and noise emissions would be expected.

- *Caltrans/CCTA SR 4 East Widening.* The Proposed Project would be constructed and operated within the same timeframe and the same geographic areas as the SR 4 East Widening Project, segments of which have been constructed and others of which are currently being designed by Caltrans. The segment from the Pittsburg/Bay Point BART Station (around Bailey Road) to Loveridge Road is complete. Caltrans and the Federal Highway Administration are responsible for the environmental evaluation of the segment from 0.8 miles west of Loveridge Road to 0.7 miles east of Hillcrest Avenue.<sup>1</sup> This segment of SR 4 between Loveridge Road and Hillcrest Avenue includes the following improvements:
  - Widen SR 4 from the existing four lanes to eight lanes. The widened freeway would consist of one high occupancy vehicle lane and three mixed-flow lanes in each direction.
  - Preserve sufficient width in the SR 4 median through the Loveridge Road interchange to accommodate a possible future public transit improvement.
  - Reconstruct SR 4 interchanges to accommodate the freeway widening at:
    - Loveridge Road
    - Somersville Road
    - Contra Loma Boulevard – L Street
    - Lone Tree Way – A Street
    - Hillcrest Avenue
  - Eliminate partial interchange at G Street and reconstruct the overcrossing.
  - Add auxiliary lanes between interchanges from SR 4 on-ramps to off-ramps.

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<sup>1</sup> Caltrans and FHWA, State Route 4 (East) Widening Project: Loveridge Road to State Route 160 Negative Declaration/Initial Study - Environmental Assessment, July 2005.

- Provide capability to add ramp metering facilities including high occupancy vehicle preferential lanes and California Highway Patrol enforcement areas where feasible.
  - Widen the Roosevelt Lane pedestrian undercrossing and the Cavallo Road undercrossing.
  - Extend drainage facilities that cross SR 4 in the project area.
- *Association of Bay Area Government's (ABAG) growth forecasts for 2030.* The ABAG forecasts have been used as a starting point to define future growth in the project corridor and study area. These growth forecasts generally encompass a number of specific development projects that are planned, approved but not yet constructed, or under construction. These forecasts also reflect recent updates to the general plans of both Pittsburg and Antioch.<sup>2,3</sup> As a result, these projections are particularly useful in anticipating future traffic conditions in the study area. Table 3.1-1 presents population and employment growth projections prepared by ABAG for Contra Costa County, and the cities of Pittsburg and Antioch.

**Table 3.1-1  
Growth Projections for Project Corridor Communities, 2010, 2015, and 2030**

		Contra Costa		
	Year	County	Pittsburg	Antioch
Population	2010	1,061,900	88,600	106,800
	2015	1,107,300	93,400	111,300
	2030	1,255,300	108,000	125,100
Households	2010	385,400	27,630	34,920
	2015	405,420	29,420	36,740
	2030	466,430	34,620	42,030
Total Jobs	2010	403,100	20,800	23,540
	2015	436,970	24,600	26,900
	2030	551,530	37,270	38,060

*Source:* Associated Bay Area Governments, Projections 2007, December 2006.

- *Ridership Development Plans.* As noted in Section 1, Introduction, both Pittsburg and Antioch are preparing RDPs for the proposed Railroad Avenue and Hillcrest Avenue Stations. An RDP is a station area plan that is created by a local jurisdiction to achieve transit ridership thresholds. The RDPs can be in the form of rezoning, a specific plan, or a general plan amendment, or a combination of these actions, with the goal of improving access to, and encouraging transit-oriented development (TOD) around, the proposed stations. In this case, RDPs are the responsibility of the cities of Pittsburg

<sup>2</sup> City of Pittsburg, *General Plan; Pittsburg 2020: A Vision for the 21st Century*, adopted October 2004, amended through December 2004.

<sup>3</sup> City of Antioch, *Antioch General Plan*, November 24, 2003.

and Antioch, and the environmental evaluation and adoption for the RDPs by the cities is a prerequisite for BART's adoption of the Proposed Project. These specific plans envision greater levels of development than anticipated by the current General Plans in the immediate environs around the stations and are acknowledged in this cumulative assessment. Table 3.1-2 identifies the new number of households and employment anticipated in the two RDP plan areas in 2030.

**Table 3.1-2  
Projected New Development in the Railroad Avenue and  
Hillcrest Avenue Station Ridership Development Plan Areas**

	Railroad Avenue Station	Hillcrest Avenue Station <sup>a</sup>	Combined <sup>a</sup>
Households	1,845	650 - 2,500	2,495 - 4,345
Employment	3,650	4,460 - 5,710	8,110 - 9,360

*Sources:* City of Pittsburg, Railroad Avenue eBART Station Specific Plan Initial Study – Draft, 2008; Dyett-Bhatia, consultants to City of Antioch for the Hillcrest Avenue Station Area Specific Plan, 2008.

*Note:*

a. Hillcrest Avenue Station and combined numbers vary depending on the station option.

The City of Pittsburg is in the process of preparing the Railroad Avenue Specific Plan, which will serve as the RDP for the proposed station at Railroad Avenue. The Specific Plan provides development standards and guidance for an area encompassing an approximately one-half mile radius from the proposed Railroad Avenue Station, and would include land use changes within 11 identified subareas. While some land uses within the one-half mile radius of the proposed station would remain the same, the Specific Plan would add new land use designations, including TOD Residential, High Intensity Mixed-Use, and Medium Intensity Mixed-Use. Ultimately, the Specific Plan will provide opportunities for the development of nearly 1,845 additional residential units and 1,004,000 square feet of additional commercial space within the plan area surrounding the proposed Railroad Avenue Station.

The City of Antioch is currently preparing the Hillcrest Station Area Specific Plan that includes policies and guidelines for promoting TOD around the proposed Median Station and three station options at Hillcrest Avenue. The conceptual plans for the Hillcrest Station Area Specific Plan would place office uses, residential TOD, and a mix of residential and retail TOD in close proximity to the proposed Hillcrest Avenue Station. Up to 2,150,000 square feet of community commercial and office uses and up to 2,500 new residential units could be developed in the Hillcrest Avenue Station area, depending on the particular station option.

- *Freight use of the Union Pacific ROW.* Recently, representatives of the Union Pacific Railroad contacted the City of Antioch and indicated that it is their intent to resume train operation on a regular basis in the next one to two years. UPRR indicated that



there could be as many as 10-15 trains per day initially and in the long term as many as 25-40 trains per day.<sup>4</sup> There remains substantial uncertainty about when train traffic might resume and how many trains per day would be operated. It is also unclear whether the existing tracks, which have not been maintained for many years, would be upgraded to allow higher speeds through the area.

## Enumeration of Impacts and Mitigation

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Each potential impact is highlighted, with an italicized “summary impact statement.” These statements are enumerated using an alpha-numerical system that identifies the environmental issue. For example, Impact LU-1 denotes the first impact discussion in the Land Use subsection. The letter codes used to identify the environmental issues presented in this section are TR for Transportation; LU for Land Use; PH for Population and Housing; VQ for Visual Quality; CR for Cultural Resources; GEO for Geology, Soils and Seismicity; HY for Hydrology and Water Quality; BIO for Biological Resources; NO for Noise and Vibration; AQ for Air Quality; HS for Public Health and Safety; CS for Community Services; UT for Utilities; and EN for Energy. Cumulative impacts are distinguished from project impacts and are denoted by the letters “CU” in the alpha-numerical system.

The italicized summary impact statement defines the nature of the impact and its significance (i.e., *S*, *PS*, *LTS*, *NI*, or *B*). Following each summary impact statement is the analysis that provides the evidence and supporting documentation for the significance classification. If an impact is less than significant, results in no impacts, or is beneficial, mitigation measures are not required. If, however, an impact is significant or potentially significant, mitigation measures are presented immediately following the impact discussion. The impact significance after mitigation is also noted (*LTS* for less than significant or *SU* for significant and unavoidable).

The mitigation measures are also numbered and are prefixed to link them with the impact they address; e.g., Mitigation Measure TR-2.1, refers to the first mitigation for Impact 2 in the Transportation subsection. A brief title is also included to easily identify the mitigation measure (e.g., *TR-2.1 Improve Hillcrest Avenue/E. 18<sup>th</sup> Street*). If the proposed mitigation measure would effectively reduce the significant or potentially significant impact to less than significant, this result is explicitly noted. On the other hand, if the proposed mitigation measure would not reduce the effect to less than significant, the analysis specifically notes that the impact would remain “significant and unavoidable (*SU*).”

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<sup>4</sup> Paul Bugarino, *Contra Costa Times*, “East County train back on track,” August 18, 2008.