

CHAPTER 5 PROJECT MERITS

A. INTRODUCTION

EIRs are intended to provide information to the public and the decisionmakers about the project, its physical environmental effects, and mitigation measures or alternatives that can avoid or reduce these effects. More specifically, an EIR prepared pursuant to CEQA must address the significant adverse impacts on the environment (Public Resources Code Section 21068). Information on whether a project is desirable is usually regarded as a discussion of the project's merits. Such information is relevant to the process of project approval and may be included in a statement of overriding considerations, which balances the benefits of a proposed project against its unavoidable environmental risks. However, information on project merits is not required to be included in an EIR under CEQA.

Although not required in the EIR by CEQA, this chapter is intended to provide the public and decisionmakers, including the BART Board of Directors, with information regarding the benefits or merits of the BART to Livermore Extension Project to assist with its decision on whether to adopt the Proposed Project or one of the Build Alternatives, or not to adopt any project (the No Project Alternative). The following four topics are addressed in this chapter:

- The beneficial impacts of the Proposed Project and Build Alternatives, which are presented in detail in Chapter 3, Environmental Analysis
- The possibility of future service expansion eastward under the Proposed Project and each Build Alternative
- The Proposed Project and Build Alternatives in relation to BART's System Expansion Policy (SEP) and Metropolitan Transportation Commission's (MTC) Resolution #3434 Transit-Oriented Development (TOD) Policy
- How the Proposed Project and Build Alternatives satisfy Plan Bay Area 2013 (Plan Bay Area) performance targets

A discussion of how the Proposed Project and Alternatives satisfy project objectives will be added to this chapter in the Final EIR, after BART has the opportunity to review and consider public comments and incorporate any revisions into the Final EIR.

B. PROJECT BENEFITS

The beneficial effects of the BART to Livermore Extension Project are not environmental impacts under CEQA, and an EIR is not required to evaluate these relative benefits. However, this EIR presents the beneficial effects of the Proposed Project and Build Alternatives so the public and decisionmakers can understand the improvements that could be achieved with project implementation.

The Proposed Project and Build Alternatives would have beneficial effects as identified in Chapter 3, Environmental Analysis, and summarized below. The quantifiable benefits are shown in Table 5-1 (see also Table 4-2 in Chapter 4). Although benefits would also occur in 2025, this discussion focuses on benefits in 2040, when the BART to Livermore Extension Project would be in full operation and benefits would be greatest. This discussion includes both project-level beneficial effects from implementation of the Proposed Project or an alternative and cumulative beneficial effects from implementation of the Proposed Project or an alternative in combination with the effects of other projects.

- **Transportation.** As described in Section 3.B, Transportation, benefits would occur with regard to increased systemwide BART ridership and reduction in total vehicle miles traveled (VMT), as well as pedestrian and bicycle improvements.¹
 - In 2040, the Proposed Project and Build Alternatives would achieve both an increase in BART systemwide ridership and a reduction in total VMT, as travelers switch from driving to transit, as follows:
 - The Proposed Project would result in the greatest increase in BART systemwide weekday ridership, by 11,900 riders, as well as the greatest reduction of weekday VMT, by 244,000.
 - The DMU Alternative or EMU Option would increase weekday ridership by 7,000 riders and reduce weekday VMT by 140,600.
 - The Express Bus/BRT Alternative would increase weekday ridership by 3,500 riders and reduce weekday VMT by 92,600.
 - The Enhanced Bus Alternative would result in the smallest increase in weekday ridership (400 riders) and the smallest reduction in weekday VMT (6,500).

When considered together with other projects in the cumulative analysis, the increases in systemwide weekday ridership and reductions in weekday VMT would be greater for each of the Proposed Project and Build Alternatives.

¹ Total VMT is the combination of passenger VMT reductions and bus VMT increases (see Table 3.B-30 in Section 3.B, Transportation).

TABLE 5-1 SUMMARY OF QUANTITATIVE BENEFICIAL EFFECTS UNDER 2040 PROJECT AND CUMULATIVE CONDITIONS

Metric	Conventional BART Project	DMU Alternative	EMU Option	Express Bus/BRT Alternative	Enhanced Bus Alternative
Transportation					
Project - BART System Ridership (average weekday)	+11,900	+7,000	+7,000	+3,500	+400
Cumulative - BART System Ridership (average weekday)	+13,400	+8,300	+8,300	+4,800	+1,800
Project - Vehicle Miles Traveled (average weekday)	-244,000	-140,600	-140,600	-92,600	-6,500
Cumulative - Vehicle Miles Traveled (average weekday)	-272,700	-164,500	-164,500	-112,900	-26,800
Greenhouse Gas Emissions					
Project - Annual GHG Emissions (metric tons of CO ₂ e/year)	-11,200	-3,500	-6,000	-3,700	--
Cumulative - Annual GHG Emissions (metric tons of CO ₂ e/year)	-12,800	-4,800	-7,300	-4,900	-400
Energy					
Project - Regional Energy Consumption (millions British Thermal Units/year)	-130,800	-35,000	-66,500	-56,800	--
Cumulative - Regional Energy Consumption (millions British Thermal Units/year)	-155,900	-55,900	-87,500	-74,600	-9,600

Note: -- = No benefit; the Enhanced Bus Alternative would increase GHG emissions by 600 metric tons of CO₂e/year and energy use by 8,200 million British Thermal Units/year. All numbers have been rounded to the nearest hundred. Data presented represent the difference between 2040 No Project Conditions and 2040 Project Conditions (or 2040 Cumulative Conditions). Positive values represent an increase and negative values represent a decrease.

- Under **Impacts TRAN-10** and **TRAN-11**, the Proposed Project and DMU Alternative or EMU Option would have beneficial effects pertaining to bicycle and pedestrian access, circulation, and safety. Specifically, the Proposed Project and DMU Alternative (or EMU Option) would incorporate pedestrian and bicycle access improvements in the vicinity of the proposed Isabel Station, including: (1) a new sidewalk along the north side of East Airway Boulevard; and (2) a new I-580 pedestrian and bicycle overcrossing of I-580, which would connect to the Isabel Station from both the north and south sides of I-580, eliminating the need for pedestrians to cross the I-580 ramps. The Express Bus/BRT Alternative and Enhanced Bus Alternative would not have any beneficial effects for pedestrians and bicyclists.

Similarly, under Cumulative Conditions, as described under **Impact TRAN-22(CU)**, the Proposed Project and DMU Alternative or EMU Option would also implement the above pedestrian and bicycle access improvements, in addition to the INP improvements, which include bicycle-supportive street design and the proposed Las Positas Trail.

- **Air Quality.** As described in Section 3.K, Air Quality, under **Impacts AQ-16** and **AQ-23(CU)**, the Proposed Project and Build Alternatives would be consistent with the 2017 Clean Air Plan—the most recently adopted air quality plan for the Bay Area—and support implementation of the plan. The Proposed Project and DMU Alternative or EMU Option would add a rail extension from the Dublin/Pleasanton Station to the Isabel Station. In addition, the Proposed Project and all Build Alternatives would add new Express and Rapid bus routes as well as bus-related infrastructure improvements.
- **Greenhouse Gas Emissions.** As described in Section 3.L, Greenhouse Gas Emissions, under **Impact GHG-4**, in 2040, the Proposed Project, DMU Alternative, EMU Option, and Express Bus/BRT Alternative would result in a reduction in greenhouse gas (GHG) emissions associated with reductions in VMT, as follows:
 - The Proposed Project would result in the greatest reduction in GHG emissions, at 11,200 metric tons per year.
 - The EMU Option would reduce GHG emissions by 6,000 metric tons per year.
 - The DMU Alternative would reduce GHG emissions by 3,500 metric tons per year.
 - The Express Bus/BRT Alternative would reduce GHG emissions by 3,700 metric tons per year.
 - However, the Enhanced Bus Alternative would result in an increase of 600 metric tons per year, as emission reductions associated with the small amount of additional riders that have been diverted from driving would not be enough to outweigh the emissions from the buses themselves. This would not represent a benefit.

When considered together with other projects in the cumulative analysis (**Impact GHG-6[CU]**), the Enhanced Bus Alternative would result in a larger VMT reduction, which would be sufficient to achieve a small GHG emissions reduction of 400 metric tons per year. Reductions in GHG emissions also would be greater for the Proposed Project, DMU Alternative, EMU Option, and Express Bus/BRT Alternative under Cumulative Conditions.

- **Energy Consumption.** As described in Section 3.M, Energy, under **Impact EN-4**, in 2040, the Proposed Project, DMU Alternative, EMU Option, and Express Bus/BRT Alternative would result in a reduction in energy consumption associated with reductions in VMT, as follows:
 - The Proposed Project would result in the greatest reduction in energy consumption, at 130,800 million British thermal units (MMBTU) per year.
 - The EMU Option would reduce energy consumption by 66,500 MMBTU per year.
 - The Express Bus/BRT Alternative would reduce energy consumption by 56,800 MMBTU per year.
 - The DMU Alternative would reduce energy consumption by 35,000 MMBTU per year.
 - The Enhanced Bus Alternative would result in an increase in energy consumption by 8,200 MMBTU per year, as the energy consumption reduction associated with the small amount of additional riders that have been diverted from driving would not be enough to outweigh the energy consumption of the buses themselves. This would not represent a benefit.

When considered together with other projects in the cumulative analysis (**Impact EN-6[CU]**), the Enhanced Bus would result in a larger VMT reduction, which would be sufficient to achieve a small reduction in energy consumption of 9,600 MMBTU per year. Reductions in energy consumption would also be greater for the Proposed Project, DMU Alternative, EMU Option and Express Bus/BRT Alternative under Cumulative Conditions.

C. FUTURE SERVICE EXPANSION

Comments received during the scoping process for this EIR, as well as comments on the BART to Livermore Program EIR, raised concerns regarding the prospect of further service expansion east of the Isabel Station. The adoption of the Proposed Project or one of the alternatives does not preclude future service expansions utilizing one or more of the technologies analyzed in this EIR, including conventional BART technology, DMU or EMU technology, or bus technology. Such an extension, as contemplated in the Program EIR, would be the subject of a separate project-level evaluation in a future environmental

document. The analysis below describes which technologies could be used for a future extension under the Proposed Project and each Alternative.

1. Conventional BART Project

If the Proposed Project is adopted by the BART Board of Directors, a future extension of conventional BART could be implemented farther east of the Isabel Station, either within the Interstate Highway (I-) 580 median toward Vasco Road and Greenville Road, or southeast toward Downtown Livermore. Additionally, DMU or EMU technology could be implemented from the Isabel Station, either east within the I-580 median or southeast toward Downtown Livermore. The adoption of the Proposed Project would not preclude the use of any technologies evaluated in this EIR for a future extension.

2. DMU Alternative/EMU Option

If the DMU Alternative or EMU Option is adopted, a future extension of DMU or EMU technology could be implemented farther east of the Isabel Station, either east within the I-580 median or southeast toward Downtown Livermore. However, the adoption of the DMU Alternative or EMU Option would preclude the extension of the Proposed Project from the Isabel Station, either east within the I-580 median or southeast toward Downtown Livermore. The transition from conventional BART service at the Dublin/Pleasanton Station to DMU or EMU service for one stop to the Isabel Station and then back to conventional BART service east of Isabel Station would be highly ineffective.

3. Express Bus/BRT Alternative

If the Express Bus/BRT Alternative is adopted, a future extension of conventional BART could be implemented east from the Dublin/Pleasanton Station. No modification to the Express Bus/BRT infrastructure would be necessary under this scenario and both transit services could co-exist. However, the adoption of the Express Bus/BRT Alternative would preclude the extension of DMU or EMU technology east from the Dublin/Pleasanton Station because it would require reconstruction of the Express Bus/BRT infrastructure at the Dublin/Pleasanton Station to accommodate DMU or EMU technology, which would be cost prohibitive.

4. Enhanced Bus Alternative

If the Enhanced Bus Alternative is adopted, a future extension of conventional BART could be implemented east from the Dublin/Pleasanton Station. Similarly, DMU or EMU technology could be implemented from the Dublin/Pleasanton Station. The adoption of the Enhanced Bus Alternative would not preclude the use of any technologies evaluated in this EIR for a future extension.

D. BART AND METROPOLITAN TRANSPORTATION COMMISSION POLICIES

1. Introduction

Both BART and MTC have adopted policies to encourage TOD in locations that are proposed to be served by a transit system expansion project. These policies seek to ensure that new station areas will generate a sufficient amount of new passengers and provide an adequate amount of housing.

As part of its SEP, BART has established ridership ratings to evaluate a proposed extension's performance, and requires local jurisdictions to prepare a Ridership Development Plan (RDP) to increase BART ridership. As part of its Resolution #3434 TOD Policy, MTC has established corridor-level housing thresholds to identify whether or not proposed extension station areas contain adequate existing and planned housing units, as well as a process for identifying measures to increase the housing supply if the thresholds are not met.

2. BART System Expansion Policy

As further described in Chapter 1, Introduction, BART's SEP—adopted in parallel with its first Strategic Plan in 1999—is meant to provide a policy framework for system expansion. The policy encourages BART to seek partnerships with other transit agencies, local communities, and private entities to plan transit service expansion. In 2002, BART adopted the system expansion criteria and process. System expansion criteria consider potential ridership in the context of other factors such as project cost-effectiveness, surrounding land uses, accessibility, connectivity with other transit systems, effects on the existing BART system, and degree of inter-agency partnering and community support.

As a steward of public funding for transportation investments, the BART policy seeks to achieve the following:

- Ensure cost-effective transportation investment decisions
- Protect the taxpayers' investment in BART's physical infrastructure
- Ensure the financial health and sustainability of BART
- Enhance the Bay Area's environment and quality of life

One element of the SEP is an evaluation of forecasted ridership for proposed extension corridors through its corridor-wide ridership ratings system. This evaluation assesses whether new stations under a proposed extension would support increased ridership. Under the SEP, projected average daily trips for an extension (daily entries and exits associated with new stations) are categorized into five ratings from low to high, as follows:

- Low: less than 5,000 average daily entries and exits
- Low-Medium: 5,000 to 9,999 average daily entries and exits
- Medium: 10,000 to 13,999 average daily entries and exits
- Medium-High: 14,000 to 20,000 average daily entries and exits
- High: above 20,000 average daily entries and exits

a. BART System Expansion Policy Ridership Ratings

Per the SEP, only future ridership at the proposed Isabel Station needs to be assessed. See Section 3.B, Transportation for a discussion of projections for systemwide ridership as well as boardings at the Dublin/Pleasanton Station and the West Dublin/Pleasanton Station. The SEP ridership ratings are only applicable to new stations; because the Express Bus/BRT Alternative makes improvements to an existing station (i.e., the Dublin/Pleasanton Station) and does not include a new station, the ratings do not apply. These ratings also do not apply to the Enhanced Bus Alternative, which consists only of minor bus infrastructure improvements and would not expand the BART system.

Based on the 2040 BART ridership projections presented in Section 3.B, Transportation, the Proposed Project would have an average of 16,200 daily entries and exits at the Isabel Station, attaining a Medium-High rating per the SEP, and the DMU Alternative would have an average of 9,600 daily entries and exits at the Isabel Station, attaining a Low-Medium Rating.² Therefore, the Proposed Project would perform better respective to the SEP ridership ratings than the DMU Alternative.

b. Ridership Development Plan

One of the primary components of the system expansion criteria and process is the requirement for communities proposed to be served by a BART extension to prepare an RDP. RDPs seek to promote BART ridership by balancing community desires with enhanced access to proposed BART stations and TOD. The RDPs can be implemented as general plan amendments, specific plans, rezonings, access improvements, or other actions selected at the discretion of the local jurisdictions. By promoting additional TOD housing within station areas, growth would be redirected and redistributed into the station areas. In response to this requirement, the City of Livermore is preparing the Isabel Neighborhood Plan (INP), which would provide for increased development densities beyond those currently allowed under the City of Livermore General Plan in the vicinity of the proposed Isabel Station, within the Livermore Isabel Avenue BART Station Priority

² See Table 3.B-22 in Section 3.B, Transportation, for daily boardings (entries). The number of entries at the Isabel Station was doubled to determine the BART ridership numbers (entries and exits) consistent with the SEP.

Development Area. See Section 3.A, Introduction to Environmental Analysis, for a more detailed discussion of the INP.

3. Metropolitan Transportation Commission Resolution #3434 - Transit-Oriented Development Policy

As further described in Chapter 1, Introduction, MTC is responsible for financing and coordinating public transportation in the nine-county Bay Area. MTC Resolution #3434 was adopted in 2001 to set forth the Regional Transit Expansion Program of Projects, together with a comprehensive funding strategy of local, regional, State of California (State), and federal funding sources.³ The resolution was amended in 2005 to include a TOD policy and amended again in 2007. The TOD policy applies only to those projects specified in the policy, which are a subset of the projects funded by Resolution #3434.⁴

While the BART to Livermore Extension Project is included in Resolution #3434, it is not listed as one of the transit extension projects subject to the TOD policy. Therefore, the housing thresholds listed in the TOD policy, further described below, are not applicable to the Proposed Project and Alternatives. However, this chapter includes a discussion of the consistency of the Proposed Project and DMU Alternative with these thresholds to provide information regarding the adequacy of housing supply in the extension corridor. Neither the Express Bus/BRT Alternative nor the Enhanced Bus Alternative would physically extend the transit system, and thus would not be subject to the TOD policy. Therefore, the Express Bus/BRT Alternative and Enhanced Bus Alternative are not further discussed below.

a. Housing Thresholds

Transit extension projects subject to the MTC Resolution #3434 TOD policy must plan for a minimum number of housing units along their respective corridors. These housing thresholds require that, within 0.5 mile of all stations served by a transit extension project, a combination of existing land uses and planned land uses meets or exceeds the corridor housing threshold. The thresholds vary by mode of transit, with more capital-intensive modes requiring higher numbers of housing units.

The corridor-level housing thresholds are as follows: 3,850 housing units for extensions utilizing BART technology; 3,300 housing units for light rail stations; 2,750 housing units

³ Metropolitan Transportation Commission (MTC), 2001. Resolution No. 3434. December 19. Amended September 24, 2008.

⁴ Metropolitan Transportation Commission (MTC), 2005. MTC Resolution 3434 Transit Oriented Development (TOD) Policy for Regional Transit Expansion Projects. July 27. Available at: <https://todresources.org/app/uploads/sites/2/2016/06/2005MTCTODPolicy.pdf>.

for bus rapid transit stations; and 2,200 housing units for commuter rail. An existing end-of-line station is included as part of the transit corridor for the purposes of calculating the housing thresholds. For example, a light rail extension with one new station would be required to meet a housing threshold of 6,600 housing units (3,300 units for the existing end-of-line station and 3,300 for the new light rail station). In addition, the housing threshold is an average of all the stations in the corridor; therefore, one station could have 2,200 units and the other station could have 4,400 units, as long as the average for both stations was a minimum of 3,300 units.

Furthermore, MTC Resolution #3434 TOD policy states that new below-market housing units receive a 50 percent bonus toward meeting the corridor threshold (i.e. one planned below-market housing unit counts as 1.5 housing units for the purposes of meeting the corridor threshold).

b. BART to Livermore Extension Project's Consistency with Housing Thresholds

Table 5-2 shows existing (2015) housing units and estimates of planned (2040) housing units for the existing Dublin/Pleasanton Station and the proposed Isabel Station, compared to the housing thresholds established by MTC methodology. There are approximately 5,003 existing and planned housing units within 0.5 mile of the Dublin/Pleasanton Station and approximately 4,831 existing and planned housing units within 0.5 mile of the Isabel Station, resulting in an average of approximately 4,917 housing units; this would exceed the respective MTC targets for the Proposed Project, DMU Alternative, and EMU Option. This analysis includes the anticipated housing units associated with the INP.

The methodology for developing the numbers presented in Table 5-2 is as follows: Existing and planned housing units within 0.5 mile of the Dublin/Pleasanton Station and existing housing units within 0.5 mile of the proposed Isabel Station were obtained from a memorandum prepared for MTC regarding existing and potential household capacity around those two stations.^{5,6} Planned housing units within 0.5 mile of the Isabel Station were obtained from an administrative draft version of the INP.⁷ The estimates provided include the affordable housing bonus, and are therefore slightly larger than the actual amount of housing units in 2040.

⁵ CD+A, 2015. Memorandum to MTC regarding Project 1507: 580 MTC TOD Assessment.

⁶ This memorandum provided two future buildout scenarios: Zoning/General Plans (fewer new housing units) and Long Term Redevelopment (more new housing units). In addition, each scenario had a low and a high estimate. The planned housing units presented here were conservatively taken from the Zoning/General Plans scenario, which projected fewer new housing units, by averaging the low estimate (4,759) and high estimate (5,247), which amounts to 5,003 housing units.

⁷ Szydluk, Monica, Senior Associate, Dyett & Bhatia, 2017. Email communication with Urban Planning Partners, Inc. May 2.

TABLE 5-2 COMPARISON OF METROPOLITAN TRANSPORTATION COMMISSION RESOLUTION #3434 - THRESHOLDS WITH EXISTING AND PLANNED HOUSING UNITS IN 2040

Project/ Alternative (MTC Project Type)	Dublin/ Pleasanton Station		Isabel Station		Average for both Stations (2040)	MTC Target	Target Satisfied
	Existing (2015)	Future (2040)	Existing (2015)	Future (2040)			
Conventional BART Project (BART)	924	5,003	565	4,831	4,917	3,850	Yes
DMU Alternative (Commuter Rail)	924	5,003	565	4,831	4,917	2,200	Yes
EMU Option (Light rail)	924	5,003	565	4,831	4,917	3,300	Yes

Note: MTC = Metropolitan Transportation Commission.

The Express Bus/BRT Alternative and Enhanced Bus Alternative are not shown because neither of those alternatives physically extends the transit system.

The DMU Alternative is classified as a Commuter Rail project type based on MTC's classification of the East Contra Costa County BART extension as Commuter Rail. The DMU Alternative is similar to the East Contra Costa County BART extension, as both entail the operation of DMU vehicles in the median of a freeway.

Sources:

Housing units within 0.5 mile of the Dublin/Pleasanton Station (Existing and planned): CD+A, 2015.

Housing units within 0.5 mile of the proposed Isabel Station (Existing): CD+A, 2015.

Housing units within 0.5 mile of the proposed Isabel Station (Proposed): Szydluk, 2017.

E. PLAN BAY AREA

Plan Bay Area is the San Francisco Bay Area's Regional Transportation Plan and Sustainable Communities Strategy, adopted in July 2013. A draft update of Plan Bay Area (Plan Bay Area 2040) was published in March 2017. Revisions to the draft Plan Bay Area 2040 and an accompanying Final EIR were published in July 2017; however, this update has not been adopted as of the preparation of this Draft EIR. See Section 3.C, Land Use and Agricultural Resources for additional information about Plan Bay Area.

This subsection briefly summarizes the consistency of the Proposed Project and Build Alternatives with the Plan Bay Area performance targets, which are shown in Table 5-3. Plan Bay Area identifies performance targets that are adopted by MTC and the Association of Bay Area Governments to outline preferred outcomes of the plan and measure the plan's performance. Performance targets 1 and 2 are required by State law, and the other eight are voluntary. The following discussion focuses on performance targets 1, 3, 6, and 9, which are applicable to the BART to Livermore Extension Project; other targets are not applicable.

TABLE 5-3 PLAN BAY AREA GOALS AND PERFORMANCE TARGETS

Goal/Outcome		Performance Target
State-required Targets		
Climate Protection	1	Reduce per-capita CO ₂ emissions from cars and light-duty trucks by 15 percent (Statutory requirement is for 2035, per Senate Bill 375)
Adequate Housing	2	House 100 percent of the region's projected growth (from a 2010 baseline year) by income level (very-low, low, moderate, above-moderate) without displacing current low-income residents (Statutory requirement, per Senate Bill 375)
Voluntary Targets		
Healthy and Safe Communities	3	Reduce premature deaths from exposure to particulate emissions: <ul style="list-style-type: none"> ▪ Reduce premature deaths from exposure to fine particulates (PM_{2.5}) by 10 percent ▪ Reduce coarse particulate emissions (PM₁₀) by 30 percent ▪ Achieve greater reductions in highly impacted areas
Reduce Injuries and Fatalities	4	Reduce by 50 percent the number of injuries and fatalities from all collisions (including bike and pedestrian)
Encourage Active Transport	5	Increase the average daily time walking or biking per person for transportation by 70 percent (for an average of 15 minutes per person per day)
Open Space and Agricultural Land	6	Direct all non-agricultural development within the urban footprint (existing urban development and urban growth boundaries)
Equitable Access	7	Decrease by 10 percentage points (to 56 percent, from 66 percent) the share of low-income and lower-middle income residents' household income consumed by transportation and housing
Economic Vitality	8	Increase gross regional product by 110 percent — an average annual growth rate of approximately 2 percent (in current dollars)
Transportation System Effectiveness	9	<ul style="list-style-type: none"> ▪ Increase non-auto mode share by 10 percentage points (to 26 percent of trips) ▪ Decrease automobile vehicle miles traveled per capita by 10 percent
	10	Maintain the transportation system in a state of good repair: <ul style="list-style-type: none"> ▪ Increase local road pavement condition index to 75 or better ▪ Decrease distressed lane-miles of state highways to less than 10 percent of total lane-miles ▪ Reduce share of transit assets past their useful life to 0 percent

Notes: CO₂ = carbon dioxide; PM₁₀ = particulate matter, less than 10 microns in diameter; PM_{2.5} = particulate matter, less than 2.5 microns in diameter.

Source: ABAG and MTC, 2013.

The Proposed Project, DMU Alternative, and Express Bus/BRT Alternative would be consistent with performance targets 1, 3, and 9, while the Enhanced Bus Alternative would have a negligible effect on these targets. The Proposed Project and DMU Alternative would have a minor inconsistency with performance target 6, while the Express Bus/BRT Alternative and Enhanced Bus Alternative would be consistent with this target. The No Project Alternative would not advance any performance targets, as existing transit

conditions would be maintained, and VMT would increase with population growth without the benefit of public transit improvement or expansion.

Consistency with the applicable performance targets is described below.

- **Performance target 1: Reduce carbon dioxide emissions by 35 percent by 2035.** As described above in the Project Benefits subsection, the Proposed Project would provide the greatest reduction in GHGs—including carbon dioxide—contributing toward performance target 1, while the DMU Alternative, EMU Option, and Express Bus/BRT Alternative would also support this target to a lesser extent. The Enhanced Bus Alternative would provide a negligible contribution toward this target only when considered together with other projects under the cumulative scenario.
- **Performance target 3: Reduce premature deaths from exposure to PM_{2.5} by 10 percent and reduce PM₁₀ by 30 percent.** The Proposed Project, DMU Alternative (with EMU Option) and Express Bus/BRT Alternative would be consistent with this target by reducing both particulate matter less than 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5}) annually by 2040. The Proposed Project would achieve the greatest reduction in both pollutants, with the DMU Alternative (with EMU Option) achieving a smaller reduction, and the Express Bus/BRT Alternative achieving a smaller reduction than either the Proposed Project or DMU Alternative. The Enhanced Bus Alternative would achieve a negligible reduction in PM_{2.5} and PM₁₀. See Table 3.K-17 in Section 3.K, Air Quality for further detail.
- **Performance target 6: Direct all non-agricultural development within the urban footprint.** The Proposed Project and DMU Alternative would remove approximately 11.8 acres of Prime Farmland and Unique Farmland from agricultural use; however, these parcels are within the Livermore Urban Growth Boundary and are surrounded by urban and transportation uses. In addition, the storage and maintenance facility, which would be constructed under the Proposed Project and DMU Alternative, would be located on grazing land outside of the Urban Growth Boundary. However, this type of use is conditionally permitted by Alameda County in the Agricultural district as public use similar to a public utility. Therefore, the Proposed Project and DMU Alternative would have a minor inconsistency with this performance target. The Express Bus/BRT Alternative and Enhanced Bus Alternative would not have any components outside of the urban footprint and would be consistent with this performance target.
- **Performance target 9: Increase the non-auto mode share by 10 percent and decrease VMT per capita by 10 percent.** As shown in Table 5-1, the Proposed Project would result in the largest increase in BART average weekday ridership (11,900 daily riders) and the highest average weekday VMT reduction (244,000 miles). The DMU Alternative would increase BART weekday ridership by 7,000 riders and reduce average weekday VMT by 140,600 miles. The Express Bus/BRT Alternative would

increase BART weekday ridership by 3,500 riders and reduce average weekday VMT by 92,600 miles. The Enhanced Bus Alternative would result in the smallest increase in weekday ridership, by 400 additional riders, and smallest reduction in weekday VMT, by 6,500.