
4.10 GREENHOUSE GAS EMISSIONS

4.10.1 INTRODUCTION

The FEIR and SEIR-1 considered greenhouse gas (GHG) emissions within Section 4.3 of each document. The FEIR described the sources of GHGs and the effect of GHG emissions on the atmosphere. The SEIR-1 concluded that the FEIR information remained accurate and did not update the GHG discussion. Since publication of the SEIR-1, the Bay Area Air Quality Management District (BAAQMD) has published new guidance for assessing climate change and GHG emissions in environmental documents.¹ The new guidance includes a summary of recent regulations and a quantitative threshold for assessing impacts.

Additionally, the CEQA Guidelines have been amended to require an evaluation of GHG emissions. Updates to the CEQA Guidelines codified in March 2010 require lead agencies to consider the potential for a project to result in significant emissions of GHGs. The updated CEQA Guidelines further state that one of the factors that lead agencies should consider in determining the significance of a project's GHG emissions is whether the project's anticipated emissions would comply with pertinent regulations. Thus, this section includes a comprehensive discussion of GHG regulations and GHG emission impacts. This section serves as a stand-alone technical section that entirely replaces the GHG discussions in both the FEIR and SEIR-1.

4.10.2 ENVIRONMENTAL SETTING

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs that contribute to global warming or global climate change have a broader global impact. Global warming is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global warming are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back into space. Among the potential implications of global warming are rising sea levels and adverse effects to water supply, water quality, agriculture, forestry, and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Like most criteria and toxic air pollutants, much of the GHG production comes from motor vehicles.

¹ BAAQMD, California Environmental Quality Act Air Quality Guidelines, June 2010.

In addition to CO₂, CH₄, and N₂O, GHGs include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and water vapor. Of all the GHGs, CO₂ is the most abundant pollutant that contributes to climate change through fossil fuel combustion. CO₂ accounts for approximately 83 percent of the total GHG emissions in California. In addition, a number of human-made pollutants—such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds, and sulfur dioxide (SO₂)—have indirect effects on terrestrial or solar radiation absorption by influencing the formation or destruction of other climate change emissions.

Carbon dioxide equivalent (CO₂e) is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, 1 ton of CH₄ has the same contribution to the greenhouse effect as approximately 21 tons of CO₂, and 1 ton of N₂O has the same contribution to the greenhouse effect as approximately 310 tons of CO₂. Therefore, CH₄ and N₂O are much more potent GHGs than CO₂. Expressing emissions in CO₂e takes into consideration the contributions of all GHG emissions to the greenhouse effect.

4.10.3 REGULATORY SETTING

4.10.3.1 Federal Greenhouse Gas Regulations

Supreme Court Ruling

The United States Environmental Protection Agency (USEPA) is the federal agency responsible for implementing the Clean Air Act (CAA). In April 2007, the US Supreme Court ruled that CO₂ is an air pollutant as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs.²

EPA Actions

In response to the mounting issue of climate change, the USEPA has taken actions to regulate, monitor, and potentially reduce GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, the USEPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide the USEPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of

² U.S. Supreme Court, *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120), April 2, 2007.

CO₂ per year. This publically available data will allow reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. Reporting is generally at the facility level; however, certain suppliers of fossil fuels and industrial greenhouse gases, along with vehicle and engine manufacturers, will report at the corporate level. An estimated 85 percent of total US GHG emissions, from approximately 10,000 facilities, is covered by this final rule.

Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act

In April 2009, the USEPA published its “Endangerment Finding” in the Federal Register.³ The Endangerment Finding is based on Section 202(a) of the CAA, which states that the administrator (of the USEPA) should regulate and develop standards for “emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.” The proposed rule addresses Section 202(a) in two distinct findings. The first addresses whether or not the concentrations of the six key GHGs (i.e., CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten the public health and welfare of current and future generations. The second addresses whether or not the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and therefore the threat of climate change.

The administrator proposed the finding that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the Climate Change Act. The evidence supporting this finding consists of human activity resulting in “high atmospheric levels” of GHG emissions, which are very likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wild fires, droughts, sea level rise, and higher-intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The administrator also proposed the finding that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. The proposed finding cites that, in 2006, motor vehicles were the second largest contributor to domestic GHG emissions (24 percent of total) behind electricity generation, and that, in 2005, the US was

³ USEPA, Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Climate Change Act, April 23, 2009.

responsible for 18 percent of global GHG emissions. Therefore, GHG emissions from motor vehicles and motor vehicle engines were found to contribute to air pollution that endangers public health and welfare.

4.10.3.2 State Greenhouse Gas Regulations

Assembly Bill 1493 (2002)

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that the California Air Resources Board (CARB) develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by the California Air Resources Board to be vehicles whose primary use is noncommercial personal transportation in the State.”

To meet the requirements of AB 1493, in 2004, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emissions standards to California’s existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961) and adoption of Section 1961.1 (13 CCR 1961.1) require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for the 2016 model year are approximately 37 percent lower than the limits for the first year of the regulations (the 2009 model year). For light-duty trucks with a LVW of 3,751 pounds to gross vehicle weight of 8,500 pounds, as well as medium-duty passenger vehicles, GHG emissions would be reduced approximately 24 percent between 2009 and 2016.

In December 2004, a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against CARB to prevent enforcement of 13 CCR Sections 1900 and 1961, as amended by AB 1493 and 13 CCR 1961.1.⁴ The automakers’ suit asserted that California’s implementation of regulations that, in effect, regulate vehicle fuel economy, violates various federal laws, regulations, and policies.

On December 12, 2007, the court found that, if California receives appropriate authorization from the USEPA (the last remaining factor in enforcing the standard), these regulations would be consistent with and have the force of

⁴ U.S. District Court for the Eastern District of California, Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon, in Her Official Capacity as Executive Director of the California Air Resources Board, et al., December 2004.

federal law, thus rejecting the automakers' claim. This authorization to implement more stringent standards in California was requested in the form of a CAA Section 209, subsection (b) waiver in 2005. Since that time, the USEPA failed to act on granting California authorization to implement the standards, and Governor Schwarzenegger and Attorney General Edmund G. Brown filed suit against the USEPA for the delay. In December 2007, USEPA Administrator Stephen Johnson denied California's request for the waiver to implement AB 1493. In his denial, Johnson cited the need for a national approach to reducing GHG emissions, the lack of a "need to meet compelling and extraordinary conditions," and the emissions reductions that would be achieved through the Energy Independence and Security Act of 2007.

The State of California filed suit against the USEPA for its decision to deny the CAA waiver. The recent change in presidential administration directed the USEPA to reexamine its position for denial of California's CAA waiver and for its past opposition to GHG emissions regulation. California received the waiver, notwithstanding the previous denial by the USEPA, on June 30, 2009.

Assembly Bill 32 (2006), California Global Warming Solutions Act

In September 2006, Governor Schwarzenegger signed AB 32 (Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006, which enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 requires the reduction of Statewide GHG emissions to 1990 levels by 2020. This amounts to approximately a 15-percent reduction compared to existing Statewide GHG emission levels, or a 30-percent reduction from projected 2020 "business as usual" emission levels. The required reduction will be accomplished through an enforceable statewide cap on GHG emissions beginning in 2012.

To effectively implement the statewide cap on GHG emissions, AB 32 directs CARB to develop and implement regulations that reduce statewide GHG emissions generated by stationary sources. Specific actions required of CARB under AB 32 include: adopting a quantified cap on GHG emissions that represents 1990 emissions levels, and disclosing how the cap is quantified; instituting a schedule to meet the emissions cap; and developing tracking, reporting, and enforcement mechanisms to ensure that California achieves the necessary reductions in GHG emissions to meet the cap.

In addition, AB 32 states that, if any regulations established under AB 1493 (2002) cannot be implemented, CARB is required to develop additional regulations to control GHG emissions from vehicles as part of AB 32.

In December 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan).⁵ The Scoping Plan outlines the primary strategies that the State will implement to achieve an approximately 169-million-metric-ton (MMT) reduction in CO₂e, or an approximately 30-percent reduction from the State's projected 2020 CO₂e emission level of 596 MMT under a business-as-usual scenario (i.e., a reduction of 42 MMT CO₂e—nearly 10 percent—from 2002 to 2004 average emissions).

The Scoping Plan includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards

- Improved emissions standards for light-duty vehicles (estimated CO₂e reduction of 31.7 MMT);
- The Low-Carbon Fuel Standard (estimated CO₂e reduction of 15.0 MMT);
- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (estimated CO₂e reduction of 26.3 MMT); and
- A renewable portfolio standard for electricity production (estimated CO₂e reduction of 21.3 MMT).

CARB has not yet determined what amount of GHG reductions it recommends from local government operations; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, CARB is also developing an additional protocol for community emissions). CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined.⁶ With regard to land use planning, the Scoping Plan predicts a CO₂e reduction of approximately 5.0 MMT, associated with implementation of SB 375, as discussed below.

⁵ CARB, 2008.

⁶ CARB, 2008.

Senate Bills 1078 and 107 and Executive Order S-14-08

Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Governor Schwarzenegger plans to propose legislative language that will codify the new higher standard.

Senate Bill 1368 (2006)

SB 1368, the companion bill of AB 32, was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities by February 1, 2007, and the California Energy Commission (CEC) to establish a similar standard for local, publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, be generated from plants that meet the standards set by the CPUC and CEC.

Senate Bill 97 (2007)

SB 97, signed by Governor Schwarzenegger in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Resources Agency (CRA) by July 1, 2009 guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA. The CRA certified and adopted these guidelines on December 30, 2009. The CRA transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the CCR. The amendments became effective on March 18, 2010.

This SB also removes, both retroactively and prospectively, as legitimate causes of action in litigation, any claim of inadequate CEQA analysis of effects of GHG emissions associated with environmental review for projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 (Proposition 1B) or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1E). This provision was repealed by provision of law on

December 30, 2009, at which time such projects, if any remain unapproved, no longer enjoy protection against litigation claims based on failure to adequately address issues related to GHG emissions.

Senate Bill 375 (2008)

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. As part of the alignment, SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that prescribes land use allocation in that MPO's regional transportation plan (RTP). CARB, in consultation with the MPOs, is required to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned GHG emission reduction targets. If an MPO does not meet its GHG reduction target, transportation projects located within its boundaries would not be eligible for funding programmed after January 1, 2012.

This bill also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located in an MPO that meets certain requirements. City or county land use policies (e.g., general plans) are not required to be consistent with the RTP, including associated SCSs or APSs. Qualified projects consistent with an approved SCS or APS and categorized as "transit priority projects" would receive incentives under new provisions of CEQA.

Executive Order S-3-05 (2005)

Executive Order S-3-05, signed by Governor Schwarzenegger on June 1, 2005, proclaimed that California is vulnerable to the impacts of climate change. The order declared that increased temperatures could reduce snowpack in the Sierra Nevada Mountains, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the order established targets for total GHG emissions, which include reducing GHG emissions to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The executive order also directed the secretary of the California Environmental Protection Agency (Cal EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary is to submit biannual reports to the governor and legislature on the progress toward reaching the emission targets, the impacts of global warming on California's resources, and mitigation and adaptation plans to combat impacts of global warming.

To comply with the executive order, the Cal EPA secretary created the California Climate Action Team, which is composed of members from various State agencies and commissions. In March 2006, the California Climate Action Team released its first report, which proposed achieving the GHG emissions targets by building on voluntary actions of California businesses and actions by local governments and communities, along with continued implementation of State incentive and regulatory programs.

Executive Order S-13-08

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08, which directs California to develop methods for adapting to climate change through preparation of a statewide plan. The executive order directed the OPR, in cooperation with the CRA, to provide land use planning guidance related to sea level rise and other climate change impacts by May 30, 2009. The order also directed the CRA to develop a State climate adaptation strategy by June 30, 2009, and to convene an independent panel to complete the first California sea level rise assessment report. The public comment period on the State climate adaptation strategy closed September 17, 2009, and the report was made public December 2, 2009. The assessment report is required to be completed by December 1, 2010 and to address the following four items:

- Project the relative sea level rise specific to California by taking into account issues such as coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates.
- Identify the range of uncertainty in selected sea level rise projections.
- Synthesize existing information on projected sea level rise impacts to state infrastructure (e.g., roads, public facilities, beaches), natural areas, and coastal and marine ecosystems.
- Discuss future research needs relating to sea level rise in California.

Executive Order S-1-07

In 2007, Governor Schwarzenegger signed Executive Order S-1-07, which proclaimed the transportation sector as the main source (accounting for over 40 percent) of GHG emissions in California. The executive order also established a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020. In particular, the order established a low-carbon fuel standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, CARB, the University of California, and other agencies to develop and propose protocols for measuring the “life-cycle carbon intensity” of transportation fuels. This analysis supporting development of the

protocols was included in the State implementation plan for alternative fuels,⁷ and was submitted to CARB for consideration as an “early action” item under AB 32. CARB adopted the LCFS on April 23, 2009.

California Attorney General

The California Attorney General has prepared a fact sheet listing various mitigation measures that local agencies may consider to offset or reduce global warming impacts and ensure compliance with AB 32. As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The majority of the mitigation measures are relevant to general land development. However, the following mitigation measures are relevant to transportation projects:

- Incorporate green building practices and design elements.
- Install efficient lighting for traffic, street, and other outdoor lighting.
- Reduce unnecessary outdoor lighting.
- Reuse and recycle construction and demolition waste.
- Incorporate public transit into the project’s design.
- Include pedestrian and bicycle facilities within projects, and ensure that existing non-motorized routes are maintained and enhanced.
- Meet an identified transportation-related benchmark.
- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation.
- Build or fund a major transit stop within or near the development.
- Promote “least polluting” ways to connect people and goods to their destinations.
- Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.
- Ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation.

⁷ CEC, State Alternative Fuels Plan, adopted December 24, 2007.

4.10.3.3 Local Greenhouse Gas Regulations

Bay Area Air Quality Management District Climate Protection Program

The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce VMT, and develop alternative sources of energy, all of which assist in reducing GHG emissions and air pollutants that affect the health of residents. The BAAQMD also seeks to support current climate protection programs in the region and stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

County of Alameda

The County of Alameda recognized the need to reduce GHG emissions to protect quality of life in the County. As a result, the Board of Supervisors directed County staff to develop a comprehensive climate protection strategy. The Board adopted 16 “Commitments to Climate Protection” that provide overarching vision, a goal of 15 percent reduction in GHGs by 2020, and the *Climate Action Plan*, which includes 80 recommended actions that will enable the County to reach its goals. These actions are solely designed for implementation by County agencies and employees and are not directly applicable to VTA projects.

4.10.4 PROJECT IMPACTS AND MITIGATION MEASURES

This section describes the impacts related to GHGs and quantifies the estimated Phase 1 GHG emissions. This section also assesses project consistency with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions.

Because the major source of GHG emissions is motor vehicles, the GHG emissions are derived from the VMT associated with Phase 1. The estimated VMT have been revised since certification of the FEIR and SEIR-1 as a result in updates to the phasing of construction and ridership projections. **Table 4.10-1** compares the SEIR-1 and SEIR-2 automobile and bus VMT.

Table 4.10-1: Regional Vehicle Miles Traveled Comparison (in millions)

Mode	No Project (SEIR-1)	BART Silicon Valley (SEIR-1)	No Project (SEIR-2)	Phase 1 (SEIR-2)
Bus	22.8	23.3	14.4	14.2
LRT	6.5	6.5	5.1	5.1
BART	108.2	13.4	109.4	117.6
Commuter Rail	2.7	2.7	2.7	2.7
Automobile	68,451.5	68,279.7	64,615.6	64,576.4
Total	68,591.7	68,446.1	64,744.5	64,713.4
Difference from No Project Conditions	0.0	-145.6	0.0	-31.1
Percent Change	0.00%	-0.2%	0.00%	-0.05%

Source: TAHA, 2010.
VMT data provided by VTA.

4.10.4.1 Methodology

GHG emissions are presented for 2030, consistent with the VMT calculations included in **Section 4.2, Transportation**, of this SEIR-2. Regional automobile and bus emissions were calculated using VMT and light-duty vehicle emission factors obtained from the CARB EMFAC2007 Motor Vehicle Emissions Inventory Model. The CO₂ and CH₄ emission rates for automobiles were 429 and 0.0105 grams per mile, respectively. The CO₂ and CH₄ emission rates for buses were 1,974 and 0.026 grams per mile, respectively.

GHG emissions were also calculated based on electric use associated with light rail activity. Energy use in British thermal units was obtained from the environmental impact statement and converted into kWh. GHG emission rates per kWh were obtained from the California Climate Action Registry *General Reporting Protocol*. The energy use emission factors, in pounds per kWh, were 3.7E-6 for N₂O, 6.7E-6 for CH₄, and 0.81 for CO₂.

The BAAQMD significance threshold was developed to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. The significance threshold is intended to serve as interim levels during implementation of the AB 32 Scoping Plan and SB 375, which will occur over time. Until AB 32 has been fully implemented in terms of adopted regulations, incentives, and programs, and until SB 375 required plans have been fully

adopted or CARB adopts a recommended threshold, the BAAQMD recommends that local agencies in the Bay Area apply a no-net-increase in operational emissions for transportation projects.⁸

4.10.4.2 Greenhouse Gas Emissions

The largest source of GHG emissions is automobiles. Public transportation projects generally reduce the amount of cars on the road by providing alternative means of transportation. With fewer cars on the roadway network, there would be fewer sources of pollution, which typically results in a reduction in GHG emissions.

Table 4.10-2 shows the difference in VMT and CO₂e for Phase 1. Phase 1 would decrease GHG emissions compared to the No Project conditions by 3,464 metric tons per year. This decrease is due to 12 percent less regional bus and automobile VMT when compared to the No Project conditions. Phase 1 would result in less GHG emissions than the No Project conditions, and, as such, would result in a beneficial impact related to GHG emissions and global climate change.

Table 4.10-2: Estimated GHG Emissions (2030)

Scenario	Regional Bus VMT	Regional Automobile VMT	Carbon Dioxide Equivalent (Metric Tons Per Year)
No Project	14,369,510	64,615,594,065	27,400,464
Phase 1	14,233,341	64,576,384,725	27,397,000
Net Increase	(136,169)	(39,209,340)	(3,464)
Increase Net Emissions?	-	-	No

Source: TAHA, 2010.
VMT data provided by VTA.

4.10.4.3 Consistency with Applicable Plans, Policies, and Regulations

On the federal level, climate change policies and regulations are focused on the regulation and reduction of GHG emissions. On the state level, climate change plans, policies, and regulations are designed to promote the goals of AB 32. Project consistency with climate change regulations is best demonstrated by assessing compliance with the AB 32 *Climate Change Scoping Plan* and the Attorney General GHG reduction measures, which provide specific metrics and strategies to reduce GHG emissions. The Scoping Plan contains broad emission reduction measures that do not generally apply on a project level. However, the Scoping Plan does include a measure that requires the development of regional transportation-related GHG targets. The Scoping Plan further states that,

⁸BAAQMD, Personal Communication, August 11, 2010.

through the SB 375 process, regions will work to integrate development patterns and transportation network in a way that reduces GHG emissions while meeting regional planning objectives. Phase 1 would provide an important connection between housing, employment, and recreational locations. As shown in **Table 4.10-2**, Phase 1 would reduce regional VMT and associated GHG emissions compared to No Project conditions. This is consistent with goals set forth in the AB 32 *Climate Change Scoping Plan*.

Table 4.10-3 shows Attorney General GHG reduction measures that are applicable to Phase 1. As shown, Phase 1 would be consistent with the identified measures, and would not interfere with plans, policies, or regulations designed to reduce GHG emissions. Impacts of Phase 1 related to applicable plans, policies, and regulations to reduce GHG emissions would be considered less than significant.

4.10.5 CONCLUSION

Phase 1 would reduce VMT and associated regional GHG emissions. In addition, Phase 1 would be consistent with State and local plans, policies, and regulations to reduce GHG emissions. Therefore, the proposed project would result in a beneficial GHG impact. This conclusion is consistent with the conclusion presented in the FEIR and SEIR-1. No new mitigation measures are necessary.

Table 4.10-3: Project Consistency with Attorney General Greenhouse Gas Reduction Measures

GHG Reduction Measures	Project Consistency
Incorporate green building practices and design elements	Consistent: VTA's adopted Sustainability Program requires Phase 1 to comply with the following strategy: "Incorporate sustainability and green building principles and practices in the planning, design, construction, and operation of new VTA facilities."
Install efficient lighting for traffic, street and other outdoor lighting	Consistent: VTA's Sustainability Program includes conserving energy during operations and an associated Phase 1 Green Building Strategy addresses daylighting and lighting controls.
Reduce unnecessary outdoor lighting	Consistent: Outdoor lighting associated with the stations would be designed to reduce light trespass onto adjacent properties and avoid unnecessary outdoor lighting along with conserving energy.

GHG Reduction Measures	Project Consistency
Reuse and recycle construction and demolition waste	Consistent: One of the adopted Phase 1 Green Building Strategies addresses materials and resources. This includes the management of construction and demolition waste to keep waste out of landfills to the maximum extent practicable; the use of recycled and regionally or locally available materials when available and appropriate; the reuse of soils on-site or elsewhere in the project area when possible.
Incorporate public transit into the project's design	Consistent: Phase 1 consists of the first 9.9 miles of BART Silicon Valley, beginning from the current planned terminus in Fremont through Milpitas to near Las Plumas Avenue in San Jose. Phase 1 includes two stations: Milpitas Station (formerly Montague/Capitol Station) and Berryessa Station.
Include pedestrian and bicycle facilities within projects and ensure that existing non-motorized routes are maintained and enhanced	Consistent: Phase 1 would include pedestrian walkways and bicycle racks at the transit stations. The stations would be designed with pedestrian and bicycle-friendly amenities (e.g., safety features) to encourage use.
Meet an identified transportation-related benchmark	Consistent: Phase 1 would improve public transit service in a severely congested corridor, enhance regional transit connectivity, increase transit ridership and improve regional air quality along other benefits of the project..
Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation	Consistent: Phase 1 includes two stations with transit centers to accommodate additional bus service, kiss & ride areas, and park-and-ride facilities to promote transit ridership.
Build or fund a major transit stop within or near the development	Consistent: Phase 1 would provide a 9.9-mile mass transit extension with two stations.
Promote "least polluting" ways to connect people and goods to their destinations	Consistent: Phase 1 would reduce regional vehicle miles traveled and associated GHG emissions compared to No Project conditions.
Require amenities for non-motorized transportation, such as secure and convenient bicycle parking	Consistent: Phase 1 would include bicycle racks at the transit stations. The stations would be designed with bicycle and pedestrian-friendly amenities (e.g., safety features) to encourage use.
Ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation	Consistent: Phase 1 would provide a 9.9-mile mass transit extension with two stations designed to encourage transit ridership.

Source: TAHA, 2010.

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