

CHAPTER 4 ENVIRONMENTAL ANALYSIS

4.1 INTRODUCTION

The sections in this chapter provide updated information on the environmental setting, regulatory setting, and project impacts and mitigation measures applicable to Bay Area Rapid Transit (BART) Silicon Valley Berryessa Extension (Phase 1) of the BART Silicon Valley. The analysis presented herein focuses on the updated information and design changes associated with Phase 1 that would result in potential environmental impacts. Due to updated ridership projections (see Design Change 1, Phasing of BART Silicon Valley), the 2004 Final Environmental Impact Report (FEIR) and the 2007 Supplemental EIR (SEIR-1) analyses of transportation, air quality, and energy are considered outdated. The FEIR and SEIR-1 noise analysis is also outdated because of changes to the regulations and standards that were applicable at the time the analysis was performed. Furthermore, an evaluation of greenhouse gas emissions is included in this Second Supplemental EIR (SEIR-2) pursuant to the updated 2010 California Environmental Quality Act (CEQA) Guidelines (see **subsection 4.1.1** below) as well as the 2006 California Global Warming Solutions Act (Assembly Bill 32). Therefore, **Section 4.2, Transportation; Section 4.3, Air Quality; Section 4.8, Energy; Section 4.10, Greenhouse Gas Emissions; Section 4.15, Socioeconomics; Chapter 5, BART Core System Parking Analysis; and Chapter 6, Agency and Community Participation**, are entirely new sections that replace the corresponding sections in the FEIR and SEIR-1. These new sections only cover the design changes associated with Phase 1. The FEIR and SEIR-1 discuss other design features and environmental impacts and mitigation measures that continue to be applicable.

4.1.1 THRESHOLDS OF SIGNIFICANCE

The thresholds used in this SEIR-2 to determine impact significance have been updated since certification of the FEIR and SEIR-1. Specifically, the CEQA Guidelines were amended, effective March 18, 2010. The updated CEQA Guidelines incorporated changes to Appendix G (Environmental Checklist). Appendix G of the CEQA Guidelines now requires that EIRs present an analysis of greenhouse gas emissions (as stated above) and a discussion of forest resources. The new checklist also incorporates changes to the significance criteria for transportation and circulation impacts; in particular, the requirement to evaluate parking impacts has been eliminated. (However, **Section 4.2, Transportation**, of this SEIR-2 provides a discussion of parking impacts for informational purposes only). Appendix F (Energy Conservation) of the updated

CEQA Guidelines also has been revised and requires that EIRs evaluate the energy use associated with proposed projects. **Table 4.1-1** lists the significance thresholds for each section in this chapter.

Table 4.1-1: Thresholds of Significance for Phase 1

Section	Environmental Issue	Threshold of Significance	Source
4.2	Transportation	Cause a Congestion Management Program facility intersection's level of service to deteriorate from LOS E (when compared to No Project).	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Cause an increase in the critical volume delay by 4 seconds or more, and increase the critical V/C ratio by 0.01 or more at a Congestion Management Program facility intersection already operating at LOS F under No Project conditions.	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Cause a local intersection's level of service to deteriorate from LOS D (when compared to the No Project).	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Cause an increase in the critical volume delay by 4 seconds or more, and increase the critical V/C ratio by 0.01 or more at a local intersection already operating at LOS E or F under No Project conditions.	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Result in a change of two letter grades at an intersection operating at LOS A or B under No Project conditions.	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Add new trips totaling more than 1 percent of the freeway capacity if a freeway segment is already operating at LOS F.	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Cause a substantial increase in regional VMT or VHT.	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Cause a substantial diversion of traffic onto a residential street.	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Substantially disrupt traffic or operations and/or substantially affect emergency vehicle response.	VTA; Cities of Milpitas and San Jose
4.2	Transportation	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, and mass transit.	Updated 2010 CEQA Guidelines, Appendix G Checklist

Section	Environmental Issue	Threshold of Significance	Source
4.2	Transportation	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated road or highways.	Updated 2010 CEQA Guidelines, Appendix G Checklist
4.2	Transportation	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	CEQA Guidelines, Appendix G Checklist
4.2	Transportation	Substantially increase hazards due to a design feature or incompatible uses.	CEQA Guidelines, Appendix G Checklist
4.2	Transportation	Result in inadequate emergency access.	CEQA Guidelines, Appendix G Checklist
4.2	Transportation	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to pedestrians and bicycle paths.	CEQA Guidelines, Appendix G Checklist
4.2	Transportation	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	CEQA Guidelines, Appendix G Checklist
4.3	Air Quality	Conflict or obstruct implementation of the federal or California CAA.	CEQA Guidelines, Appendix G Checklist
4.3	Air Quality	Violate federal or California air quality standards or contribute substantially to an existing or projected air quality violation.	CEQA Guidelines, Appendix G Checklist
4.3	Air Quality	Expose sensitive receptors to substantial pollutant concentrations.	CEQA Guidelines, Appendix G Checklist
4.3	Air Quality	Create objectionable odors affecting a substantial number of people.	CEQA Guidelines, Appendix G Checklist
4.3	Air Quality	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as nonattainment under an applicable federal or California ambient air quality standard.	CEQA Guidelines, Appendix G Checklist

Section	Environmental Issue	Threshold of Significance	Source
4.3	Air Quality	Exceed the BAAQMD's significance criteria.	CEQA Guidelines, Appendix G Checklist
4.3	Air Quality	Operational activity would not be consistent with the US EPA Transportation Conformity Rule (40 CFR Part 93).	BAAQMD; FHA; US EPA
4.4	Biological Resources and Wetlands	Have substantial adverse effect, either directly or through habit modifications, on any species identified as a candidate, sensitive, or special status species in regional plans, policies, or regulations, or by USFWS, NOAA Fisheries, or CDFG.	CEQA Guidelines, Appendix G Checklist
4.4	Biological Resources and Wetlands	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in regional plans, policies, regulations, or by USFWS, NOAA Fisheries, or CDFG.	CEQA Guidelines, Appendix G Checklist
4.4	Biological Resources and Wetlands	Have a substantial adverse effect on state waters or on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	CEQA Guidelines, Appendix G Checklist
4.4	Biological Resources and Wetlands	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established native resident or migratory wildlife corridor(s), or impede the use of native wildlife nursery sites.	CEQA Guidelines, Appendix G Checklist
4.4	Biological Resources and Wetlands	Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved regional or state HCP.	CEQA Guidelines, Appendix G Checklist
4.4	Biological Resources and Wetlands	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance as applicable.	CEQA Guidelines, Appendix G Checklist
4.5	Community Services and Facilities	Result in the need for new or physically altered governmental facilities so as to maintain acceptable serve ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, and other public facilities.	CEQA Guidelines, Appendix G Checklist
4.5	Community Services and Facilities	Result in the increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	CEQA Guidelines, Appendix G Checklist

Section	Environmental Issue	Threshold of Significance	Source
4.5	Community Services and Facilities	Include or require the construction or expansion of recreational facilities which may have an adverse effect on the environment.	CEQA Guidelines, Appendix G Checklist
4.6	Cultural and Historical Resources	Cause a substantial adverse change in the significance of a historical resource, as defined in CEQA Guidelines Section 15064.5 or federal regulations and guidelines.	CEQA Guidelines, Appendix G Checklist
4.6	Cultural and Historical Resources	Cause a substantial adverse change in the significance of an archeological resource, pursuant to CEQA Guidelines Section 15064.5 or federal regulations and guidelines.	CEQA Guidelines, Appendix G Checklist
4.6	Cultural and Historical Resources	Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.	CEQA Guidelines, Appendix G Checklist
4.6	Cultural and Historical Resources	Disturb any human remains, including those interred outside of formal cemeteries.	CEQA Guidelines, Appendix G Checklist
4.7	Electromagnetic Fields	Result in DC magnetic fields that exceed the guidelines of the ACGIH.	ACGIH
4.8	Energy	Place a substantial demand on regional energy supply or require substantial additional capacity.	VTA
4.8	Energy	Significantly increase peak and/or base period electricity demand in relationship to the supply.	VTA
4.9	Geology, Soils, Seismicity	Expose people or structure to potential substantial adverse effects including the risk of loss, injury, or death involving rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure including liquefaction; lateral spreading, subsidence, and collapse as a result of underlying unstable geologic units; or expansive soil.	CEQA Guidelines, Appendix G Checklist
4.9	Geology, Soils, Seismicity	Result in substantial soil erosion or the loss of topsoil.	CEQA Guidelines, Appendix G Checklist
4.9	Geology, Soils, Seismicity	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	CEQA Guidelines, Appendix G Checklist

Section	Environmental Issue	Threshold of Significance	Source
4.10	Greenhouse Gas Emissions	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Updated 2010 CEQA Guidelines, Appendix G Checklist
4.10	Greenhouse Gas Emissions	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gas.	Updated 2010 CEQA Guidelines, Appendix G Checklist
4.11	Hazardous Materials	Create a significant hazard to the public to the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	CEQA Guidelines, Appendix G Checklist
4.11	Hazardous Materials	Emit hazardous emissions, or handle hazardous materials or waste, within ¼ mile of an existing or proposed school.	CEQA Guidelines, Appendix G Checklist
4.11	Hazardous Materials	Be located on a site that is included on a list of hazardous materials sites and, as a result, create a significant hazard to the public or the environment.	CEQA Guidelines, Appendix G Checklist
4.11	Hazardous Materials	Create a potential hazard to the public to the environment through the routine transport, use, or disposal of hazardous materials.	CEQA Guidelines, Appendix G Checklist
4.11	Hazardous Materials	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	CEQA Guidelines, Appendix G Checklist
4.11	Hazardous Materials	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	CEQA Guidelines, Appendix G Checklist
4.12	Land Use	Physically divide an established community.	CEQA Guidelines, Appendix G Checklist
4.12	Land Use	Conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	CEQA Guidelines, Appendix G Checklist
4.13	Noise and Vibration	Contribute to a cumulative increase in noise levels that would be considered a severe impact according to FTA criteria.	FTA Noise and Vibration Criteria
4.13	Noise and Vibration	Result in vibration levels that exceed FTA criteria.	FTA Noise and Vibration Criteria

Section	Environmental Issue	Threshold of Significance	Source
4.13	Noise and Vibration	Operational noise exceeds the BART design criteria.	FTA Noise and Vibration Criteria
4.13	Noise and Vibration	Ground-borne vibration from operations exceeds the BART design criteria.	FTA Noise and Vibration Criteria
4.14	Land Use	Physically divide an established community.	CEQA Guidelines, Appendix G Checklist
4.14	Land Use	Conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	CEQA Guidelines, Appendix G Checklist
4.15	Socioeconomics	Induce substantial growth in an area either directly (e.g., by proposing new homes or buildings) or indirectly (e.g., through roads or infrastructure) not in accordance with existing community or city plans.	CEQA Guidelines, Appendix G Checklist
4.15	Socioeconomics	Displace existing businesses or housing, especially affordable housing.	CEQA Guidelines, Appendix G Checklist
4.15	Socioeconomics	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	CEQA Guidelines, Appendix G Checklist
4.16	Utilities	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities that could cause significant environmental effects.	CEQA Guidelines, Appendix G Checklist
4.16	Utilities	Result in the construction of new storm water drainage facilities or the expansion of existing facilities that could cause significant environmental effects.	CEQA Guidelines, Appendix G Checklist
4.16	Utilities	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	CEQA Guidelines, Appendix G Checklist
4.16	Utilities	Have sufficient water supplies available to serve the project from existing entitlements and resources.	CEQA Guidelines, Appendix G Checklist
4.16	Utilities	Result in a determination by the wastewater treatment provider that serves the project that it has adequate capacity to serve the project's demand in addition to the provider's existing commitments.	CEQA Guidelines, Appendix G Checklist

Section	Environmental Issue	Threshold of Significance	Source
4.16	Utilities	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	CEQA Guidelines, Appendix G Checklist
4.16	Utilities	Comply with federal, state, and local statutes and regulations related to solid waste.	CEQA Guidelines, Appendix G Checklist
4.17	Visual Quality and Aesthetics	Substantially damage scenic resources within a state scenic highway including, but not limited to, trees, rock outcroppings, and historical buildings.	CEQA Guidelines, Appendix G Checklist
4.17	Visual Quality and Aesthetics	Substantially degrade the existing visual character or quality of the site and its surroundings.	CEQA Guidelines, Appendix G Checklist
4.17	Visual Quality and Aesthetics	Have a substantial adverse effect on a scenic vista.	CEQA Guidelines, Appendix G Checklist
4.17	Visual Quality and Aesthetics	Create a new source of substantial light to glare that would adversely affect day or nighttime views in the area.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Violate any water quality standards or waste discharge requirements.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Substantially deplete water groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Place structures within a 100-year flood hazard area that would impede or redirect flood flows.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.	CEQA Guidelines, Appendix G Checklist

Section	Environmental Issue	Threshold of Significance	Source
4.18	Water Resources, Water Quality, and Floodplains	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Substantially degrade water quality.	CEQA Guidelines, Appendix G Checklist
4.18	Water Resources, Water Quality, and Floodplains	Result in inundation by seiche, tsunami, or mudflow.	CEQA Guidelines, Appendix G Checklist
4.19	Construction: Transportation	Result in the long-term (1 month or more) closure of a street, or the closure of a lane or other interference of traffic flow on any major traffic-carrying street, or the diversion of traffic through residential areas.	VTA
4.19	Construction: Transportation	Result in long-term (3 months or more) disruption of parking or pedestrian access that is essential for continued operation of business.	VTA
4.19	Construction: Water Resources, Water Quality, and Floodplains	Substantially affect water or groundwater quality, or alter surface runoff rates thereby contributing to flooding or erosion hazards.	VTA
4.19	Construction: Biological Resources and Wetlands	Substantially affect sensitive species or habitats, including natural communities and federally protected wetlands.	VTA
4.19	Construction: Cultural and Historical Resources	Demolish or materially alter a significant historical or archaeological resource.	VTA
4.19	Construction: Hazardous Materials	Create a potential public or environmental health hazard or an undue potential risk for health-related accidents, or result in a safety hazard for people residing or working in the project area.	VTA
4.19	Construction: Noise and Vibration	Cause a substantial temporary or periodic increase in ambient noise levels.	VTA

Section	Environmental Issue	Threshold of Significance	Source
4.19	Construction: Noise and Vibration	Result in noise or vibration levels that exceed FTA criteria.	FTA Noise and Vibration Criteria
4.19	Construction: Air Quality	Fail to implement Best Management Practices for construction-related activities, as recommended by the BAAQMD.	BAAQMD

Notes:

ACGIH = American Conference of Governmental Industrial Hygienists

BAAQMD = Bay Area Air Quality Management District

BART = Bay Area Rapid Transit

CAA = Clean Air Act

CDFG = California Department of Fish and Game

CEQA = California Environmental Quality Act

CFR = Code of Federal Regulations

CWA = Clean Water Act

DC = direct current

FTA = Federal Transit Administration

FHWA = Federal Highway Administration

HCP = Habitat Conservation Plan

LOS = level of service

NOAA Fisheries = National Oceanic and Atmospheric Administration Fisheries Service

USEPA = US Environmental Protection Agency

USFWS = US Fish and Wildlife Service

V/C = volume-to-capacity

VHT = vehicle hours traveled

VMT = vehicle miles traveled

VTA = Santa Clara Valley Transit Authority

Source: VTA, 2010.

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