

5 ENVIRONMENTAL JUSTICE

Since publication of the Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS), the following substantive changes have been made to this chapter:

- Analysis about the Diridon Design Variant (DDV), which was included in Section 3.19, Design Variant to Optimize Speed, in the Draft EIR/EIS, was incorporated into this chapter.
- A footnote was added to Section 5.1, Introduction, to clarify that the analysis of property displacements and relocation summarized in this Final EIR/EIS is based on a Draft Relocation Impact Report and that a Final Relocation Impact Report will be developed after completion of the final engineering design.
- Section 5.2.1.4, Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (USDOT Order 5610.2C), was updated to discuss the new changes in U.S. Department of Transportation (USDOT) orders.
- Section 5.2.2.4, McAteer-Petris Act (Gov. Code § 66600 et seq.), was modified to add information about the environmental justice and social equity policies of the San Francisco Bay Conservation and Development Commission (BCDC).
- A footnote was added to Section 5.3.2.2, Methods for Identifying Adverse Effects on Minority Populations and Low-Income Populations, clarifying when traffic congestion is considered an adverse effect.
- A footnote was added to Section 5.5.1.2, Environmental Justice Outreach Events, to clarify that additional community and outreach meetings were conducted in 2020 and 2021, as described in Chapter 9, Public and Agency Involvement, and documented in Appendix 9-A, Public and Agency Meeting List. Figure 5-15 was updated to depict the extent of the alternative alignments between Scott Boulevard and West Alma Avenue.
- The Safety and Security subsection in Section 5.6.3.1, No Adverse Effects, was revised to remove modifications at the Atherton Station because the station closed in 2020, and modifications to remove the hold-out rule are no longer necessary. The Station Planning, Land Use, and Development subsection within Section 5.6.3.1 was also revised to update the acreage of permanent right-of-way acquisition.
- The Safety and Security subsection in Section 5.6.3.2, Effects Addressed through Mitigation, was revised to reflect revisions to the design for the Relocated Brisbane Fire Station under Alternative A based on feedback from the City of Brisbane and to clarify the access design under Alternative B.
- The Parks, Recreation, and School District Play Areas subsection within Section 5.6.3.2 was revised to incorporate analysis of the Reed and Grant Streets Sports Park.
- The Traffic Congestion/Delay subsection in Section 5.6.3.3, Construction-Related Effects Potentially Disproportionate after Mitigation, was modified to describe construction period traffic congestion/delay as a potential adverse effect and consider the location of potential construction traffic delays. The conclusion that the San Francisco to San Jose Project Section (Project Section, or project) would not have a disproportionately high and adverse effect related to construction traffic congestion/delay has not been changed.
- The Noise and Vibration subsection in Section 5.6.3.3 was updated to remove modifications at the Atherton Station. In addition, the Safety and Security subsection in Section 5.6.3.3 was revised to reflect a phased construction approach to the relocated Tunnel Avenue overpass that would avoid temporary closure of Tunnel Avenue or Lagoon Road in Brisbane and would ensure that either the existing Brisbane Fire Station or the Relocated Brisbane Fire Station would remain operational with adequate access during construction.
- The Socioeconomics and Communities subsection in Section 5.6.3.3, Tables 5-15 and 5-16, were updated to clarify that the displaced Brisbane Corporation Yard under Alternative A was

counted as an industrial business and to identify displacements with the DDV. Figures 5-16 and 5-17 were updated to depict the extent of the alternative alignments between Scott Boulevard and West Alma Avenue and the DDV was added to Figure 5-17 under Alternative A.

- The Air Quality subsection in Section 5.6.3.3 was updated to reflect new air quality mitigation measures.
- The Traffic Congestion/Delay subsection in Section 5.6.3.4, Operations-Related Effects Potentially Disproportionate after Mitigation, was modified to add that project operations would add traffic at the San Jose Diridon Station and that Alternative B would also cause increased traffic volume, congestion, and delays in the vicinity of the San Jose Diridon Station, to describe operational traffic congestion/delay as a potential adverse effect, to identify that the project would not have a disproportionately high and adverse effect on minority populations and low-income populations before mitigation, to discuss potential traffic mitigation measures under consideration, and to identify that the project would not have a disproportionately high and adverse effect after mitigation. A new table (Table 5-18) and figures (Figures 5-18 through 5-20) were added to qualitatively and quantitatively assess potential adverse effects.
- The Safety and Security subsection in Section 5.6.3.4 was modified to note the availability of site-specific traffic mitigation measures to reduce emergency vehicle response time delays at certain locations under certain circumstances related to SS-MM#4: Install Emergency Vehicle Priority Treatments Related to Increased Gate-Down Time Impacts.
- The Noise and Vibration subsection in Section 5.6.3.4 was modified to reflect updated noise impacts incorporating the DDV and lead track design change for Alternative A and to correct the number of operations vibration impacts.
- Section 5.9, California High-Speed Rail Authority's Environmental Justice Determination, was revised to provide additional information about the California High-Speed Rail Authority's (Authority) policies to provide targeted job training and hiring opportunities for minority populations and low-income populations.

5.1 Introduction

This chapter evaluates potential impacts on minority populations and low-income populations, referred to as environmental justice populations. It summarizes environmental justice engagement with minority populations and low-income populations and key issues and concerns raised by these populations. The chapter identifies whether the project alternatives would have a disproportionately high and adverse effect on minority populations and low-income populations, and describes potential cumulative impacts that could occur in combination with past, present, and reasonably foreseeable future actions. This environmental justice evaluation is being issued by the Authority pursuant to 23 United States Code (U.S.C.) Section 327 and the terms of the National Environmental Policy Act (NEPA) Assignment Memorandum of Understanding (Federal Railroad Administration [FRA] and State of California 2019), dated July 23, 2019, which assigned to the Authority responsibility for complying with NEPA and other federal environmental laws, including U.S. Presidential Executive Order (USEO) 12898 and related USDOT orders and guidance.

The data used in the analysis are derived from various sources, including the U.S. Census Bureau 2010 Decennial Census and the 2010–2014 U.S. Census Bureau American Community Survey (ACS) 5-Year Estimates. The most reliable data available at the start of the analysis were used to document the demographic and economic characteristics of the reference community and the resource study area (RSA).

The *San Francisco to San Jose Project Section Community Impact Assessment* (San Francisco to San Jose Community Impact Assessment) (Authority 2019a) and *San Francisco to San Jose Project Section Draft Relocation Impact Report* (San Francisco to San Jose Draft Relocation Impact Report) (Authority 2019b) provide additional technical information about communities

from the 4th and King Street Station in San Francisco to Scott Boulevard in Santa Clara that support this environmental justice analysis.¹ The *San Jose to Merced Project Section Community Impact Assessment* (San Jose to Merced Community Impact Assessment) (Authority 2019c) and *San Jose to Merced Project Section Draft Relocation Impact Report* (San Jose to Merced Draft Relocation Impact Report) (Authority 2019d) provide additional technical details from Scott Boulevard to the terminus of the Project Section at West Alma Avenue in San Jose. The following appendices in Volume 2, Technical Appendices, of this Final EIR/EIS are also relevant to the environmental justice analysis:

- Appendix 2-D, Applicable Design Standards, provides the list of relevant design standards for the project alternatives.
- Appendix 2-E, Project Impact Avoidance and Minimization Features, provides the list of all impact avoidance and minimization features (IAMF) incorporated into this project.
- Appendix 2-I, Regional and Local Plans and Policies, provides a list by resource of all applicable regional or local plans and policies.
- Appendix 3.1-B, Analysis of Consistency with McAteer-Petris Act and San Francisco Bay Plan, provides a summary of the project’s consistency with San Francisco Bay Plan (Bay Plan) policies.
- Appendix 5-A, Environmental Justice Engagement Summary Report, documents the Authority’s outreach to minority populations and low-income populations, as well as feedback received from these populations.

Environmental justice in terms of transportation projects can be defined as the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, income, national origin, or educational level, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies, from the early stages of transportation planning and investment decision making through construction, operations, and maintenance. The environmental justice analysis must address, to the extent practicable and permitted by law, the potential disproportionately high and adverse human health or environmental effects of transportation programs, policies, and activities on minority populations and low-income populations. Environmental justice is an important consideration for transportation projects because of the potential effects on the quality of life of individuals and groups living and working within the RSA.

Issues and concerns raised during environmental justice engagement efforts, include:

- How project alternatives and project elements would avoid, benefit or adversely affect different neighborhoods
- Visual and noise impacts at the Brisbane light maintenance facility (LMF)
- Noise, safety, pollution, and displacements resulting from construction and operation of the passing track
- Operations-related noise
- Traffic congestion
- Safety related to train speeds and at-grade crossings
- Aesthetic effects

¹ The summary of property displacements and relocation impacts in this Final EIR/EIS is based on an assessment of the preliminary engineering design that is presented in detail in the Draft Relocation Impact Report. The final acquisition determinations will be made on a case-by-case basis during the land acquisition and real estate appraisal phase for the project and reported in a Final Relocation Impact Report. This will occur after the project engineering and design process is finalized and before construction of any alternative is approved.

- Community cohesion and connectivity
- Displacements (including of low-income housing)
- Equitable distribution of project benefits
- Cumulative effects

The resource sections in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, provide additional information related to assessing the project's impacts on resources that could also affect minority populations and low-income populations.

5.1.1 Definition of Resources

The following are definitions for minority populations and low-income populations analyzed in this Final EIR/EIS:

- **Minorities**—*Minority* includes persons who are American Indian and Alaskan Native, Asian American, Black or African American, Hispanic or Latino, and Native Hawaiian and other Pacific Islander. A minority population means any readily identifiable group or groups of minority persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons (such as migrant workers, students, or Native Americans) who will be similarly affected by a proposed program, policy, or activity.
- **Low-income**—*Low-income* means a person whose median household income is at or below the U.S. Census poverty thresholds, or a locally developed threshold that is at least as inclusive as the federal poverty thresholds. A low-income population means any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons (such as migrant workers, students, or Native Americans) who will be similarly affected by a proposed program, policy, or activity. For the purposes of this analysis, a locally developed threshold is used for San Francisco, San Mateo, and Santa Clara Counties to account for the San Francisco Bay Area's (Bay Area) high cost of living relative to the rest of the country. Low-income populations within San Francisco, San Mateo, and Santa Clara Counties are defined as persons with household incomes at or below 200 percent of the U.S. Census poverty thresholds.²

5.2 Laws, Regulations, and Orders

Federal and state laws, regulations, and orders relevant to the analysis of environmental justice in this Final EIR/EIS are presented in this section. The Authority would implement the statewide high-speed rail (HSR) system, including the Project Section, in compliance with all federal and state regulations. The Socioeconomics and Communities section of Volume 2, Appendix 2-I and Appendix 3.1-B provide regional and local plans and policies relevant to environmental justice considered in the preparation of this analysis.

5.2.1 Federal

5.2.1.1 Title VI of the Civil Rights Act (42 U.S.C. § 2000(d) et seq.)

Title VI of the Civil Rights Act (42 U.S.C. § 2000(d) et seq.) prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance. Under Title VI, each federal agency is required to make sure that no person, on the grounds of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal financial assistance.

² This is consistent with the approach adopted by the Metropolitan Transportation Commission, which is the transportation planning, financing, and coordinating agency for the nine-county Bay Area.

5.2.1.2 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (USEO 12898)

USEO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, outlines the federal government’s environmental justice policy. The USEO requires federal agencies to identify and address to the greatest extent practicable and permitted by law the disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

5.2.1.3 Presidential Memorandum Accompanying USEO 12898

The Presidential Memorandum accompanying USEO 12898 emphasizes the importance of existing laws, such as Title VI of the Civil Rights Act of 1964 and NEPA, that can assist with implementation of the principles of the order. The memorandum provides that, in accordance with Title VI, “each Federal agency shall ensure that all programs or activities receiving Federal assistance that affect human health or the environment do not directly, or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin.” It calls for specific actions to be directed in NEPA-related activities. They include:

- Analyzing environmental effects, including human health, economic, and social effects on minority populations and low-income populations when such analysis is required by NEPA.
- Ensuring that mitigation measures outlined or analyzed in environmental assessments, environmental impact statements, and Records of Decision, whenever feasible, address disproportionately high and adverse environmental effects of proposed actions on minority populations and low-income populations.
- Providing opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving accessibility to public meetings, official documents, and notices to affected communities.

5.2.1.4 Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (USDOT Order 5610.2C)

To implement USEO 12898, the USDOT relies on USDOT Order 5610.2C issued on May 14, 2021 (USDOT 2021), which replaced USDOT Order 5610.2B issued on November 18, 2020, which replaced the prior USDOT Order 5610.2(a) from May 2012. USDOT Order 5610.2C applies to actions undertaken by USDOT operating administrations, including FRA. The USDOT Order affirms the importance of considering environmental justice principles as part of early planning activities in order to avoid disproportionately high and adverse effects. The Order states that USDOT will not carry out any programs, policies, or activities that will have a disproportionately high and adverse effects on minority populations or low-income populations unless “further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect are not practicable.” The Order also states that “[i]n making determinations regarding disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancement measures that will be implemented and all offsetting benefits to the affected minority and low-income populations may be taken into account, as well as the design, comparative impacts, and the relevant number of similar existing system elements in non-minority and non-low-income areas.”

5.2.1.5 Improving Access to Services for Persons with Limited English Proficiency (USEO 13166)

USEO 13166 requires each federal agency to ensure that recipients of federal financial assistance provide meaningful access to their programs and activities by limited English proficiency applicants and beneficiaries. Meaningful access can include availability of vital documents, printed and internet-based information in one or more languages, depending on the location of the project, and translation services during public meetings.

5.2.1.6 Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 U.S.C. § 61)

The Uniform Relocation Assistance and Real Property Act (Uniform Act), passed by Congress in 1970 (42 U.S.C. § 61), stipulates that persons displaced from homes, businesses, and farms as a result of a federal action or by an undertaking involving federal funds must be treated fairly, consistently, and equitably. This protects people so that they will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. The objectives of the Uniform Act are to:

- Provide uniform, fair and equitable treatment of persons whose real property is acquired or who are displaced in connection with federally funded projects.
- Make certain that relocation assistance is provided to displaced persons to lessen the emotional and financial impact of displacement.
- Make certain that no individual or family is displaced unless decent, safe, and sanitary housing is available within the displaced person's financial means.
- Help improve the housing conditions of displaced persons living in substandard housing.
- Encourage and expedite acquisition by agreement and without coercion.

5.2.2 State

An environmental justice analysis is required by federal law but is not explicitly required by the State of California. The California Environmental Quality Act (CEQA) focuses on whether a project would have a significant impact on the physical environment and whether the environmental impacts of a project would cause substantial adverse impacts on human beings. Although specific provisions of CEQA require consideration of how the environmental and public health burdens of a project would affect certain communities (e.g., through consideration of the environmental setting and the assessment of cumulative impacts of a project), CEQA does not directly address environmental justice or the fair treatment of individuals and communities, and, as a result, CEQA determinations are not included in this chapter.

5.2.2.1 California Government Code Section 11135(a)

Section 11135(a) of the California Government Code prohibits discrimination or the denial of full and equal access to benefits of any program or activity operated or funded by the state or a state agency on the basis of race, national origin, ethnic group identification, religion, age, sexual orientation, color, or disability. This provision requires public agencies to consider fairness in the distribution of environmental benefits and burdens.

5.2.2.2 California Government Code Section 65040.12(e)

Section 65040.12(e) defines environmental justice as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” It does not, however, require an analysis of impacts on these populations as part of the CEQA process.

5.2.2.3 California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund (SB 535)

The California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund requires the California Environmental Protection Agency to identify disadvantaged communities for investment opportunities, as specified. The bill requires the California Department of Finance, when developing a specified 3-year investment plan, to allocate 25 percent of the available moneys in the Greenhouse Gas Reduction Fund to projects that provide benefits to disadvantaged communities, as specified, and to allocate a minimum of 10 percent of the available moneys in the Greenhouse Gas Reduction Fund to projects located in disadvantaged communities. The bill requires the California Department of Finance, when developing funding guidelines, to include guidelines for how administering agencies should maximize benefits for

disadvantaged communities. Senate Bill (SB) 535 also requires that the administering agencies report to the California Department of Finance, which in turn, provides a description of how these agencies have fulfilled specified requirements relating to projects providing benefits to, or located in, disadvantaged communities to the Legislature in a specified report.

5.2.2.4 McAteer-Petris Act (Gov. Code § 66600 et seq.)

The McAteer-Petris Act vests BCDC with the authority to plan and regulate activities and development in and around the San Francisco Bay, consistent with policies adopted in the Bay Plan. The Bay Plan was adopted in 1968 and was amended in 2019 to include policies concerning environmental justice (BCDC 2020). The policies require community outreach and engagement to involve potentially affected communities in underrepresented, identified vulnerable and/or disadvantaged communities, to identify potential disproportionate impacts in collaboration with the potentially affected communities, and to take measures to mitigate disproportionate adverse impacts on those communities. Refer to Volume 2, Appendix 3.1-B for additional information about the environmental justice and social equity policies relevant to the project.

5.2.3 Regional and Local

The city and county general plans presented in the Socioeconomic and Communities section of Appendix 2-I in Volume 2 of this Final EIR/EIS include goals and policies focused on providing fair and equitable housing and public facilities regardless of age, disability, race, culture, or income; preserving community character and minimizing incompatible land use conflicts; encouraging pedestrian and bicycle transportation in community design and improving mobility for urban and rural populations; and protecting agricultural lands and the associated agricultural economy. These plans and policies are applicable to the analysis of environmental justice. Consistency of the project alternatives with these and other policies that affect all communities within the local plan areas are addressed in Section 3.12.3, Consistency with Plans and Laws. As described in Appendix 3.1-B, the project alternatives were determined to be consistent with each of the environmental justice and social equity policies outlined in the Bay Plan.

5.3 Methods for Evaluating Effects

The evaluation of effects on minority populations and low-income populations is a federal requirement of USEO 12898. The following sections summarize the RSA and the methods used to analyze effects on minority populations and low-income populations.

5.3.1 Definition of Reference Community and Resource Study Area

The reference community is the area comprising the general population that could be affected by the project. The RSA encompasses the area where introduction of an HSR system is most likely to result in substantial changes or adverse effects on minority populations and low-income populations.

The reference community for this environmental justice analysis is the three-county region of San Francisco, San Mateo, and Santa Clara Counties (Figure 5-1). This area represents the general population that could be affected adversely or beneficially by the project alternatives. Information for these three counties is presented throughout this analysis to provide context and allow for comparison and contrast among communities within the RSA and the surrounding areas.

The RSA for direct and indirect effects on minority populations and low-income populations is defined as the census tracts partially or fully within the project alternatives' footprints and a 0.5-mile buffer zone from the project footprints. This is the area in which direct impacts on communities associated with noise, transportation, and property displacement are most likely to occur, and it is consistent with the Authority's Environmental Methodology Guidelines, Version 5.09 (Figure 5-1) (Authority and FRA 2017). The RSA includes the project footprint for each of the project alternatives that might be directly affected and adjoining areas that might be indirectly affected.



Sources: U.S. Census Bureau 2016a, 2016b

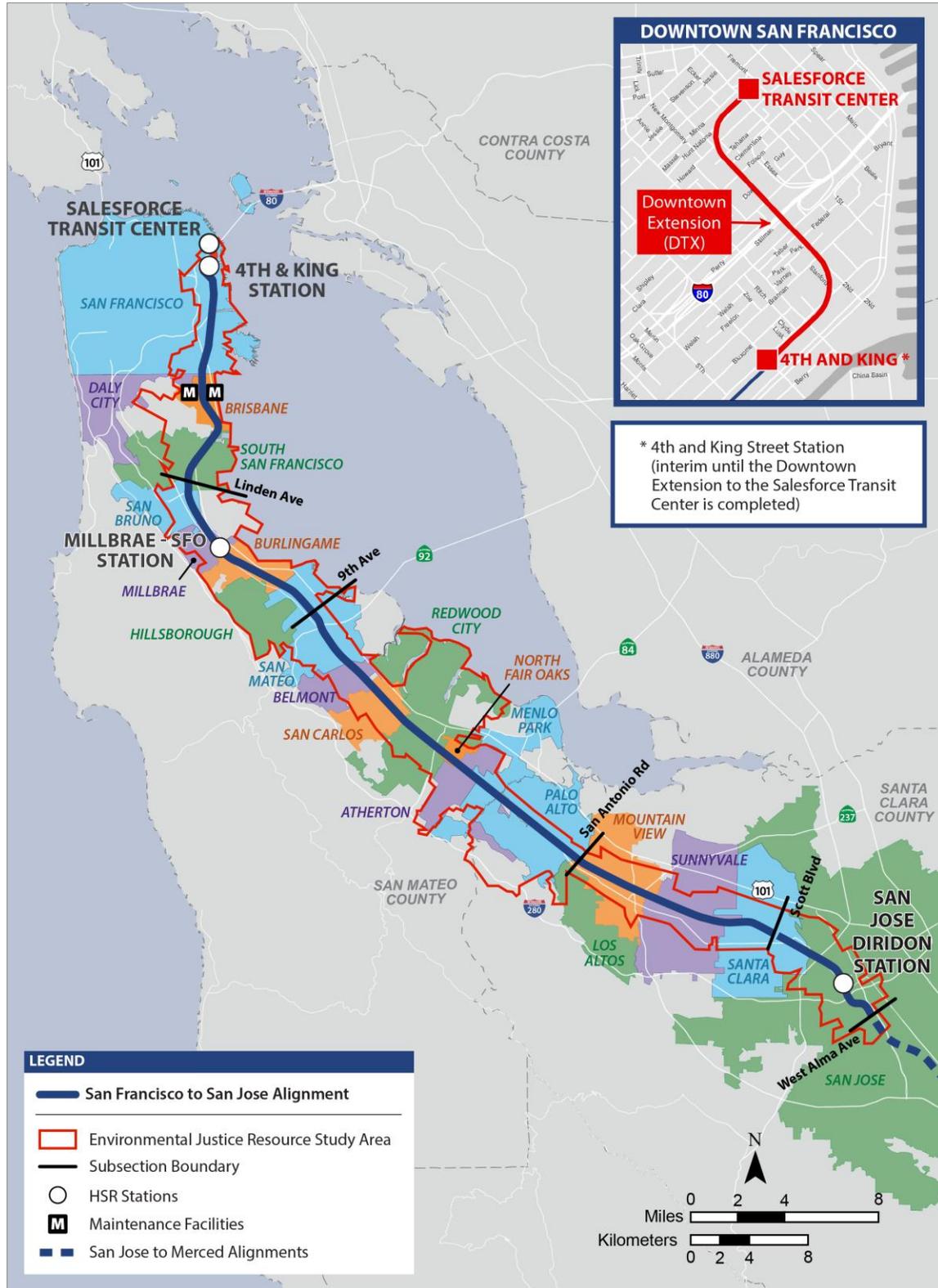
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Figure 5-1 Environmental Justice Reference Community and Resource Study Area

Potentially affected cities and communities within the RSA include portions of San Francisco, Brisbane, Daly City, South San Francisco, San Bruno, Millbrae, Hillsborough, Burlingame, San Mateo, Belmont, San Carlos, Redwood City, North Fair Oaks, Stanford, Atherton, Menlo Park, Palo Alto, Mountain View, Los Altos, Sunnyvale, Santa Clara, and San Jose as well as unincorporated areas of San Mateo and Santa Clara Counties. Figure 5-2 illustrates the RSA in relation to the jurisdictional limits of each of these cities and communities. The population density is relatively consistent throughout most of the RSA, with the highest population densities in the City and County of San Francisco and the cities of Santa Clara County (Figure 5-3). Because the RSA is established based on census tracts—the size of which can vary based on the population density³—some census tracts within the RSA are large and extend for miles beyond the project alternatives’ footprints. Minority populations and low-income populations within the environmental justice RSA but farther than 0.5 mile from the project footprints would be unlikely to experience adverse environmental or community effects. Consequently, the environmental justice RSA includes a larger area and greater population than would likely be affected by the project alternatives.

The cumulative RSA for environmental justice is defined as the area encompassing portions of San Francisco, San Mateo, and Santa Clara Counties. The cumulative RSA for environmental justice is the same as the RSAs for direct and indirect effects on minority populations and low-income populations, defined as the census tracts partially or fully within the project alternatives’ footprints and a 0.5-mile buffer zone from the project footprints. It captures adverse and beneficial effects associated with construction and operations of the project alternatives as well as regional effects on minority populations and low-income populations associated with anticipated planned development.

³ According to the U.S. Census Bureau, the optimum size for a census tract is approximately 4,000 people. Therefore, the spatial size of the census tract varies based on population density. Census tracts are smaller in dense urban areas and larger in areas with low population densities (U.S. Census Bureau 2010a).



Sources: U.S. Census Bureau 2016a, 2016b

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Figure 5-2 Cities and Communities within the Environmental Justice Resource Study Area



Sources: U.S. Census Bureau 2016a, 2016b

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Figure 5-3 Population Density within the Environmental Justice Reference Community

5.3.2 Methods for Effects Analysis

This section describes the sources and methods the Authority used to analyze potential effects of implementing the project alternatives on minority populations and low-income populations. Laws, regulations, and orders (see Section 5.2, Laws, Regulations, and Orders) pertaining to environmental justice were also considered in the evaluation of effects on minority populations and low-income populations.

5.3.2.1 *Identification of Minority Populations, Low-Income Populations, and Other Sensitive Populations*

Census tract low-income data and minority data were obtained from the 2010–2014 ACS 5-Year Estimates for the reference community and the environmental justice RSA.⁴ Minority populations and low-income populations are defined in Section 5.1, Introduction.

Minority populations and low-income populations were mapped using geographic information systems to determine the locations and concentrations of minority populations and low-income populations. To confirm the accuracy of this data for use in this environmental justice analysis, the Authority performed additional quantitative validation methods, including the examination of other proxy data sources that would indicate the current locations of minority populations and low-income populations. The data on low-income populations in the RSA were validated by use of other proxy data sources including ACS data on linguistic isolation and participation in social service programs, such as the percentage of households receiving coupons through the Supplemental Nutrition Assistance Program (SNAP).

The Authority also identified the presence of sensitive populations, such as elderly, disabled, and linguistically isolated populations within the reference community and RSA. Elderly populations represent individuals who are over the age of 65. Disabled populations include those individuals who have difficulties with hearing, vision, cognition, mobility, self-care, or independent living. Linguistically isolated populations are readily identifiable groups of persons over 14 years of age who do not speak English very well or at all. Data on these populations were obtained from the 2010–2014 ACS 5-Year Estimates.

The identification of sensitive populations informed the Authority's outreach team of areas needing special outreach consideration (e.g., populations requiring interpreters or different types of media). The Authority used this information to tailor outreach activities for more effective public participation and distribution of information. The identification of minority populations and low-income populations was used to evaluate construction and operations effects on minority populations and low-income populations for the environmental justice analysis.

5.3.2.2 *Methods for Identifying Adverse Effects on Minority Populations and Low-Income Populations*

USEO 12898 requires federal agencies to address the potential for their programs, policies, and activities to have a disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. To identify adverse effects on minority populations and low-income populations, the resource sections in Chapter 3 were reviewed and impacts on environmental or community resources with the potential to affect minority populations and low-income populations were identified. USDOT Order 5610.2C defines "adverse effects" as meaning the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to:

- Bodily impairment, infirmity, illness, or death
- Air, noise, and water pollution and soil contamination

⁴ The 2010–2014 ACS 5-Year Estimates (released in January 2016) were the most recently available data at the time of start of the analysis.

- Destruction or disruption of human-made or natural resources
- Destruction or diminution of aesthetic values
- Destruction or disruption of community cohesion or a community’s economic vitality
- Destruction or disruption of the availability of public and private facilities and services
- Vibration
- Adverse employment effects
- Displacement of persons, businesses, farms, or nonprofit organizations
- Increased traffic congestion,⁵ isolation, exclusion, or separation of minority or low-income individuals within a given community or from the broader community
- The denial of, reduction in, or significant delay in the receipt of benefits of USDOT programs, policies, or activities

This assessment was accomplished by reviewing the construction and operations effects identified in each resource section, including details regarding the RSA, the magnitude of the effect, whether effects are adverse or beneficial, the duration of effects (temporary or permanent), and the geographic location of the effects under each project alternative relative to the identified minority populations and low-income populations within the environmental justice RSA. Where the project would result in no effect on minority populations and low-income populations or would result in an effect that does not warrant mitigation, the effect was considered to be not adverse and no further analysis was conducted. The Authority evaluated adverse effects in the environmental justice analysis based on the following considerations:

- Effects that were minimized through mitigation were evaluated to determine whether the mitigation measures (1) were equally applied to minority populations and low-income populations and non-minority populations and non-low-income populations and (2) if they addressed the concerns of the minority populations and low-income populations. If the mitigation measures were not successful in addressing (1) and (2) above, effects were considered adverse.
- Effects that were not substantially reduced through mitigation were considered adverse.

5.3.2.3 Methods for Determining Disproportionately High and Adverse Effects

Once adverse effects on minority populations and low-income populations were identified, the Authority evaluated whether effects that would adversely affect minority populations and low-income populations would have disproportionately high and adverse effects on these populations. A disproportionately high and adverse effect on minority populations and low-income populations is generally defined as an effect that:

- Would be predominantly borne by minority populations and/or low-income populations, or
- Would be suffered by minority populations and/or low-income populations and would be appreciably more severe or greater in magnitude than the adverse effect suffered by the non-low-income and non-minority populations in the affected area and the reference community.

Determinations of disproportionately high and adverse effects also consider mitigation and enhancement measures that would be implemented, as well as all offsetting benefits to the minority populations and low-income populations. Whether adverse effects would be

⁵ Traffic congestion/delay is considered an adverse effect for the Final EIR/EIS, whether or not such congestion or delay would result in isolation, exclusion, or separation of minority or low-income individuals within a given community or from the broader community.

disproportionately high and adverse includes the consideration of the totality of the circumstances, including:

- The location of an adverse effect in relation to minority populations and low-income populations
- The percentage of the minority populations and low-income populations in the environmental justice RSA as compared to the percentage of the minority populations and low-income populations in the reference community
- The perceptions of the minority populations and low-income populations regarding the severity of the adverse effect and the success of the proposed mitigation measures in reducing the effect
- Whether mitigation measures applied to avoid, minimize, reduce, or compensate for adverse effects would do so equally for both minority populations and low-income populations and non-minority populations and non-low-income populations
- The project benefits that would be received by minority populations and low-income populations
- Any social, religious, or cultural resources and public services such as police, fire, and emergency services particularly important to the minority populations and low-income populations that would be affected

5.3.2.4 Environmental Justice Engagement

USEO 12898 requires that federal agencies employ effective public participation and provide access to information. Consequently, a key component of compliance with USEO 12898 is outreach to potentially affected minority populations and low-income populations. The Authority conducted and will continue to conduct specific outreach efforts to local stakeholders, community groups, and established minority organizations throughout the EIR/EIS process. The Authority organized on-the-ground outreach, such as information tables and booths at local community events and locations frequented by local residents.

The Authority contacted groups with an interest in environmental and economic social justice issues and established minority organizations, including organizations such as Asian Americans for Community Involvement, San Mateo County Health Department, SF Environment, Sustainable San Mateo County, and the Vietnamese Voluntary Organization. The Authority also contacted neighborhood associations such as Visitacion Valley Planning Alliance (San Francisco), Little Hollywood Neighbors (San Francisco), North Fair Oaks Community Council (San Mateo County), and Bayview Citizens Advisory Committee (San Francisco), as well as other civic and group leaders. These locations were identified as an effective means to reach minority populations and low-income populations and included locations such as the East Palo Alto Farmers Market, Gardner Community Flea Market, Sunnyvale State of the City, and NeighborUp Night in the Sunnydale neighborhood of San Francisco. At the advice of the service providers interviewed, the Authority's outreach team also held meetings with translators in both Spanish and Vietnamese to provide project information to community members with limited English proficiency. More information on these meetings is found in Section 5.5, Environmental Justice Engagement and Documentation, and Volume 2, Appendix 5-A.

Special outreach included translation of open house meeting flyers into Spanish, Mandarin, Vietnamese, and Tagalog; placement of meeting notifications in different types of media; the provision of select meeting handouts in Spanish; and the presence of Spanish and Vietnamese language translators at select meetings in accordance with the needs identified by the community. The environmental justice outreach team also conferred with local elected officials in each community on needs for interpretation in other languages in addition to Spanish and Vietnamese. Where minority populations or low-income populations could be affected by the project alternatives, outreach activities were conducted to determine the best ways of communicating with the affected populations. The environmental justice outreach team obtained feedback from environmental justice organizations, community leaders, and community members

during community events and coordinated ongoing outreach specific to the environmental justice communities that were identified. Refer to Section 5.5 for further detail.

The purpose of these outreach efforts was to provide opportunities for meaningful participation and input into the project design, identification of disproportionately high and adverse effects, and development of mitigation as follows:

- **Consideration of adverse effects and potential project design modifications**—Affected minority populations and low-income populations were engaged in discussions of potential adverse effects and benefits to obtain input on potential design modifications or variations to the project that would avoid or minimize adverse effects.
- **Identifying disproportionately high and adverse effects**—The environmental justice outreach team engaged minority populations and low-income populations to provide insight into their perception of adverse and beneficial effects. This input was critical in the determination of disproportionately high and adverse effects, which are the net results after consideration of the totality of the circumstances.
- **Development of mitigation**—The environmental justice outreach team engaged affected minority populations and low-income populations in discussions to identify their priorities and needs and to obtain insight into the types of mitigation that may reduce the severity of the effect.

Section 5.5 provides a summary of this outreach.

5.4 Affected Environment

This section provides overall demographic information for the reference community and environmental justice RSA, and a more detailed presentation showing the distribution of minority populations, low-income populations, and other sensitive populations in the reference community and RSA. Although stations and the LMF are included in the environmental justice RSA, demographics for the RSA associated with these project components are summarized separately.

5.4.1 Overview

The reference community consists of San Francisco, San Mateo, and Santa Clara Counties, while the RSA is comprised of a subset of these counties that includes portions of the cities and communities of San Francisco, Brisbane, Daly City, South San Francisco, San Bruno, Millbrae, Hillsborough, Burlingame, San Mateo, Belmont, San Carlos, Redwood City, North Fair Oaks, Stanford, Atherton, Menlo Park, Palo Alto, Mountain View, Sunnyvale, Los Altos, Santa Clara, and San Jose, as well as unincorporated areas of San Mateo and Santa Clara Counties. Table 5-1 provides an overview of the demographic characteristics of the reference community and RSA. The RSA is about 7.6 percent of the size of the reference community and contains 21.2 percent of the reference community’s population. Relative to the reference community, the population of the RSA has higher median household incomes, a higher percentage of low-income households, and a lower unemployment rate (Table 5-1). Both the reference community and the RSA are racially and ethnically diverse. Minority representation within the RSA is slightly less than that of the reference community and linguistic isolation is slightly greater than that of the reference community. The demographics of the reference community and RSA are discussed in more detail by county and subsection, respectively, in the following sections.

Table 5-1 Overview of Reference Community and Resource Study Area Demographic Characteristics (2010–2014 Estimates)

Characteristic	Reference Community ¹	Resource Study Area ¹
Area (square miles)	1,785	135
Total population	3,410,478	724,050
Population density (persons per square mile)	1,911	5,370*

Characteristic	Reference Community ¹	Resource Study Area ¹
Total households	1,222,229	272,748
Percent of population low-income ²	23.9	25.4*
Median household income	\$88,922	\$93,826*
Percent of population minority	62.6	60.0
Percent of population over 65	12.8	11.9
Percent of population with disability status ³	8.4	8.0
Percent linguistic isolated households	11.3	11.4*
Percent of population unemployed	8.2	7.9

Sources: U.S. Census Bureau 2010b; U.S. Census Bureau ACS 2010–2014a, 2010–2014b, 2010–2014c, 2010–2014d, 2010–2014e, 2010–2014f, 2010–2014g

Bolded values denoted with an asterisk (*) identify demographic characteristics for the resource study area that exceed that of the reference community.

¹ Reference community and resource study area data were calculated through summation (e.g., area, total population, total households), or a weighted average based on the size, population, or households within each county or subsection (e.g., population density, percent low-income, median household income, percent minority).

² For San Francisco, San Mateo, and Santa Clara Counties, consistent with the Metropolitan Transportation Commission's approach, low-income is defined as persons with household incomes at or below 200 percent of the U.S. Census poverty thresholds.

³ Per U.S. Census Bureau data, this is the percent of population with a disability who are over the age of 5.

5.4.1.1 Reference Community

Table 5-2 shows demographic information for the reference community, consisting of San Francisco, San Mateo, and Santa Clara Counties; an area of 1,785 square miles (U.S. Census Bureau 2010b). For comparison, the table also shows demographic information for each of the three counties. Santa Clara County is the largest county in the reference community and also the most populous, with 54 percent of the reference community's population. The population density of San Francisco County is significantly higher than that of San Mateo County, Santa Clara County, and the reference community (U.S. Census Bureau 2010b; U.S. Census Bureau ACS 2010–2014a).

Table 5-2 Reference Community Demographic Characteristics (2010–2014 Estimates)

Characteristic	San Francisco County	San Mateo County	Santa Clara County	Reference Community ¹
Area (square miles)	47	448	1,290	1,785
Total population	829,072	739,837	1,841,569	3,410,478
Population density (persons per square mile)	17,640	1,651	1,428	1,911
Total households	348,832	258,683	614,714	1,222,229
Percent of population low-income ²	28.3	20.4	23.3	23.9
Median household income	\$78,378	\$91,421	\$93,854	\$88,922
Percent of population minority	58.6	58.8	65.9	62.6
Percent of population over 65	14.1	14.1	11.6	12.8
Percent of population with disability status ³	10.5	8.0	7.7	8.4

Characteristic	San Francisco County	San Mateo County	Santa Clara County	Reference Community ¹
Percent linguistic isolated households	12.5	9.5	11.3	11.3
Percent of population unemployed	7.6	7.4	8.8	8.2

Sources: U.S. Census Bureau 2010b; U.S. Census Bureau ACS 2010–2014a, 2010–2014b, 2010–2014c, 2010–2014d, 2010–2014e, 2010–2014f, 2010–2014g

¹ Reference community data was calculated through summation (e.g., area, total population, total households), or a weighted average based on the size, population, or households within each county (e.g., population density, percent low-income, median household income, percent minority).

² For San Francisco, San Mateo, and Santa Clara Counties, consistent with the Metropolitan Transportation Commission’s approach, low-income is defined as persons with household incomes at or below 200 percent of the U.S. Census poverty thresholds.

³ Per U.S. Census Bureau data, this is the percent of population with a disability who are over the age of 5.

Economic conditions within the three counties of the reference community are relatively similar. The percentage of low-income individuals within the reference community is 23.9 percent, and in 2010–2014 estimates, median household incomes ranged from a low of \$78,378 in San Francisco County to a high of \$93,854 in Santa Clara County (U.S. Census Bureau ACS 2010–2014b, 2010–2014c). These median household incomes are well above the California state average (\$61,489 in 2010–2014 estimates). The reference community comprises the entire Silicon Valley high-technology activity from San Francisco to San Jose. This region is home to some of the largest technology firms with a highly educated and well-compensated workforce.

The reference community is racially and ethnically diverse. Based on 2010–2014 estimates, minority individuals made up 62.6 percent of the population, compared to 60.8 percent for California (U.S. Census Bureau ACS 2010–2014d). The greatest racial and ethnic diversity occurs in Santa Clara County. The racial makeup of the reference community is relatively similar to that of the three counties, with Asians being the largest minority group in San Francisco (33.3 percent), San Mateo (25.7 percent), and Santa Clara County (32.9 percent). In terms of ethnicity, San Mateo and Santa Clara Counties have greater proportions of Hispanic or Latino ethnicity (25.4 and 26.7 percent, respectively) than San Francisco County (15.3 percent).

In addition to minority populations and low-income populations, this environmental justice analysis also examines other sensitive populations that may have special needs, such as elderly, disabled, or linguistically isolated individuals. The elderly population (65 years and older) was comparable in the three counties at 14.0 percent for San Francisco and San Mateo Counties and 11.7 percent for Santa Clara County based on 2010–2014 estimates (U.S. Census Bureau ACS 2010–2014a). Approximately 8.0 percent of the reference community population is disabled, with the highest rates of disability in San Francisco County (10.5 percent) (U.S. Census Bureau ACS 2010–2014e). Approximately 11.4 percent of households in the reference community were linguistically isolated (U.S. Census Bureau ACS 2010–2014f).

5.4.1.2 Resource Study Area

The environmental justice RSA is organized by subsection and extends from San Francisco in the north to San Jose in the south. Table 5-3 shows the cities and communities or portions thereof by project subsection. Some cities and communities are included in more than one subsection.

Table 5-3 Cities/Communities within the Resource Study Area

Subsection	City/Community in the RSA
San Francisco to South San Francisco	San Francisco, Daly City, Brisbane, South San Francisco, San Bruno, and unincorporated San Mateo County
San Bruno to San Mateo	South San Francisco, San Bruno, Millbrae, Burlingame, Hillsborough, San Mateo, and unincorporated San Mateo County

Subsection	City/Community in the RSA
San Mateo to Palo Alto	San Mateo, Unincorporated San Mateo County, Belmont, San Carlos, Redwood City, North Fair Oaks, Atherton, Menlo Park, Palo Alto, Stanford, Los Altos, Mountain View, and unincorporated Santa Clara County
Mountain View to Santa Clara	Palo Alto, Mountain View, Sunnyvale, Santa Clara, and unincorporated Santa Clara County
San Jose Diridon Station Approach	Santa Clara and San Jose

RSA = resource study area

Table 5-4 shows demographic characteristics of the environmental justice RSA within each subsection based on 2010–2014 estimates. Census tracts within 0.5 mile of more than one subsection were included in the calculations for each subsection, but not duplicated in the totals for the RSA. The environmental justice RSA has a total population of 724,050 (U.S. Census Bureau ACS 2010–2014a).

Table 5-4 Resource Study Area Demographic Characteristics (2010–2014 Estimates)

RSA Characteristics	San Francisco to South San Francisco	San Bruno to San Mateo	San Mateo and Palo Alto	Mountain View to Santa Clara	San Jose Diridon Station Approach	RSA Totals ¹
Area (square miles)	26	33	52	20	17	135
Total population	149,285	133,718	240,466	148,393	104,917	724,050
Population density (persons per square mile)	5,726*	4,013*	4,611*	7,530*	6,204*	5,370*
Total households	54,269	49,712	89,679	59,361	39,671	272,748
Percent of population low-income ²	31.9*	18.9	22.1	21.1	35.5*	25.4*
Median household income	\$85,921	\$101,674*	\$101,919*	\$96,728*	\$73,609	\$93,826*
Percent of population minority	76.1*	54.2	49.4	63.8*	62.9*	60.0
Percent of population over 65 years old	12.0	14.3*	13.4*	10.0	8.7	11.9
Percent of population with disability status ³	10.2*	7.7	7.4	6.8	8.1	8.0
Percent linguistically isolated households	15.2*	10.0	9.7	11.6*	11.8*	11.4*
Percent of population unemployed	8.7*	7.2	6.6	7.9	9.5*	7.9

Sources: U.S. Census Bureau 2010b; U.S. Census Bureau ACS 2010–2014a, 2010–2014b, 2010–2014c, 2010–2014d, 2010–2014e, 2010–2014f, 2010–2014g

RSA = resource study area

Bolded values denoted with an asterisk (*) identify RSA demographic characteristics that exceed those of the reference community.

¹ RSA data was calculated through summation (e.g., area, total population, total households), or a weighted average based on the size, population, or households within each subsection (e.g., population density, percent low-income, median household income, percent minority). Census tracts split by a particular subsection were included in the estimate for each subsection, but were included only once in the estimates of RSA totals.

² For San Francisco, San Mateo, and Santa Clara Counties, consistent with the Metropolitan Transportation Commission's approach, low-income is defined as persons with household incomes at or below 200 percent of the U.S. Census poverty thresholds.

³ Per U.S. Census Bureau data, this is the percent of population with a disability who are over the age of 5.

Compared to the reference community (23.9 percent low-income), the environmental justice RSA has a similar but slightly higher percentage of low-income individuals (25.4 percent low-income) (U.S. Census Bureau ACS 2010–2014b). Median household incomes within the environmental justice RSA (\$93,826) are higher than the median household incomes for the reference community (\$88,922) (U.S. Census Bureau ACS 2010–2014c). Within the Project Section, the San Jose Diridon Station Approach Subsection has the highest percentage of low-income individuals (35.5 percent low-income) and the lowest median household income (\$73,609).

The minority populations in the environmental justice RSA (60.0 percent minority), are less than the percent minority for the reference community (62.6 percent minority) (U.S. Census Bureau ACS 2010–2014d). Within the Project Section, the greatest concentration of minority populations occurs in the San Francisco to South San Francisco Subsection (76.1 percent minority) followed by the Mountain View to Santa Clara Subsection (63.8 percent minority).

The percentages of other sensitive populations, including elderly, disabled, and linguistically isolated persons, within the environmental justice RSA is similar to or slightly lower than that of the reference community. Exceptions include the higher rates of elderly in the San Bruno to San Mateo Subsection (14.3 percent) and San Mateo to Palo Alto Subsection (13.4 percent), higher rates of disabled persons in the San Francisco to South San Francisco Subsection (10.2 percent), and higher rates of linguistic isolation in the San Francisco to South San Francisco Subsection (15.2 percent), the Mountain View to Santa Clara Subsection (11.6 percent), and the San Jose Diridon Station Approach Subsection (11.8 percent) (U.S. Census Bureau ACS 2010–2014f).

Table 5-5 shows an overview of demographic characteristics of the RSA for the stations and Brisbane LMF based on 2010–2014 estimates. The RSA is the same for both the East Brisbane LMF and West Brisbane LMF. The population density near the 4th and King Street Station is higher than that of the Brisbane LMF, Millbrae Station, and San Jose Diridon Station. The Brisbane LMF and San Jose Diridon Station are located in an area with higher percentages of low-income individuals than the reference community (30.0 and 32.7 percent low-income), whereas the 4th and King Street and Millbrae Station areas have lower percentages of low-income individuals than the reference community (U.S. Census Bureau ACS 2010–2014b). The greatest concentrations of minority populations occur within the RSA for the Brisbane LMF (87.7 percent minority), which substantially exceeds the percent minority within the RSA of the 4th and King Street Station (53.4 percent), Millbrae Station (56.1 percent), San Jose Diridon Station (60.0) and reference community (62.6 percent) (U.S. Census Bureau ACS 2010–2014d). The population within the RSA for the Brisbane LMF also has the highest rate of linguistic isolation (19.2 percent, approximately 8 percent higher than the reference community) (U.S. Census Bureau ACS 2010–2014f).

Table 5-5 Station and Light Maintenance Facility Resource Study Area Demographic Characteristics (2010–2014 Estimates)

RSA Characteristics ¹	4th and King Street Station	Brisbane LMF	Millbrae Station	San Jose Diridon Station
Area (square miles)	4	10	10	4.6
Total population	41,931	38,343	25,220	33,012
Population density (persons per square mile)	10,483*	3,834*	2,522*	7,224*
Total households	21,175	11,721	9,140	12,728
Percent of population low-income ²	22.8	30.0*	14.4	32.7*
Median household income	\$110,367*	\$69,762	\$101,153*	\$82,827
Percent of population minority	53.4	87.7*	56.1	60.0
Percent of population over 65 years old	10.4	14.3*	16.8*	7.8
Percent of population with disability status ³	11.8*	9.4*	7.3	7.2
Percent linguistically isolated households	13.3*	19.2*	10.3	10.7*
Percent of population unemployed	5.7	11.9*	6.3	10.4*

Sources: U.S. Census Bureau 2010b; U.S. Census Bureau ACS 2010–2014a, 2010–2014b, 2010–2014c, 2010–2014d, 2010–2014e, 2010–2014f, 2010–2014g

LMF = light maintenance facility

RSA = resource study area

Bolded values denoted with an asterisk (*) identify demographic characteristics for the RSA that exceed that of the reference community.

¹ RSA data was calculated through summation (e.g., area, total population, total households), or a weighted average based on the size, population, or households within census tract (e.g., population density, percent low-income, median household income, percent minority).

² For San Francisco, San Mateo, and Santa Clara Counties, consistent with the Metropolitan Transportation Commission's approach, low-income is defined as persons with household incomes at or below 200 percent of the U.S. Census poverty thresholds.

³ Per U.S. Census Bureau data, this is the percent of population with a disability who are over the age of 5.

5.4.2 Low-Income Populations

5.4.2.1 Reference Community

Table 5-6 shows the low-income populations within the reference community by county. The median household income for the reference community is \$88,922, which is approximately \$27,400 higher than the median household income for California (U.S. Census Bureau ACS 2010–2014c). Household incomes vary slightly by county, from a high of \$93,854 in Santa Clara County to a low of \$78,378 in San Francisco County. Approximately 23.9 percent of individuals within the reference community were identified as low-income in 2010–2014 estimates, which is higher than California as a whole, where low-income individuals made up 16.4 percent of the total population (U.S. Census Bureau ACS 2010–2014b). The percentages of low-income individuals were similar in Santa Clara County (23.3 percent), lower in San Mateo County (20.4 percent), and higher in San Francisco County (28.3 percent).

Table 5-6 Low-Income Populations within the Reference Community (2010–2014 Estimates)

Characteristic	San Francisco County	San Mateo County	Santa Clara County	Reference Community ¹
Total population	829,072	739,837	1,841,569	3,410,478
Percent of population low-income ²	28.3	20.4	23.3	23.9
Median household income	\$78,378	\$91,421	\$93,854	\$88,922

Sources: U.S. Census Bureau ACS 2010–2014b, 2010–2014c

¹ For San Francisco, San Mateo, and Santa Clara Counties, consistent with the Metropolitan Transportation Commission’s approach, low-income is defined as persons with household incomes at or below 200 percent of the U.S. Census poverty thresholds.

² Reference community population data was calculated through summation, while the median household income and percent low-income were calculated through a weighted average based on the population or households within each county.

5.4.2.2 Resource Study Area

Table 5-7 shows the household incomes and low-income populations within the environmental justice RSA by subsection and by city/community. Approximately 25.4 percent of individuals within the environmental justice RSA were low-income, which is slightly more than the 23.9 percent of low-income individuals in the reference community based on 2010–2014 estimates. The median household income for the environmental justice RSA was \$93,826, which is \$4,904 greater than the reference community) (U.S. Census Bureau ACS 2010–2014b, 2010–2014c).

The cities and communities of the environmental justice RSA vary immensely in terms of median household income and percent low-income populations. Median household income ranges from \$65,507 to \$248,054, and the percent low-income ranges from 4.7 percent to 48.7 percent. The environmental justice RSA within North Fair Oaks (48.7 percent low-income) and Santa Clara (40.1 percent low-income) had the highest percentages of low-income populations in the RSA (U.S. Census Bureau ACS 2010–2014b). In contrast, the lowest percentage of low-income populations were within the Hillsborough (4.7 percent low-income), Los Altos (5.0 percent low-income), and Atherton (6.7 percent low-income). The median household income of \$248,054 in Hillsborough was the highest of the cities and communities within the environmental justice RSA.

Table 5-7 Median Household Incomes and Low-Income Populations within the Resource Study Area (2010–2014 Estimates)¹

Subsection and City/Community within RSA	Population	Median Household Income ²	Estimated Percentage Low-Income ³
San Francisco to South San Francisco	149,200	\$85,927	31.9*
San Francisco	109,915	\$90,736*	32.3*
Daly City	4,371	\$66,500	35.5*
Brisbane	3,032	\$77,339	18.8
South San Francisco	20,135	\$66,943	35.7*
San Bruno	5,357	\$66,752	25.4*
Unincorporated San Mateo County	6,390	\$82,546	23.1
San Bruno to San Mateo	133,402	\$101,600*	18.9
South San Francisco	3,951	\$74,761	31.8*
San Bruno	22,138	\$78,626	19.4
Millbrae	16,660	\$87,291	14.6
Burlingame	28,708	\$97,867*	16.1

Subsection and City/Community within RSA	Population	Median Household Income ²	Estimated Percentage Low-Income ³
Hillsborough	10,710	\$248,054*	4.7
San Mateo	46,856	\$91,054*	24.2*
Unincorporated San Mateo County	4,379	\$121,484*	17.6
San Mateo to Palo Alto²	239,974	\$101,925*	22.2
San Mateo	14,271	\$95,858	18.5
Unincorporated San Mateo County	729	\$130,234*	10.1
Belmont	14,100	\$105,333*	14.9
San Carlos	21,132	\$116,571*	13.5
Redwood City	42,296	\$68,940	38.1*
North Fair Oaks	14,654	\$69,232	48.7*
Atherton	7,034	\$240,468*	6.7
Menlo Park	11,084	\$125,255*	8.3
Palo Alto	41,136	\$113,442*	15.0
Stanford	56,811	\$71,113*	18.5
Los Altos	4,703	\$138,906*	5.0
Mountain View	11,488	\$96,901*	24.0*
Unincorporated Santa Clara County	537	\$171,071*	7.2
Mountain View to Santa Clara	147,836	\$96,753*	21.0
Palo Alto	3,320	\$136,911*	9.5
Mountain View	55,895	\$94,967*	22.1
Sunnyvale	57,029	\$101,482*	18.8
Santa Clara	31,360	\$85,475	24.6*
Unincorporated Santa Clara County	232	\$102,375*	13.4
San Jose Diridon Station Approach	104,718	\$73,610	35.5*
Santa Clara	20,453	\$65,507	40.1*
San Jose	84,265	\$75,338	34.5*
RSA Totals	724,050	\$93,826*	25.4*

Sources: U.S. Census Bureau ACS 2010–2014b, 2010–2014c

RSA = resource study area

Bolded values denoted with an asterisk (*) identify demographic characteristics for the RSA that exceed that of the reference community.

¹ RSA data were calculated through summation (e.g., population), or a weighted average based on the size, population, or households within each subsection (e.g., percent low-income, median household income). Census tracts split by a particular subsection were included in the estimate for each subsection.

² Median household income was calculated using a weighted average.

³ For San Francisco, San Mateo, and Santa Clara Counties, consistent with the Metropolitan Transportation Commission's approach, low-income is defined as persons with household incomes at or below 200 percent of the U.S. Census poverty thresholds.

Table 5-8 shows 2010–2014 ACS 5-Year Estimates for households that received SNAP assistance during the previous 12 months. SNAP is the major national income support program to which all low-income and low-resource households, regardless of household characteristics, are eligible. Within the environmental justice RSA, approximately 4.1 percent of households received SNAP based on 2010–2014 estimates, compared to 8.7 percent of households in California during the same year. Daly City had the highest percentage of households receiving SNAP assistance (14.3 percent) followed by South San Francisco (11.0 percent) in the San Bruno to San Mateo Subsection, while Hillsborough had the lowest percentage of households receiving SNAP (0.2 percent) (U.S. Census Bureau ACS 2010–2014h).

Table 5-8 Percentage of Households Participating in the Supplemental Nutrition Assistance Program within the Resource Study Area (2010–2014 Estimates)

Subsection and City/Community within RSA	Percent Households Receiving SNAP ¹
San Francisco to South San Francisco	6.5
San Francisco	6.8
Daly City	14.3
Brisbane	2.6
South San Francisco	6.1
San Bruno	3.8
Unincorporated San Mateo County	2.3
San Bruno to San Mateo	3.1
South San Francisco	11.0
San Bruno	4.8
Millbrae	1.7
Burlingame	0.9
Hillsborough	0.2
San Mateo	4.3
Unincorporated San Mateo County	1.8
San Mateo to Palo Alto	2.8
San Mateo	2.6
Unincorporated San Mateo County	1.3
Belmont	1.6
San Carlos	1.1
Redwood City	6.4
North Fair Oaks	9.7
Atherton	1.0
Menlo Park	1.1
Palo Alto	1.1
Stanford	0.6

Subsection and City/Community within RSA	Percent Households Receiving SNAP ¹
Los Altos	0.8
Mountain View	3.4
Unincorporated Santa Clara County	0.0
Mountain View to Santa Clara	3.4
Palo Alto	2.6
Mountain View	2.9
Sunnyvale	3.5
Santa Clara	4.4
Unincorporated Santa Clara County	1.4
San Jose Diridon Station Approach	5.7
Santa Clara	5.4
San Jose	5.8
RSA Totals	4.1

Source: U.S. Census Bureau ACS 2010–2014h

RSA = resource study area

SNAP = Supplemental Nutrition Assistance Program

¹ The percent households receiving SNAP in the RSA and the subsections of the RSA were calculated using an average based on the number of households in each census tract.

Figure 5-4 through Figure 5-8 illustrate the concentrations of low-income individuals within the environmental justice RSA by subsections. Further details regarding locations where the percent low-income populations exceed that of the reference community is described by subsection.

San Francisco to South San Francisco Subsection

The San Francisco to South San Francisco Subsection environmental justice RSA is 31.9 percent low-income (Table 5-7) compared to 23.9 percent for the reference community (Table 5-6). The populations within the RSA in San Francisco, Daly City, South San Francisco, and San Bruno all have higher concentrations of low-income individuals than the reference community. The environmental justice RSA within San Francisco is 32.3 percent low-income, which is 8.4 percent greater than that of the reference community. The RSA for the 4th and King Street Station is 22.8 percent low-income. The environmental justice RSA within Brisbane is 18.8 percent low-income, which is 5.1 percent less than that of the reference community. The RSA for the Brisbane LMF sites is 30.0 percent low-income.

In San Francisco, high concentrations of low-income populations occur east and west of the project alignment in the neighborhoods of Bayview-Hunters Point and Visitacion Valley, and west of the Brisbane LMF sites in Bayshore Heights. The Bayview-Hunters Point neighborhood south of Cesar Chavez Street and east of U.S. Highway (US) 101 ranges from 35.7 to 62.9 percent low-income. Low-income populations in Visitacion Valley west of Bayshore Boulevard range from 43.5 to 64.3 percent low-income. The Bayshore Heights neighborhood is 35.5 percent low-income. Bayshore Heights and Visitacion Valley are north and west of the Brisbane LMF sites and are included in the RSA for the Brisbane LMF. Most of South San Francisco within the environmental justice RSA has also high concentrations of low-income populations, ranging from 25.1 to 44.2 percent low-income. The highest concentrations of low-income individuals (44.2 percent low-income) occur in the downtown area of South San Francisco along Grand Avenue.

San Bruno to San Mateo Subsection

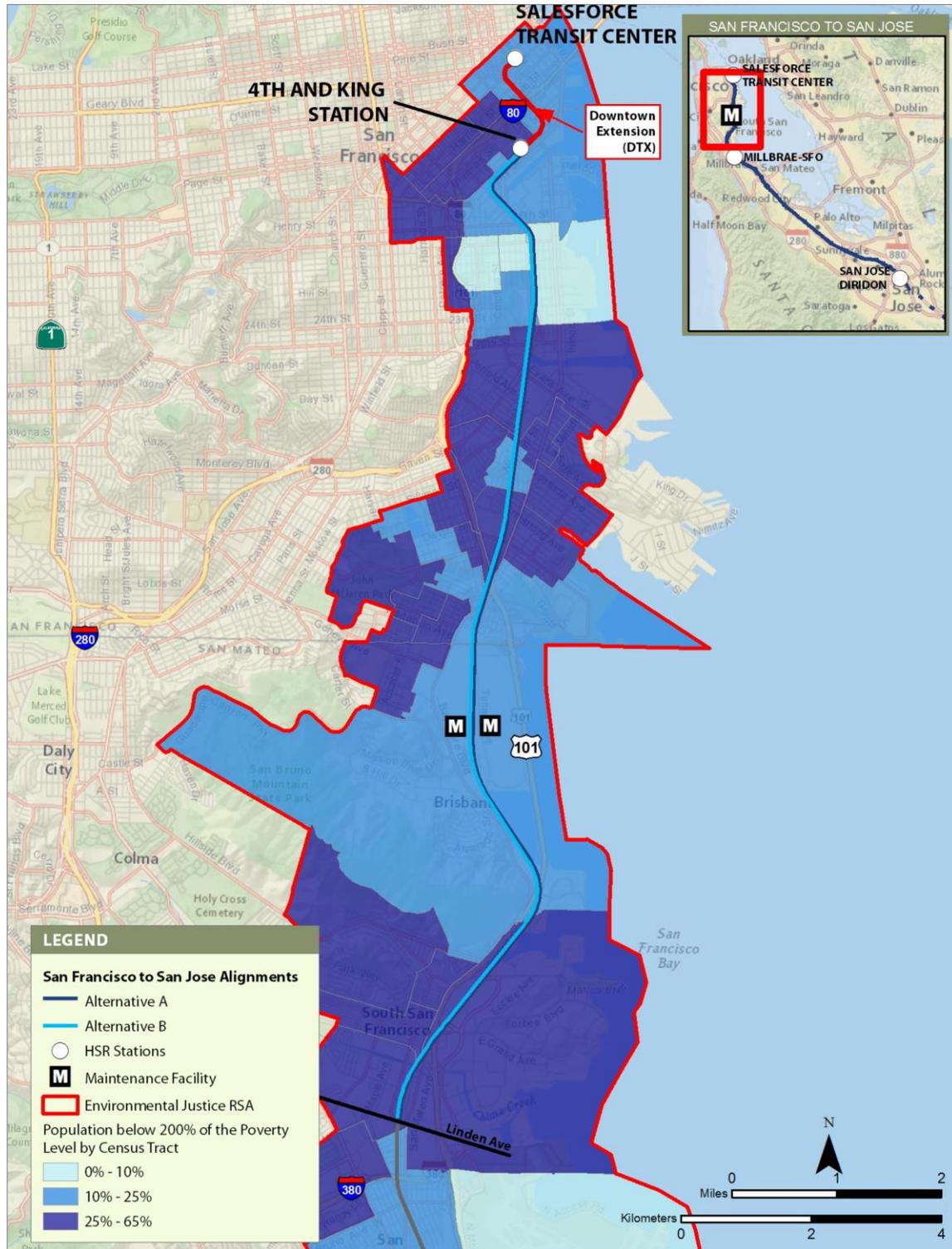
The San Bruno to San Mateo Subsection environmental justice RSA is 18.9 percent low-income (Table 5-7), which makes it the subsection with the lowest concentration of low-income individuals. The environmental justice RSA within Millbrae is 14.6 percent low-income, which is 9.3 percent less than that of the reference community. The RSA for the Millbrae Station is 14.4 percent low-income.

The highest concentrations of low-income individuals within this subsection occur in a residential area between the Caltrain corridor and US 101 in San Bruno (which ranges from 24.7 to 31.8 percent low-income) and a residential area in San Mateo between El Camino Real on the west, US 101 on the east, Peninsula Avenue on the north, and East Fourth Avenue on the south (which ranges from 31.4 to 36.8 percent low-income).

San Mateo to Palo Alto Subsection

The San Mateo to Palo Alto Subsection environmental justice RSA is 22.1 percent low-income (Table 5-7), which is below the reference community. The cities and communities within this subsection show the greatest variation in median household incomes and percent low-income individuals. The highest concentration of low-income individuals occurs in Redwood City (38.1 percent low-income) and North Fair Oaks (48.7 percent low-income). The lowest concentrations of low-income individuals occur just south of North Fair Oaks in Atherton (6.7 percent low-income) and in Los Altos (5.0 percent low-income).

The concentrations of low-income populations in Redwood City and North Fair Oaks substantially exceed that of the reference community, by 14.2 percent and 24.8 percent, respectively. In Redwood City, residential neighborhoods adjacent to the alignment range from 37.2 to 63.8 percent low-income. In North Fair Oaks, the highest concentration of low-income populations (61.0 percent) occurs between Woodside Road on the north, Wilburn Avenue on the south, Middlefield Road on the east, and El Camino on the west.



Source: U.S. Census Bureau ACS 2010–2014b

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Figure 5-4 Low-Income Populations in the Resource Study Area—San Francisco to South San Francisco Subsection

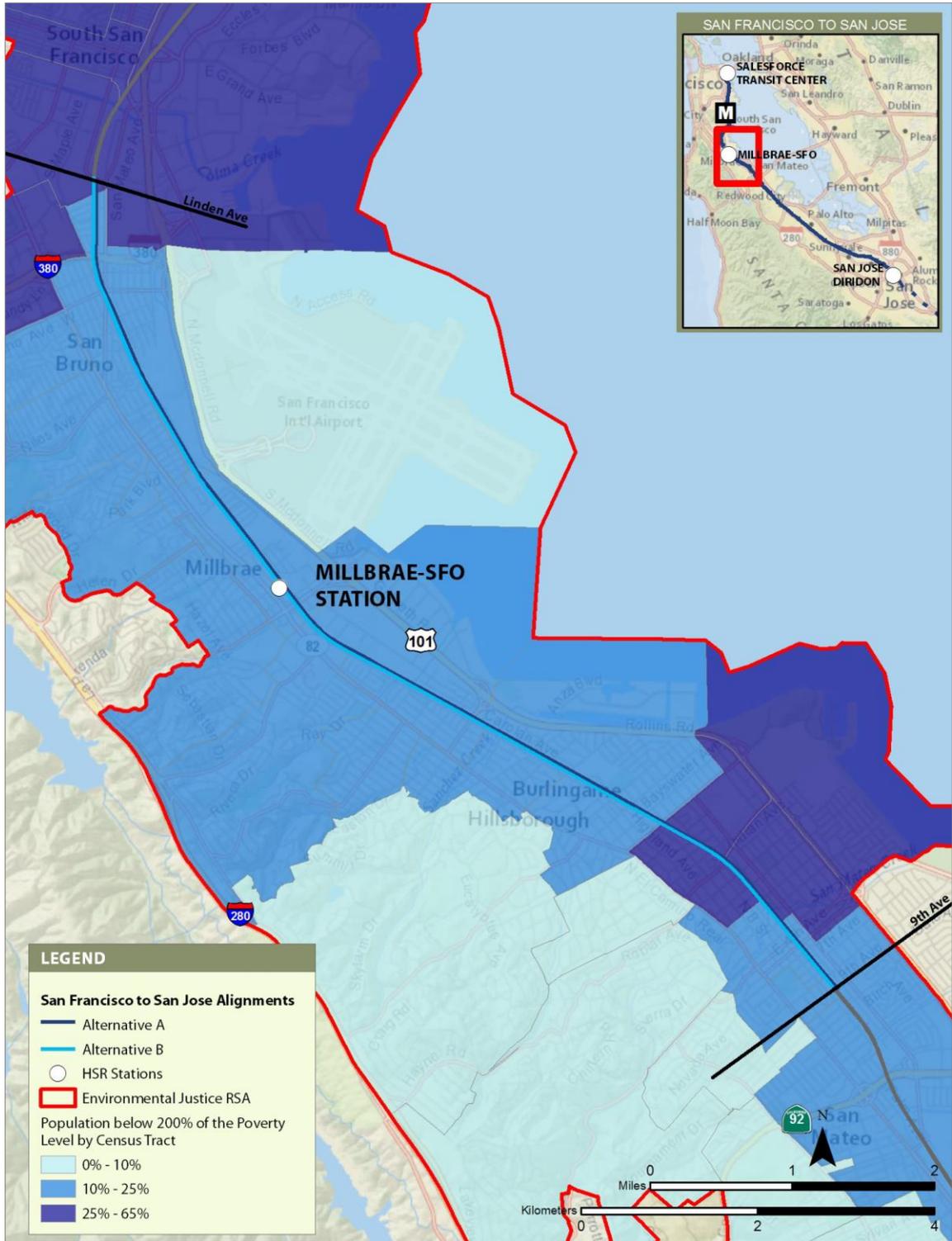
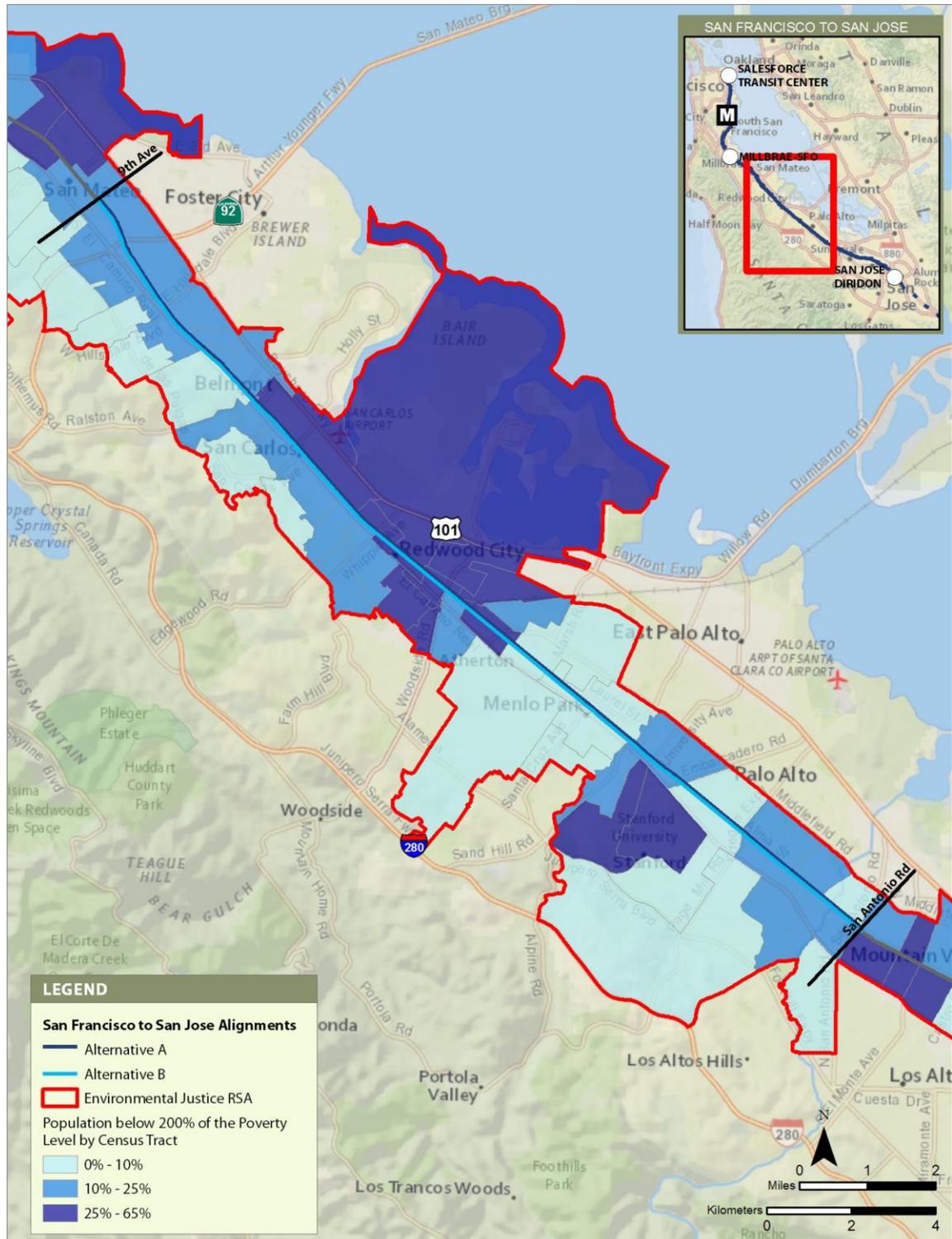


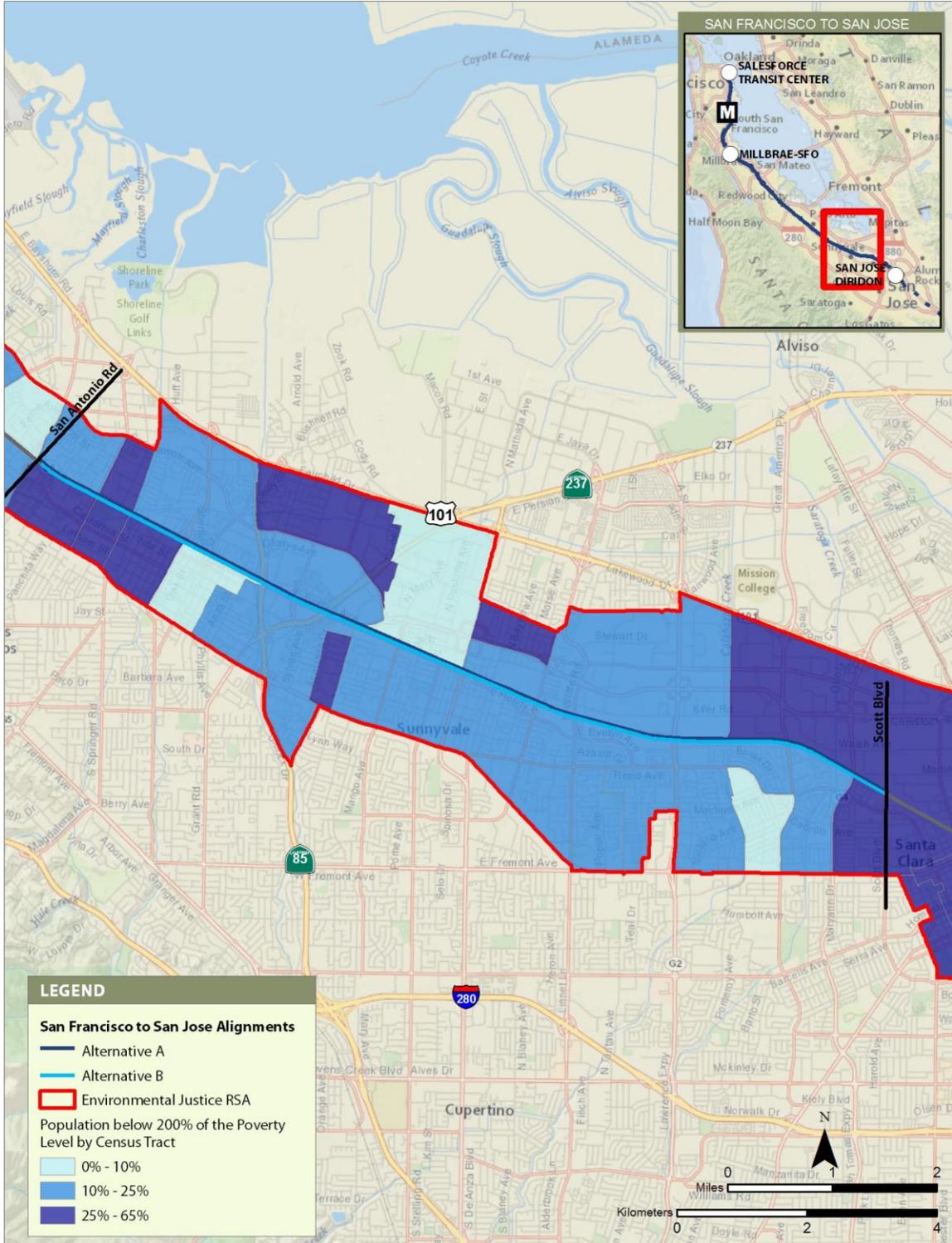
Figure 5-5 Low-Income Populations in the Resource Study Area—San Bruno to San Mateo Subsection



Source: U.S. Census Bureau ACS 2010–2014b

JULY 2019

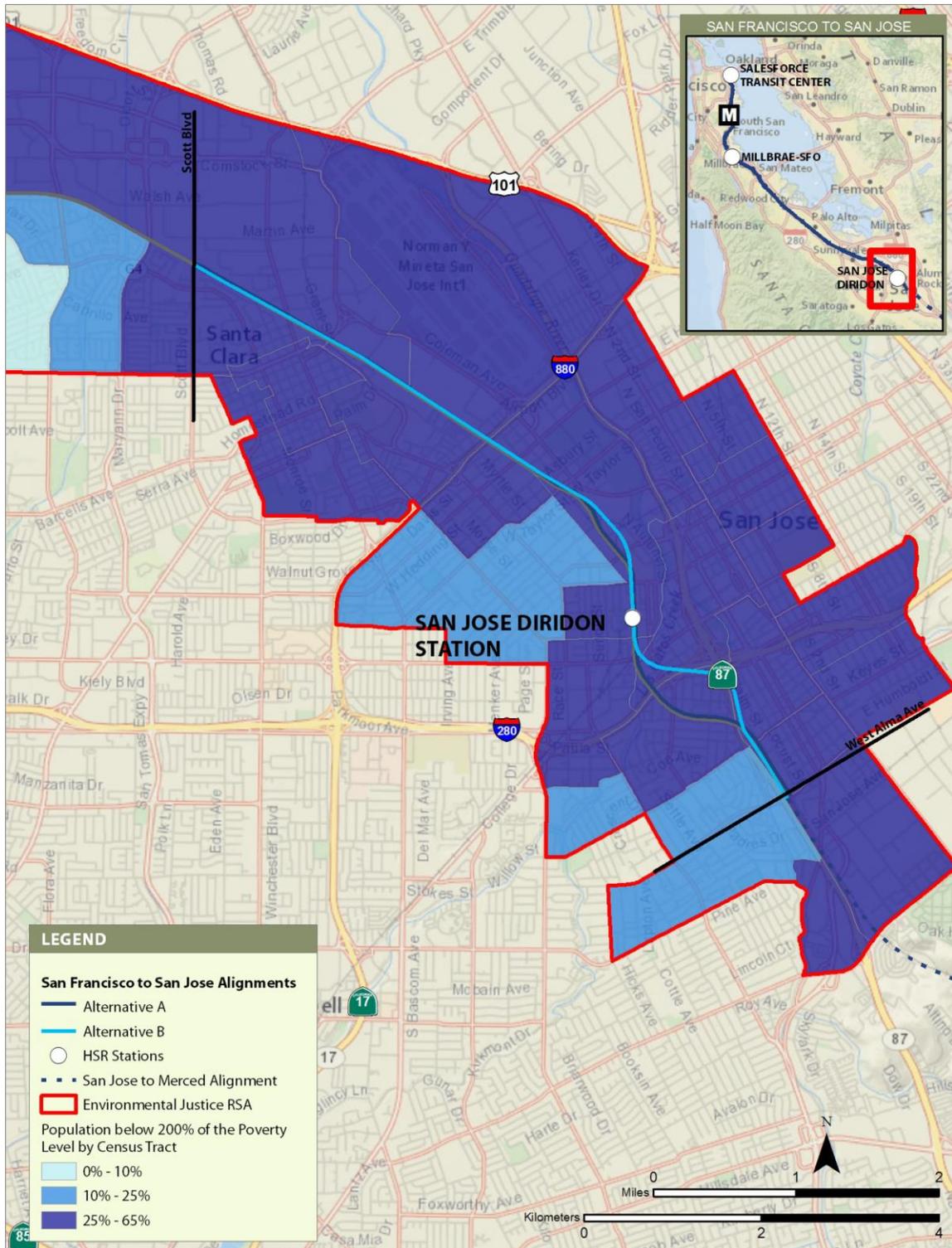
Figure 5-6 Low-Income Populations in the Resource Study Area—San Mateo to Palo Alto Subsection



Source: U.S. Census Bureau ACS 2010–2014b

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Figure 5-7 Low-Income Populations in the Resource Study Area—Mountain View to Santa Clara Subsection



Source: U.S. Census Bureau ACS 2010–2014b

JULY 2019

Figure 5-8 Low-Income Populations in the Resource Study Area—San Jose Diridon Station Approach Subsection

Mountain View to Santa Clara Subsection

The environmental justice RSA in the Mountain View to Santa Clara Subsection is 21.0 percent low-income (Table 5-7). Of the cities and communities in this subsection, only Santa Clara has a higher concentration of low-income individuals than the reference community. There are also small neighborhoods with high concentrations of low-income populations in Mountain View on either side of the alignment between San Antonio Road and Shoreline Boulevard (30.0 to 35.1 percent low-income), and in Santa Clara between Lawrence Expressway on the west, Norman Y. Mineta San Jose International Airport (SJC) on the east, US 101 on the north, and El Camino Real (39.4 percent low-income) on the south.

San Jose Diridon Station Approach Subsection

The environmental justice RSA in the San Jose Diridon Station Approach Subsection is 35.5 percent low-income (Table 5-7), which is 11.6 percent higher than the reference community. The environmental justice RSA within Santa Clara is 40.1 percent low-income, which is 16.2 percent higher than the reference community. In the industrial land uses north of the existing Caltrain tracks and bounded by US 101 to the north and SJC to the east, the population is 39.4 percent low-income. Residential areas south of the existing Caltrain tracks have low-income populations ranging from 39.5 to 49.9 percent. In this area, Homesafe Santa Clara, which is managed by Charities Housing, provides 24 units of subsidized, affordable housing and on-site childcare for very low-income survivors of domestic abuse and their children.

The environmental justice RSA within San Jose is 34.5 percent low-income, which is 10.6 percent higher than that of the reference community. The highest rates of low-income populations in the environmental justice RSA occur east of the intersection of Interstate (I-) 280 and State Route (SR) 87 where the neighborhoods of Market/Almaden, Washington/Guadalupe, and Tamien are located; these neighborhoods are 56.1 percent low-income. The Gardner and Auzerais/Josefa neighborhoods are 25.8 percent and 37.0 percent low-income, respectively.

5.4.3 Minority Populations

5.4.3.1 Reference Community

As shown in Table 5-9, the reference community is racially and ethnically diverse. In 2010–2014 estimates, minority individuals made up between approximately 58.6 and 65.8 percent of the three counties’ populations. As a whole, 62.6 percent of the reference community’s population is minority, compared to 60.8 percent for the state of California (U.S. Census Bureau ACS 2010–2014d). The racial and ethnic makeup of the reference community is relatively similar to that of the three counties. Based on 2010–2014 estimates, Asians were the largest minority group in the reference community and across each of the three counties, followed closely by Hispanics or Latinos. San Mateo and Santa Clara Counties have substantially larger concentrations of persons of Hispanic or Latino ethnicity than San Francisco County.

Table 5-9 Minority Group Representation in the Reference Community (2010–2014 Estimates)

Geographic Area	Percent Minority Population					Total
	Hispanic or Latino	Non-Hispanic or Latino			Other	
		Black	Asian	Native American/Hawaiian/Pacific Islander		
San Francisco County	15.3	5.5	33.3	0.6	3.9	58.6
San Mateo County	25.4	2.5	25.7	1.5	3.8	58.9
Santa Clara County	26.7	2.4	32.9	0.5	3.3	65.8
Reference community ¹	23.7	3.2	31.4	0.8	3.5	62.6

Source: U.S. Census Bureau ACS 2010–2014d

¹ Reference community percent minority data is a weighted average based on the population within each county.

5.4.3.2 Resource Study Area

Table 5-10 shows the minority group representation within the environmental justice RSA by subsection and by city and community. As a whole, the environmental justice RSA is 60.0 percent minority, with the largest minority groups being Asian (25.2 percent) and Hispanic or Latino (26.8 percent) (U.S. Census Bureau ACS 2010–2014d). Figure 5-9 illustrates the distribution of minority groups within the environmental justice RSA and areas with the greatest concentrations of minority populations. The greatest concentration of racial and ethnic minorities occurs in the San Francisco to South San Francisco Subsection (76.2 percent) and Mountain View to Santa Clara Subsection (63.8 percent).

The cities and communities of the environmental justice RSA vary substantially in terms of the concentration of minority populations. The highest concentrations of minority populations within the environmental justice RSA occur in Daly City (96.6 percent), South San Francisco (85.6 percent), and North Fair Oaks (79.5 percent) (U.S. Census Bureau ACS 2010–2014d). In contrast, the lowest concentrations of minority populations occur in Atherton and Menlo Park (21.5 percent each).

Figure 5-10 through Figure 5-14 illustrate the percentage of minority populations within the environmental justice RSA. Further details regarding locations where the percent minority populations exceed that of the reference community is described by subsection.

San Francisco to South San Francisco Subsection

The environmental justice RSA within this subsection is 76.2 percent minority, which is 13.6 percent more than that of the reference community and is the highest concentration of minority populations within the RSA. The populations within the RSA in San Francisco, Daly City, South San Francisco, and San Bruno all have higher concentrations of minorities than the reference community. The environmental justice RSA within San Francisco is 74.2 percent minority, which is 11.6 percent greater than that of the reference community. The RSA for the 4th and King Street Station is 53.4 percent minority. The environmental justice RSA within Brisbane is 61.3 percent minority, which is 1.3 percent less than the reference community. The RSA for the Brisbane LMF sites is 87.8 percent minority,

In San Francisco, high concentrations of minority populations occur in the neighborhoods of Bayview-Hunters Point, Visitacion Valley, Little Hollywood, and Bayshore Heights, which range from 74.1 to nearly 95.5 percent minority. Visitacion Valley, Little Hollywood, and Bayshore Heights are north and west of the Brisbane LMF sites and are included in the RSA for the Brisbane LMF. Most of South San Francisco within the environmental justice RSA also has high concentrations of minority populations, which range from 77.1 to 90.5 percent minority. The minority population in San Francisco is largely Asian, whereas the population is largely Hispanic or Latino in South San Francisco.

San Bruno to San Mateo Subsection

The San Bruno to San Mateo Subsection environmental justice RSA is 54.2 percent minority, which is lower than the reference community (62.6 percent minority). The environmental justice RSA within Millbrae is 63.2 percent minority, which is 0.6 percent greater than the reference community. The RSA for the Millbrae Station is 56.1 percent minority.

The highest concentrations of minority populations occur in a residential area in San Bruno between El Camino Real and US 101 (which ranges from 69.2 to 75.9 percent minority), a residential neighborhood north of the Millbrae Station between Broadway and US 101 (70.1 percent minority), and a residential area in San Mateo east of the Caltrain tracks between Peninsula Avenue on the north and East Fourth Avenue on the south (which ranges from 63.0 to 82.7 percent minority).

Table 5-10 Minority Group Representation within the Resource Study Area (2010–2014 Estimates)¹

Subsection and City/Community within RSA	Percent Minority Population					Total
	Hispanic or Latino	Non-Hispanic or Latino			Other ²	
		Black	Asian	Native American/ Hawaiian/Pacific Islander		
San Francisco to South San Francisco	24.6	10.4	37.0	1.1	3.0	76.2*
San Francisco	17.8	13.4	39.0	0.9	3.2	74.2*
Daly City	29.2	4.1	60.2	0.2	3.0	96.6*
Brisbane	21.9	1.8	30.4	0.3	6.9	61.3
South San Francisco	53.6	1.8	25.7	2.7	1.8	85.6*
San Bruno	38.4	2.1	29.7	2.3	2.5	75.0*
Unincorporated San Mateo County	36.6	0.9	32.1	0.3	3.3	73.2*
San Bruno to San Mateo	25.0	1.7	22.4	1.4	3.7	54.2
South San Francisco	48.8	1.7	23.7	6.5	2.7	83.3*
San Bruno	36.7	1.8	21.3	2.6	3.7	66.0*
Millbrae	16.0	1.3	42.4	0.6	2.9	63.2*
Burlingame	13.1	1.0	19.5	0.6	5.1	39.3
Hillsborough	4.9	0.6	27.2	0.1	3.7	36.5
San Mateo	32.3	2.6	16.0	1.6	3.3	55.7
Unincorporated San Mateo County	28.1	1.0	25.5	0.1	3.6	58.3
San Mateo to Palo Alto	25.7	1.8	17.4	0.7	3.8	49.4
San Mateo	25.4	1.9	18.1	1.3	3.8	50.4
Unincorporated San Mateo County	13.0	0.2	23.0	0.1	3.1	39.5
Belmont	14.8	2.5	21.9	0.0	7.1	46.4
San Carlos	12.7	0.9	10.2	0.8	3.9	28.5
Redwood City	53.6	1.7	7.1	0.5	2.4	65.4*
North Fair Oaks	71.4	0.8	4.4	1.8	1.1	79.5*
Atherton	5.0	0.2	12.2	0.2	3.8	21.5
Menlo Park	4.0	0.6	12.6	0.2	4.0	21.5
Palo Alto	9.2	1.7	28.7	0.1	4.3	44.0
Stanford	12.5	5.0	26.6	0.8	6.1	51.0
Los Altos	4.6	0.0	25.0	0.0	5.4	35.0
Mountain View	22.4	2.1	29.2	0.9	3.2	57.9
Unincorporated Santa Clara County	7.1	0.9	22.5	0.0	2.4	32.9

Subsection and City/Community within RSA	Percent Minority Population					Total
	Hispanic or Latino	Non-Hispanic or Latino			Other ²	
		Black	Asian	Native American/Hawaiian/Pacific Islander		
Mountain View to Santa Clara	22.7	2.4	35.0	0.3	3.4	63.8*
Palo Alto	7.8	1.6	30.7	0.2	3.3	43.6
Mountain View	23.2	2.1	27.9	0.3	3.7	57.3
Sunnyvale	19.3	2.2	43.2	0.2	3.6	68.5*
Santa Clara	29.8	3.2	33.3	0.3	2.4	69.0*
Unincorporated Santa Clara County	13.5	1.2	27.4	0.0	6.1	48.1
San Jose Diridon Station Approach	38.3	4.1	16.5	0.6	3.4	62.9*
Santa Clara	29.7	3.4	20.9	0.7	2.9	57.6
San Jose	40.4	4.3	15.4	0.6	3.5	64.2*
RSA Totals	26.8	3.9	25.2	0.8	3.5	60.0

Source: U.S. Census Bureau ACS 2010–2014d

RSA = resource study area

Bolded values denoted with an asterisk (*) identify demographic characteristics for the RSA that exceed that of the reference community.

¹ RSA data were calculated through a weighted average based on the population within each subsection.

² Includes categories of “some other race” and “two or more races.”

San Mateo to Palo Alto Subsection

The San Mateo to Palo Alto Subsection environmental justice RSA is 49.4 percent minority, with 25.7 percent of the population Hispanic or Latino and 17.4 percent of the population Asian. The concentration of minority populations within this subsection is the lowest in the RSA and is approximately 13 percent less than the reference community. The highest concentrations of minority populations occur in Redwood City (65.4 percent) and North Fair Oaks (79.5 percent), and these populations are largely Hispanic or Latino. The lowest concentrations of minority populations occur just south of North Fair Oaks in Atherton and Menlo Park (21.5 percent each).

Mountain View to Santa Clara Subsection

The environmental justice RSA in the Mountain View to Santa Clara Subsection is 63.8 percent minority, with 22.7 percent of the population Hispanic or Latino and 35.0 percent of the population Asian. Of the cities and communities in this subsection, Sunnyvale and Santa Clara have higher concentrations of minorities than the reference community. There are also neighborhoods with high concentrations of minority populations in Mountain View west of the alignment San Antonio Road and Rengstorff Avenue (63.2 percent minority) and south of the SR 85 and SR 238 intersection (66.1 percent minority); in Sunnyvale east and west of the alignment (ranging from 65.0 to 73.9 percent minority); and in the northern portion of Santa Clara (ranging from 71.0 to 74.4 percent minority).

San Jose Diridon Station Approach Subsection

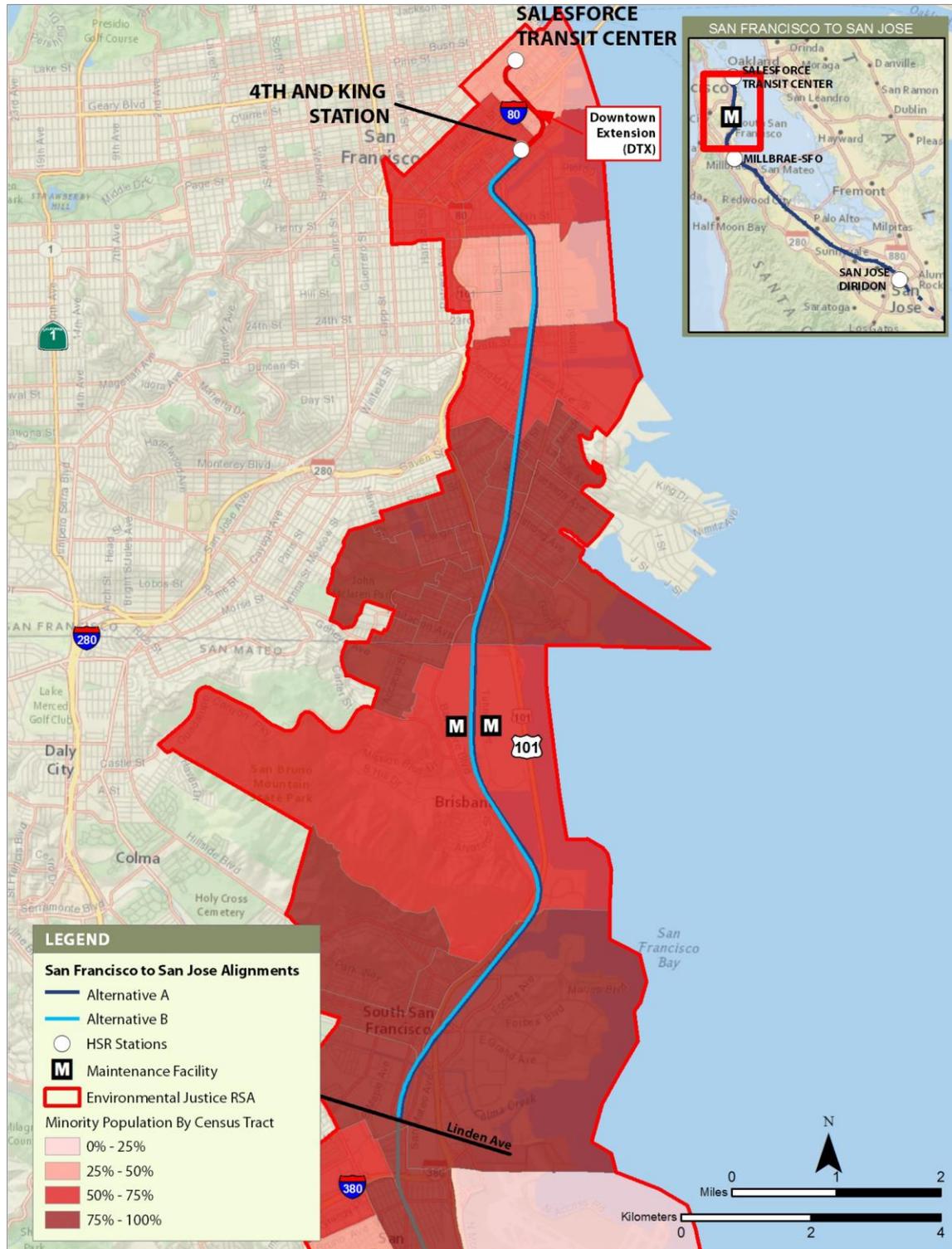
The environmental justice RSA within this subsection is 62.9 percent minority, which is 0.3 percent greater than the reference community. Minority representation is higher in downtown San Jose (64.2 percent minority) than in Santa Clara (57.6 percent minority), and the greatest concentrations of minority populations are east of the intersection of I-280 and SR 87. In the Market/Almaden, Washington/Guadalupe, and Tamien neighborhoods, concentrations of minority populations range from 85.7 to 93.7 percent.



Source: U.S. Census Bureau ACS 2010–2014d

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Figure 5-9 Minority Population Distribution



Source: U.S. Census Bureau ACS 2010–2014d

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Figure 5-10 Minority Populations in the Resource Study Area—San Francisco to South San Francisco Subsection

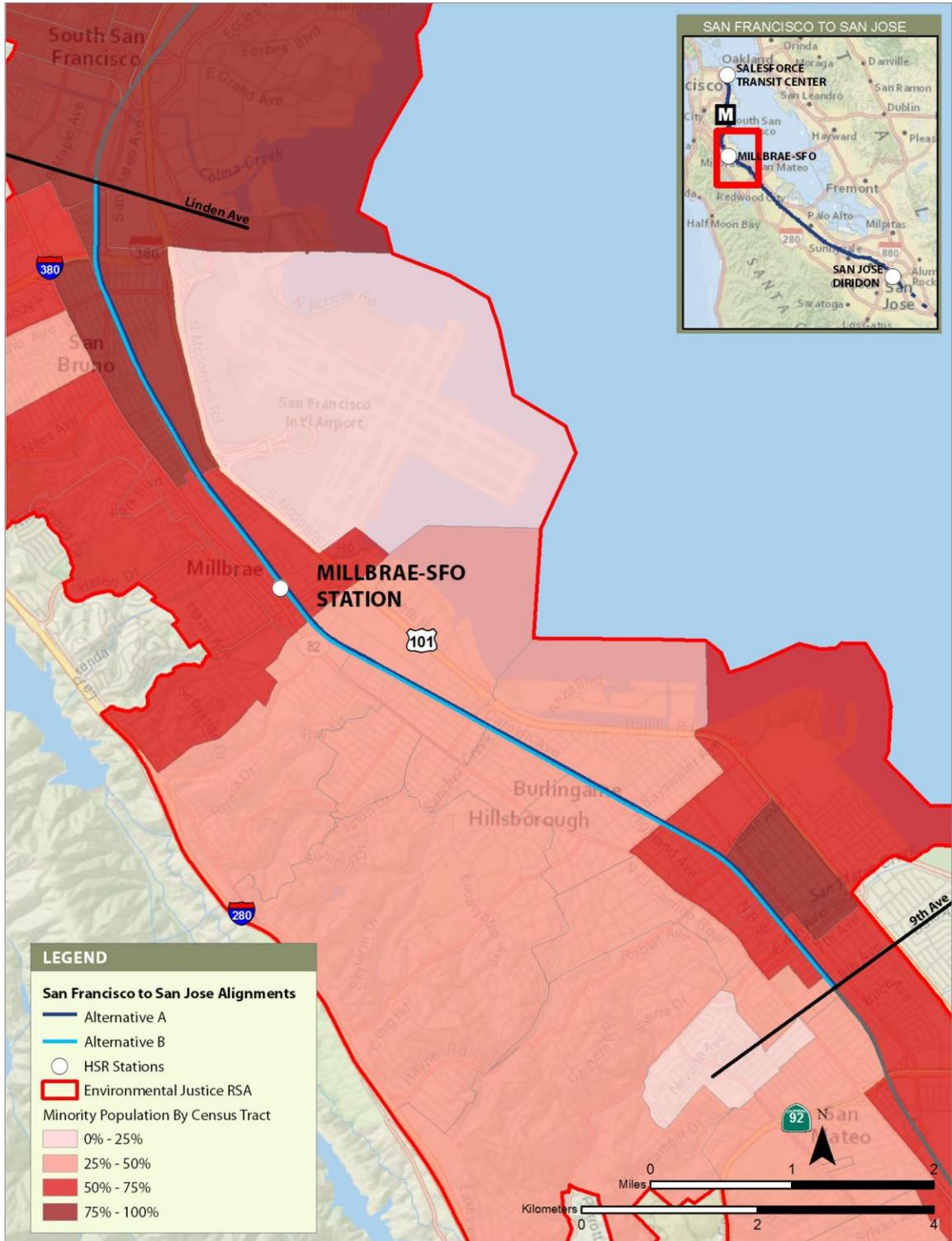
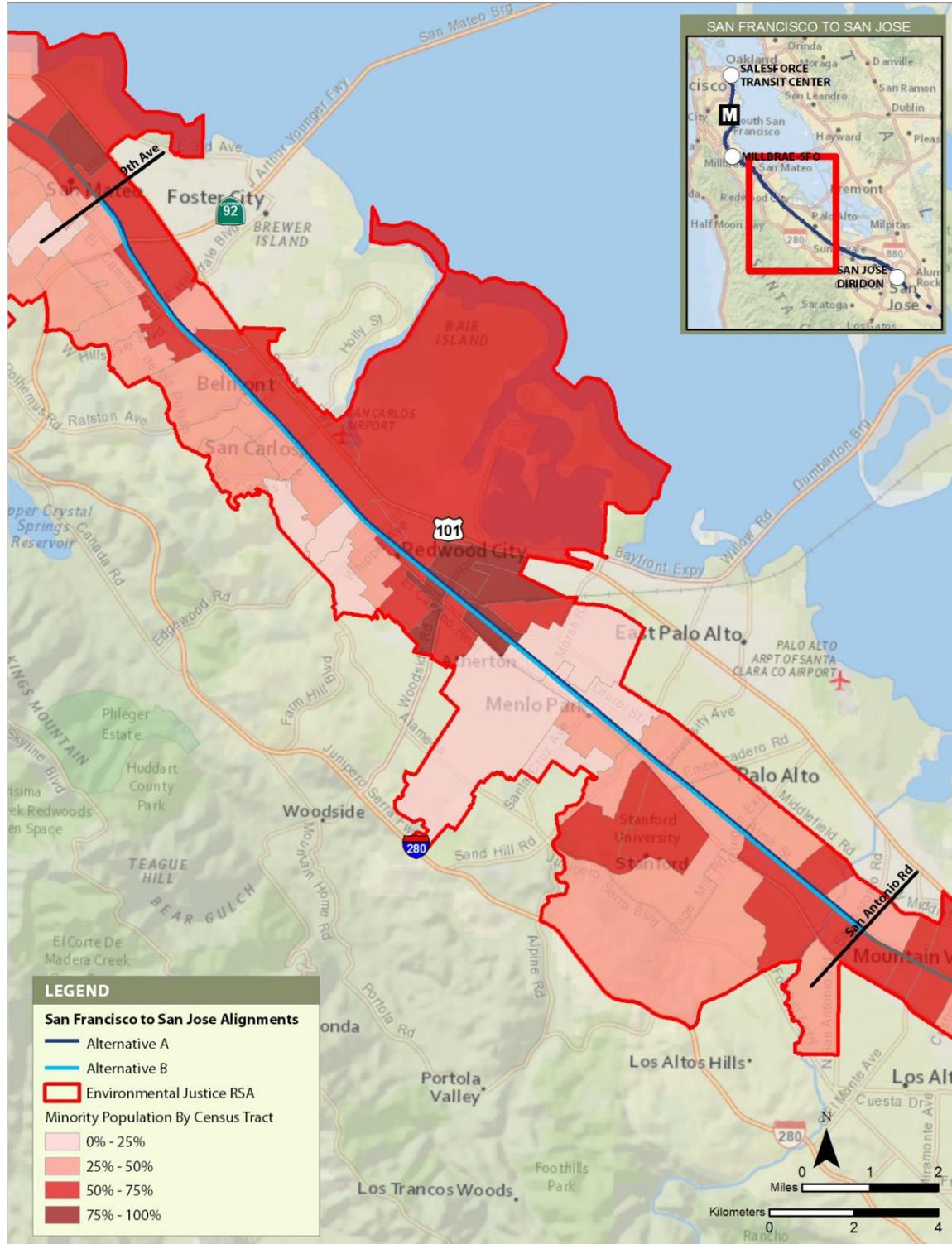


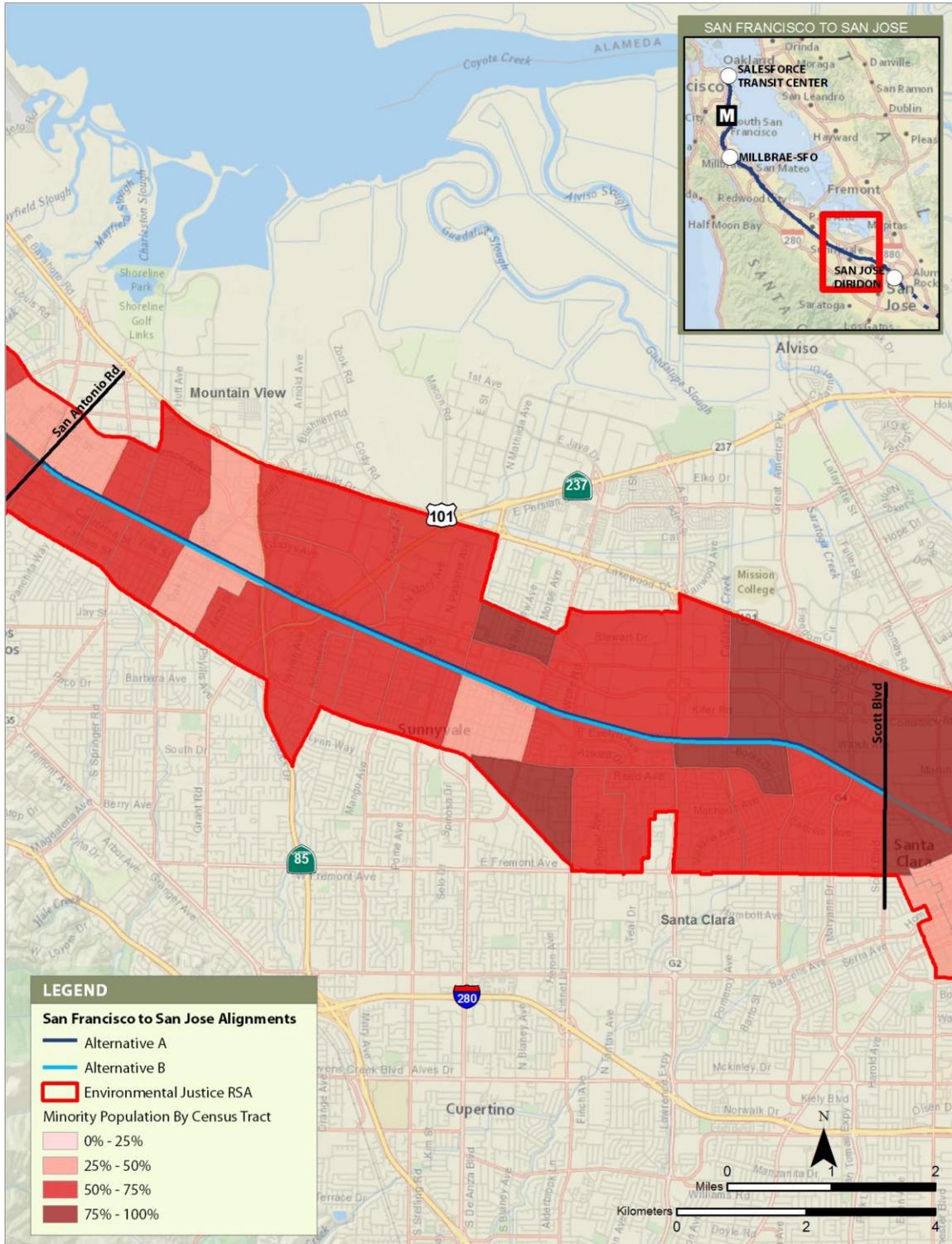
Figure 5-11 Minority Populations in the Resource Study Area—San Bruno to San Mateo Subsection



Source: U.S. Census Bureau ACS 2010–2014d

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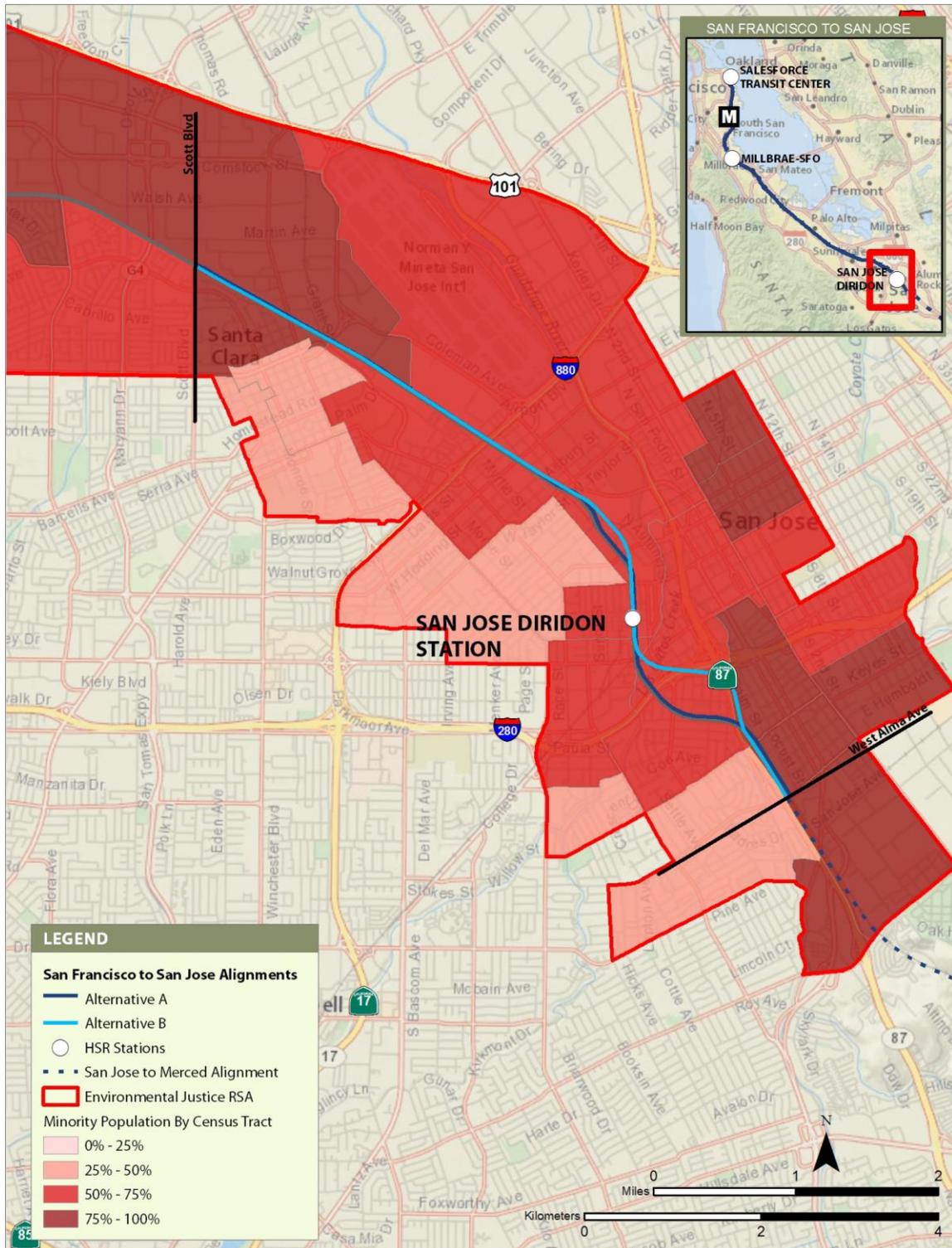
Figure 5-12 Minority Populations in the Resource Study Area—San Mateo to Palo Alto Subsection



Source: U.S. Census Bureau ACS 2010–2014d

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Figure 5-13 Minority Populations in the Resource Study Area—Mountain View to Santa Clara Subsection



Source: U.S. Census Bureau ACS 2010–2014d

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Figure 5-14 Minority Populations in the Resource Study Area—San Jose Diridon Station Approach Subsection

5.4.4 Other Sensitive Populations

5.4.4.1 Reference Community

In addition to minority populations and low-income populations, this environmental justice analysis also examines the distribution of sensitive populations, such as linguistically isolated, disabled, or elderly persons. These populations may have special relocation needs and outreach needs to facilitate meaningful participation in project planning activities. As shown in Table 5-1, 11.3 percent of households in the reference community were linguistically isolated based on 2010–2014 estimates (U.S. Census Bureau ACS 2010–2014f). Of the three counties, San Francisco County had the highest concentration of linguistically isolated households at 12.5 percent.

The elderly population (65 years and older) was 12.8 percent in the reference community and was comparable among all three counties, ranging from 11.6 to 14.1 percent of the population based on 2010–2014 estimates (U.S. Census Bureau ACS 2010–2014a). The percent of the population over the age of 5 with a disability was approximately 8.0 percent of the reference community, with similar rates in of disabled persons in Santa Clara and San Mateo Counties. The percent of the population with disability status in San Francisco County was slightly higher, at 10.5 percent (U.S. Census Bureau ACS 2010–2014e).

5.4.4.2 Resource Study Area

Table 5-11 shows other sensitive populations within the environmental justice RSA by subsection and by city/community. Within the environmental justice RSA, 11.9 percent of individuals were over the age of 65, 8.0 percent had a disability and 11.4 percent of households were linguistically isolated based on 2010–2014 estimates (U.S. Census Bureau ACS 2010–2014a, 2010–2014e, 2010–2014f). The environmental justice RSA within the San Francisco to South San Francisco Subsection had the highest concentration of linguistically isolated households (15.2 percent) and disabled persons (10.2 percent), whereas the San Bruno to San Mateo Subsection had the highest concentration of elderly persons (14.3 percent).

Table 5-11 Other Sensitive Populations within the Resource Study Area (2010–2014 Estimates)

Subsection and City/Community within RSA	Percent Population Over 65 Years	Percent Population with Disability Status ¹	Percent Linguistically Isolated Households
San Francisco to South San Francisco	12.0	10.2*	15.2*
San Francisco	12.0	10.5*	15.0*
Daly City	13.3*	6.9	22.5*
Brisbane	13.3*	10.8*	2.7
South San Francisco	12.0	9.9*	22.1*
San Bruno	12.3	9.1*	9.9
Unincorporated San Mateo County	11.9	10.0*	8.1
San Bruno to San Mateo	14.3*	7.7	10.0
South San Francisco	12.5	8.7*	20.7*
San Bruno	11.4	7.4	10.9
Millbrae	18.2*	9.0*	10.5
Burlingame	12.7	6.2	6.7

Subsection and City/Community within RSA	Percent Population Over 65 Years	Percent Population with Disability Status ¹	Percent Linguistically Isolated Households
Hillsborough	19.2*	6.7	3.6
San Mateo	14.3*	8.7*	12.3*
Unincorporated San Mateo County	14.8*	6.6	9.6
San Mateo to Palo Alto	13.4*	7.4	9.7
San Mateo	15.1*	9.3*	10.5
Unincorporated San Mateo County	19.2*	8.0	4.1
Belmont	14.8*	6.9	4.4
San Carlos	13.3*	6.4	3.3
Redwood City	9.5	8.2	16.2*
North Fair Oaks	7.4	6.4	21.3*
Atherton	21.5*	6.5	0.9
Menlo Park	14.7*	5.6	5.3
Palo Alto	17.6*	7.2	8.5
Stanford	4.4	3.5	7.3
Los Altos	15.1*	9.7*	2.9
Mountain View	14.7	5.7	11.7*
Unincorporated Santa Clara County	28.0*	6.0	0.9
Mountain View to Santa Clara	10.0	6.8	11.6*
Palo Alto	17.0*	6.8	9.6
Mountain View	10.0	5.8	10.7
Sunnyvale	8.8	6.1	11.8*
Santa Clara	11.2	9.9*	13.7*
Unincorporated Santa Clara County	12.2	5.9	6.0
San Jose Diridon Station Approach	8.7	8.1	11.8
Santa Clara	8.0	7.3	11.8
San Jose	8.9	8.3	11.8
Resource Study Area Total²	11.9	8.0	11.4*

Sources: U.S. Census Bureau ACS 2010–2014a, 2010–2014e, 2010–2014f

RSA = resource study area

Bolded values denoted with an asterisk (*) identify demographic characteristics for the RSA that exceed that of the reference community.

¹ Per U.S. Census Bureau data, this is the percent of population with a disability who are over the age of 5.

² RSA data were calculated through a weighted average based on the population within each subsection.

San Francisco to South San Francisco Subsection

The environmental justice RSA for the other sensitive populations within the San Francisco to South San Francisco Subsection had the highest concentrations of linguistically isolated households (15.2 percent) and disabled persons (10.2 percent) of the entire RSA, both of which exceeded that of the reference community. Of the cities and communities within this subsection, San Francisco and Brisbane had the highest concentrations of disabled persons, while Daly City and South San Francisco had the highest concentrations of linguistically isolated households.

The RSA for the 4th and King Street Station has a population comprised of 10.4 percent elderly persons, 11.8 percent disabled persons, and 13.3 percent linguistically isolated households. The RSA for the Brisbane LMF sites has a population comprised of 14.3 percent elderly persons, 9.4 percent disabled persons, and 19.2 percent linguistically isolated households.

San Bruno to San Mateo Subsection

The environmental justice RSA within the San Bruno to San Mateo Subsection had the highest concentration of elderly persons (14.3 percent) of the entire RSA, which is attributed in part to the high concentrations of elderly persons in Millbrae (18.2 percent) and Hillsborough (19.2 percent). South San Francisco, Millbrae, and San Mateo had concentrations of disabled persons that exceed that of the reference community, while the concentration of linguistically isolated households in South San Francisco (20.7 percent) is nearly double that of the reference community.

The RSA for the Millbrae Station has a population comprised of 16.8 percent elderly persons, 7.3 percent disabled persons, and 10.3 percent linguistically isolated households (Table 5-5). Immediately west of the Millbrae Station, the Millbrae Serra Convalescent Hospital provides extended-stay nursing care to seniors with varying levels of disabilities.

San Mateo to Palo Alto Subsection

The environmental justice RSA within the San Mateo to Palo Alto Subsection had a high concentration of elderly persons (13.4 percent), in excess of the reference community. Notably high concentrations of elderly persons were present in Atherton (21.5 percent), Los Altos (23.6 percent), and unincorporated Santa Clara County (28.0 percent). The concentrations of disabled persons ranged from 3.5 percent to 9.7 percent across the cities and communities within this subsection. High concentrations of linguistically isolated households were present in Redwood City (16.2 percent) and North Fair Oaks (21.3 percent).

Mountain View to Santa Clara Subsection

The Mountain View to Santa Clara Subsection environmental justice RSA had a population comprised of 10.0 percent elderly persons, 8.8 percent disabled persons, and 11.6 percent linguistically isolated households (U.S. Census Bureau ACS 2010–2014a, 2010–2014e, 2010–2014f). High concentrations of elderly persons were present in Palo Alto (17.0 percent), while high concentrations of linguistically isolated households were present in Sunnyvale (11.8 percent) and Santa Clara (13.7 percent).

San Jose Diridon Station Approach Subsection

The San Jose Diridon Station Approach Subsection environmental justice RSA had a population comprised of 8.7 percent elderly persons, 8.1 percent disabled persons, and 11.8 percent linguistically isolated households (U.S. Census Bureau ACS 2010–2014a, 2010–2014e, 2010–2014f). Santa Clara and San Jose's concentrations of elderly persons, disabled persons, and linguistically isolated households closely resembled those in the San Jose Diridon Station Approach Subsection RSA.

5.5 Environmental Justice Engagement and Documentation

5.5.1 Affected Populations and Communities

As documented in Section 5.4, Affected Environment, minority populations and low-income populations are located throughout the environmental justice RSA. Concentrations of minority populations or low-income populations are greater than the reference community in San Francisco, Daly City, South San Francisco, San Bruno, San Mateo, Redwood City, North Fair Oaks, Mountain View, Sunnyvale and Santa Clara. Concentrations of minority populations or low-income populations are less than the reference community in Brisbane, Millbrae, Burlingame, Hillsborough, Belmont, San Carlos, Atherton, Menlo Park, Los Altos, Palo Alto, and Stanford (U.S. Census Bureau ACS 2010–2014b, 2010–2014d). Input on the locations of minority populations and low-income populations from local stakeholders and community groups, elected officials, and staff members supplemented the demographic analysis in Section 5.4, and included coordination with the following individuals and groups:

- Local experts and consultants
- City staff and elected officials familiar with minority populations and low-income populations in the RSA
- Local neighborhood/homeowner associations (e.g., the neighborhood associations of Visitacion Valley Planning Alliance (San Francisco), Little Hollywood Neighbors (San Francisco), North Fair Oaks Community Council (San Mateo County), and Bayview Citizens Advisory Committee (San Francisco)), special interest groups, community centers, health clinics, faith-based organizations, and local chambers of commerce and other business stakeholders

The Authority reviewed community newspapers, websites, and blogs, and conducted additional online research of organizations that serve minority populations and low-income populations. The Authority also relied on previous work experience in the corridor for the identification of additional stakeholders and organizations.

5.5.1.1 Engagement Methods

Targeted outreach to the minority populations, low-income populations, and other sensitive populations in the environmental justice RSA is a crucial component in developing an all-inclusive participation and information program and would continue throughout the project design and construction phases. These outreach efforts consider all recommendations and factors for outreach included in the Authority's Title VI Program Plan, Limited English Proficiency Plan, and Environmental Justice Guidance (Authority 2012a, 2012b, 2012c), including:

- Consideration of the time, location, and accessibility of all meetings. This effort includes using other means for engagement such as interviews, briefings, and the use of audio devices to record comments. In addition, all meetings include multiple notification methods, provision of interpreters, venue locations that are accessible, and formats that provide for different ways to learn about the project alternatives and share feedback.
- Reaching people within their own communities and during existing meetings schedules. This effort includes utilizing existing community groups and their knowledge of the community to reach minority populations, low-income populations, and other sensitive populations more effectively. This also includes selection of meeting locations that are culturally sensitive.
- Provision of interpreters for languages commonly spoken in each community (Spanish, Mandarin/Cantonese Chinese, and Tagalog for San Francisco, and Spanish for San Mateo and Mountain View) during the 2016 public scoping meetings
- Presentations focused to specific interest groups
- Placement of meeting announcements and flyers through different types of media and advertisement of meeting notices in Spanish, Mandarin, Vietnamese, and Tagalog

- Cultural sensitivity to minority groups
- Identification of barriers to public participation and ways to overcome those barriers

These activities are summarized in the following section.

5.5.1.2 Environmental Justice Outreach Events

Extensive public and agency outreach has been conducted for this Final EIR/EIS, particularly targeted to engage minority populations and low-income populations. These outreach efforts are documented in Chapter 9 of this Final EIR/EIS. This process will continue through the design and construction phases of the project. Environmental justice outreach activities were conducted by the project team using the outreach strategy described in Volume 2, Appendix 5-A, Attachment 1, *San Francisco to San Jose Project Section Environmental Justice Outreach Plan*. Table 5-12 describes the outreach to minority populations and low-income populations conducted by the Authority between April 2016 and December 2019.⁶ These outreach activities included presentations at public and stakeholder group meetings, interviews with local stakeholders, and informational tabling at various types of community events. The locations of these events are mapped on Figure 5-15, which shows these community events were in minority populations and low-income communities.

Table 5-12 Outreach to Minority Populations and Low-Income Populations

Date	Meeting Type	Meeting Location	Description
July 13, 2016	East Palo Alto Farmers Market	Ravenswood Family Health Center, East Palo Alto	Authority staff set up an information table, collected comments and provided information on the statewide HSR program and the Project Section.
August 20, 2016	Gardner Flea Market	Gardner Community Center, San Jose	The Authority set up an informational table at the entrance of the Gardner Community Flea Market (a seasonal market open to the public located in an area with low-income populations) with informational handouts and a sign-in sheet. The Authority provided a large-format map of the Gardner neighborhood and those who visited the table were invited to place dots on the map to indicate their residence. Gardner is identified as a low-income population for the environmental justice analysis.
August 25, 2016	North Fair Oaks Community Council Meeting	Fair Oaks Community Center, Redwood City	Authority staff set up an information table, collected comments and provided information on the statewide HSR program and the Project Section. The Fair Oaks Community Center is located near the project alternatives in an area with minority populations and low-income populations.
September 18, 2016	Viva CalleSJ Community Event	Six miles of roads along Willow Glen, Japantown, Downtown San Jose, and the Burbank/West San Carlos neighborhoods	Viva CalleSJ is a free program that temporarily closes miles of San Jose streets to bring communities together to walk, bike, skate, play, and explore the city. Authority staff set up an information table at the Willow Glen Activity Hub with informational handouts and a sign-in sheet. A large-scale version of the Community Values Exercise was completed by three members of the public, and visitors were invited to indicate their residence on a large-format map of San

⁶ As described in Chapter 9 and documented in Appendix 9-A, the Authority conducted additional community and outreach meetings in 2020 and 2021. Appendix 9-A lists the meeting participants, dates, and topics.

Date	Meeting Type	Meeting Location	Description
			Jose. Thirty people visited the informational table. The Willow Glen neighborhood is located adjacent to minority populations and low-income populations within the environmental justice RSA, and this event was expected to draw residents from nearby areas due to the scale of the event.
November 15, 2016	East Palo Alto City Council	East Palo Alto Government Center	Authority staff provided a statewide HSR program update, followed by an update of the Project Section. Staff noted that there is no immediate impact from the HSR corridor on the City of East Palo Alto. Staff also provided an update on ongoing and upcoming outreach events, and encouraged continued stakeholder engagement.
November 19, 2016	Visitacion Valley Planning Alliance Meeting	Visitacion Branch Library, San Francisco	Authority staff provided project information, including updates on the statewide HSR program, alignment options, and the Project Section, and gathered stakeholder input. The Visitacion Branch Library is located near the project alternatives in an area with minority populations and low-income populations.
December 7, 2016	Bayview Citizens Advisory Committee Meeting	Bayview Hunter's Point YMCA, San Francisco	Authority staff gave a presentation that included updates on the statewide HSR program and Project Section and a question and answer session. The Bayview Hunter's Point YMCA is located near the project alternatives in an area with minority populations and low-income populations.
December 13, 2016	San Bruno City Council Meeting	San Bruno Senior Center, San Bruno	Authority staff gave a presentation that included updates on the statewide HSR program and Project Section and a question and answer session.
January 18, 2017	Little Hollywood Neighbors Meeting	Recology SF, San Francisco	Authority staff gave a presentation that included updates on the statewide HSR program and Project Section and a question and answer session. Recology SF is located adjacent to the project alternatives and in close proximity to minority populations and low-income populations.
February 13, 2017	Gardner Neighborhood Association	Gardner Community Center, San Jose	Authority staff made a presentation at a regularly scheduled Gardner Neighborhood Association meeting located in an area with low-income populations. The presentation was followed by a question-and-answer session that was moderated by Authority staff and the neighborhood association president. The focus of the presentation was to provide information about the project and an opportunity for questions and answers on the proposed alignment alternatives for the San Jose Diridon Station Approach Subsection and the Gardner area. Gardner is identified as a low-income population for the environmental justice analysis.

Date	Meeting Type	Meeting Location	Description
February 16, 2017	Friendly Acres Meeting	PAL Building, Redwood City	Authority staff provided project information and gathered stakeholder input. Staff delivered a presentation that included updates on the statewide HSR program, the range of alternatives for the Project Section, and a question and answer session. This meeting venue is located in close proximity to minority populations and low-income populations within the environmental justice RSA.
March 6, 2017	Bayview Hill Neighborhood Association Meeting	St. Paul of the Shipwreck Church, Francis Center, San Francisco	Authority staff delivered a presentation that included updates on the statewide HSR program, the range of alternatives for the Project Section, and a question and answer session. This church is located near the project alternatives in an area with minority populations and low-income populations.
March 8, 2017	Goodyear-Mastic and Alma Neighborhood Associations Joint Meeting	Alma Senior Center, San Jose	The Alma Senior Center is located within the environmental justice RSA in an area with both minority populations and low-income populations. Authority staff made a presentation at a regularly scheduled joint meeting of the Goodyear-Mastic and Alma Neighborhood Associations. The Tamien neighborhood was also invited to attend this meeting. The presentation was followed by a question-and-answer session that was moderated by Authority staff and the neighborhood association presidents. The focus of the presentation was to provide information about the project and an opportunity for questions and answers on the proposed alignment alternatives for the San Jose Diridon Station Approach Subsection and Monterey Corridor Subsection (in the San Jose to Merced Project Section). Twenty-four members of the public attended the meeting.
July 27, 2017	North Fair Oaks Community Council	Fair Oaks Community Center, Redwood City	Authority staff delivered a presentation that included an update on the statewide HSR program and the environmental review process, range of alternatives, and station planning for the Project Section. The Fair Oaks Community Center is located near the project alternatives in an area with minority populations and low-income populations.
September 9, 2017	Presentation to United Neighborhoods of Santa Clara County Neighborhood Development Conference	Seven Trees Community Center, San Jose	Authority staff made a presentation at the United Neighborhoods of Santa Clara County Neighborhood Development Conference that included statewide HSR program and Project Section updates. The Seven Trees Community Center is located within the environmental justice RSA in an area with both minority populations and low-income populations.

Date	Meeting Type	Meeting Location	Description
September 18, 2017	Presentation to Gardner Neighborhood Association	Gardner Community Center, San Jose	Authority staff made a presentation to the Gardner Neighborhood Association located in an area with low-income populations. The presentation included Project Section updates, review of project alternatives in the San Jose Diridon Station Approach Subsection, and a review of community input. Authority staff also responded to questions.
July 2, 2018	Oak Grove Neighborhood Association Meeting	Southside Community Center, San Jose	Authority staff made a presentation to the Oak Grove Neighborhood Association primarily regarding the 2018 Business Plan. The Southside Community Center is located near the project alternatives in an area with both minority populations and low-income populations.
September 15, 2018	Sunnyvale State of the City	Murphy Avenue, Downtown Sunnyvale	Authority staff set up an information table, collected comments and provided information on the statewide HSR program and Project Section. Murphy Avenue is located near the project alternatives in an area with minority populations.
October 23, 2018	Delmas Park Neighborhood Association Meeting	The Learning Center, San Jose	Authority staff were invited by the Delmas Park Neighborhood Association to provide an update on the 2018 Business Plan and the project alternatives under consideration in San Jose. The workshop consisted of a presentation by Authority staff and a question-and-answer session. The Delmas Park neighborhood is located near the project alternatives in an area with low-income populations.
March 6, 2019	Vietnamese Voluntary Organization	San Jose	Authority staff convened a Vietnamese in-language meeting with members of the Vietnamese community in San Jose to provide updates on the project and solicit input on the project alternatives.
March 7, 2019	Visitacion Valley Service Providers Collaborative	Visitacion Valley, San Francisco	Authority staff provided the community with an update on the project and outreach conducted over the past 6 months. There was a question-and-answer session including community members sharing concerns that Visitacion Valley is a target for large infrastructure projects with limited community benefit. Visitacion Valley is located near the project alternatives in an area with minority populations and low-income populations.
March 20, 2019	Refugee and Immigrant Forum	San Jose	Authority staff provided a presentation to service providers (including the Family Alliance for Counseling Tools and Resolution, Silicon Valley Independent Learning Center, and Jewish Family Services of Silicon Valley) for refugees and immigrants in San Mateo and Santa Clara Counties.
March 26, 2019	Transportation Equity Allied Movement Coalition	San Mateo County	Authority staff provided updates on the statewide HSR program and Project Section updates, including outreach updates, for a consortium of San Mateo County sustainable/equitable transportation organizations.

Date	Meeting Type	Meeting Location	Description
April 9, 2019	NeighborUp Night	Visitacion Valley, San Francisco	Authority staff shared project information at a table during the monthly community meeting run by Mercy Housing. Visitacion Valley is located near the project alternatives in an area with minority populations and low-income populations.
April 25, 2019	North Fair Oaks Community Council	Fair Oaks Community Center, Redwood City	Spanish-language meeting in which Authority staff presented on the statewide HSR program and Project Section updates. Following the presentation, community council members asked questions regarding safety, station selection, and traffic impacts. The Fair Oaks Community Center is located near the project alternatives in an area with minority populations and low-income populations.
May 13, 2019	Gardner Community Meeting with Gardner Neighborhood Association	Gardner Community Center, San Jose	Authority staff convened a Spanish in-language meeting in response to requests from the Gardner Neighborhood Association. Staff provided project information to increase awareness about the project and collected feedback about project-related impacts. Approximately 15 members of the public participated. Gardner is identified as a low-income population for the environmental justice analysis.
May 18, 2019	Sunnydale Family Day	Visitacion Valley, San Francisco	Authority staff set up an information table, collected comments, and provided information on the statewide HSR program and Project Section. Discussions focused on the impacts in Visitacion Valley due to the proximity of the railroad tracks. Visitacion Valley is located near the project alternatives in an area with minority populations and low-income populations.
May 19, 2019	North Fair Oaks mural unveiling	Redwood City	Authority staff shared project information at a table during an event held to unveil a mural commissioned by the North Fair Oaks community.
May 30, 2019	Visitacion Valley Community Leaders' Meeting	Visitacion Valley, San Francisco	Authority staff presented information to community leaders from the Visitacion Valley neighborhood and solicited feedback. Attendees were particularly interested in the LMF and employment opportunities. Visitacion Valley is located near the project alternatives in an area with minority populations and low-income populations.
June 14, 2019	Homeless Walks with PATH	San Jose Diridon Station area	Authority staff shadowed PATH staff as they conducted outreach to the homeless community around Diridon Station and near the Guadalupe River. Through this outreach, the team interacted with members of the homeless community regarding project impacts including fencing and heightened security at the station deterring overnight stays and encampments.

Date	Meeting Type	Meeting Location	Description
June 24, 2019	YUCA	East Palo Alto	Authority staff presented information to the YUCA members, primarily high school students. YUCA focuses on training youth leaders about community organization approaches around environmental and social issues. Many of the participants have extensive experience navigating the transit system throughout the Peninsula. Discussion focused on improved connectivity, cost and affordability, potential for displacement, and whether the project would help alleviate income inequality.
June 29, 2019	Parkside and Shoreview Community Summer Picnic	San Mateo	Authority staff shared project information at a table at this community event. Staff spoke to approximately 30 local residents, answered questions, and collected comments. Shoreview Park is in an area of east San Mateo with minority populations and low-income populations.
July 18, 2019	Thursday Night Live music event	Mountain View	Authority staff shared project information at a table during the City of Mountain View's Thursday Night Live music series. Community members provided comments and asked questions related to the impacts of the blended system, the project timeline, and pedestrian and traffic safety.
August 1, 2019	Visitacion Valley Service Providers Collaborative	Visitacion Valley, San Francisco	The Visitacion Valley Service Providers Collaborative is a monthly meeting bringing together service providers serving the area to share information and discuss community concerns. Authority staff presented an update on the Staff-Recommended Preferred Alternative, upcoming input opportunities, and the environmental milestones. The Authority also answered questions about potential health hazards resulting from construction of tracks and the LMF, location of stations, project funding, noise impacts, and community work force development opportunities.
August 3, 2019	Sunnydale Community Health Fair	Sunnydale	Authority staff set up an information table to share project updates, answer questions, and accept comments. Comments from attendees focused on safety and security and the substantial population of limited-English speakers in the area, and included concern that there are limited informational options for non- or limited English speakers and suggestions for how to better reach those populations.
August 9, 2019	Downtown San Jose Farmers Market	Downtown San Jose	The San Jose Farmers Market is held every Friday during the spring and summer months across several blocks of downtown San Jose in an area with low-income populations. Authority representatives staffed an information table, speaking to approximately 60 people and providing project updates and receiving feedback. Input from the community included concern regarding the impacts on the Diridon neighborhood, including property impacts and eminent domain,

Date	Meeting Type	Meeting Location	Description
September 7, 2019	San Mateo Farmers Market	College of San Mateo, San Mateo	coordination with other transit agencies, traffic, safety, and connections between Millbrae Station and SFO. Authority staff shared project information at a booth during this Saturday event, speaking to about 50 community members. Discussion included questions about the timeframe for completion of the project as well as electrification of Caltrain, potential commute options HSR would offer, housing pressure relief, and job opportunities.
October 7, 2019	Asian Pacific Islander Council Meeting	San Francisco	Authority representatives provided an introductory presentation at the Asian Pacific Islander Council's monthly meeting. Members expressed an interest in learning more about the project and raised questions related to timing of construction and operations, local hiring, and potential displacements.
October 16, 2019	Ground-truthing (observing)	San Jose and Santa Clara	The Authority's outreach team observed communities around the Tamien and Santa Clara Caltrain Stations. In San Jose, the outreach team identified a homeless encampment, residences, and businesses that could be affected by the project. In Santa Clara, the team observed that much of the area around the station was occupied by businesses and retail. However, a small residential community located on Main Street, in the vicinity of Sahara Way, was identified as a potential minority and low-income neighborhood that could be affected.
November 14, 2019	Visitacion Valley Community Meeting	Visitacion Valley, San Francisco	Authority staff met with residents of Visitacion Valley to discuss the LMF, specifically how it will interact with the proposed Brisbane Baylands development. Additionally, the community was interested in workforce development opportunities.
December 13, 2019	Gardner Academy parents and community	Gardner Academy, San Jose	Authority representatives gave a presentation to approximately 35 parents and other community members. Gardner is identified as a low-income population for the environmental justice analysis.
December 13, 2019	Gardner Neighborhood Walk	Gardner Academy and surrounding neighborhood, San Jose	Authority staff joined representatives of the Gardner Neighborhood Association, the Office of Congresswoman Zoe Lofgren, and San Jose Unified School District to walk around the neighborhood and identify community impacts. Participants expressed concern about further isolation, maintenance of tracks and bridges that children would cross to get to school, impacts on emergency response times, and preservation of Fuller Park. Gardner is identified as a low-income population for the environmental justice analysis.

HSR = high-speed rail
 LMF = light maintenance facility
 SFO = San Francisco International Airport
 UCSF = University of California San Francisco
 YMCA = Young Men's Christian Association
 YUCA = Youth United for Community Action



Source: U.S. Census Bureau ACS 2010–2014b, 2010–2014d

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Figure 5-15 Locations of Environmental Justice Outreach Activities

Environmental Justice Organizations

The outreach team conducted a series of interviews starting in August 2016 with stakeholder organizations serving minority populations and low-income populations in the environmental justice RSA to inform these populations of Authority’s outreach efforts. The primary objectives of the interviews were to better understand the interests and concerns of minority populations and low-income populations related to the HSR project; to present the Authority’s strategy for meaningfully engaging minority stakeholders and low-income stakeholders, including anticipating and responding to potential challenges; and to identify specific environmental justice outreach opportunities (e.g., events, meetings, neighborhood groups) and additional stakeholders with whom to partner moving forward. In addition to stakeholder organizations, numerous individuals were interviewed through community canvassing efforts and by referral from the stakeholder organizations interviewed. Like the organizations, these individuals provided valuable community insight.

Stakeholder organizations offered suggestions on how to effectively engage communities along the project. These engagement suggestions included conducting in-language gatherings, neighborhood walks, and door-to-door canvassing in some neighborhoods; using social media and public service announcements on Spanish-language radio stations to engage Spanish-speaking residents; and providing incentives such as food and childcare at evening and weekend meetings.

These recommendations were incorporated into and continued to shape the targeted environmental justice outreach efforts conducted throughout 2018 and 2019. Authority staff made efforts to provide accommodations to address stakeholder’s suggestions and provide enhanced outreach whenever feasible by partnering with local organizations. For example:

- Authority staff joined local community leaders to conduct neighborhood walks and canvass door-to-door in select minority communities and low-income communities to answer community members’ questions and provide information about the project. In San Jose’s Gardner neighborhood, for example, the Authority coordinated the planning of a Spanish-language community meeting with the neighborhood association. In advance of the early evening meeting held at the local community center, Authority staff canvassed in the neighborhood and informed members of the public that children and other family members were welcome. The neighborhood association provided refreshments.
- Authority staff enlisted local community organizations to translate and share information about events on community organizations’ social media postings, via emails and newsletters, and on their websites. For example, a large Vietnamese community foundation in San Jose hosted a presentation by Authority staff. They prepared a flyer about the event in Vietnamese and also provided a meal at the event to encourage participation.
- Multilingual flyers, posters and newspaper ads, and community organizations’ social media postings invited members of the public to the summer 2019 open houses regarding the staff-recommended Preferred Alternative. Based on stakeholder feedback, the outreach consulting team provided family-friendly snacks and a number of children accompanied adult members to these informal events.

As a result of the interest from communities on the potential effects of the proposed Brisbane LMF and the passing tracks under Alternative B, the project outreach team intensified environmental justice outreach in the Project Section and engaged community-based service providers in additional interviews in late 2018 and 2019. The outreach team interviewed service providers representing the interests of more than 53,000 community members including Brisbane and nearby communities of Visitacion Valley, Sunnydale, and Bayview-Hunters Point. The objectives of these interviews were to gather feedback on the project’s effects on the minority populations and low-income populations and increase their awareness and knowledge about the project. Table 5-13 identifies the stakeholder organizations and individual that were interviewed. Additional information on these interviews can be found in Volume 2, Appendix 5-A, Appendix C, Biannual Environmental Justice Outreach Reports. The locations of these interviews are mapped on Figure 5-15 and

demonstrate the location of these stakeholders in minority communities and low-income communities.

Table 5-13 Interviews with Stakeholder Organizations and Community Service Providers

Interviewee	Date
Bay Area Air Quality Management District, San Francisco Bay Area	August 3, 2016
SF Environment, San Francisco	August 3, 2016
City of San Jose District Three, San Jose	August 4, 2016
Delmas Park Neighborhood Association, San Jose	August 4, 2016
Metropolitan Transportation Commission Policy Advisory Council, San Francisco Bay Area	August 5, 2016
San Mateo County Health Department, San Mateo County	August 5, 2016
Sustainable San Mateo County, San Mateo County	August 5, 2016
Metropolitan Transportation Commission, San Francisco Bay Area	August 25, 2016
Resident, Visitacion Valley, San Francisco	October 2, 2018
The Children's Place, San Carlos	October 3, 2018
Santa Clara University, Santa Clara County	October 5, 2018
San Carlos Elms Senior Housing, San Carlos	October 16, 2018
League of United Latin American Citizens, San Jose	October 16, 2018
San Mateo County Office of Sustainability, San Mateo County	October 16, 2018
Anders and Anders Foundation, Visitacion Valley	October 22, 2018
Mountain View Coalition for Sustainable Planning, Mountain View	October 23, 2018
San Mateo County Health Department, San Mateo County	October 23, 2018
Community Legal Services, East Palo Alto	October 24, 2018
Downtown Millbrae Neighborhood Walk, Millbrae	October 24, 2018
Brisbane Senior Center, Brisbane	October 25, 2018
Ravenswood Health Clinic, East Palo Alto	October 25, 2018
Mayview Health Clinic, Mountain View	October 25, 2018
Sunnydale Health and Wellness Center, Sunnydale	October 25, 2018
St. Vincent de Paul Society, San Francisco	October 26, 2018
Bessie Carmichael School/Filipino Education Center, San Francisco	October 26, 2018
Committee for Green Foothills, North Fair Oaks/San Mateo and Santa Clara Counties	October 26, 2018
Real Options for City Kids (R.O.C.K.), Visitacion Valley	October 26, 2018
Biblioteca Latinoamericana Branch Library, San Jose	October 29, 2018
Community Services Agency of Mountain View, Mountain View	October 29, 2018
St. Francis Center, North Fair Oaks	October 29, 2018
Silicon Valley Bicycle Coalition, San Mateo and Santa Clara Counties	October 30, 2018
Santa Clara County Office of Supportive Housing, Santa Clara County	October 31, 2018

Interviewee	Date
Sequoia District Adult School, North Fair Oaks	October 31, 2018
Youth Leadership Institute, San Mateo County	November 1, 2018
Saint Athanasius Parish, Mountain View	November 2, 2018
Acterra Action for a Healthy Planet, East Palo Alto	November 6, 2018
Nuestra Casa, East Palo Alto	November 6, 2018
Youth United for Community Action, East Palo Alto	November 8, 2018
Biblioteca Latinoamericana Branch Library, San Jose	November 9, 2018
Santa Maria Urban Ministry, San Jose	November 12, 2018
Santa Clara County Social Services	November 14, 2018
Vietnamese Voluntary Organization	November 15, 2018
Siena Youth Center, North Fair Oaks/Redwood City	November 19, 2018
Salvation Army Family Services, San Jose	November 27, 2018
Gardner Community Center Staff and Patrons, San Jose	December 3, 2018
Salvation Army's Emmanuel House, San Jose	December 4, 2018
Head Start Program, Office of Education, Santa Clara County	January 8, 2019
Santa Clara County Office of Immigrant Relations	February 6, 2019
Santa Clara County Office of Immigrant Relations	February 28, 2019
North Fair Oaks Community Council, San Mateo County	January 22, 2019
Day Worker Center of Mountain View, Mountain View	January 23, 2019
Mercy Housing Transformation Project, Sunnydale	February 1, 2019
Alviso Neighborhood Group, Alviso	February 13, 2019
San Jose Downtown Residents Association, San Jose	February 14, 2019
LifeMoves, San Mateo County	February 15, 2019
San Francisco Mayor's Office of Housing and Community Development	February 26, 2019
Youth United for Community Action, East Palo Alto	February 26, 2019
County of San Mateo Office of Sustainability, San Mateo County	February 26, 2019
Youth Leadership Institute, San Mateo County	March 14, 2019
Resident, Little Hollywood neighborhood, Visitacion Valley	March 20, 2019
Homeless community (spoke with homeless individuals in coordination with LifeMoves), San Mateo	March 26, 2019
Homeless community (spoke with homeless individuals in coordination with LifeMoves), Redwood City	March 28, 2019
Homeless community (spoke with homeless individuals in coordination with LifeMoves), South San Francisco	April 4, 2019
Homeless community (spoke with homeless individuals in coordination with LifeMoves and the St. Vincent de Paul Homeless Help Center), San Mateo	June 20, 2019

Interviewee	Date
Bill Wilson Center, San Jose	June 25, 2019
DeBug Community and Advocacy Group, Santa Clara County	June 26, 2019
Resident, Mountain View	July 24, 2019
Chinatown Community Development Center, San Francisco	July 26, 2019
Charity Cultural Services Center, San Francisco	August 9, 2019
Community Activist, San Mateo	September 9, 2019
FacesSF, San Francisco	September 24, 2019
Youth Leadership Institute, San Francisco Bay Area	September 26, 2019
FacesSF, San Francisco	October 3, 2019
International Children Assistance Network, Santa Clara County	October 24, 2019
La Raza Radio, San Francisco Bay Area	December 3, 2019
Charities Housing (property manager for HomeSafe Santa Clara), Santa Clara County	December 9, 2019
Univision, San Francisco Bay Area	December 9, 2019
La Raza Radio, San Francisco Bay Area	December 13, 2019
Sacred Heart Nativity School, San Jose	December 13, 2019
Univision, San Francisco Bay Area	December 13, 2019
Charities Housing (property manager for HomeSafe Santa Clara), Santa Clara County	December 16, 2019

Engagement through Coordination with Community Working Groups

The Authority also convened community working groups (CWG) to discuss and gather input on project alternatives with community members representing a broad range of local interests. Each of the CWGs includes representatives of minority populations and low-income populations in the environmental justice RSA.

As the Authority expanded environmental justice outreach efforts in 2018 and 2019, Authority staff coordinated with CWG members on how to best engage with minority populations and low-income populations in their communities. The topic of coordination served as a discussion prompt at some CWG meetings, and CWG members offered advice on coordination partners or advocated for activities and events to be conducted in specific neighborhoods.

As a result of this input, Authority staff worked closely with CWG members representing specific population groups to collaborate on environmental justice outreach activities targeting minority populations and low-income populations. For example, in San Jose, a CWG member facilitated the door-to-door canvassing and scheduling of a community meeting in the Gardner neighborhood. Another CWG member organized a meeting with representatives from the Vietnamese community.

To ensure CWGs reflect the diversity of stakeholders in the region, the Authority continues to add new CWG members by inviting contacts established through the environmental justice outreach process. As Authority staff engage with stakeholder organizations representing minority, low-income, and other marginalized populations, leaders of these organizations are invited to join the CWGs. CWG meetings continued in 2020 and early 2021, allowing review and coordination of the Draft EIR/EIS and 2020 Business Plan.

5.5.2 Issues and Concerns

The Authority and FRA engaged, and the Authority continues to engage, extensively with stakeholders on the project beginning in 2009 for the Project Section and continuing through preparation of this Final EIR/EIS. A number of meetings were held throughout the project public engagement process to solicit community input and concerns regarding the potential effects of the project on minority populations and low-income populations. Authority staff also attended community functions, such as farmers' markets and neighborhood association meetings, to inform the community about the project and learn about their concerns. At these gatherings, a variety of stakeholders provided comments on a wide range of issues, and expressed opinions regarding the selection of the project alternatives. The following are key recurring issues and concerns raised during engagement efforts, including in areas with minority populations and low-income populations:

- **HSR alignments**—Participants provided input on how different project alternatives and project elements (e.g., the Brisbane LMF sites, the passing track between San Mateo and Redwood City) would avoid, benefit, or adversely affect different neighborhoods along the Project Section.
- **Brisbane LMF**—Participants in Brisbane, Sunnydale, Visitacion Valley and Little Hollywood expressed concern about the proposed Brisbane LMF and associated air quality, visual, and noise impacts of construction and operation. Some community members expressed concerns about the cumulative impacts on human health associated with operations of an LMF in an area where the majority of San Francisco's industrial land uses are concentrated. The same residents inquired about potential offsetting benefits related to local employment opportunities with the LMF, improved street lighting throughout the area, and development of open space or green space to offset the potential emissions from LMF operations.
- **Passing track**—Participants in the communities of San Mateo, Belmont, San Carlos, and Redwood City expressed concerns about construction and operations-related noise, safety, pollution, and displacements.
- **Project-related noise**—Participants along the entire project alignment expressed concerns about operations noise levels and horn noise at at-grade crossings. Stakeholders also asked about noise mitigation such as quiet zones.
- **Traffic and transportation**—Participants in all three counties noted concerns about traffic congestion resulting from construction and project operations. Participants were concerned that without grade separations, the four-quadrant gates would be down more frequently, leading to more congestion. Participants were also concerned about pedestrian access, parking availability, and traffic at stations.
- **Safety and security**—Participants raised concerns regarding safety associated with train speeds and at-grade crossings. Many communities expressed particular concern about accidents at the station platforms and the safety of at-grade crossings. Commenters requested consideration of grade separations and reinforced fencing around the perimeter of the right-of-way. Participants in the North Fair Oaks community expressed a high level of concern over safety due to the close proximity of the train tracks to their homes.
- **Aesthetic effects**—Participants all along the alignment expressed concerns about the visual impact of radio towers. Participants in San Mateo specifically mentioned the visual impacts of the passing track under Alternative B.
- **Community cohesion and connectivity**—Participants in many communities such as Mountain View, Visitacion Valley, Little Hollywood, Sunnydale, North Fair Oaks, East Palo Alto and Sunnyvale expressed concern regarding community cohesion and connectivity impacts due to impaired pedestrian access, disruption of community functions, and division of neighborhoods. Participants in the North Fair Oaks community expressed concern about access to community, health, family and children services as the train tracks form a dividing line for their community. Participants in North Fair Oaks and East Palo Alto indicated that a

primary concern for their communities is the limited number of grade-separated crossings of the tracks, which require community members to walk or take transit for unreasonably long distances to access services across the tracks. These community members noted that although there is an existing underpass on Woodside Road, it is not safe for pedestrians or bicyclists due to the fast-moving traffic and heavy congestion on that road.

- **Displacements**—Participants voiced concerns related to the number and type of residential displacements, as well as displacement of local businesses, services, and educational institutions. Others expressed concern as to whether adequate replacement housing and other zoned properties exist to relocate those affected.
- **Affordable housing**—Participants from a number of communities including Brisbane, Stambaugh-Heller, San Carlos, North Fair Oaks, Redwood Village, Sunnyvale, Mountain View, East Palo Alto, and Visitacion Valley raised concerns regarding gentrification and displacement of low-income housing and moderate-to-lower cost housing. This is especially applicable for residents facing construction and operations-related impacts in and around the alternatives (e.g., LMF and passing tracks).
- **Environmental justice**—Participants were concerned about equitable distribution of project benefits and impacts. Community members in San Francisco’s Sunnydale, Visitacion Valley, and Little Hollywood neighborhoods cited the statistic that residents of these neighborhoods have a shorter life expectancy than their counterparts on Russian Hill because over half of the land in San Francisco zoned for industrial use is in the vicinity of their neighborhoods, creating poor air quality and significant environmentally-related health conditions. Community members expressed interest in the availability of reduced-fare tickets and jobs for local low-income residents.
- **Cumulative effects**—Participants expressed concerns about the compatibility of HSR with other planned projects. Participants in San Mateo referred to the 25th Avenue Grade-Separation Project; participants in San Francisco and Brisbane referred to the Baylands development, Schlage Lock, and Bayshore Multimodal Station; and participants in Menlo Park, Palo Alto, Mountain View, and Sunnyvale referred to planned grade-separation projects.

5.6 Assessment of Effects

5.6.1 Overview

This section summarizes potential adverse effects of the No Project Alternative and the project alternatives on human health and environmental resources by alternative and project component. Locations of adverse effects of the project were mapped in relation to concentrations of minority populations and low-income populations and the available mitigation measures were assessed to determine whether they addressed concerns raised by minority populations and low-income populations during the targeted engagement process. After considering the totality of the adverse effects, beneficial effects, cumulative effects, and the perceptions of the minority populations and low-income populations, the Authority determined whether the effects would result in a disproportionately high and adverse effect on minority populations and low-income populations.

5.6.2 No Project Alternative

The population in the Bay Area is expected to experience continued growth through 2040 (see Section 2.6.1.1, Projections Used in Planning) and development to accommodate the population and employment increases would continue under the No Project Alternative, resulting in associated direct and indirect impacts on the resident populations, including minority populations and low-income populations. Planned and other reasonably foreseeable projects anticipated to be built by 2040 include residential, commercial, industrial, recreational, and transportation projects. These projects would occur throughout San Francisco, San Mateo, and Santa Clara Counties, which have 28.3, 20.4, and 23.3 percent low-income populations and 58.6, 58.8, and 65.9 percent minority populations, respectively (U.S. Census Bureau ACS 2010–2014b, 2010–2014d). The effects on these populations would depend upon the location of these projects relative to the concentrations of minority populations and low-income populations.

Foreseeable future development projects in the three-county region include implementation of various types of development projects and land use plans, as well as implementation of general and specific plans. Planned projects under the No Project Alternative would also include transportation projects such as the Caltrain Peninsula Corridor Electrification Project and residential, commercial, and industrial development projects. Section 3.18, Cumulative Impacts, and Volume 2, Appendices 3.18-A, Cumulative Nontransportation Plans and Projects List, and 3.18-B, Cumulative Transportation Plans and Projects Lists, list foreseeable future development and transportation projects that could affect populations within the cities and counties through which the project would travel.

Under the No Project Alternative, existing land would be redeveloped for residential, commercial, and industrial development, and the transportation infrastructure to support the development. Adopted regional and local plans and policies guide development activities in a manner that encourages compact growth. Consequently, with or without the project, much of the planned growth would be focused within or adjacent to urbanized areas of the RSA, including infill development. Redevelopment of existing land uses to transit-oriented development would be likely to occur in downtown San Francisco and in Millbrae with or without the HSR project because the *San Francisco General Plan*, the *Mission Bay North Redevelopment Plan*, and the *Mission Bay South Redevelopment Plan* propose a diverse mix of higher-density urban land uses near the 4th and King Street Station and the Millbrae Station Area Specific Plan encourages transit-oriented development.

Population growth and associated development pressures could disturb communities near construction activities, including minority populations and low-income populations, during temporary construction activities. Planned development and transportation projects that would occur as part of the No Project Alternative would likely include the implementation of various forms of mitigation to avoid or minimize potential effects on community and environmental resources that would have the potential to affect human health, safety, and welfare.

5.6.3 Project Alternatives

As described in Chapter 3, construction and operation of the project alternatives would result in temporary and permanent adverse effects, as well as beneficial effects on environmental resources and populations, including minority populations and low-income populations. This environmental justice analysis focuses on the potential for adverse effects on health, safety, and the environment to disproportionately affect minority populations and low-income populations, with consideration of offsetting benefits.

The assessment of effects is organized as follows:

- Section 5.6.3.1 summarizes the project's effects that have either no adverse effects or adverse effects that would not affect minority populations or low-income populations.
- Section 5.6.3.2 summarizes adverse effects for which mitigation will be available, applied equally to minority populations and low-income populations and the general population as a whole, and will be responsive to the concerns raised during the environmental justice engagement process.
- Section 5.6.3.3 evaluates whether project construction would result in a disproportionately high and adverse effect on minority populations and low-income populations after the application of mitigation and the consideration of project benefits.
- Section 5.6.3.4 evaluates whether project operations would result in a disproportionately high and adverse effect on minority populations and low-income populations after the application of mitigation and the consideration of project benefits.
- Section 5.6.3.5, Cumulative Effects, evaluates the potential for cumulative impacts that could affect minority populations and low-income populations.

To the extent the DDV would cause Alternative A to result in different levels of impact, those differences are noted. Unless so noted, Alternative A with and without the DDV would have the same level of impact.

5.6.3.1 No Adverse Effects

The following resource topics were determined to have no adverse effects or adverse effects that would not affect minority populations and low-income populations: air quality (operations); electromagnetic fields (EMF)/electromagnetic interference (EMI); public utilities and energy; geology, soils, seismicity, and paleontological resources; biological and aquatic resources; hydrology and water resources (water quality); safety and security (community safety during construction and operations); socioeconomics and communities (community cohesion); and station planning, land use, and development. This section provides a brief summary of these topics.

Air Quality (Operations)

Operation of the project would result in localized increases in emissions of criteria pollutants and mobile source air toxics from vehicle traffic near the HSR stations and LMF. However, these increases would not lead to violations of the California ambient air quality standards (CAAQS) or national ambient air quality standards (NAAQS), or exceedances of Bay Area Air Quality Management District (BAAQMD) risk thresholds (see Section 3.3, Air Quality and Greenhouse Gases). Operation of the project as part of the statewide HSR system would result in an overall benefit to regional air quality. This benefit would result from a shift in modes of travel from vehicles and aircrafts to HSR, which has fewer emissions relative to existing modes of transportation. The emissions reductions would be equal for both project alternatives. The project alternatives would also result in a net reduction of greenhouse gas emissions statewide. Long-term air quality improvements would be experienced equally by minority populations and low-income populations and the general population within the region.

Electromagnetic Fields/Electromagnetic Interference

Construction and operation of the project alternatives would intermittently generate increased levels of EMF and EMI. As the EMF levels generated during construction and operation would be far below applicable health and safety standards, the general public and HSR employees would not be exposed to increased health risks (see Section 3.5, Electromagnetic Fields and Electromagnetic Interference). There would be no adverse effects on human health associated with increased exposure to EMF and EMI as a result of the project alternatives, and populations, including minority populations or low-income populations, would not be adversely affected.

Public Utilities and Energy

Construction of the project alternatives could result in planned or accidental temporary interruption of utility service, increased water use, increased waste generation, and increased energy consumption. These planned or accidental interruptions would not result in prolonged disruption of services; would not result in the loss of, or reduced access to, public utility lines or pipes; or would not require new water, solid waste disposal, or energy facilities or expansion of existing facilities (see Section 3.6, Public Utilities and Energy). There would be no adverse effects on human health associated public utilities or energy as a result of the project alternatives, and populations, including minority populations or low-income populations, would not be adversely affected.

Geology, Soils, Seismicity, and Paleontological Resources

Risks to human health and safety associated with encountering geologic hazards, unstable soil conditions, and seismic hazards during construction or project operation will be avoided through standard construction practices (GEO-IAMF#1: Geologic Hazards, GEO-IAMF#2: Slope Monitoring, GEO-IAMF#3: Gas Monitoring, GEO-IAMF#5: Hazardous Minerals, GEO-IAMF#6: Ground Rupture Early Warning Systems, GEO-IAMF#7: Evaluate and Design for Large Seismic Ground Shaking, GEO-IAMF#8: Suspension of Operations during an Earthquake, GEO-IAMF#9: Subsidence Monitoring, GEO-IAMF#10: Geology and Soils) including preparation of a

construction management plan; monitoring for slope instability, subsurface gas and subsidence; installing seismic early warning systems; designing for earthquake loads; using motion sensors to shut down operations during or after an earthquake; and compliance with established engineering design guidelines and standards.

Adverse effects on paleontological resources during construction would not occur because paleontological resource monitoring and avoidance and minimization (GEO-IAMF#11: Engage a Qualified Paleontological Resources Specialist, GEO-IAMF#12: Perform Final Design Review and Triggers Evaluation, GEO-IAMF#13: Prepare and Implement Paleontological Resources Monitoring and Mitigation Plan, GEO-IAMF#14: Provide WEAP Training for Paleontological Resources, GEO-IAMF#15: Halt Construction, Evaluate, and Treat if Paleontological Resources Are Found) will occur in areas with high paleontological sensitivity and will allow identification and salvage of fossils prior to and during construction (see Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources). Accordingly, no adverse effects associated with geology, soils, seismicity and paleontological resources would occur, and populations, including minority populations and low-income populations, would not be affected.

Biological and Aquatic Resources

Construction and operation of the project alternatives would result in temporary and permanent adverse effects on biological and aquatic resources, including land cover, special-status species, plants and habitat, non-special-status species wildlife and habitat, jurisdictional aquatic resources, protected trees, and wildlife corridors (see Section 3.7, Biological and Aquatic Resources). While some adverse effects on biological and aquatic resources would occur during project construction and operation, the resources affected are not related to human health and are not relied upon as local subsistence food sources for minority populations and low-income populations. As a result, the project would not result in effects on biological and aquatic resources that would adversely affect the health of populations, including minority populations and low-income populations, or adversely affect critical environmental resources on which these populations directly rely.

Hydrology and Water Resources (Water Quality)

Construction activities such as grading, excavation, and dewatering will be conducted in accordance with a stormwater pollution prevention plan (SWPPP) that includes best management practices effective at minimizing discharges of sediment from the construction site and managing construction equipment and materials to prevent leaks, spills, and accidental discharges to surface waterbodies (HYD-IAMF#3: Prepare and Implement a Construction Stormwater Pollution Prevention Plan). HSR stations and the Brisbane LMF will be designed to reduce the potential for discharging pollutants to surface waterbodies by performing mechanical maintenance indoors and using low-impact development measures to capture and treat potentially contaminated runoff. Operation and maintenance activities will be subject to a SWPPP and an operations and maintenance plan, which will further minimize water quality effects. Neither construction nor operations would result in the violation of a water quality standard or the creation of a substantial new source of polluted runoff (see Section 3.8, Hydrology and Water Resources). There would be no adverse effects on water quality, and populations, including minority populations or low-income populations, would not be adversely affected.

Safety and Security

Community Safety (Construction)

During the environmental justice engagement process, participants raised concerns regarding safety at the at-grade crossings and on station platforms, and requested consideration of additional grade separations. Although the project does not incorporate any new grade separations, construction of the project would introduce permanent safety improvements at at-grade crossings, around the perimeter of the right-of-way, and at station platforms. Safety improvements at 40 at-grade crossings (for Alternative A) or 38 at-grade crossings (for Alternative B) between San Francisco and San Jose Diridon Station would include the installation of four-quadrant gates, barriers, and roadway channelization where these improvements do not already

exist. Four-quadrant gates would prevent drivers from traveling in opposing lanes to avoid the lowered gate arms. Pedestrian crossing gates would be constructed parallel to the tracks and aligned with the vehicular gates on either side of the roadway. The project would also complete the perimeter fencing of the Caltrain right-of-way, which would have the effect of creating a “sealed corridor” that reduces the potential for train conflicts with motor vehicles, pedestrians, and cyclists and discourages trespassing. These project elements would have a beneficial effect on vehicular and pedestrian safety and would reduce traffic hazards by minimizing potential for conflicts between trains and motor vehicles, pedestrians, and bicycles.

The project also includes safety improvements at existing stations to accommodate HSR trains passing through or stopping at the stations. At the Broadway (Alternatives A and B) and College Park (Alternative A only) Caltrain Stations, new northbound outboard platforms would be constructed to eliminate the need for passengers to board and alight the train from between the active tracks, improving the safety of passengers during train operations and eliminating the hold-out rule, which requires oncoming trains to stop outside of the station zone until the passengers are safely clear. At other Caltrain stations, the project would include station design modifications to address the safety of passengers waiting on platforms and warn passengers to move away from the edge of the platforms prior to approach of an HSR train passing through the stations.

The safety improvements that are part of the project would have a beneficial effect on community safety, which would be experienced throughout the environmental justice RSA. These improvements over existing conditions would address the safety and security concerns raised during environmental justice engagement about safety at at-grade crossings and on station platforms.

Community Safety (Operations)

During the environmental justice engagement process, participants raised concerns regarding the safety associated with additional train operations and increased train speeds in close proximity to residential neighborhoods. Project operations would increase the number, frequency, and speeds of trainsets operating within the Caltrain corridor, while reducing the distance between trains. Operational safety within the right-of-way would be accomplished through safety elements such as positive train control, which would monitor and, if necessary, control train movement in the event of human error, increasing safety by preventing train-to-train collisions, overspeed derailments, movements through misaligned switches, and incursions through work zones. Additionally, trains within the blended system would have operating speeds of up to 110 miles per hour, rather than the 220-mile-per-hour operating speeds for dedicated HSR, due to design speeds of the corridor and the shared use of the tracks. The project would also include safety improvements that would secure the right-of-way through the installation of perimeter fencing, four-quadrant gates, and median separators to reduce conflicts with automobiles and pedestrians at at-grade crossings. Operational safety features and maximum travel speeds will reduce the potential for collisions and derailment, and the potential for safety impacts on passengers, employees and the public. No adverse effects on community safety would occur due to train operations; minority populations and low-income populations would not be adversely affected.

Socioeconomics and Communities (Community Cohesion)

Community cohesion⁷ takes into consideration access and linkages, community facilities, and local businesses in the surrounding area that provide opportunities for residents to gather. Construction activities would temporarily disrupt communities and neighborhoods along the alignment through changes in circulation and access (e.g., lane closures, detours, and temporary road closures) affecting pedestrians, bicyclists, motorists, and transit; increased noise and vibration; and changes to the visual environment from construction fencing, barricades, construction equipment, and material stockpiles. Construction-related noise, dust, visual changes,

⁷ Community cohesion is defined as the degree to which residents have a sense of belonging to their neighborhood; a level of commitment to the community; or an association with neighbors, groups, and institutions, usually as a result of continued association over time.

and changes in traffic patterns would be localized and would occur only during the construction period. While construction may temporarily affect the perceived quality of life in communities adjacent to construction sites, particularly in San Mateo, Belmont, San Carlos, and Redwood City near construction of the passing track and near the viaduct construction in San Jose (under Alternative B), it would not be expected to affect overall community cohesion.

Construction of permanent HSR infrastructure, which is largely contained within the existing Caltrain corridor, would not create a new physical barrier in any of the communities along the rail alignment. Where noise barriers are proposed as mitigation, they will be built along the existing Caltrain corridor, which already presents a physical barrier to connectivity along the corridor. Roadway connectivity would be maintained across the corridor. While some existing views would be blocked by construction equipment primarily associated with construction of the passing track and aerial San Jose Diridon Station and associated viaduct under Alternative B, overall community cohesion along the corridor would not be affected. Residential and business relocations would be required, but there are adequate replacement properties to accommodate residential and business displacements (see Section 3.12, Socioeconomics and Communities). No adverse effects on community cohesion would occur as a result of project construction, and minority populations and low-income populations would not be adversely affected.

During the environmental justice engagement process, community members in North Fair Oaks raised concerns about the existing physical divisions of the community and limited number of grade separations, which limit access to community resources on the other side of the railroad tracks. While the project would not contribute to further division or disruption of communities, the project also would not build any new grade separations that would improve community cohesion. The Authority supports a regional effort to identify funding and implement crossing improvements.

Station Planning, Land Use, and Development

Construction of the project alternatives would require the permanent conversion of various amounts and types of land uses to transportation uses along the entire length of the project alignment. The project alternatives would require the permanent acquisition and conversion of 258.8 acres (Alternative A), 284.0 acres (Alternative B [Viaduct to I-880]), and 279.1 acres (Alternative B [Viaduct to Scott Boulevard]), respectively, of existing residential, commercial, transportation, mixed uses, and public facilities. The permanent conversion of the lands along the track alignment would be predominantly within and adjacent to existing transportation rights-of-way and would represent small acquisitions along the entire alignment, which would not alter the overall land use patterns. The conversion of undeveloped land at the Brisbane LMF site to transportation uses would not be incompatible with the existing commercial, industrial, and vacant uses on the site. No adverse effects on existing land use patterns would occur as a result of project construction, and minority populations and low-income populations would not be adversely affected. Alteration of land use patterns as it affects displacements and relocations is discussed further in Section 5.6.3.3 under Socioeconomics and Communities.

5.6.3.2 Effects Addressed through Mitigation

Project effects associated with safety and security (emergency access); aesthetics and visual quality; hazardous materials and wastes; parks, recreation, and school district play areas; and disturbance or destruction of cultural resources were determined to have adverse effects on populations, including minority populations and low-income populations, which were addressed through mitigation. For these resource topics, the proposed mitigation will be applied equally to minority populations and low-income populations and the general population as a whole, and was responsive to the concerns raised during the environmental justice engagement process.

Safety and Security

Emergency Access (Permanent Construction Effects)

Construction of either the East Brisbane LMF under Alternative A or the West Brisbane LMF under Alternative B would require relocation of the Tunnel Avenue overpass and extension of Lagoon Road. The relocation of the Tunnel Avenue overpass would include relocating the southern terminus of Tunnel Avenue from the intersection of Bayshore Boulevard/Old County Road to Bayshore Boulevard/Valley Drive, which is the primary vehicle access to and from the Brisbane Fire Station, at 3445 Bayshore Boulevard.

Under Alternative A, the existing Brisbane Fire Station would be relocated approximately 800 feet to the south of the existing fire station, with two driveways connecting to Bayshore Boulevard, providing full access to Bayshore Boulevard equivalent to the existing level of access. Accordingly, relocation of the Brisbane Fire Station would have no adverse effect on emergency access and response under Alternative A and there would be no need for mitigation.

Under Alternative B, the Relocated Brisbane Fire Station would be approximately 150 feet south of the existing fire station, with access via the new Tunnel Avenue/Bayshore Boulevard intersection, which would allow turns to both northbound and southbound Bayshore Boulevard, and a secondary driveway would connect the Relocated Brisbane Fire Station to Bayshore Boulevard via the existing station's secondary driveway. Fire trucks exiting the Relocated Brisbane Fire Station secondary driveway would only be able to turn northbound onto Bayshore Boulevard. During congested conditions, fire trucks using the southern driveway would experience additional delays compared to existing conditions. The Authority would implement SS-MM#2: Modify Drive Access Control for Relocated Brisbane Fire Station, to maintain existing emergency response times for the Brisbane Fire Department. With this mitigation measure, the relocation of the fire station under Alternative B would not affect emergency access and would therefore not adversely affect minority populations and low-income populations.

Aesthetics and Visual Quality

Temporary Effects (Construction)

Construction of the project alternatives would introduce construction equipment and associated materials into existing views. The duration and intensity of construction activities would vary by location and project component. Minor track shifts and installation of four-quadrant gates would occur over several days or weeks, while the construction of major project components would occur over several years: expanding the existing 4th and King Street and Millbrae Stations, and at-grade San Jose Diridon Station under Alternative A would take 2 years; building the Brisbane LMF would take 2 to 3 years; building the passing track under Alternative B would take 4.5 years; and building the aerial San Jose Diridon Station and viaduct approaches under Alternative B would take 3 to 4 years. Construction of major project components in residential areas would include heavy equipment and vehicles, dust, material stockpiles, staging areas, worker parking, and equipment and material storage areas. These activities would be present and visible to nearby viewers in residential areas, and would result in temporary degradation of visual character or quality at multiple sites and their surroundings.

These effects on visual quality would be experienced by all communities near construction activities, including minority populations and low-income populations, but would be greater in magnitude and duration under Alternative B in the San Mateo–Redwood City Landscape Unit and in the Santa Clara, Diridon Station, and San Jose Station Approach Landscape Units. In the San Mateo–Redwood City Landscape Unit with Alternative B, the railway would be expanded from two to four tracks for the passing track; existing rail bridges would be rebuilt over existing grade-separated streets; and fill and materials would be imported to widen existing berms and expand the Hillsdale Caltrain Station, rebuild the Hayward Park and Belmont Caltrain Stations, and relocate the station platforms of the San Carlos Caltrain Station. Adverse construction-related effects on visual quality would occur along the approximately 6-mile-long passing track, especially in residential areas along Old County Road in San Mateo, Belmont, and San Carlos. Low-income populations are located east of the passing track between Ninth Avenue and SR 92 in San

Mateo, and east of the passing track between Belmont and San Carlos. The percentage of low-income individuals on the east side of the passing track between SR 92 and Belmont and along the full extent of the west side of the passing track do not exceed the reference community. Adverse construction effects on visual quality would therefore not be predominately borne by minority populations and low-income populations.

In the Santa Clara, Diridon Station, and San Jose Station Approach Landscape Units under Alternative B, precast span construction would be used to build the viaduct and would involve manufacturing guideway segments at a central facility and conveying them to the construction site on transporters that would move along the completed portions of the viaduct. Temporary scaffolding would be erected to build the aerial San Jose Diridon Station. Adverse construction-related effects on visual quality would occur in Santa Clara under Alternative B (Viaduct to Scott Boulevard), and in San Jose under Alternative B (both viaduct options). Populations adjacent to the viaduct construction in Santa Clara and San Jose consist mostly of minority populations and low-income populations that exceed the reference community. Adverse construction-related effects on visual quality would therefore be predominately borne by minority populations and low-income populations.

The Authority would implement AVQ-MM#1: Minimize Visual Disruption from Construction Activities, and AVQ-MM#2: Minimize Light Disturbance during Construction, to minimize the construction-related effects on residential views under Alternative B. These mitigation measures will require that construction contractors employ measures such as preserving existing vegetation to screen views and locating construction staging sites 500 feet from residential areas, to minimize visual disturbance and shield nighttime construction lighting, thereby maintaining existing visual quality as much as possible. These measures will reduce the area and scale of, and exposure to, adverse effects on visual quality associated with passing track construction in San Mateo, Belmont, and San Carlos and San Jose Diridon Station and associated viaduct construction in Santa Clara and San Jose. These measures will apply equally to minority populations and low-income populations and the general population within the RSA as a whole, and will address the concerns raised by minority populations and low-income populations during the environmental justice engagement process about construction-related effects on aesthetics and visual quality. Adverse construction-related effects on visual quality will be mitigated and remaining effects would not be disproportionately high and adverse on minority populations and low-income populations.

Permanent Effects (Construction)

Permanent effects on aesthetics and visual quality would be minimal for the majority of the Project Section because track and platform alterations to the 4th and King Street Station in San Francisco, minor shifts to tracks along the corridor, addition of four-quadrant gates at grade crossings, and radio towers would be familiar to existing viewers of the Caltrain railway. Under Alternative B, construction of the passing tracks in the San Mateo–Redwood City Landscape Unit, would substantially alter the visual environment and visual quality of residential areas in San Mateo where the removal of buildings along the right-of-way to accommodate the widened rail corridor would result in partial views to the railway corridor and the intrusion of the railway tracks, overhead contact system, and passing trains into the visual environment. At the San Carlos Depot, the expansion of the Caltrain railway to four tracks as it passes behind the depot would increase the visual presence of the railway and diminish the prominence and visual quality of the depot building. Permanent adverse visual effects would occur primarily in San Mateo and San Carlos under Alternative B. As described above, while percentages of low-income populations east of the passing track exceed the reference community, the percentages of low-income populations along the remaining areas adjacent to the passing track do not exceed the reference community.

The Authority would implement mitigation measures to minimize changes to the visual environment that affect sensitive viewers under Alternative B. AVQ-MM#3: Incorporate Design Aesthetic Preferences into Final Design and Construction of Non-Station Structures, will require the contractor to work with the Authority and local jurisdictions to incorporate the Authority-approved aesthetic preferences for non-station structures into final design and construction. As

part of AVQ-MM#4: Provide Vegetation Screening along At-Grade and Elevated Guideways Adjacent to Residential Areas, the Authority or its contractors, prior to the commencement of HSR operations, will provide landscape screening to obscure HSR infrastructure from residential and recreational viewers. As part of AVQ-MM#5: Replant Unused Portions of Lands Acquired for the HSR, lands acquired for the project that are not used for the project will be replanted or replaced with similar vegetation that, upon maturity, will be similar in size and character to the removed vegetation. These measures will minimize the aesthetic and visual effects of HSR infrastructure because a context-sensitive design process and resulting design elements will enhance the visual landscape, integrating the appearance of the HSR infrastructure into that of the surrounding community, and reducing adverse visual impacts. These mitigation measures will soften and obscure the conflicting aesthetic of the HSR infrastructure under Alternative B, thereby reducing the resulting area, scale, and exposure to adverse visual impacts. As a result, no permanent adverse effects would occur due to construction of either project alternative that have the potential to adversely affect minority populations and low-income populations.

Hazardous Materials and Wastes

Construction activities would be similar throughout the project corridor and would involve the temporary transport, use, storage, and disposal of hazardous materials and wastes, which have the potential to result in accidental spills or releases at all locations near construction sites. Schools are particularly sensitive locations for the accidental release of hazardous materials because of potential effects on children's health and safety. Schools within 0.25 mile of construction activities that could be at risk for hazardous waste spills are located in each adjacent community within the RSA. These schools are distributed among minority populations and low-income populations, as well as among non-minority populations and non-low-income populations. HMW-MM#1: Limit Use of Extremely Hazardous Materials near Schools, will limit the transport of hazardous materials near any of these schools (see Section 3.10, Hazardous Materials and Wastes). Because mitigation will be applied equally to all schools within 0.25 mile of construction activities and will substantially reduce the risk of a hazardous materials spill, the project would not adversely affect populations, including minority populations and low-income populations.

During the environmental justice engagement process, participants in Brisbane, Sunnydale, Visitation Valley, and Little Hollywood raised concerns regarding the use of and generation of hazardous materials and wastes at the Brisbane LMF. At the Brisbane LMF, maintenance of trains would use materials and chemicals during operations, including lubricants, fuels, metal filings, hydraulic fluids, cleaning products, refuse, landscaping supplies, and other potentially toxic materials such as pesticides. Most of the mechanical maintenance on trains would be performed inside a building designated for mechanical maintenance activities, where these materials and chemicals would be used and stored in accordance with federal and state regulations. The quantities of hazardous materials used and wastes generated by project operations would be small compared to wastes generated by other transportation services (e.g., automobiles or air travel, which use petroleum-based vehicle fuel as the primary means of power) and commercial or industrial facilities. There would be no adverse effects to the general population, including minority populations and low-income populations.

Parks, Recreation, and School District Play Areas

Project construction would result in temporary changes from noise, vibration, and air emissions on the use and user experience of parks, recreational facilities, and open-space resources. The project will comply with FRA and Federal Transit Administration guidelines for minimizing construction noise and vibration levels (NV-IAMF#1: Noise and Vibration) and will minimize fugitive dust emissions (AQ-IAMF#1: Fugitive Dust Emissions). Although noise and dust could present a nuisance to users of these facilities, noise levels and dust concentrations would be below levels harmful to human health, and these effects would not diminish the normal use and functions of the facilities under either of the project alternatives. The project alternatives would be designed to maintain access to existing park, recreation, and open-space facilities during construction and operation (PK-IAMF#1: Parks, Recreation, and Open Space).

Construction of Alternative A would not result in permanent changes in access to or circulation in or around parks, recreational facilities, and open-space resources that would prevent the use of the resources. While Alternative A would require permanent acquisition of 0.03 acre (2.6 percent) of Fuller Park, the affected portion of the park is currently used as a train control site for Union Pacific Railroad operations and does not contain any recreational facilities. As most of the park would remain intact and contiguous for continued use, there would be no change in use of the park and its capacity would not be diminished.

Under Alternative B, access to and circulation within Trinta Park would change because the closure of Leslie Street would permanently block three of the four pedestrian access points and one maintenance access point. PK-MM#1: Provide Permanent Park Access, will provide permanent pedestrian and maintenance access along the eastern park boundary or other public rights-of-way, and PK-MM#2: Implement Project Design Features, will apply the project design features prepared as part of PK-IAMF#1 to the pedestrian and maintenance access routes at Trinta Park. These mitigation measures will maintain permanent access to and circulation in the park during operations.

Alternative B would also require permanent acquisition of portions of two parks—Reed and Grant Streets Sports Park and Tamien Park—located in Santa Clara and San Jose, respectively. Alternative B (Viaduct to Scott Boulevard) would require permanent acquisition of 0.82 acre of Reed and Grant Streets Sports Park (11 percent of the total park area) along the southwestern corner of the park adjacent to the Caltrain right-of-way. PK-MM#5: Reconfigure Reed and Grant Streets Sports Park, will reconfigure the soccer fields to avoid encroachments that would make three of the five fields unusable and result in diminished capacity to use of these facilities. Alternative B would also require permanent acquisition of 0.22 acre of Tamien Park (6.3 percent of the total park area) along the west edge of the park. Permanent acquisition of this 0.22 acre would impede use of the soccer field, potentially rendering the field unusable for one of its intended purposes as a regulation-size field. PK-MM#4: Design Refinements to Avoid Aboveground Park Encroachment at Tamien Park, will refine the design to avoid permanent acquisition that would diminish use of the soccer field. With these mitigation measures, no permanent adverse effects would occur due to construction of either project alternative that would have the potential to affect minority populations and low-income populations.

Disturbance or Destruction of Cultural Resources

The project alternatives could result in construction-related impacts on cultural resources as a result of temporary and permanent disturbance of land. Unknown archaeological sites could be subject to disturbance-related impacts from construction activities involving soil excavation or compaction resulting from the use of heavy machinery on the construction site itself or in staging areas. The potential to disturb or damage unknown archaeological resources during construction would be the same for both alternatives because the survey coverage and cultural sensitivity are the same for each project alternative and the amounts of ground disturbance are comparable. Construction activities under both project alternatives could also result in the demolition, relocation, and alteration of built resources, the setting of the resources, or both. The built historic resources that would be affected include single-family residences, historic train depot complexes, and commercial or institutional properties. As described in detail in Section 3.16, Cultural Resources, the Authority would implement mitigation measures to reduce the potential for ground-disturbing activities to affect archaeological or built resources and to minimize impacts on built resources through documentation and interpretation of these resources. These mitigation measures will be effective in minimizing impacts on archaeological and built resources, including those that have cultural importance for a distinct cultural group.

Tribal outreach occurred throughout the project planning process for the HSR program, and input was obtained from the tribal community regarding potential sensitive Native American cultural resources in proximity to the project alternatives. No traditional cultural properties or sacred tribal sites were identified that could be affected by the project alternatives. Consequently, there would be no disproportionate effects on minority populations and low-income populations associated with the disturbance or destruction of cultural resources.

5.6.3.3 Construction-Related Effects Potentially Disproportionate after Mitigation

As described in Chapter 3, construction of either project alternative would result in temporary and permanent adverse effects on populations. This section evaluates the potential for these adverse effects to result in a disproportionately high and adverse effect on minority populations and low-income populations after the application of mitigation and the consideration of project benefits.

Transportation

Traffic Congestion/Delay

Project construction would result in temporary roadway closures, modifications, or lane closures during construction and increased traffic associated with construction activities (e.g., heavy truck traffic and construction worker trips to and from the construction site). This would affect local vehicle circulation by increasing traffic congestion and intersection delay. Adverse effects (NEPA effect only) on local circulation would be experienced under both project alternatives in the vicinity of the Millbrae Station and San Jose Diridon Station, and in the vicinity of the passing track under Alternative B during construction. The greatest adverse effects experienced under Alternative B would be by residents in San Mateo, Belmont, San Carlos, and Redwood City where passing track construction would require occasional temporary road closures and lane closures in highly congested areas along El Camino Real to modify nine existing undercrossings. SS-MM#1: Construction Traffic Management for Passing Track Section, will involve implementation of a construction staging plan for the passing track, staggering of temporary closures of adjacent at-grade underpasses, and restricting construction materials deliveries during AM and PM peak hours. Even with this mitigation measure, interference with vehicle circulation, increases in travel times, delays, and inconvenience to the traveling public would still occur.

The distribution of the location of the temporary adverse traffic delays during construction would be focused near the Millbrae Station and the San Jose Diridon Station for both alternatives, and in southern San Mateo, Belmont, San Carlos, and northern Redwood City during passing track construction with Alternative B. The RSA for the Millbrae Station has a lower percentage of minority populations and low-income populations than the reference community, and the RSA for the San Jose Diridon Station has a greater percentage of low-income populations but a lower percentage of minority populations than the reference community. In the passing track area, San Mateo, San Carlos, and Belmont have a lower percentage of low-income populations and minority populations than the reference community, while Redwood City has a greater percentage of low-income populations and minority populations than the reference community. Under both alternatives, temporary adverse traffic delays would occur in areas with both high and low concentrations of minority populations or low-income populations, and adverse effects would not be predominately borne by minority populations or low-income populations nor would they be appreciably more severe or greater in magnitude than the adverse effects suffered by the non-minority populations and non-low-income populations. As such, there would not be disproportionate construction period traffic delay effects for minority populations or low-income populations under Alternative A or Alternative B. Therefore, construction-related traffic would not have a disproportionately high and adverse effect on minority populations or low-income populations.

Bus Transit and Passenger Rail

Project construction would result in temporary disruption to San Francisco Municipal Railway (MUNI), San Mateo County Transit District (SamTrans), and Santa Clara Valley Transportation Authority (VTA) bus routes and light rail services and Caltrain, and would result in commuter inconvenience. Project-related construction staging and traffic would require the temporary closure of parking areas, bus stops, transit stations, or roadway travel lanes within temporary construction easements, which would contribute to temporary interference with bus transit along roadways and at the 4th and King Street, Millbrae, and San Jose Diridon Stations; at the Brisbane LMF sites; and at affected Caltrain stations. Construction of the project would also result in temporary effects on passenger rail operations because of construction or modifications at passenger rail stations and platforms and track realignments, as well as construction of the

passing tracks and viaduct under Alternative B. Project construction would temporarily degrade performance of the public transit system and passenger rail services within and immediately adjacent to the Caltrain corridor, and at the existing 4th and King Street and Millbrae Stations under both project alternatives. Although bus services may experience temporary delays in certain areas at certain times during construction, bus service would be maintained through the temporary relocation of bus stops, rerouting of bus routes, and the provision of pedestrian and bicycle access to temporary bus stops.

Demographic information on riders of bus and passenger rail within the Project Section is shown in Table 5-14. Data reported for BART, Caltrain, MUNI, VTA, and SamTrans indicate that transit ridership serves racially and ethnically diverse populations with 58 percent, 52 percent, 50 percent, 77 percent, and 79 percent of riders identifying as minority, respectively (BART 2016; Caltrain 2016; SFMTA 2016; VTA 2014; SamTrans 2016). The reference community is 62.6 percent minority (U.S. Census Bureau ACS 2010–2014d), which exceeds the percent minority of riders using BART, Caltrain, and MUNI. The income of transit riders varies by transit service, with between 6 percent and 18 percent of riders using Caltrain, BART, and MUNI reporting incomes in the lowest income bracket of less than \$25,000, compared to 55 percent of VTA riders and 37 percent of SamTrans riders that reported incomes in the lowest income bracket. Household income brackets do not directly correspond to the poverty threshold used to identify low-income populations but are indicative of the economic status of transit riders. While potential effects on transit services were not specifically raised as a community concern during environmental justice engagement, transit and passenger rail provide critical mobility services to low-income populations and other sensitive populations that have mobility limitations (e.g., children, elderly, disabled).

Table 5-14 Income and Ethnicity by Transit Service Provider

	BART	Caltrain	MUNI	VTA	SamTrans ¹
Income	16% <\$25K	6% <\$25K	18% <\$22K	55% <\$25K	37% <\$25K
	17% \$25–49K	9% \$25–49K	22% \$22–51K	19% \$25–49K	17% \$25–49K
	36% \$50–99K	25% \$50–99K	25% \$51–100K	15% \$50–99K	10% \$50–74K
	37% >\$100K	61% >\$100K	35% >\$100K	11% >100K	13% >\$75K
Ethnicity	28% Asian/Pacific Islander	36% Asian/Pacific Islander	26% Asian/Pacific Islander	29% Asian/Pacific Islander	36% Asian/Pacific Islander
	19% Hispanic	11% Hispanic	14% Hispanic	36% Hispanic	33% Hispanic
	10% Black	4% Black	9% Black	10% Black	9% Black
	1% American Indian/Alaska Native	1% American Indian/Alaska Native	1% American Indian/Alaska Native	2% American Indian/Alaska Native	1% American Indian/Alaska Native

Sources: BART 2016; Caltrain 2016; SFMTA 2016; VTA 2014; SamTrans 2016

BART = Bay Area Rapid Transit

MUNI = San Francisco Municipal Railway

SamTrans = San Mateo County Transit District

VTA = Santa Clara Valley Transportation Authority

¹ Only 77 percent of survey respondents provided income information.

A traffic control plan (TR-IAMF#2: Construction Transportation Plan) and a construction management plan for maintenance of transit access (TR-IAMF#11: Maintenance of Transit Access) will minimize disruption to transit and passenger rail service by maintaining safe and adequate transit access during construction, providing signage for temporary transit facilities, and minimizing transit schedule disruptions. Additionally, TR-MM#3: Railway Disruption Control Plan, will reduce effects on passenger rail service by minimizing the duration of construction in areas that will require temporary closures, limiting construction hours, and coordinating between the construction contractor and passenger rail service providers to reduce disruption levels. This

measure will reduce construction disruption to a matter of hours or a few days at most and will minimize disruption to passenger rail services.

Even with these project features and mitigation measure, project-related construction staging and traffic could contribute to a temporary material decrease in the performance of certain bus routes on roadways near the existing 4th and King Street, Millbrae, and San Jose Diridon Stations, at the Brisbane LMF sites, and at affected Caltrain stations. These disruptions would be limited to specific bus routes and could include temporary route detours or temporary relocation of bus stops during construction. For example, the construction of improved access roads on the west side of Millbrae Station would require temporary lane closures and road restriping along El Camino Real, resulting in the temporary relocation of the SamTrans Route ECR bus stop located at El Camino Real/Linden Avenue. While some transit riders would experience temporary inconveniences associated with increased travel time during certain times during construction, the contractor would provide a temporary bus stop and maintain safe and adequate access for transit users during construction. Any adverse effects on transit would be experienced by, and would be of similar magnitude for, both minority populations and low-income populations and non-minority population and non-low-income populations. For these reasons and because disruptions would be temporary, would be limited in scope, and would not result in the closure of routes or have other systemwide effects on the availability of public transit, these effects were found to not be disproportionately high and adverse on minority populations and low-income populations on an end-to-end basis for the project corridor.

Safety and Security

Emergency Response (Temporary Construction Effects)

Building the project would require temporary road closures and lane closures under both project alternatives. Effects would be greater under Alternative B due to the additional temporary road and lane closures associated with construction of the passing track and viaduct. These temporary closures would result in increases to emergency response times and emergency evacuation times, and the exceedance of performance objectives of emergency service providers, including law enforcement, fire departments, and emergency services under Alternative B.

The realignment of the Tunnel Avenue and Lagoon Road overpass under both project alternatives would not require closure of Tunnel Avenue or Lagoon Road because, as discussed in Section 3.11, the Authority has developed a construction staging plan that would require construction of the realigned roads prior to closure of the existing roads and relocation of the Brisbane Fire Station prior to closure of the existing fire station, which would avoid construction-related adverse effects related to emergency response. Accordingly, there would be no temporary effects on emergency response times during construction with the potential to adversely affect populations in the City of Brisbane, including minority populations and low-income populations.

Construction-related traffic associated with the passing tracks under Alternative B could lead to increased response time and delay of emergency vehicles from congestion and changes in local vehicle circulation resulting from the modifications to or replacement of nine existing grade separations in Belmont, San Carlos, and Redwood City in an area along El Camino Real with high levels of traffic and congestion. The Authority has incorporated IAMFs into the project design to avoid and minimize project impacts. A construction safety transportation plan (SS-IAMF#1 and SS-IAMF#2) will be developed to maintain traffic flow, especially during peak travel periods. The Authority's contractor will also implement SS-MM#1 for Alternative B, which will require additional construction traffic management for the passing track area, including the staggering of temporary closures of adjacent at-grade underpasses. This mitigation measure will reduce but not avoid temporary impacts on emergency response times during construction of the passing track through the communities of San Mateo, Belmont, San Carlos, and Redwood City. These effects would be experienced by both low-income and minority populations and non-low-income and non-minority populations. Low-income populations in San Mateo (18.5 percent) and minority populations and low-income populations in Redwood City (65.4 percent minority and 38.1 percent low-income) exceed the reference community, while minority populations and low-income populations in Belmont and San Carlos do not exceed the reference community. Construction

traffic would be distributed along the passing track segments between San Mateo and Redwood City and thus would have similar magnitude of effects in both low-income and minority populations and non-low-income and non-minority populations. The temporary disruption of the underpasses during extension or replacement of railroad overcrossing would occur in San Mateo (25th Avenue, 28th Avenue, 31st Avenue, and 42nd Avenue), Belmont (Ralston Avenue and Harbor Boulevard) and San Carlos (Holly Street, Brittan Avenue, and Howard Avenue), so would not disproportionately occur in environmental justice communities. Therefore, the adverse effects on emergency response times from construction of the passing track would not have a disproportionately high and adverse effect on minority populations or low-income populations.

Noise and Vibration

Noise from construction activities would temporarily exceed FRA noise standards along the entire project corridor and adversely affect sensitive receptors (e.g., residences, schools, hospitals, and parks). Vibration from construction, including pile driving, would cause adverse effects on sensitive receptors in the area. The duration and intensity of construction activities would vary by location and project component. Minor track shifts within the existing Caltrain corridor would be expected to last no more than several days at any given location. Installing four-quadrant gates at existing at-grade crossings would occur primarily over a period of 2 to 4 weeks, radio towers would take 3 to 6 months, and modifying the existing Broadway Caltrain Station would take 9 to 12 months. The construction of several other major project components would, however, occur over several years under Alternatives A and B: expanding the existing 4th and King Street, Millbrae, College Park (Alternative A only), and San Jose Diridon Stations would take 2 years; building the Brisbane LMF would take 2 to 3 years; building viaducts in the San Jose Diridon Station Approach Subsection under Alternative B would take 2 to 3 years; and building the passing track under Alternative B would take 4.5 years. The potential for noise and vibration impacts would be greatest where noise- and vibration-sensitive land uses are near major construction activities with a long duration.

Within these areas that would experience the greatest construction-related noise and vibration effects, minority populations or low-income populations would be affected within the Brisbane LMF RSA (87.7 percent minority and 30.0 percent low-income), the San Jose Diridon Station RSA (32.7 percent low-income), in San Mateo (18.5 percent low-income), and in Redwood City (65.4 percent minority and 38.1 percent low-income). Minority populations and low-income populations do not exceed the reference community in the RSA for the 4th and King Street Station, the RSA for the Millbrae Station, or in the environmental justice RSA for Belmont or San Carlos.

These effects would be temporary during construction and will be reduced with NV-MM#1: Construction Noise Mitigation Measures, and NV-MM#2: Construction Vibration Mitigation Measures, as described in Section 3.4, Noise and Vibration, of this Final EIR/EIS. These mitigation measures will be applied throughout the entire project corridor and will reduce construction noise and vibration below the FRA noise and vibration standards wherever feasible through noise monitoring and the avoidance of pile driving within 50 feet of buildings. Mitigation will reduce construction noise but not always below the FRA noise standards, particularly at night, when track realignments under both project alternatives and construction of the passing track under Alternative B would occur.

Mitigation will partially address concerns raised during environmental justice engagement by reducing annoyance and disruption from construction noise but may not reduce construction noise levels below the FRA noise standards at all locations. Any remaining exceedances of FRA noise standards will be temporary. Moreover, the Authority will establish a toll-free telephone hotline through which community members could raise questions or concerns about construction activities. Mitigation will reduce temporary construction-related increases in noise and vibration, will be applied equally throughout the project corridor, and will be responsive to community concerns raised during the construction process. Construction-related increases in noise and vibration would not result in disproportionately high and adverse noise and vibration effects on minority populations and low-income populations.

Socioeconomics and Communities

Displacements and Relocations

Construction of the project alternatives would require the acquisition of right-of-way and would result in the displacement of residential units, commercial and industrial businesses, and community facilities. Table 5-15 shows a summary by alternative of the displacements that would occur by property type. A total of 65 displacements (Alternative A without the DDV), 66 displacements (Alternative A with the DDV), 219 displacements (Alternative B [Viaduct to I-880]), or 271 displacements (Alternative B [Viaduct to Scott Boulevard]) have the potential to occur. Alternative B (Viaduct to Scott Boulevard) would result in the greatest number of displacements of all property types.

Table 5-15 Displacements by Type

Displacement Type	Alternative A ¹	Alternative B ²
Residences	14	42/62
Commercial and Industrial Businesses	48/49	171/202
Community and Public Facilities	3	6/7
Total Displacements	65/66	219/271

Source: Authority 2019b

¹ Where differences occur, values are presented for Alternative A without the DDV, followed by Alternative A with the DDV. For Alternative A, the Brisbane Corporation Yard was considered an industrial business displacement.

² Where differences occur, values are presented for Alternative B (Viaduct to I-880) first, followed by Alternative B (Viaduct to Scott Boulevard).

Displacements would occur within seven of the cities and communities within the environmental justice RSA. Table 5-16 shows a breakdown of residential and business displacements within each subsection and city/community. The greatest concentration of displacements would occur in Belmont and in San Jose under Alternative B. Figure 5-16 and Figure 5-17 depict residential and business displacements by city/community using symbols of proportional sizes to represent the relative number of displacements. As illustrated on Figure 5-16 and Figure 5-17, displacements caused by the project alternatives would occur both in communities where the concentrations of minority populations and low-income populations are greater than the reference community and in communities where the concentrations of minority populations and low-income populations are less than the reference community.

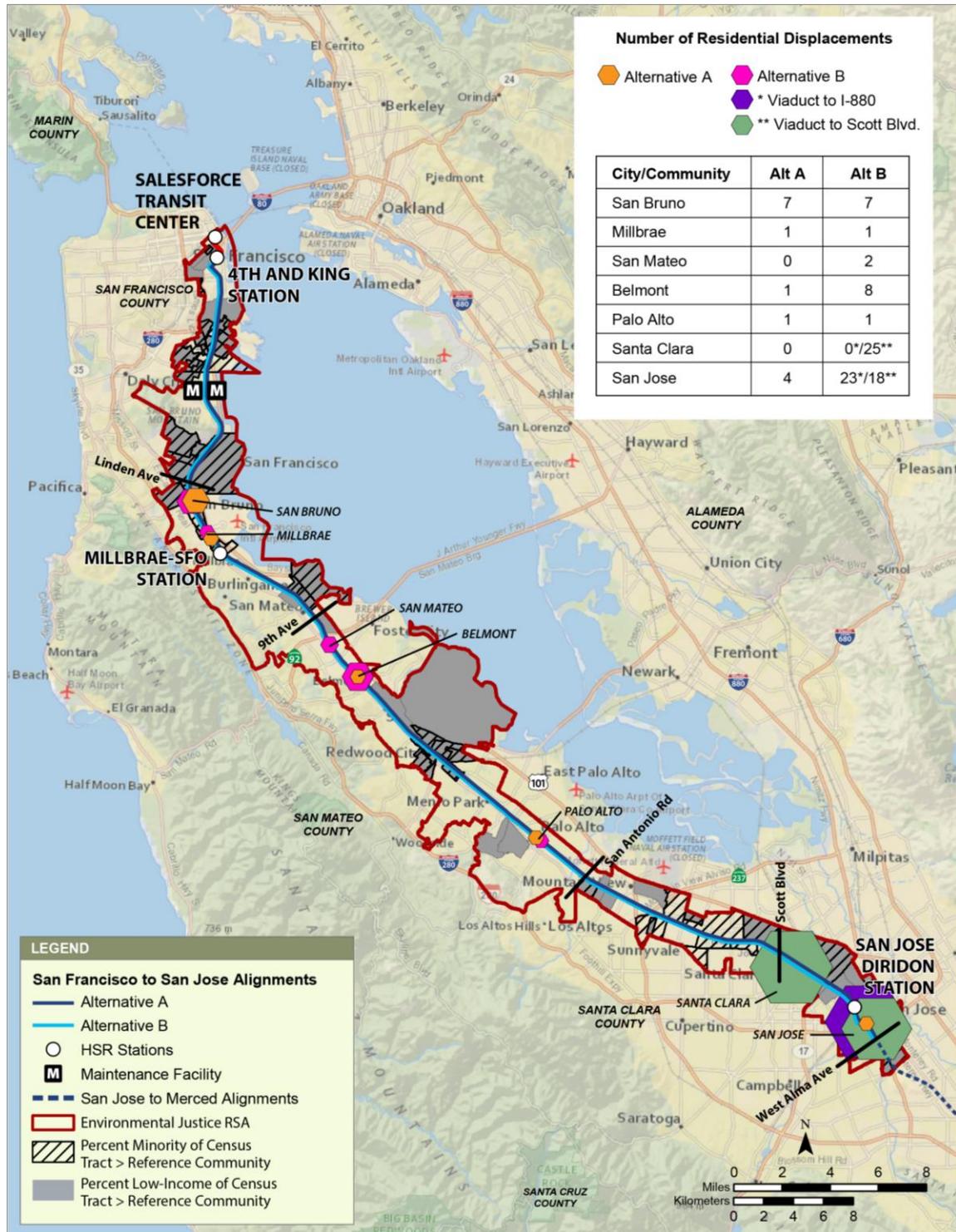
Table 5-16 Residential and Business Displacements by Subsection and City/Community

Subsection and City/Community	Alternative A ¹		Alternative B ²	
	Residential	Businesses	Residential	Businesses
San Francisco to South San Francisco Subsection	0	3	0	3
Brisbane	0	3	0	3
San Bruno to San Mateo Subsection	8	14	8	15
San Bruno	7	0	7	0
Millbrae	1	14	1	15
San Mateo to Palo Alto Subsection	2	12	11	91
San Mateo	0	1	2	23
Belmont	1	10	8	65
San Carlos	0	0	0	2
Palo Alto	1	1	1	1
Mountain View to Santa Clara Subsection	0	0	0	0
San Jose Diridon Station Approach Subsection	4	19/20¹	23/43²	63/94²
Santa Clara	0	0	0/25 ²	2/36 ²
San Jose	4	19/20 ¹	23/18 ²	61/58 ²

Sources: Authority 2019b, 2019d

¹ Where differences occur, values are presented for Alternative A without the DDV, followed by Alternative A with the DDV. For Alternative A, the Brisbane Corporation Yard was considered an industrial business displacement.

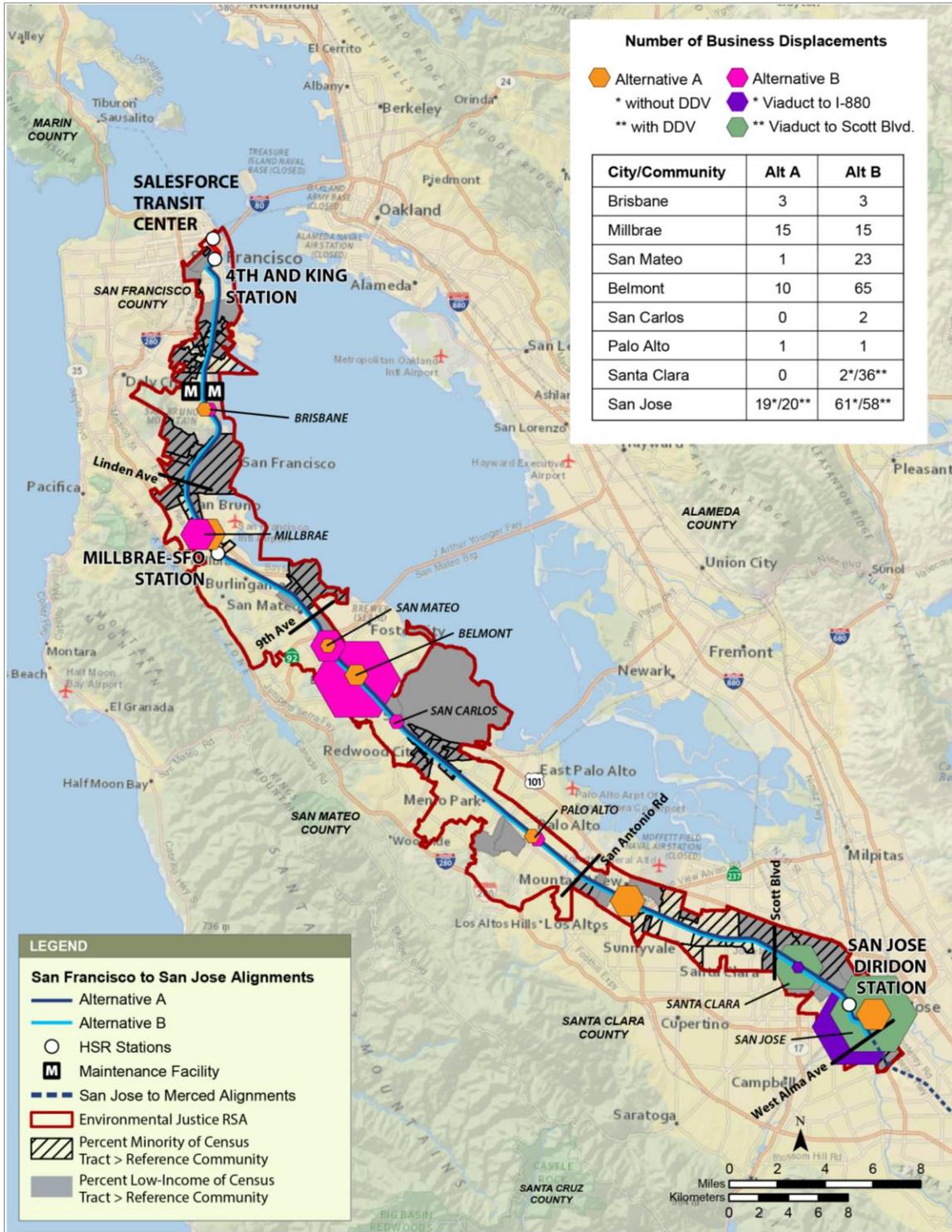
² Where differences occur, values are presented for Alternative B (Viaduct to I-880) first, followed by Alternative B (Viaduct to Scott Boulevard).



Sources: U.S. Census Bureau ACS 2010–2014b, 2010–2014d; Authority 2019e, 2019f

MARCH 2022

Figure 5-16 Residential Displacements—Proportional Representation by Alternative and Community



Sources: U.S. Census Bureau ACS 2010–2014b, 2010–2014d; Authority 2019e, 2019f

MARCH 2022

Figure 5-17 Business Displacements—Proportional Representation by Alternative and Community

Within the San Francisco to South San Francisco Subsection, construction of either the East Brisbane or West Brisbane LMF would require the displacement of three businesses in Brisbane.⁸ These displacements consist of two industrial businesses (e.g., warehouses and various outbuildings) and a commercial greenhouse.

Displacements in the San Bruno to San Mateo Subsection would occur in San Bruno and Millbrae. In San Bruno, both project alternatives would require track modifications that would require acquisition of additional right-of-way. Due to the proximity of existing development, this right-of-way acquisition would displace three duplexes and one single-family home east of the corridor and south of I-380 near the intersection of Walnut Street and Montgomery Avenue. In Millbrae, both project alternatives would result in a single-family residential displacement west of the station on Serra Avenue and 14 commercial business displacements. The majority of these businesses are located along El Camino Real west of the Millbrae Station and represent a range of businesses: home renovation, auto body repair, restaurants, dental care, art shops, rehabilitation facilities, and real estate offices. One of these displaced businesses under both project alternatives is the Millbrae Serra Convalescent Hospital in Millbrae. Both project alternatives would also result in the relocation of the Millbrae Station Historic Depot (also known as the Millbrae Train Museum).

Within the San Mateo to Palo Alto Subsection, displacements would occur under both project alternatives in San Mateo, Belmont, San Carlos, and Palo Alto. In San Mateo, Alternative A would displace one business, an auto body shop, to accommodate a communication radio tower east of the San Mateo Caltrain Station. Alternative B would displace 2 single-family residences in Hayward Park, 23 businesses, and the Playgroups Unlimited-Universe of Colors. In Belmont, Alternative A would displace a single-family residence and 10 businesses, whereas Alternative B would displace 4 single-family residences and 2 multifamily residences, 65 businesses, and a nonprofit cat rescue organization. In San Carlos, two automobile shops would be displaced under Alternative B, and in Palo Alto, an interior design business would be displaced.

The project alternatives would result in 25 residential displacements and 36 business displacements in Santa Clara under Alternative B (Viaduct to Scott Boulevard), and 2 business displacements under Alternative B (Viaduct to I-880). Homesafe Santa Clara, which is managed by Charities Housing and provides 24 units of subsidized, affordable housing and on-site childcare for very low-income survivors of domestic abuse and their children, would be displaced under Alternative B (Viaduct to Scott Boulevard).

The project alternatives would result in 4 residential displacements and 19 business displacements in San Jose under Alternative A, 23 residential displacements and 61 business displacements under Alternative B (Viaduct to I-880), and 18 residential displacements and 58 business displacements under Alternative B (Viaduct to Scott Boulevard).

Displacements were a primary concern of community members along the project alignment. Participants were particularly concerned about displacement of low-income rental housing, the ability of low-income and unemployed community members who rent their homes to relocate if affected by the project, and the availability of replacement housing to relocate those affected.

Overall, there are a total of 14 residential displacements under Alternative A, 42 residential displacements under Alternative B (Viaduct to Scott Boulevard), and 62 residential displacements under Alternative B (Viaduct to I-880) across the entire 49-mile length of the Project Section that traverses densely populated communities between San Francisco and San Jose (Figure 5-3). As described in detail in the San Francisco to San Jose Draft Relocation Impact Report (Authority 2019b), an analysis of available replacement properties indicates that there would likely be a sufficient number of comparable replacement properties within the relocation RSA and in the specific communities where displacements would occur for displaced residents to relocate within the same communities. In addition, the Authority would comply with federal and state laws that require that relocation assistance be provided to any person displaced because of the acquisition

⁸ For Alternative A, the Brisbane Corporation Yard was considered as an industrial business displacement.

of real property by a public entity for public use. Relocation resources available to displaced residents include relocation assistance and counseling, direct financial assistance, and sufficient government funding to carry out all relocation processes and forms of assistance. The relocation assistance provided by the Authority would address concerns raised by community members, in that the Authority would assist displaced residents with finding suitable housing in the communities in which they currently reside, if desired. Because the overall number of residential displacements across the Project Section is low, there are a sufficient number of comparable replacement properties where displacements would occur, and relocation assistance would be provided by the Authority, the effect of residential displacements for the Project Section overall was determined not to be high and adverse. Therefore, residential displacements are also not disproportionately high and adverse.

Overall, there are a total of 48 business displacements under Alternative A (without the DDV), 49 business displacements under Alternative A (with the DDV), 171 business displacements under Alternative B (Viaduct to Scott Boulevard), and 202 residential displacements under Alternative B (Viaduct to I-880). The Authority has two programs to aid businesses that must relocate: (1) Relocation Advisory Assistance Program that assists with locating a suitable replacement property, and (2) Relocation Payments Program that reimburses for certain relocation costs. As described in the San Francisco to San Jose Draft Relocation Impact Report (Authority 2019b), an analysis of available replacement properties indicates that some displaced commercial and industrial businesses may be unable to relocate within the same communities, as there may be insufficient replacement properties in Brisbane, Millbrae, and Belmont under both alternatives. A review of the areas of insufficient relocation opportunities indicates that they are not disproportionately minority areas or low-income areas overall.⁹ While there may not be a sufficient number of replacement properties in these specific communities, there are sufficient resources available for businesses to relocate to neighboring cities and communities. Given that there are an inadequate number of replacement properties in some communities where displacements would occur, the Authority determined that the effect of business displacements overall would be high and adverse under both alternatives.

As illustrated on Figure 5-17, business displacements would occur in communities where the concentrations of minority populations and low-income populations are greater than the reference community and also in communities where the concentrations of minority populations and low-income populations are less than the reference community. Because business displacements are distributed across the Project Section and are not concentrated in areas with minority populations and low-income populations, and the areas of insufficient relocation availability are not disproportionately concentrated in areas with minority populations and low-income populations, the effect of business displacements would not result in disproportionately high and adverse effects on minority populations and low-income populations.

The Authority is committed to making sure that all benefits and services would be provided equitably without regard to race, color, religion, age, national origins, and disability as specified under Title VI of the Civil Rights Act of 1964 and the California High Speed Rail Authority Title VI Program (Authority 2012a). USEO 13166 (Improving Access to Services for Persons with Limited English Proficiency) also underscores the Authority's commitment to minimizing community effects by not disproportionately favoring or discriminating against any populations in the process of providing support to residences and businesses.

Employment

Construction of the project alternatives has the potential to result in adverse employment effects associated with business displacements. As described under Displacements and Relocations, the project alternatives would require acquisition of additional right-of-way, resulting in the displacement of commercial and industrial businesses. The number of affected jobs due to

⁹ Millbrae has a slightly higher percentage of minority populations than the reference community, but Belmont and Brisbane have lower percentages of minority populations than the reference community. Millbrae, Belmont, and Brisbane all have lower percentages of low-income populations than the reference community.

business displacements is estimated to be up to 862 employees under Alternative A, compared to 2,782 employees under Alternative B (Viaduct to I-880), and 3,062 employees under Alternative B (Viaduct to Scott Boulevard) (Authority 2019b, 2019d). Many of these businesses would likely relocate, in which case employees could retain their job. However, in some cases a business may close, resulting in job loss.

The overall number of available commercial or industrial facilities for sale or for lease within the relocation RSA for both alternatives exceeds the numbers of displaced commercial and industrial facilities (48 under Alternative A and 171/202 under Alternative B). This indicates sufficient relocation resources should be available within the relocation RSA. However, at the community level, displaced commercial and industrial businesses may not be able to relocate in the same community because the available commercial and industrial facilities might not be located near the displaced businesses. Sufficient relocation resources were not available in Brisbane, Millbrae, and Belmont under both project alternatives. Displaced businesses in these communities may need to relocate to San Mateo or a neighboring community, where greater supplies of commercial and industrial facilities may be available for rent or for lease. The Authority would provide these businesses with relocation assistance resources; however, as described above, some of these businesses may close rather than relocate, resulting in job loss.

Overall, HSR construction would generate employment growth that would benefit the region during the 4.5-year construction period. The project alternatives would create 4,620 (Alternative A), 6,950 (Alternative B [Viaduct to I-880]), and 8,111 (Alternative B [Viaduct to Scott Boulevard]) additional direct or indirect jobs within San Francisco, San Mateo, and Santa Clara Counties under Alternatives A and B, respectively. Job creation for HSR construction is not expected to result in a one-for-one replacement of each job loss. However, from a regional perspective the level of job creation would exceed job displacement, so overall employment changes would be beneficial, and would therefore not result in disproportionately high and adverse effects on minority populations and low-income populations.

Construction-Related Job Creation

- Between 4,620 and 8,111 direct and indirect jobs are expected to be generated during the construction period, depending on the Alternative.
- The Authority participates in training programs designed to increase the ability of local workers to compete for jobs, and maintains a hiring goal of 30 percent disadvantaged workers and small businesses.

The Authority is committed to making sure that no person in the state of California is excluded from participation in, nor denied the benefits of, its programs, activities, and services on the basis of race, color, national origin, age, sex, or disability as afforded by Title VI of the Civil Rights Act of 1964 and related statutes. As described in detail in Section 3.17, Regional Growth, the Authority and others have been implementing a variety of programs to increase the ability of local workers and construction firms to compete and obtain construction jobs associated with the HSR system. To increase the ability of local workers to compete for available project jobs, the Authority has made a commitment through a cooperative partnership with skilled craft unions and contractors to promote and help implement education, apprenticeship training, advanced communication about hiring opportunities, and contractor networking opportunities for local workers. The program, referred to as the Community Benefits Agreement, is intended to help disadvantaged workers, such as those who are lower-income, are veterans, are single parents, have no high school or General Educational Development diploma, or suffer from chronic unemployment. The commitment includes setting a hiring goal that 30 percent of all work hours be filled by disadvantaged workers. The Authority also has committed to a 30 percent small business participation goal for all of the Authority's construction.¹⁰ The employment opportunities created by construction of the project alternatives, in combination with the Authority's employment commitments and training programs designed to increase the ability of local workers to compete

¹⁰ Additional information about these programs is available at http://hsr.ca.gov/Programs/Small_Business/index.html and <http://www.hsr.ca.gov/Programs/Construction/index.html>.

for these jobs, has the potential to result in economic benefits for the communities affected by the project, including minority populations and low-income populations.

Air Quality

Construction of the project alternatives would require use of heavy construction equipment and trucks that could generate fugitive dust emissions (particulate matter smaller than or equal to 10 microns in diameter [PM₁₀] and particulate matter smaller than or equal to 2.5 microns in diameter [PM_{2.5}]) from earthmoving activities and combustion pollutants, particularly ozone precursors (nitrogen oxides and volatile organic compounds [VOC]), and carbon monoxide from heavy equipment and trucks. VOCs would also be generated from paints and other coatings used during construction activities. Temporary construction activity for both project alternatives would not exceed the BAAQMD significant cancer risk thresholds of 10 in 1 million. Construction of the project alternatives would result in temporary, localized elevated criteria pollutant concentrations, which also would contribute to existing exceedances of the 1- to 24-hour and annual CAAQS for PM₁₀ where background concentrations already exceed the CAAQS.

Table 5-17 summarizes the localized criteria pollutant violations by subsection. Because these standards are established to protect the public from adverse health effects that can occur from exposure to air pollutants, violations of these thresholds indicate increased health risks associated with temporary construction-related air pollutant emissions.

Violations of the CAAQS for PM₁₀ would occur under both project alternatives, and along the entire length of the alignment (i.e., within every subsection), as shown in Table 5-17. Violations of the annual CAAQS for PM_{2.5} and the 24-hour NAAQS for PM_{2.5} would occur under both project alternatives in the San Jose Diridon Station Approach Subsection (except for the annual CAAQS for PM_{2.5} under Alternative B [Viaduct to Scott Boulevard]). The potential for health risks would be greatest adjacent to the construction sites, and would dissipate rapidly as a function of distance from construction activities.

Table 5-17 Temporary Localized Criteria Pollutant Violations by Subsection

Elevated Criteria Pollutant Concentrations by Subsection	Alternative A	Alternative B (Viaduct to I-880)	Alternative B (Viaduct to Scott Blvd)
San Francisco to South San Francisco			
24-hour PM ₁₀ CAAQS	X	X	X
Annual PM ₁₀ CAAQS	X	X	X
Annual PM _{2.5} CAAQS	–	–	–
24-hour PM _{2.5} NAAQS	–	–	–
San Bruno to San Mateo			
24-hour PM ₁₀ CAAQS	X	X	X
Annual PM ₁₀ CAAQS	X	X	X
Annual PM _{2.5} CAAQS	–	–	–
24-hour PM _{2.5} NAAQS	–	–	–
San Mateo to Palo Alto			
24-hour PM ₁₀ CAAQS	X	X	X
Annual PM ₁₀ CAAQS	X	X	X
Annual PM _{2.5} CAAQS	–	–	–
24-hour PM _{2.5} NAAQS	–	–	–

Elevated Criteria Pollutant Concentrations by Subsection	Alternative A	Alternative B (Viaduct to I-880)	Alternative B (Viaduct to Scott Blvd)
Mountain View to Santa Clara			
24-hour PM ₁₀ CAAQS	X	X	X
Annual PM ₁₀ CAAQS	X	X	X
Annual PM _{2.5} CAAQS	–	–	–
24-hour PM _{2.5} NAAQS	–	–	–
San Jose Diridon Station Approach			
24-hour PM ₁₀ CAAQS	X	X	X
Annual PM ₁₀ CAAQS	X	X	X
Annual PM _{2.5} CAAQS	X	X	–
24-hour PM _{2.5} NAAQS	X	X	X

Sources: Authority 2019g, 2019h

Bld = Boulevard

CAAQS = California ambient air quality standard

I = Interstate

NAAQS = national ambient air quality standard

PM₁₀ = particulate matter smaller than or equal to 10 microns in diameter

PM_{2.5} = particulate matter smaller than or equal to 2.5 microns in diameter

Although construction-related air quality was not specifically raised as a community concern during environmental justice engagement, the increased health risks associated with temporary construction-related air quality emissions warrants consideration. Project features (AQ-IAMF#1, AQ-IAMF#2: Selection of Coatings, AQ-IAMF#3: Renewable Diesel, AQ-IAMF#4: Reduce Criteria Exhaust Emissions from Construction Equipment, AQ-IAMF#5: Reduce Criteria Emissions from On-Road Construction Equipment, and AQ-IAMF#6: Reduce Potential Impacts from Concrete Batch Plants) will minimize construction emissions through the best available on-site controls. However, exceedances of the CAAQS for PM₁₀ and PM_{2.5} and the 24-hour NAAQS for PM_{2.5} would still occur. In addition to the air quality IAMFs, mitigation measures have been identified to further address impacts on air quality from project construction, including AQ-MM#1: Construction Emissions Reductions—Requirements for use of Zero Emission and/or Near Zero Emission Vehicles and Off-Road Equipment, and AQ-MM#2: Offset Project Construction Emissions in the SFBAAB. Offsets could occur regionally throughout the San Francisco Bay Area Air Basin and may not directly reduce localized pollutant concentrations. Therefore, adverse effects on public health would result from temporary construction-related emissions. These adverse health risks associated with elevated criteria pollutants would be borne by individuals in all communities adjacent to project construction, would not be solely concentrated in areas of minority populations or low-income populations and would not disproportionately affect minority populations and low-income populations, nor would the effect on minority populations and low-income populations be greater in magnitude than the adverse effects on the reference community. Accordingly, no disproportionately high and adverse effect on minority populations and low-income populations would result from construction-related air quality emissions.

5.6.3.4 Operations-Related Effects Potentially Disproportionate after Mitigation

Project operations would result in permanent adverse effects on populations, including minority populations and low-income populations, associated with traffic congestion; decreased bus transit performance; delays in emergency response; and noise and vibration. This section evaluates the potential for these adverse effects to result in a disproportionately high and adverse effect on minority populations and low-income populations after mitigation and the consideration of project

benefits. Project operations would result in benefits associated with regional employment growth and long-term air quality improvements.

Transportation

Traffic Congestion/Delay

Project operations under both project alternatives would add traffic at the 4th and King Street Station, Millbrae Station, and San Jose Diridon Station, and increase gate-down events at at-grade crossings from added HSR trains, increasing congestion and delays at adjacent intersections. Alternative A and Alternative B would also cause increased traffic volume, congestion, and delays in the vicinity of the San Jose Diridon Station. Degradation of localized intersection operations would adversely affect residents in adjacent communities and would result in longer travel times and inconvenience for residents. Project operation would have beneficial effects on intersection operations at Bayshore Boulevard/Old County Road in Brisbane and on circulation and access at the Millbrae Station.

During operations, the distribution of the adverse operational traffic delays would be throughout the project corridor at certain intersections adjacent to or near the 4th and King Street Station in San Francisco; the Millbrae Station; the San Jose Diridon Station; and at-grade crossings in San Francisco, South San Francisco, San Bruno, Burlingame, San Mateo, Redwood City, Atherton, Palo Alto, Menlo Park, Mountain View, Sunnyvale, and San Jose.

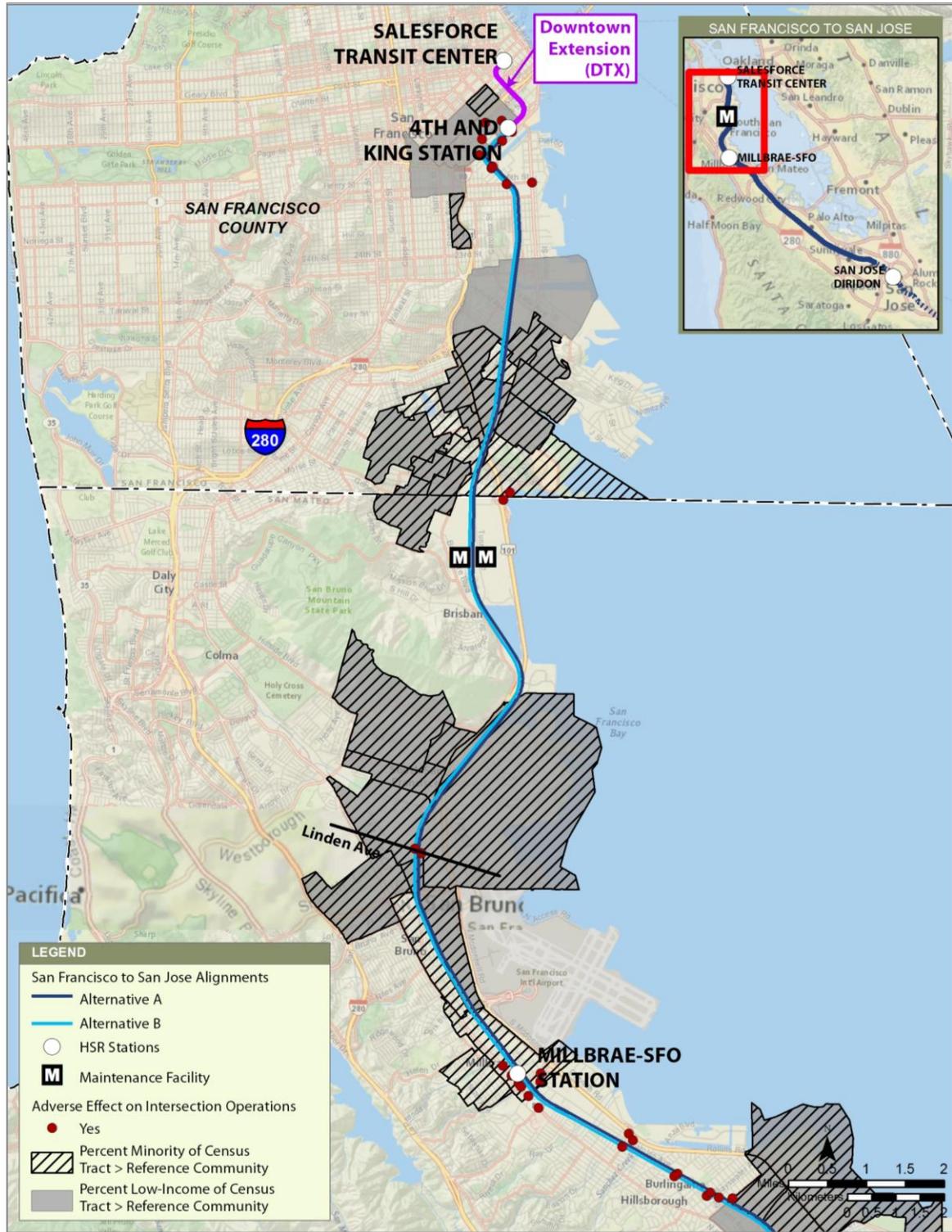
As discussed in Section 3.2, Transportation, the Authority would implement certain site-specific traffic mitigation measures (as described in TR-MM#1: Potential Mitigation Measures Available to Address Traffic Delays [NEPA Effect Only]) to address adverse NEPA effects associated with traffic delay, including installing traffic signals, widening intersection approaches, optimizing existing traffic signals, and optimizing intersection geometry. The measures in TR-MM#1 will reduce permanent effects on intersection operations, but as shown in Table 5-18 and illustrated on Figures 5-18 through 5-20, substantial delays and level of service (LOS) degradation would remain at 80 intersections under Alternative A and 83 intersections under Alternative B after mitigation. No additional feasible mitigation is available to reduce permanent adverse effects on these remaining intersections. As adverse effects on intersection operations would continue to occur in the station areas and near at-grade crossings, the concerns raised by minority populations and low-income populations about increased congestion as a result of project operations would not be fully addressed through mitigation.

Adverse effects on intersection operations would be distributed along the entire length of the alignment in most adjacent cities and communities (Table 5-18). However, a greater number of adverse effects would occur in San Francisco, Burlingame, San Mateo, Menlo Park, Palo Alto, and Mountain View. Of these cities, the concentrations of minority populations or low-income populations in San Francisco, San Mateo, and Mountain View exceed the reference community, while the concentrations of minority populations or low-income populations in Burlingame, Menlo Park, and Palo Alto are less than the reference community (U.S. Census Bureau ACS 2010–2014b, 2010–2014d). As adverse effects on intersection operations would occur in areas with both high and low concentrations of minority populations or low-income populations, adverse effects would not be predominantly borne by minority populations or low-income populations nor would they be appreciably more severe or greater in magnitude than the adverse effects suffered by the nonminority populations and non-low-income populations. Therefore, project operations before or after mitigation would not result in permanent adverse effects on intersections that would disproportionately affect minority populations and low-income populations.

Table 5-18 Adversely Affected Intersection Operations after Mitigation Associated with Project Operations

Subsection and City/Community	Alternative A, Number of Adverse Intersection Effects ¹	Alternative B, Number of Adverse Intersection Effects ¹
San Francisco to South San Francisco	16	16
San Francisco	14	14
South San Francisco	2	2
San Bruno to San Mateo	24	24
Millbrae	8	8
Burlingame	9	9
San Mateo	7	7
San Mateo to Palo Alto	24	24
San Mateo	2	2
Redwood City	4	4
Atherton	1	1
Menlo Park	9	9
Palo Alto	8	8
Mountain View to Santa Clara	8	8
Mountain View	7	7
Sunnyvale	1	1
San Jose Diridon Station Approach	8	11
San Jose	8	11
Environmental Justice RSA Total	80	83

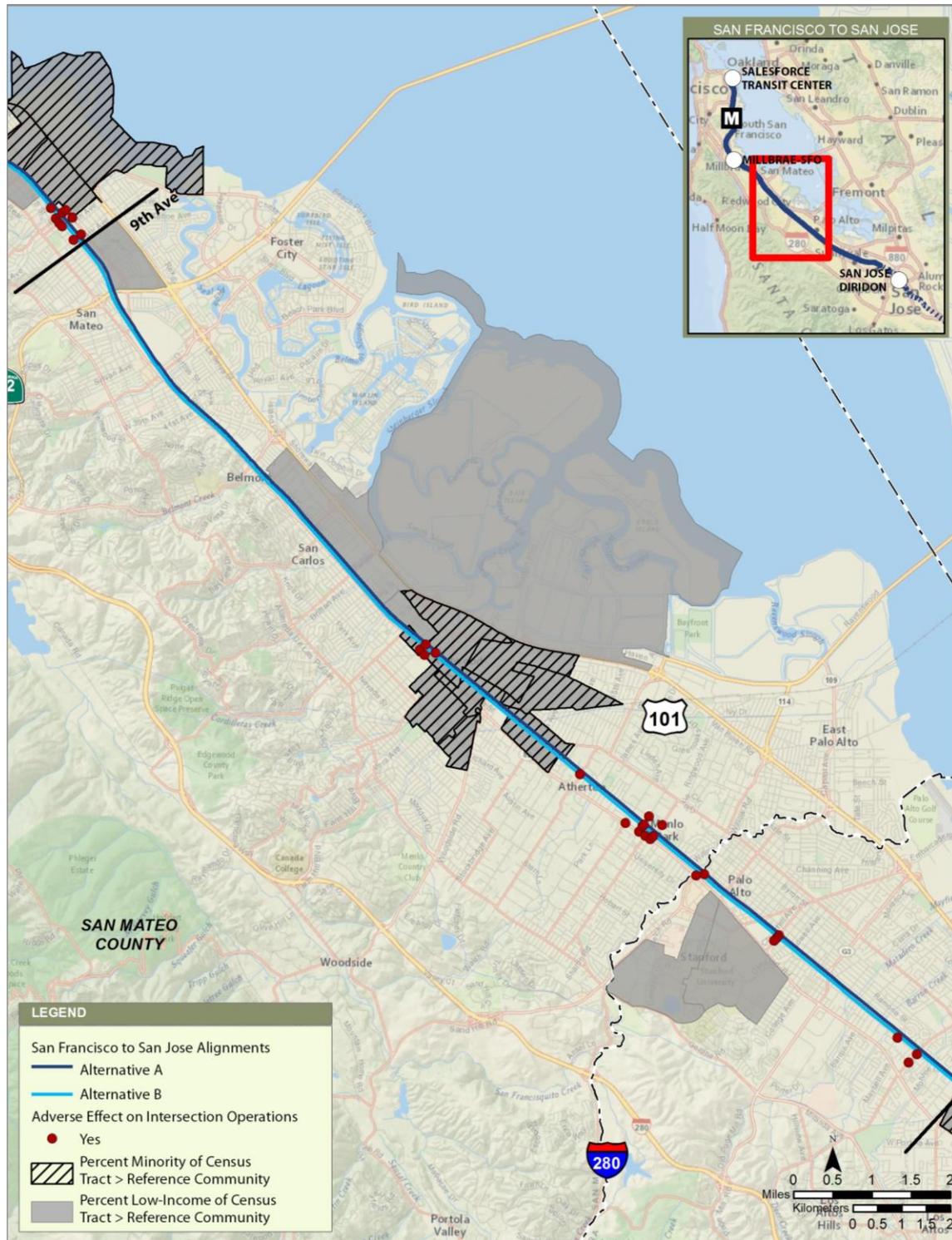
¹ An adverse intersection operations effect is defined for a signalized intersection as a degradation to LOS E or F and an increase in the volume-to-capacity ratio of 0.04 over the baseline condition, and for an unsignalized intersection as a degradation to LOS E or F and an increase in traffic delay of 5 seconds or more.



Sources: U.S. Census Bureau ACS 2010–2014b, ACS 2010–2014d; Authority and FRA 2017d

March 2022

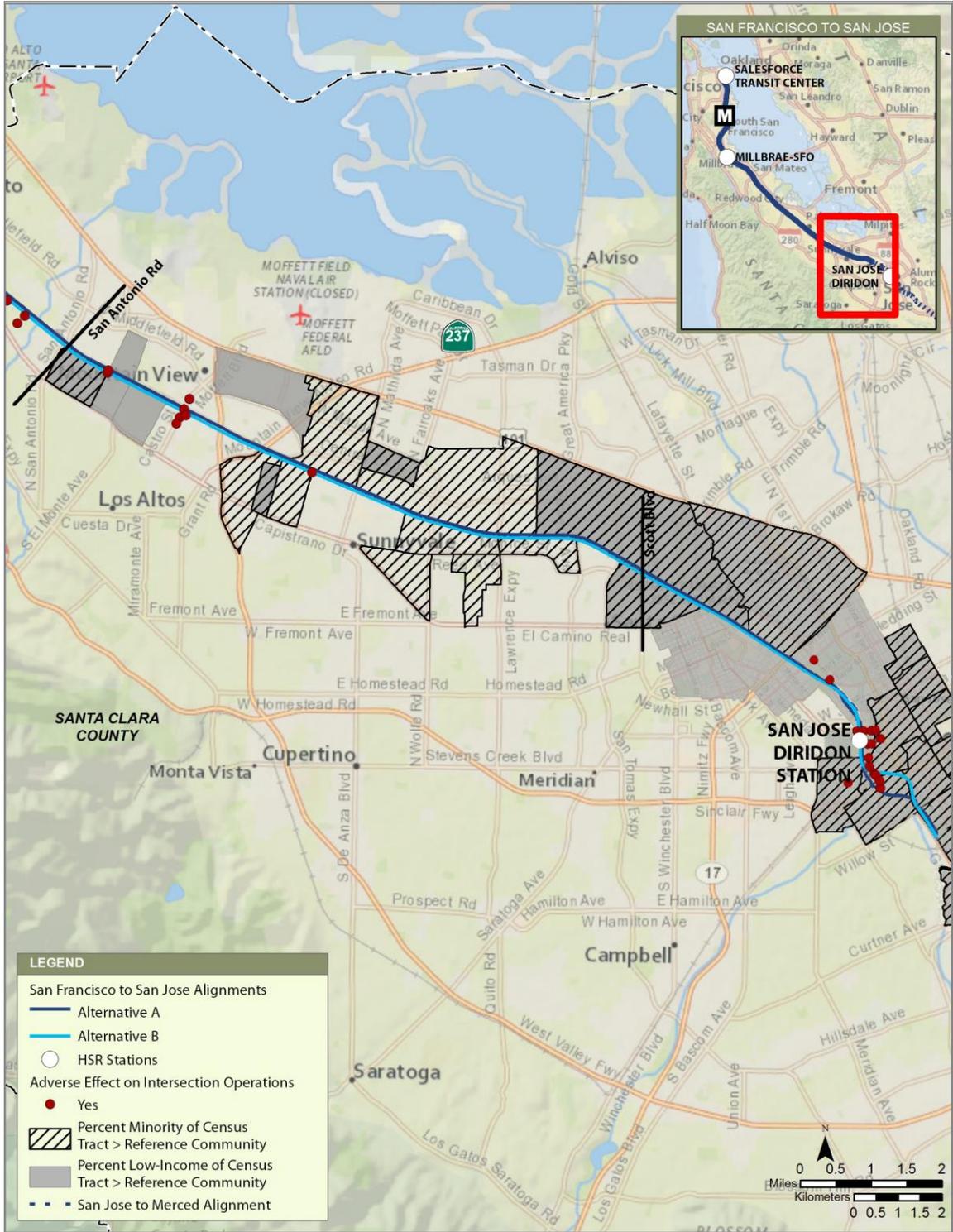
Figure 5-18 Adverse Transportation Effects during Operations—Part 1 of 3



Sources: U.S. Census Bureau ACS 2010–2014b, ACS 2010–2014d; Authority and FRA 2017d

March 2022

Figure 5-19 Adverse Transportation Effects during Operations—Part 2 of 3



Sources: U.S. Census Bureau ACS 2010–2014b, ACS 2010–2014d; Authority and FRA 2017d

March 2022

Figure 5-20 Adverse Transportation Effects during Operations—Part 3 of 3

Operation of the project would change regional and statewide travel patterns through the addition of new trips to 4th and King Street, Millbrae, and San Jose Diridon Stations from passengers and HSR workers traveling to the station areas and the shift of vehicle trips from airports and other intercity travel hubs to train trips. Shifts and changes in travel patterns would result in a benefit through a reduction in vehicle miles traveled (VMT) on roadways, freeways, and intersections. Although localized congestion would result from the project, VMT would be reduced regionally through decreases in long-range vehicle trips and increases in HSR ridership, resulting in less overall congestion. By 2040, both project alternatives would reduce annual VMT in San Francisco County by 24 million miles, in San Mateo County by 90 million miles, and in Santa Clara County by 230 million miles. These transportation benefits would benefit the region as a whole.

Bus Transit and Passenger Rail

Project operations under both project alternatives would add traffic at the 4th and King Street Station, Millbrae Station, and San Jose Diridon Station and increase gate-down events at at-grade crossings from added HSR trains, increasing delays at adjacent intersections and decreasing the performance of 11 high-frequency bus routes operated by MUNI, SamTrans, and VTA. The increased congestion and delay because of the project would affect bus on-time performance and operating speeds in the 4th and King Street Station area (MUNI Routes 30 and 45), at the 16th Street at-grade crossing in San Francisco (MUNI 55), along El Camino Real adjacent to the Millbrae Station (SamTrans ECR), at the Ravenswood Avenue at-grade Crossing in Menlo Park (SamTrans 296), and in the San Jose Diridon Station area (VTA Routes 181, 22, 64, 72, 73, and DASH). Impacts on transit operations at these locations would be the same under both project alternatives. TR-MM#2: Install Transit Priority Treatments, will reduce the impacts on bus transit operations. This mitigation measure will improve bus transit operations by installing transit signal priority improvements along segments of Fifth Street and Townsend Street in the 4th and King Street Station area; along El Camino Real near the Millbrae Station; at key intersections near the Ravenswood Avenue at-grade crossing; and along Cahill Street, Montgomery Street, and Autumn Street in the San Jose Diridon Station area. While the transit signal priority treatments will improve congestion, they will not reduce transit delays for MUNI Routes 30, 45, or 55 in San Francisco.

Alternative B would relocate the San Carlos Station approximately 2,260 feet south of its current location to accommodate the passing tracks. This would reduce Caltrain's accessibility to downtown San Carlos, putting most of downtown beyond a quarter-mile walk from the station. The station relocation would also lengthen SamTrans Route 260 (which currently terminates at San Carlos Station) and increase bus travel times from Redwood Shores. TR-MM#4: Install San Carlos Caltrain Station Pedestrian Improvements, will reduce effects on pedestrians at the San Carlos Station, but permanent effects would remain due to the station relocation.

These effects on bus transit would affect transit users in San Francisco and San Carlos, some of whom are minority individuals or low-income individuals. While the project alternatives may result in bus transit delay during operations within certain areas proximate to three MUNI routes in San Francisco and one SamTrans route in San Carlos, the overall effect of the project on transportation and transit resources in the region and state would be beneficial through increased rail service, substantial reductions in VMT, increased transit connectivity, and reduction in the need to expand freeways and airports. These benefits would benefit the region as a whole, including minority populations and low-income populations throughout the environmental justice RSA and would offset the localized bus transit delays in two discrete areas along the project corridor.

Safety and Security

Emergency Response

Project operations under both project alternatives would add traffic at the 4th and King Street Station, Millbrae Station, and San Jose Diridon Station and increase gate-down events at at-grade crossings from added HSR trains, increasing delays at adjacent intersections, and causing permanent delays in emergency vehicle access and response times. This would result in an

increase in emergency response time of over 30 seconds for fire stations/first responders in San Francisco, Millbrae, Burlingame, Redwood City, Menlo Park, Palo Alto, Mountain View and San Jose under both project alternatives.

The Authority would implement mitigation measures that will require the development of an emergency vehicle priority plan, as well as installation of emergency vehicle priority treatments and new traffic control devices near the HSR stations (SS-MM#3: Install Emergency Vehicle Priority Treatments near HSR Stations). SS-MM#4 will involve monitoring and implementation of phased emergency vehicle priority treatment strategies at at-grade crossings. With these measures, delays in emergency response times for fire stations/first responders will be reduced in some locations, but an increase in emergency response time of over 30 seconds will remain for fire stations in Burlingame, Redwood City, Menlo Park, Palo Alto, and Mountain View. Figure 5-21 and Figure 5-22 illustrate the locations of adverse effects on emergency response with mitigation in relation to minority populations and low-income populations.

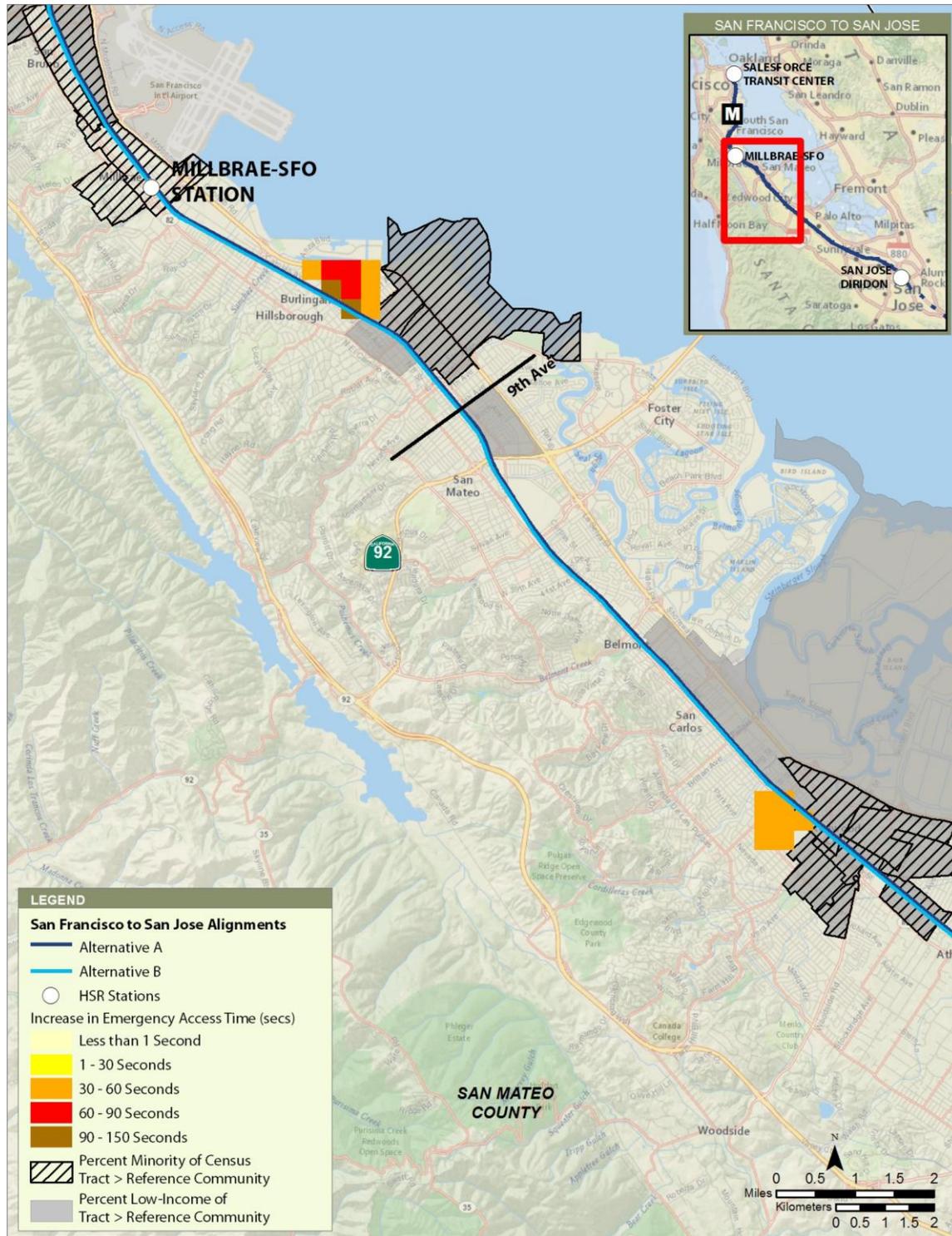
Adverse effects on emergency response would occur in Burlingame, Redwood City, Menlo Park, Palo Alto, and Mountain View, with delays of up to 150 seconds forecast in Menlo Park. Of these locations, only the environmental justice RSA for Redwood City has low-income populations (38.1 percent) and minority populations (65.4 percent) that exceed the reference community (23.9 percent low-income and 62.6 percent minority). Overall, delays in emergency response would not result in a disproportionately high and adverse effect on minority populations or low-income populations.

As described in Section 3.11, if local jurisdictions choose not to implement and operate emergency vehicle priority treatments using construction funds provided by the Authority per SS-MM#4, the following site-specific traffic mitigation measures will help to reduce peak-hour traffic delays at intersections adjacent to or near at-grade crossings with significant emergency vehicle response time delays:¹¹

- TR-MM#1a.2: North Lane/California Drive—Install Traffic Signal
- TR-MM#1a.3: North Lane/Carolan Avenue—Install Traffic Signal
- TR-MM#1a.5: Brewster Avenue/Perry Street—Install Traffic Signal
- TR-MM#1h: Whipple Avenue/El Camino Real—Add Overlap Signal Phase and Optimize Signal Timing
- TR MM#1i: Whipple Avenue/Arguello Street—Optimize Signal Timing

Although these traffic mitigation measures will help to address traffic delays at adjacent or nearby intersections, they will not change gate-down times and thus will not fully address residual delays to emergency vehicle response times.

¹¹ As described in Section 3.2, Transportation, signalized locations that are adjacent to at-grade crossings would also be provided with signal preemption.



Sources: U.S. Census Bureau ACS 2010–2014b, 2010–2014d; Authority 2019i

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Figure 5-21 Adverse Effects on Emergency Response during Operations—Part 1 of 2

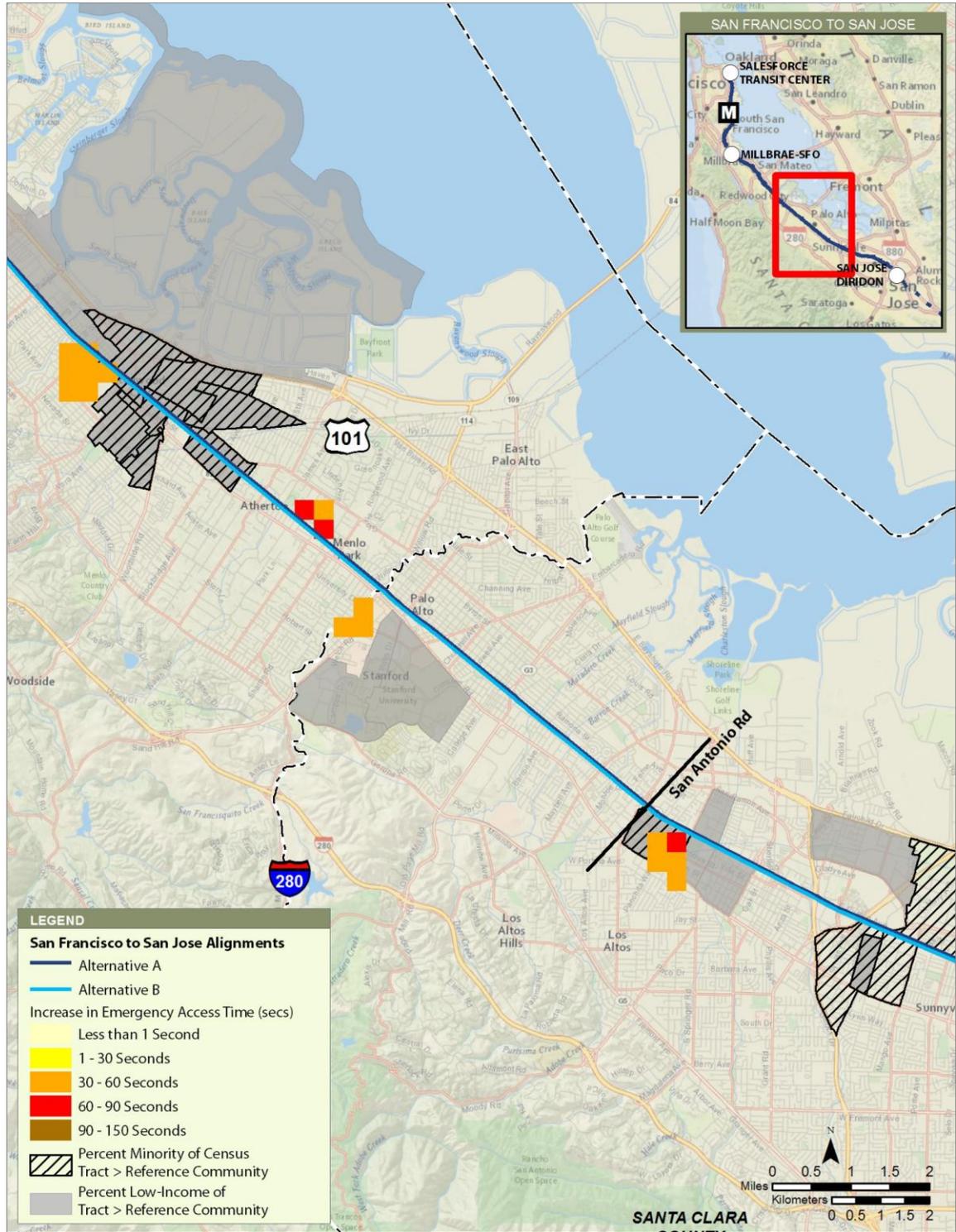


Figure 5-22 Adverse Effects on Emergency Response during Operations—Part 2 of 2

Noise and Vibration

During the environmental justice engagement, operational train noise and horn noise at at-grade crossings was raised as a key concern in most of the communities along the alignment and was particularly important to residents who experience noise associated with existing Caltrain operations. Community members asked about noise mitigation such as quiet zones, which are established by local jurisdictions and exempted from FRA requirements to routinely sound warning horns when approaching at-grade highway/rail crossings.

Operation of the project would generate noise levels above existing ambient levels as a result of increased train operations, increased frequency of the sounding of warning horns at at-grade crossings and Caltrain stations, and increased traffic near the interim 4th and King Street Station in 2029. Table 5-19 shows the number of severe and moderate noise impacts as a result of train operations under each of the project alternatives by subsection and by city/community after mitigation. Noise mitigation will include noise barriers, sound insulation, or acquisition of easements on properties severely affected by noise in accordance with the criteria established in the Authority's Noise and Vibration Mitigation Guidelines (NV-MM#3: Implement Proposed California High-Speed Rail Project Noise Mitigation Guidelines). The Authority will also support potential implementation by local jurisdictions of Quiet Zones, which will avoid trains sounding warning horns when approaching at-grade crossings (NV-MM#4). Mitigation also requires additional noise analysis during final design, should final design or vehicle specifications result in changes to the assumptions underlying the noise analysis in this Final EIR/EIS (NV-MM#5: Vehicle Noise Specification; NV-MM#6: Special Trackwork at Crossovers, Turnouts, and Insulated Joints; NV-MM#7: Additional Noise Analysis during Final Design).

The proposed mitigation, which is described in detail in Section 3.4, was analyzed in two ways: (1) noise mitigation with noise barriers, and (2) noise mitigation with a combination of quiet zones and noise barriers. With noise barrier mitigation, Alternative A would have slightly greater severe and moderate noise impacts on sensitive receptors (2,881) than Alternative B (2,633 [Viaduct to I-880], 2,690 [Viaduct to Scott Boulevard]). As illustrated on Figure 5-23 through Figure 5-26, operational noise impacts would occur along the entire length of the alignment, in communities where the concentrations of minority populations and low-income populations are greater than the reference community and also in communities where the concentrations of minority populations and low-income populations are less than the reference community. Because operational noise impacts are distributed throughout the Project Section and are not concentrated in areas with minority populations and low-income populations, the effect of operational noise impacts would not result in disproportionately high and adverse effects on minority populations and low-income populations.

Although the Authority cannot implement quiet zones, which are the responsibility of local jurisdictions, the project would install four-quadrant gates at at-grade crossings, which is a minimum condition for the creation of quiet zones. If local jurisdictions choose to implement quiet zones, the implementation of quiet zones and noise barriers would reduce the total number of severe and moderate noise impacts to 2,357 noise impacts for Alternative A and to either 2,124 (Viaduct to I-880) or 2,181 (Viaduct to Scott Boulevard) noise impacts for Alternative B.

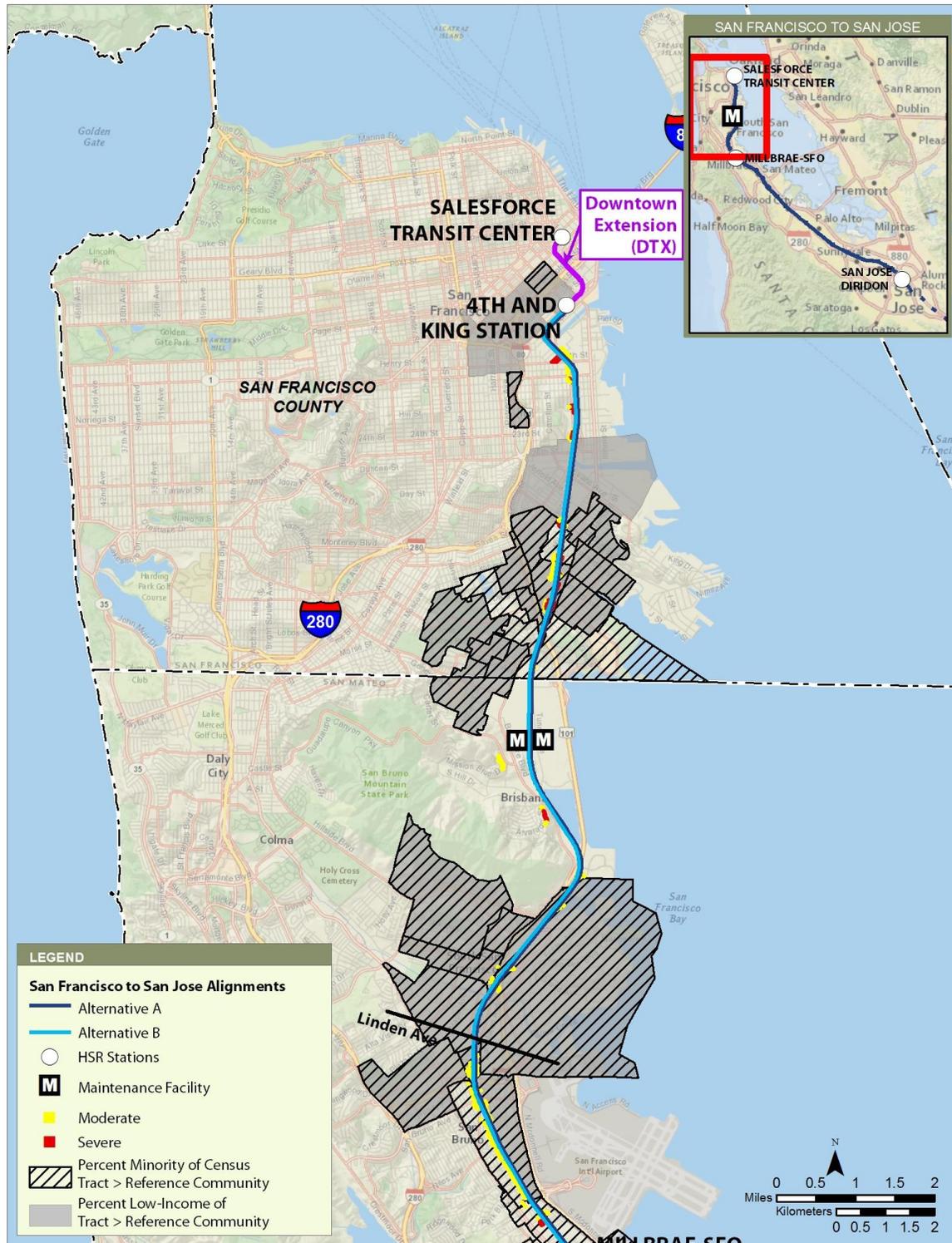
Table 5-19 Mitigated Operational Noise Impacts with Noise Barriers and with Quiet Zones and Noise Barriers by Alternative (Number of Receptors with Predicted Noise Impact)

Subsection and City/Community	Alternative A				Alternative B ¹			
	With Noise Barriers		Quiet Zones and Noise Barriers		With Noise Barriers		Quiet Zones and Noise Barriers	
	Moderate	Severe	Moderate	Severe	Moderate	Severe	Moderate	Severe
San Francisco to South San Francisco	185	169	176	166	186	164	177	161
San Francisco	144	164	135	161	145	163	136	160
Brisbane	21	5	21	5	21	1	21	1
South San Francisco	20	0	20	0	20	0	20	0
San Bruno to San Mateo	555	144	351	5	555	144	351	5
San Bruno	263	26	219	2	263	26	219	2
Millbrae	11	8	0	1	11	8	0	1
Burlingame	181	48	123	1	181	48	123	1
San Mateo	100	62	9	1	100	62	9	1
San Mateo to Palo Alto	945	124	933	60	941	123	929	59
San Mateo	460	12	431	12	456	11	427	11
Belmont	83	1	83	1	83	1	83	1
San Carlos	54	6	54	6	54	6	54	6
Redwood City	74	51	39	0	74	51	39	0
North Fair Oaks	18	0	18	0	18	0	18	0
Atherton	35	13	13	6	35	13	13	6
Menlo Park	14	15	20	4	14	15	20	4
Palo Alto	207	26	259	31	207	26	259	31
Mountain View	0	0	16	0	0	0	16	0
Mountain View to Santa Clara	482	21	417	9	482	21	417	9
Mountain View	335	10	308	7	335	10	308	7
Sunnyvale	69	10	31	1	69	10	31	1
Santa Clara	78	1	78	1	78	1	78	1
San Jose Diridon Station Approach	218	37	216	24	13/73	3/0	13/73	3/0
Santa Clara	6	1	6	1	12/73	0/0	12/73	0/0
San Jose	212	36	210	23	1/0	3/0	1/0	3/0
Environmental Justice RSA Total	2,385	495	2,093	264	2,178/2,237	455/452	1,887/1,947	237/234

I- = Interstate

RSA = resource study area

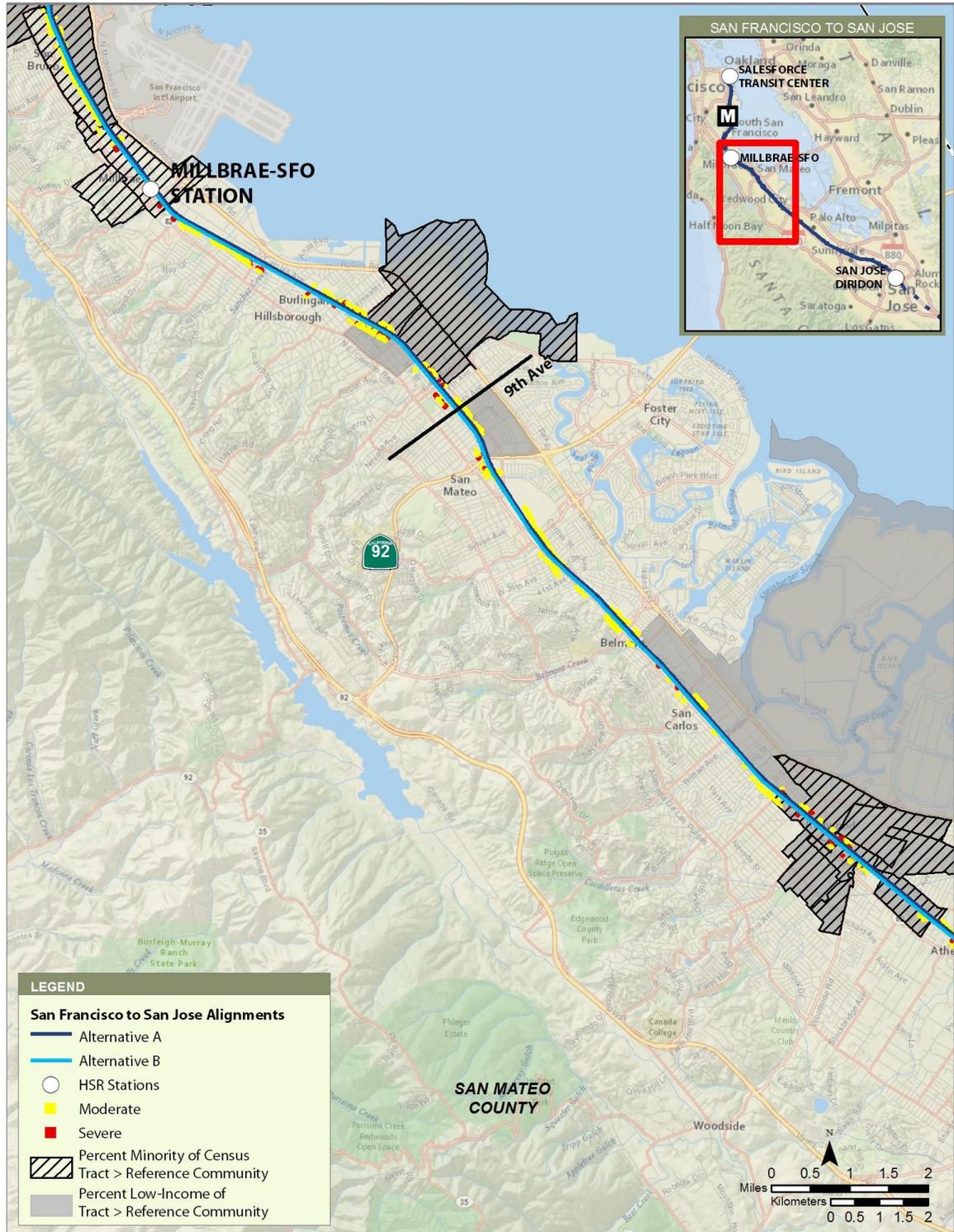
¹ Where differences occur, values are presented for Alternative B (Viaduct to I-880) first, followed by Alternative B (Viaduct to Scott Boulevard).



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d

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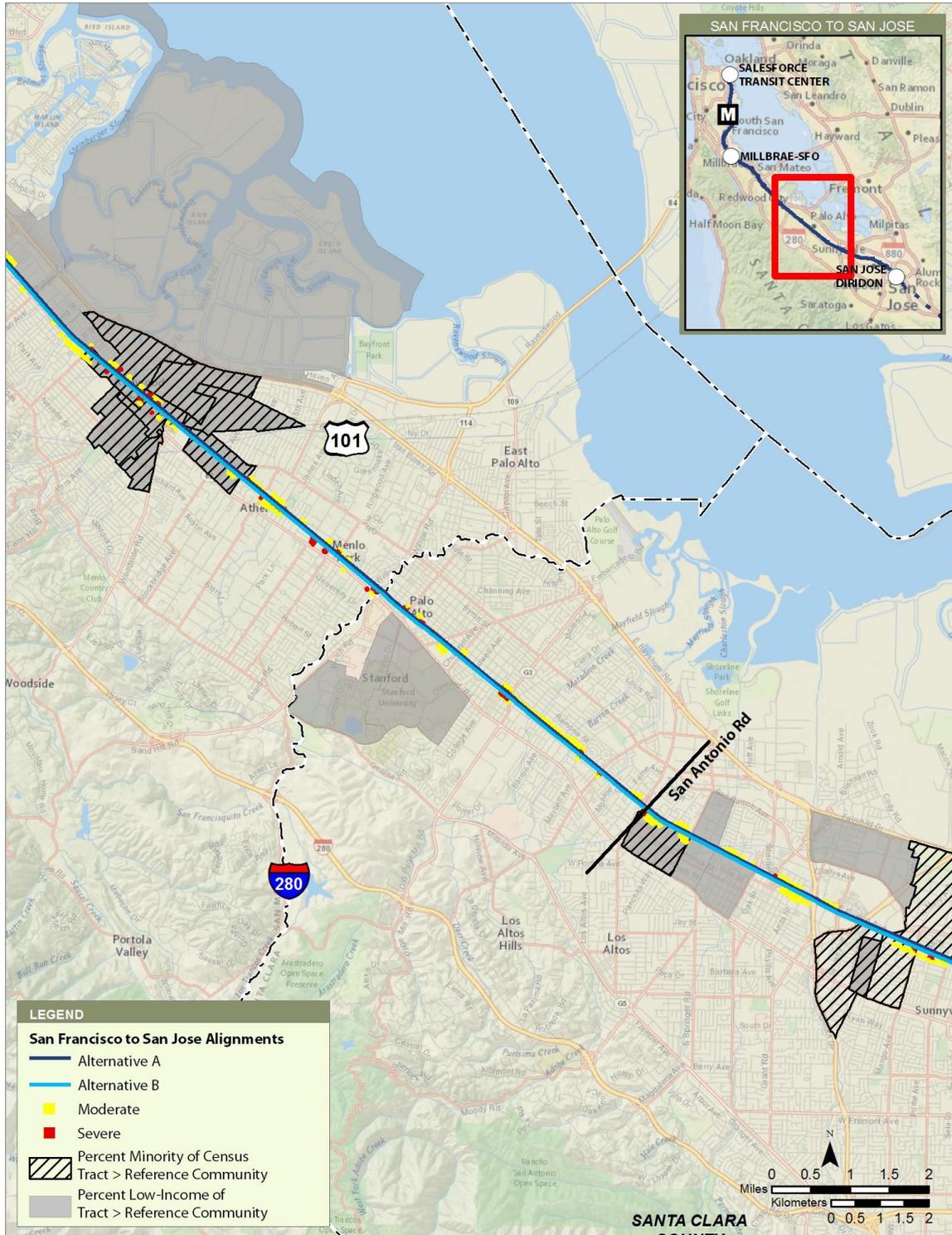
Figure 5-23 Operational Noise Impacts with Noise Barriers—Part 1 of 4



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d

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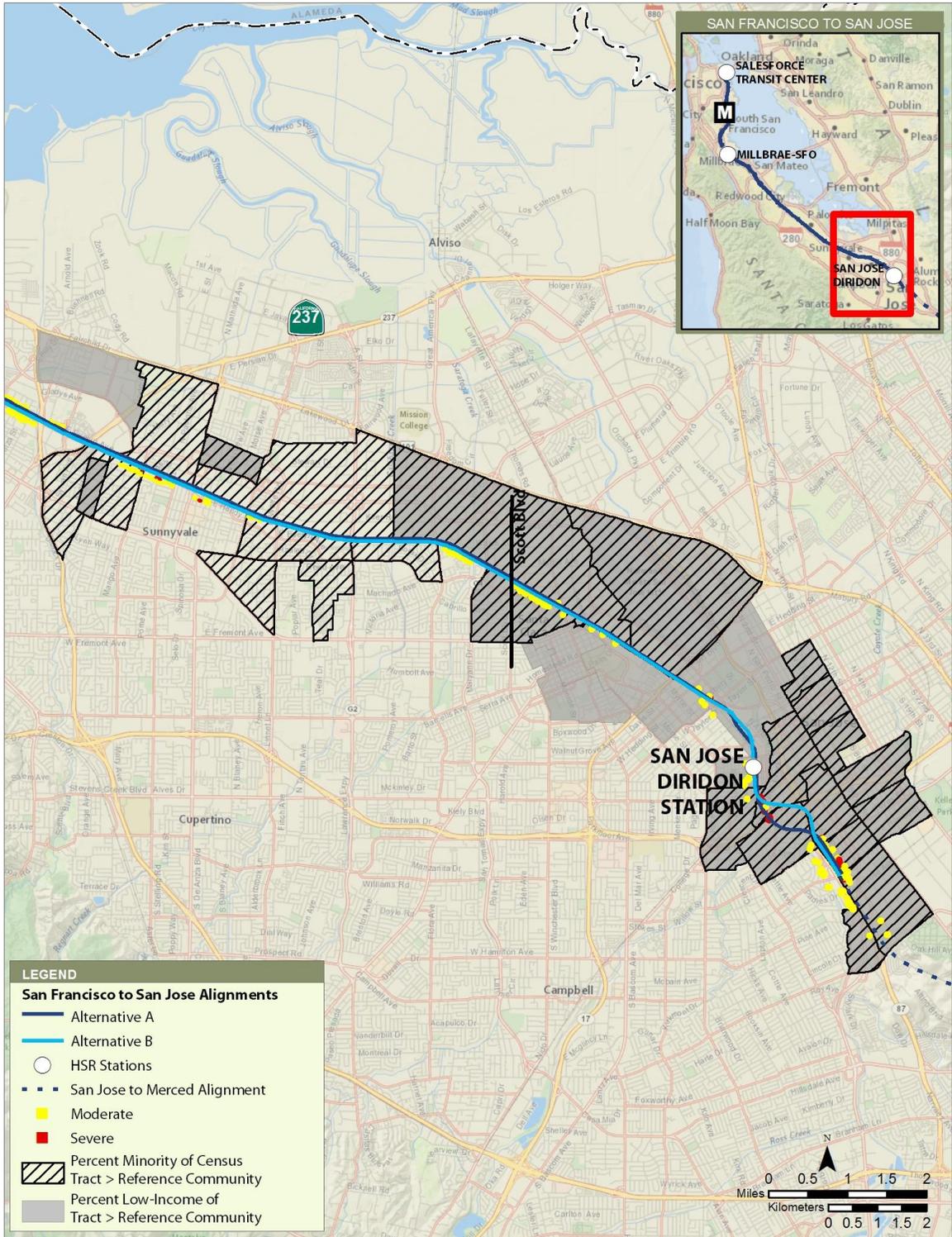
Figure 5-24 Operational Noise Impacts with Noise Barriers—Part 2 of 4



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d; Authority 2019k

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Figure 5-25 Operational Noise Impacts with Noise Barriers—Part 3 of 4



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d; Authority 2019k

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Figure 5-26 Operational Noise Impacts with Noise Barriers—Part 4 of 4

In addition to noise generated by train operations and train horns, operation of the project would generate additional traffic and traffic-related noise that would be similar for both project alternatives. Traffic noise level increases greater than 3 decibels (dB) above existing levels would occur at two roadway segments in 2029 near the 4th and King Street Station. Such traffic-related noise impacts would occur during operation of the interim 4th and King Street Station, but would not occur during operation of the Brisbane LMF or Millbrae Station. Near the San Jose Diridon Station, there would be four roadway segments under Alternative A where the increase in traffic noise levels are anticipated to be greater than or equal to 3 dB. Under Alternative B (both viaduct options), there would be five roadway segments where the increase in traffic noise levels are anticipated to be greater than or equal to 3 dB.

Operation of the project would also generate excessive ground-borne vibration impacts at sensitive receptors. Along the proposed alignment, there are many vibration-sensitive locations where the existing vibration levels exceed the residential criterion of 72 vibration decibels due to Caltrain operations. Because the project would more than double the number of train passby events per day, additional vibration impacts would occur as a result of project operations. As shown in Table 5-20, Alternative A would result in 2,493 vibration impacts, while Alternative B (Viaduct to I-880) would result in 2,307 vibration impacts and Alternative B (Viaduct to Scott Boulevard) would result in 2,366 vibration impacts. As illustrated on Figures 5-27 through 5-30, vibration impacts would be distributed along the entire length of the alignment in communities where the concentrations of minority populations and low-income populations are greater than the reference community and also in communities where the concentrations of minority populations and low-income populations are less than the reference community. NV-MM#8: Project Vibration Mitigation Measures, will require the mitigation of vibration impacts through a variety of options that may include relocation of special trackwork, building modifications, or vehicle suspension. The specific design and implementation of this mitigation will be identified during final design, but may not mitigate all vibration impacts.

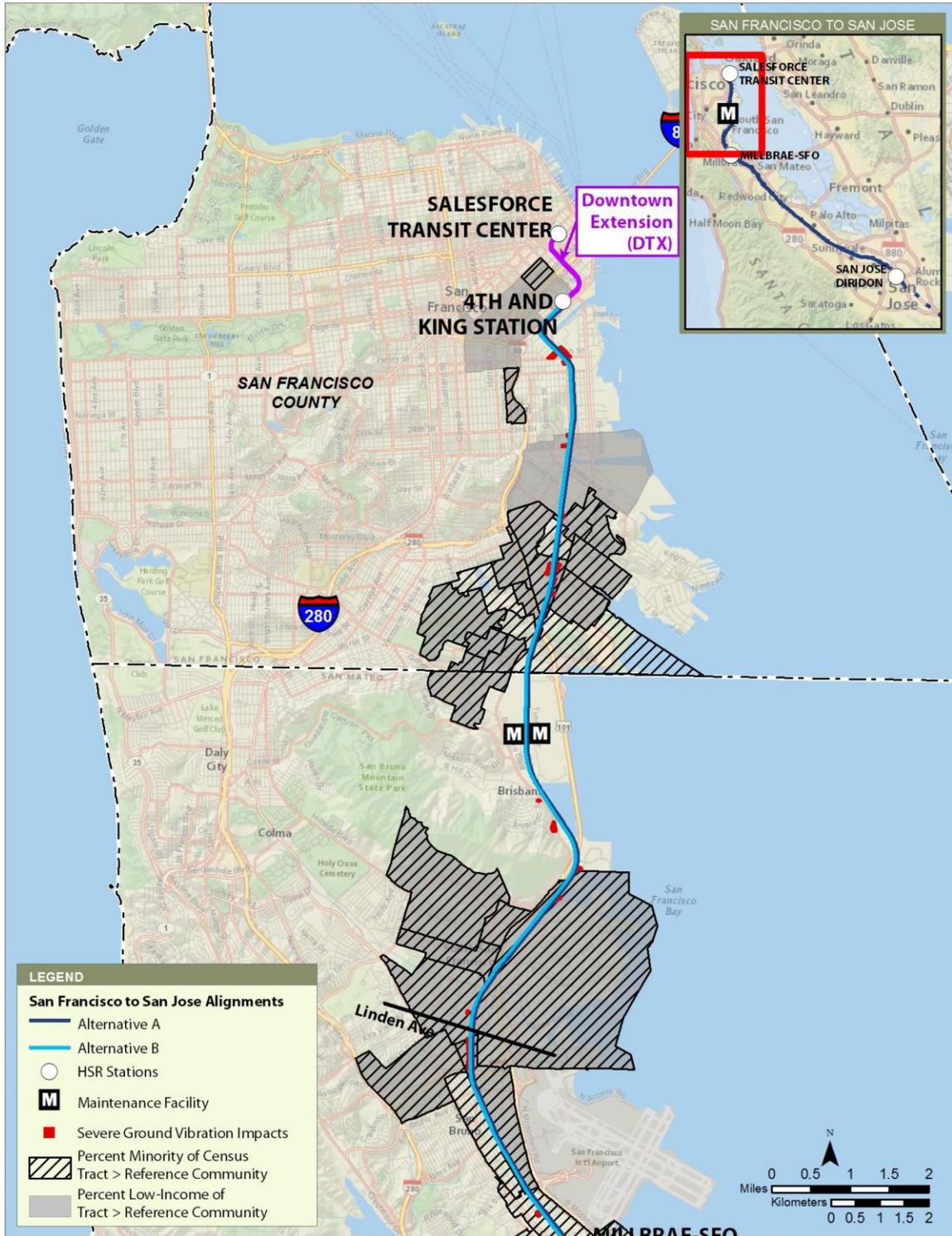
Mitigation will not fully address the noise and vibration concerns raised during the environmental justice engagement process; however, as illustrated on Figures 5-23 through 5-30, noise and vibration impacts would be distributed along the entire length of the alignment, affecting all adjacent cities and communities. Adverse effects on noise and vibration would occur in areas with minority populations and low-income populations that exceed the reference community and in areas with minority populations and low-income populations that do not exceed the reference community. Therefore, the project's operational noise and vibration impacts would not result in disproportionately high and adverse effects on minority populations and low-income populations.

Table 5-20 Ground-Borne Operational Vibration Impacts by Alternative

Subsection	Number of Ground-Borne Vibration Impacts	
	Alternative A	Alternative B ¹
San Francisco to South San Francisco	76	75
San Bruno to San Mateo	652	652
San Mateo to Palo Alto	1,150	1,149
Mountain View to Santa Clara	412	412
San Jose Diridon Station Approach	203	19/78
Environmental Justice RSA Total	2,493	2,307/2,366

I- = Interstate

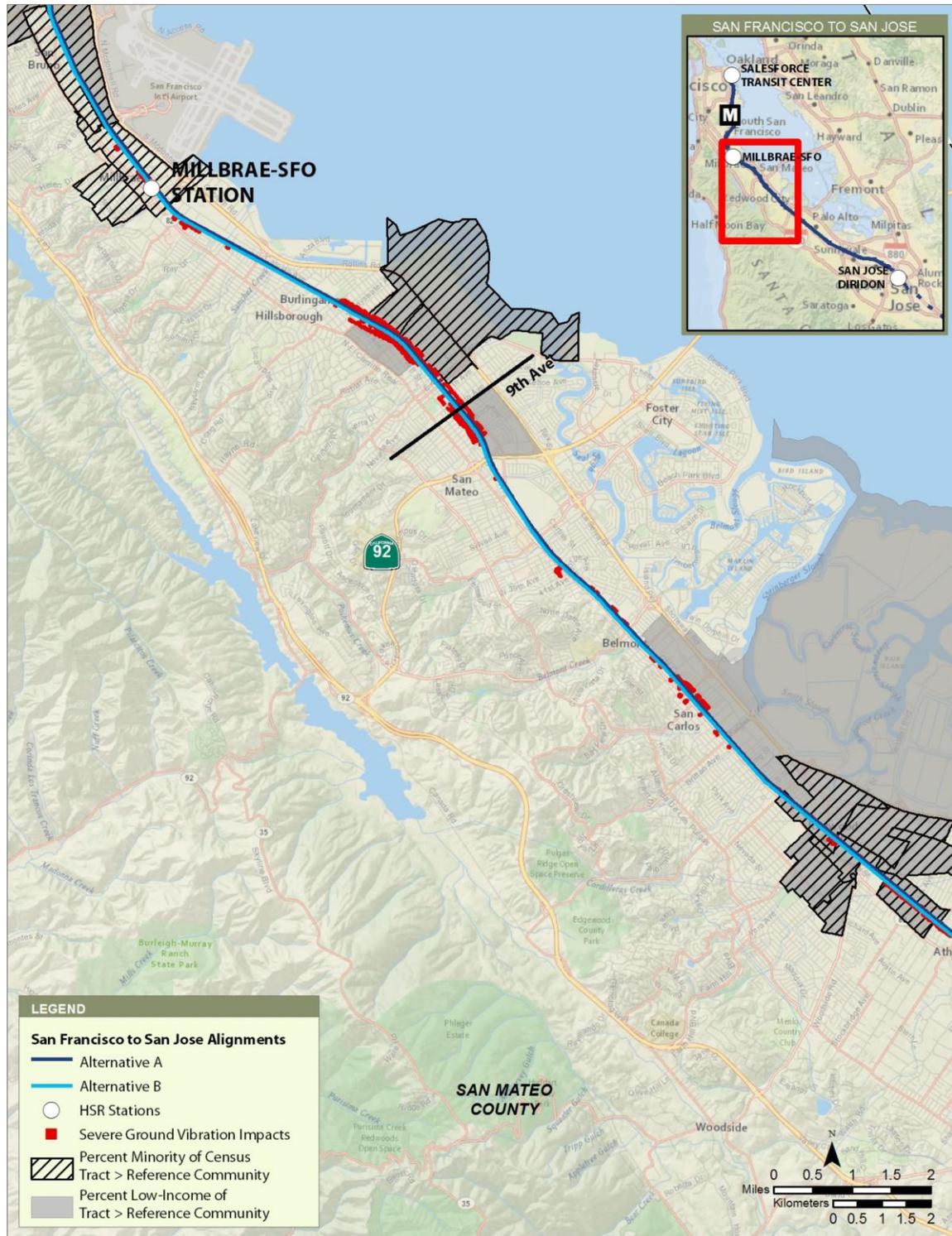
¹ Where differences occur, values are presented for Alternative B (Viaduct to I-880) first, followed by Alternative B (Viaduct to Scott Boulevard).



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d

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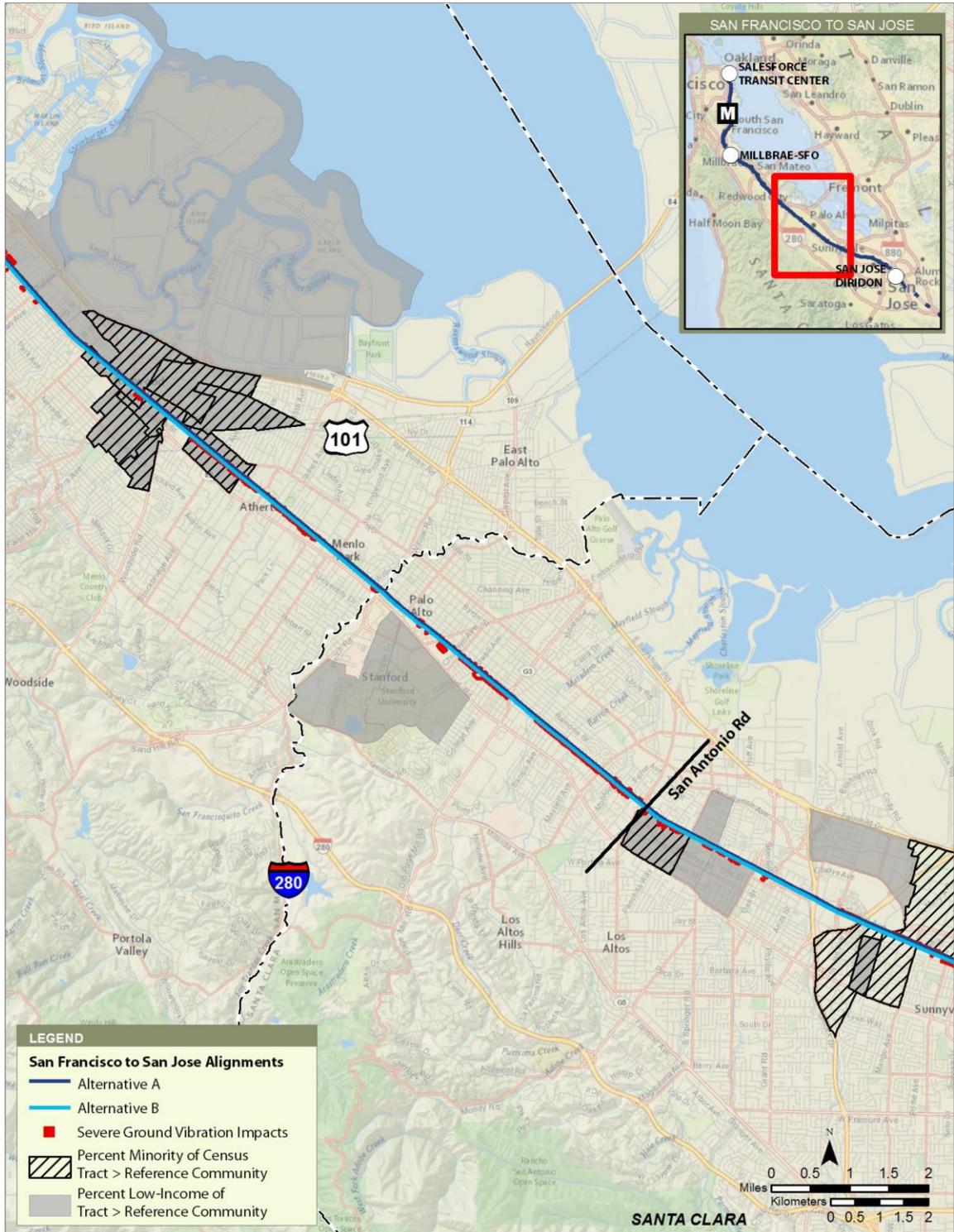
Figure 5-27 Operational Ground-Borne Vibration Impacts—Part 1 of 4



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d

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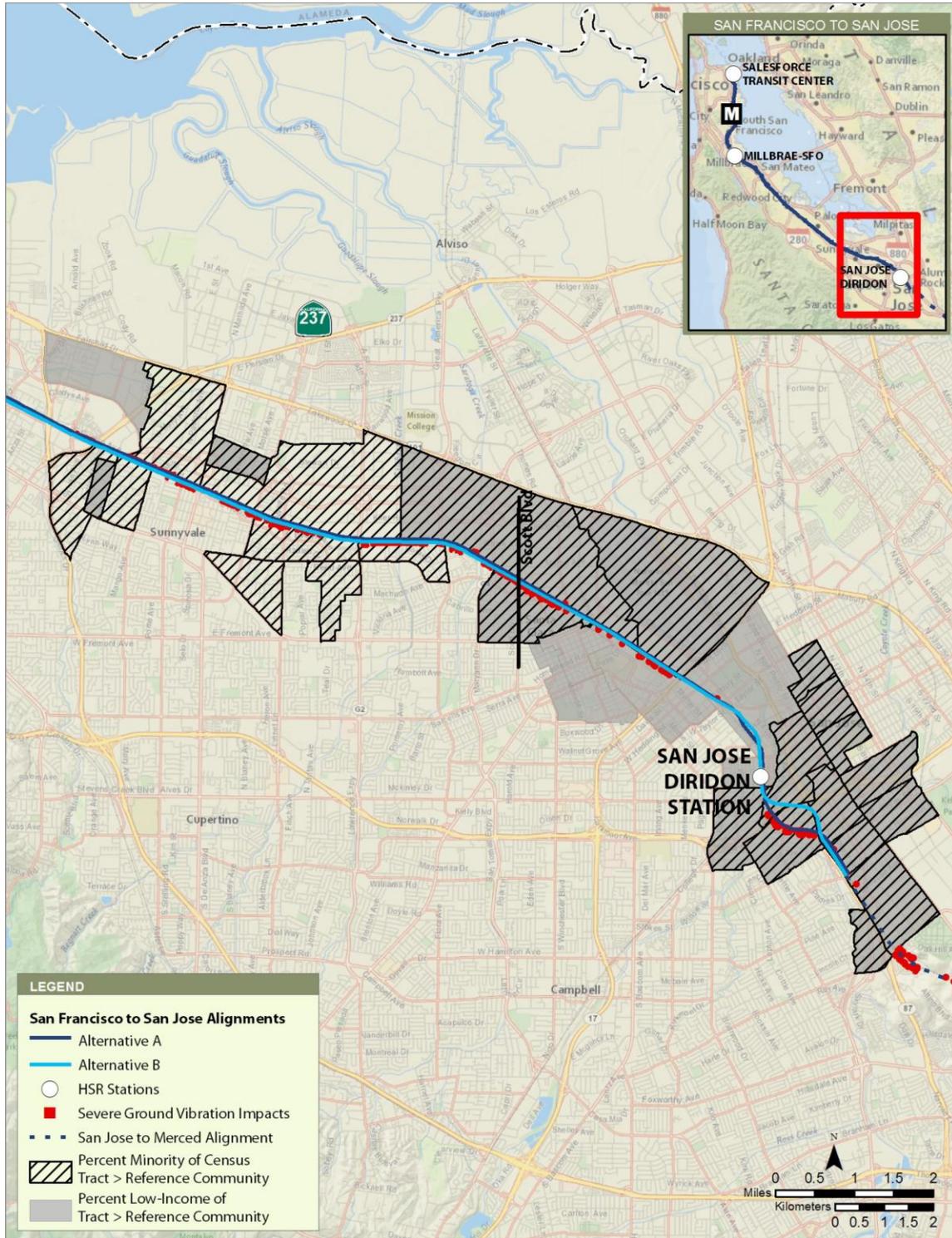
Figure 5-28 Operational Ground-Borne Vibration Impacts—Part 2 of 4



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d; Authority 2019k

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Figure 5-29 Operational Ground-Borne Vibration Impacts—Part 3 of 4



Sources: Volume 2, Appendix 3.4-A; U.S. Census Bureau ACS 2010–2014b, 2010–2014d; Authority 2019k

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Figure 5-30 Operational Ground-Borne Vibration Impacts—Part 4 of 4

Socioeconomics and Communities

Employment

The HSR project would improve connectivity while facilitating new access to employment and educational opportunities and creating job opportunities across many sectors of the economy in the three-county region. Overall, it is expected that employment growth would be a net benefit for the region as a whole. The Authority estimates operations associated with the HSR system would create approximately 340 operation and maintenance jobs in the three-county reference community, an estimate that would be the same for both project alternatives. Operations-related employment would be based in San Francisco and Millbrae at station locations and the Brisbane LMF. The Authority is committed to making sure that no person in the state of California is excluded from participation in, nor denied the benefits of, its programs, activities, and services on the basis of race, color, national origin, age, sex, or disability as afforded by Title VI of the Civil Rights Act of 1964 and related statutes. With the Authority's implementation of employment training programs consistent with the Community Benefits Agreement described in the Employment section under Section 5.6.3.3, these jobs would provide opportunities for minority populations and low-income populations within the region.

5.6.3.5 Cumulative Effects

Analysis of cumulative impacts requires examination of a project's impacts in conjunction with the impacts of other past, present, and reasonably foreseeable projects causing related impacts. Section 3.18 discusses the project alternatives' contribution to any cumulative impact for each resource area discussed in Chapter 3. The following discussion provides additional information on the potential for cumulative impacts that could affect minority populations and low-income populations.

Under the cumulative condition, ongoing infill development would be expected to continue within the cumulative RSA. Such development anticipated to be constructed by 2040 would include residential, commercial, industrial, recreational, and transportation projects. These projects would occur throughout the cumulative RSA, which is the same as the environmental justice RSA and includes census tracts within 0.5 mile of the project footprint. This area includes portions of San Francisco, Brisbane, Daly City, South San Francisco, San Bruno, Millbrae, Hillsborough, Burlingame, San Mateo, Belmont, San Carlos, Redwood City, North Fair Oaks, Stanford, Atherton, Menlo Park, Palo Alto, Mountain View, Los Altos, Sunnyvale, and Santa Clara, as well as unincorporated areas of San Mateo and Santa Clara Counties. The cumulative RSA has a 62.6 percent minority and 23.9 percent low-income population.

Past development in the cumulative RSA has affected the communities within the RSA. In recent decades, the Bay Area has experienced record employment levels and population growth due to expansion of the technological sector. This strong economic growth has placed extreme pressure on the region's housing and transportation infrastructure. Limited residential development, especially near job centers, has resulted in rising housing costs, insufficient housing supply to meet current and future needs, and a spatial mismatch between the location of jobs and housing. This has resulted in increased distances between jobs and housing and transit and increased VMT, as residents unable to afford to live near transit and job centers commute farther. Recent development trends are anticipated to continue in the cumulative RSA. Together, the project alternatives, planned development, and cumulative conditions (discussed under the general plans for the cities and communities of the cumulative RSA), adjacent HSR project sections, and relevant additional future development and transportation projects identified in Volume 2, Appendix 3.18-A and Appendix 3.18-B, constitute the cumulative condition relevant to environmental justice.

Communities with the highest percentage of low-income populations within the cumulative RSA include Redwood City and North Fair Oaks, while communities with the highest percentage of minority populations within the cumulative RSA include Daly City, South San Francisco, and North Fair Oaks. Planned nontransportation projects within these areas include development of residential areas; mixed-use areas that include residential, commercial and retail space; and

parks, open spaces, and recreation resources. Transportation projects in these areas include multiple road widening and realignment projects and intersection improvements, including the US 101/Produce Avenue Interchange project in South San Francisco and widening of Woodside Road in Redwood City between El Camino and Broadway. In North Fair Oaks, an elder care facility is proposed.

Construction of planned projects in the cumulative RSA could result in temporary and permanent disruptions to minority populations and low-income populations during construction. If built concurrently with the project, the incremental effects of multiple projects could combine to create disproportionate and adverse effects on minority populations and low-income populations in specific communities, which would be considered a cumulative impact under NEPA. However, nontransportation and transportation projects as a whole are distributed throughout the cumulative RSA and extend beyond the neighborhoods where there are high percentages of minority populations and low-income populations. In addition, a number of these projects would create additional, permanent jobs in the area, which could increase the economic opportunities available to minority populations and low-income populations.

Development of planned projects would likely include the implementation of various forms of measures to avoid or minimize the potential for temporary and permanent cumulative impacts on the population as a whole in the cumulative RSA. Adverse effects would be distributed throughout the region and would occur based on the construction timelines of the projects under the cumulative condition. Many of the planned projects occur through the broader areas of the cumulative RSA, rather than in specific neighborhoods where there are high concentrations of minority populations and low-income populations.

The project alternatives would result in local and regional benefits to the minority populations and low-income populations that constitute a high percentage of the populations of the cities and communities within the cumulative RSA. These benefits would include improvements in mobility within the region, air quality improvements, and new employment opportunities during construction and operations. These project benefits are likely to accrue equally to minority populations and low-income populations and non-minority populations and non-low-income populations.

5.7 Summary of Disproportionately High and Adverse Effects

As described in Section 5.6, Assessment of Effects, with consideration of mitigation and offsetting benefits, construction and operation of the project would not result in disproportionately high and adverse effects on minority populations and low-income populations.

5.8 Measures to Minimize Harm

The evaluation of impacts in this section is based largely on impacts identified in other sections of this Final EIR/EIS, with accompanying mitigation measures to minimize or avoid some of the impacts on minority populations and low-income populations, as detailed in Section 5.6. Because construction and operation of the project would not result in disproportionately high and adverse effects on minority populations and low-income populations, no additional mitigation, community enhancements, or betterments to address disproportionately high and adverse effects on minority populations and low-income populations have been identified.

5.9 California High-Speed Rail Authority's Environmental Justice Determination

The proposed San Francisco to San Jose Project Section would likely result in a limited set of adverse impacts on minority populations and low-income populations residing or conducting business in the environmental justice RSA. These impacts are expected to be similar in kind and magnitude as those that would be experienced by the general population living or working along the corridor. Populations in the RSA would benefit from the transit improvements in the San Francisco to San Jose Project Section, including safety improvements along the Caltrain corridor, substantial reductions in VMT, increased transit connectivity, and reduction in the need to expand

freeways and airports. Economic benefits include job creation and regional employment growth that would result from construction and operation of the project. These benefits would accrue equally to minority populations and low-income populations in the RSA and to the general public. To ensure that the benefits of job creation reach disadvantaged communities, the Authority participates in job training programs and sets hiring goals for hours worked by disadvantaged workers, which includes workers who are lower-income, veterans, single parents, have no high school or General Educational Development diploma, or suffer from chronic unemployment. These tailored programs increase the ability of disadvantaged workers to compete for construction jobs and offer targeted benefits for minority workers and low-income workers that meet the criteria for eligibility.

Outreach activities for minority and low-income residents and businesses within the project corridor have been conducted since 2016. Volume 2, Appendix 5-A documents how minority populations and low-income populations have been engaged in project planning activities. Members of minority populations and low-income populations have not voiced concerns substantially unlike comments from the general public.

In accordance with USDOT Order 5610.2C, if disproportionately high and adverse effects are identified, the action will only be carried out if the Authority determines that “further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect are not practicable.” With the proposed design measures, best management practices, off-setting benefits, and mitigation commitments, the Authority has concluded that the San Francisco to San Jose Project Section would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.