5 ENVIRONMENTAL JUSTICE

5.1 Introduction

This section describes the existing conditions related to environmental justice (EJ) and minority populations and low-income populations within the reference community and the resource study area (RSA) (e.g., EJ populations), and summarizes EJ engagement with minority populations and low-income populations and key issues and concerns raised by these populations. The chapter also analyzes the effects of the No Project Alternative and the Palmdale to Burbank Project Section Build Alternatives on minority populations and low-income populations and identifies whether the Build Alternatives would have a disproportionately high and adverse effect on minority populations and low-income populations, and describes cumulative effects that could occur in combination with past, present, and reasonably foreseeable future actions.

Environmental Justice

Environmental Justice is a National Environmental Policy Act analysis mandated by United States Presidential Executive Order 12898 that requires federal agencies to identify and assess, as appropriate, disproportionately high and adverse environmental and human health effects on minority communities and low-income populations. Environmental Justice guidance also requires that there are opportunities for substantive input for minority and/or low-income populations in the project planning process (Authority 2017).

EJ in terms of transportation projects can be defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, from the early stages of transportation planning and investment decision making through construction, operations, and maintenance. The analysis of EJ must address, to the extent practicable and permitted by law, the disproportionately high and adverse human health or environmental effects of transportation projects' programs, policies, and activities on minority populations and low-income populations. EJ 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.

This EJ analysis complies with United States Presidential Executive Order (USEO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which requires federal agencies to assess the potential for their actions to have disproportionately high and adverse environmental and health effects on minority and/or low-income populations. This chapter also complies with the United States Department of Transportation's (USDOT) Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (USDOT order 5610.2C), the Federal Railroad Administration (FRA) *Procedures for Considering Environmental Impacts* (64 *Federal Register* 28556), the California High-Speed Rail Authority's (Authority) *Title VI Program Plan*, *Limited English Proficiency Plan*, and *Environmental Justice Guidance*.

Where appropriate, this analysis also incorporates guidance from the Federal Highway Administration and the Federal Transit Administration (FTA). These guidance documents include Federal Highway Administration Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (FHWA Order 6640.23A) and Environmental Justice Policy Guidance for Federal Transit Administration Recipients (FTA Circular 4703.1).

This preliminary EJ analysis is being released for comment by 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 (MOU) (FRA and State of California 2019) assigning the Authority responsibility for complying with NEPA and other federal environmental laws, including USEO 12898 and related USDOT orders and guidance. This chapter describes the existing conditions related to EJ populations within the reference community and RSA, as defined in Section 5.4.1. Adverse effects on minority and/or low-income populations are assessed to determine whether the California High-Speed Rail (HSR) System may have disproportionately high and adverse environmental and health effects on these EJ populations.

This EJ analysis is based upon information from the following sections, technical reports, and appendices of this Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS):

- Section 3.2, Transportation, analyzes transportation-related impacts, circulation during construction, and parking supply near station areas.
- Section 3.3, Air Quality and Global Climate Change, identifies the potential increases in pollutant and greenhouse gas emissions.
- Section 3.4, Noise and Vibration, analyzes noise-related impacts on sensitive receptors as a result of the California HSR System.
- Section 3.5, Electromagnetic Interference and Electromagnetic Fields, discusses the measured electromagnetic fields (EMF) and the potential for electromagnetic interference (EMI) from operation of the California HSR System.
- Section 3.8, Hydrology and Water Resources, discusses existing surface-water hydrology, water quality, groundwater, and floodplains, and identifies impacts on these resources for each Build Alternative.
- Section 3.10, Hazardous Materials and Wastes, discusses the potential for the California HSR System construction and operation to spill or mobilize pollutants.
- Section 3.11, Safety and Security, describes the safety and security plans developed by the Authority to ensure that the California HSR System is safe and secure.
- Section 3.12, Socioeconomics and Communities, analyzes the communities and associated development patterns that surround the project alignments.
- Section 3.15, Parks, Recreation, and Open Space, identifies existing parks, recreation, and open space areas and impacts on such land uses as a result of the California HSR System.
- Section 3.16, Aesthetics and Visual Quality, identifies changes to the visual character and quality as a result of the California HSR System.
- Section 3.17, Cultural Resources, describes known and adverse effects on cultural resources that would result from implementation of the California HSR System.
- Section 3.19, Cumulative Impacts, analyzes the combined impacts associated with implementing the Build Alternatives in combination with other past, present, and reasonably foreseeable future actions or projects.

The *Palmdale to Burbank Project Section: Community Impact Assessment* (Authority 2019a) and the *Palmdale to Burbank Project Section: Draft Relocation Impact Report* (Authority 2019b) provide additional technical information about communities that supports this EJ analysis. In addition, the following appendices and technical reports provide more detailed information:

- Appendix 2-E, Impact Avoidance and Minimization Features (IAMFs), lists IAMFs included as applicable in each of the Build Alternatives for the purposes of the environmental impact analysis.
- Appendix 2-H, Regional and Local Policy Consistency Analysis, provides a Regional and Local Policy Consistency Table, which lists EJ goals and policies applicable to the Palmdale to Burbank Project Section and notes the Build Alternatives' consistency or inconsistency with each.
- Appendix 5-A, *Palmdale to Burbank Project Section: Environmental Justice Outreach Plan*, provides an overview of Authority efforts to engage minority and/or low-income populations.

The data used in the analysis are derived from various sources, including the United States Census Bureau (U.S. Census) 2010 Decennial Census, U.S. American Community Survey (ACS), and the California Department of Finance. The 2010–2014 ACS dataset (U.S. Census

2015) was utilized for the Central and Burbank Subsections. In all cases, the most current reliable data available at the time of the analysis were used to document the EJ characteristics in the RSA.

5.1.1 Definition of Environmental Justice Populations

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

- **Minorities**—Minority includes persons who are American Indian, Alaskan Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian and other Pacific Islander, and other individuals who are one other or two or more races. 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 could be affected by a proposed program, policy, or activity (Authority 2017).
- **Low-Income**—Low-income means a person whose median household income is at or below the Department of Health and Human Services' poverty guidelines. A low-income population means any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically transient persons (such as migrant workers, students, or Native Americans) who could be affected by a proposed program, policy, or activity (Authority 2017).

5.2 Laws, Regulations, and Orders

5.2.1 Federal

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

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, national origin, age, sex, or disability in programs and activities receiving federal financial assistance. Under Title VI, each federal agency is required to ensure 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.

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

USEO 12898 outlines the federal government's EJ 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 and environmental effects of their programs, policies, and activities, on minority and/or low-income populations in the United States.

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

To implement USEO 12898, USDOT relies on USDOT Order 5610.2C, which cancelled and superseded USDOT Order 5610.2B in May 2021. Order 5610.2C applies to actions undertaken by the USDOT operating administrations, including FRA. The USDOT Order affirms the importance of considering EJ principles as part of early planning activities in order to avoid disproportionately high and adverse effects. The order states that the USDOT will not carry out any programs, policies, or activities that will have a disproportionately high and adverse effect 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 defines a "disproportionately high and adverse effect on minority [and/or] low-income populations" to mean an adverse effect that is predominantly borne by a minority population or a low-income population, or that would be suffered by the minority population or low-income population, and that is appreciably more severe or greater in magnitude than would be suffered by the nonminority population or non-low-income population. "Adverse effects" are

defined in the order as “the totality of significant individual or combined negative environmental, human health effects of DOT programs, policies, and activities.”

Presidential Memorandum Accompanying USEO 12898

The Presidential Memorandum accompanying USEO 12898 calls for specific actions to be directed in National Environmental Policy Act (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, EISs, and Records of Decision, whenever feasible, address disproportionately high and adverse environmental effects or proposed actions on minority and/or low-income populations
- Providing opportunities for community input in the NEPA process, including identifying effects and mitigation measures in consultation with affected communities, and improving accessibility to public meetings, official documents, and notices to affected communities

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 (LEP) 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.

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

The Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) program ensures that persons displaced as a result of a federal action or by an undertaking involving federal funds are treated fairly, consistently, and equitably. This helps to ensure persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

5.2.2 State

California Government Code 65040.12(e)

Section 65040.12(e) defines EJ 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 California Environmental Quality Act (CEQA) process.

California High-Speed Rail Authority Environmental Justice Policy

In August 2012, the Authority adopted an EJ Policy (Authority 2012a). The policy states:

- The Authority will develop and maintain an EJ Guidance in compliance with Title VI of the Civil Rights Act of 1964, USEO 12898, and California state law—Government Code Section 65040.2 et seq. and Public Resources Code Section 1110 et seq.
- The Authority will promote EJ in its programs, policies, and activities to avoid, minimize, or mitigate disproportionately high human health and environmental effects, including social and economic effects on minority and/or low-income populations.
- The Authority will duly emphasize the fair and meaningful involvement of all people regardless of race, color, national origin, or income with respect to HSR system planning, development, operations, and maintenance.
- The Authority will engage the public through public participation forums so that decisions are mitigated and reflect EJ for all communities.

California High Speed Rail Title VI Plan

In March 2012, the Authority adopted a policy and plan to ensure that the California HSR Program complies with Title VI. The policy states:

- The Authority is committed to ensuring 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.
- The Authority, as a federal grant recipient, is required by FRA to conform to Title VI of the Civil Rights Act of 1964 and related statutes. The Authority's subrecipients and contractors are required to prevent discrimination and ensure nondiscrimination in all of their programs, activities, and services.
- As permitted and authorized by Title VI, the Authority will administer a Title VI Program in accordance with the spirit and intent of the nondiscrimination laws and regulations. The Title VI Plan includes a commitment to inclusive public involvement of all persons affected by the HSR system (Authority 2012a).

California High Speed Rail Limited English Proficiency Policy and Plan

In May 2012, the Authority adopted a policy and plan to ensure that the California HSR Program complies with the requirements of USEO 13166. The policy states:

- It is the policy of the Authority to communicate effectively and provide meaningful access to LEP individuals to all the Authority's programs, services, and activities. The Authority will provide free language assistance services to LEP individuals encountered or whenever an LEP individual requests language assistance services.
- The Authority will treat LEP individuals with dignity and respect. Language assistance will be provided through a variety of methods, including staff interpreters, translation and interpreter service contracts, and formal arrangements with local organizations providing interpretation or translation services or telephonic interpreter services.

The LEP Policy and Plan supplements the Title VI Plan (Limited English Proficiency Plan); Resolution 12-15 (Authority 2012b).

California Relocation Act (California Government Code § 7260 et seq.)

In parallel with federal law, the California Relocation Act requires state and local governments to provide relocation assistance and benefits to displaced persons who have been displaced as a result of projects undertaken by state or local governments that do not involve federal funds. When federal funding is involved, the Uniform Act takes precedence.

California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund (Senate Bill 535, De León)

This bill 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 within disadvantaged communities, as specified. 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. The bill requires administering agencies to report to the California Department of Finance, and the Department of Finance to include in a specified report to the California State Legislature, a description of how administering agencies have fulfilled specified requirements relating to projects providing benefits to, or located in, disadvantaged communities.

5.2.3 Regional and Local

All relevant city, county, and regional plans as well as municipal codes were consulted for this analysis. This includes review of policies pertaining to EJ, the provision of affordable housing, and equitable planning. Table 5-1 provides an overview of the regional and local general plans that contain goals, objectives, and policies relevant to EJ populations.

Table 5-1 Summary of Regional and Local Plans

Regional/Local Plan	Summary
Los Angeles County and Unincorporated Los Angeles County	
Los Angeles County General Plan 2035 (2015)	The Land Use Element contains general conditions and standards for development to implement the General Plan policy regarding regional land-use concerns and to guide the decision-making process in the absence of applicable community-level planning. The General Plan includes policies aimed at expanding transportation options that reduce automobile dependence and increase transit access for underserved transit users, such as seniors, students, low-income households, and persons with disabilities.
Los Angeles County Antelope Valley Area Plan (2015)	The *Los Angeles County Antelope Valley Area Plan* covers the county's largest planning area, which spans approximately 1,800 square miles, including portions of the Mojave Desert and most of the San Gabriel Mountains and Angeles National Forest (ANF). Among other outcomes, the plan's last update dramatically expanded in size the county's *Significant Ecological Areas* in the Antelope Valley. This plan includes policies that generally support the development of rail and policies that specifically encourage development of the California HSR System with a station in Palmdale. Moreover, the plan calls for regional transportation system development to consider and mitigate impacts on existing communities and to minimize land-use conflicts.
City of Palmdale	
City of Palmdale General Plan (1993)	The *Palmdale General Plan* comprises several elements that pertain to socioeconomics and communities, including Land Use; Noise; Circulation; Environmental Resources; Housing; Public Services; Parks, Recreation and Trails; and Public Safety. These elements cover topics including transportation, housing, open space, and community facilities. In particular, the Land Use Element establishes a guide for long-range growth and development of the city. The Land Use Element serves to inform the public of the City's land-use goals, objectives, and policies for long-term development, guides day-to-day operational decisions of City staff, and establishes land-use classifications for land within the city. The Land Use Element promotes a stable and diversified economic base and development of a community identity.
City of Los Angeles	
City of Los Angeles General Plan (2001)	The *City of Los Angeles General Plan* is a comprehensive, long-range declaration of purposes, policies, and programs for the development of the city. The General Plan consists of 11 elements; 10 citywide elements and the Land Use Element or plan for each of the City's 35 Community Planning Areas. The City's General Plan sets forth a conceptual relationship between land use and transportation on a citywide basis. The City aims to prioritize transportation decisions based upon outcomes of safety, public health, equity, access, social and economic benefits.

Regional/Local Plan	Summary
City of Los Angeles Plan for a Healthy Los Angeles (2015)	The *City of Los Angeles Plan for a Healthy Los Angeles* is an update of the General Plan Health and Wellness Element. The plan establishes goals and policies intended to care for the health and well-being of communities and individuals within the City of Los Angeles.
Sunland-Tujunga-Lake View Terrace-Shadow Hills-East La Tuna Canyon Community Plan (1997)	The Community Plan is part of the City of Los Angeles General Plan. More than half of the land within this Community Plan Area is planned for residential use, and most residential land uses are low density, single-family developments. This Community Plan identifies a significant amount of open space. The Community Plan contains policies to promote an arrangement of land uses, streets, and services that will encourage and contribute to the economic, social, and physical health of the community.
Sylmar Community Plan (1997)	The *Sylmar Community Plan* is part of the City of Los Angeles General Plan. This plan was developed in the context of promoting a vision of Sylmar as a community that maximizes the development opportunities of the future rail transit system and supports intermodal mass transportation planning to implement linkages to future rail service. Additionally, the plan outlines a vision for Sylmar's long-term physical and economic development and community enhancement.
Arleta-Pacoima Community Plan (1996)	The *Arleta-Pacoima Community Plan* is part of the City of Los Angeles General Plan and consists of five major sub areas: Arleta, Pacoima, Hansen Dam, Northeast Valley Enterprise Zone, and the Earthquake Disaster Assistance Project Area. This Community Plan contains a mix of residential, commercial, industrial, open space, and public facilities land uses. The largest share of land use within the Community Plan Area is residential, consisting primarily of low-density residential development. This plan has goals to improve function, design, and economic vitality of commercial corridors. Additionally, this plan encourages the creation of jobs to improve the economic and physical condition of the community.
Sun Valley-La Tuna Canyon Community Plan (1999)	The *Sun Valley-La Tuna Canyon Community Plan* is part of the *City of Los Angeles General Plan*. The Community Plan encourages park and ride facilities to interface with rail facilities and development of an intermodal public transportation plan to implement linkages to rail service. The plan has goals to improve function, design, and economic vitality of commercial corridors. Additionally, the plan encourages the creation of jobs to improve the economic and physical condition of the community.
City of Burbank	
Burbank 2035 General Plan (2013)	The *Burbank 2035 General Plan* establishes policies to guide future development and designates appropriate locations for different land uses including open space, parks, residences, commercial uses, industry, schools, and other public uses. Additionally, this plan supports an efficient public transit network including high-speed rail through Burbank. Policies in this plan call for the City to advocate for improved regional rail services linking Burbank's employment and residential centers to the rest of the region.

Sources: City of Burbank, 2013; City of Los Angeles, 1996, 1997a, 1997b, 1999, 2001, 2016; City of Palmdale, 1993; Los Angeles County, 2015a, 2015b
ANF = Angeles National Forest; HSR = high-speed rail

5.3 Consistency with Plans and Laws

As indicated in Section 3.1.4.3, Consistency with Plans and Laws, CEQA and the Council on Environmental Quality (CEQ) regulations require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws. As such,

this Draft EIR/EIS evaluates inconsistencies between the six Build Alternatives and federal, state, regional, and local plans and laws to provide planning context.

The Authority, as the lead state and federal agency proposing to construct and operate the California HSR System, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction on the selected Build Alternative. Therefore, there would be no inconsistencies between the six Build Alternatives and these federal and state laws and regulations.

The Authority is a state agency and therefore is not required to comply with local land use and zoning regulations; however, it has endeavored to design and construct the HSR project so that it is consistent with land use and zoning regulations. For example, the proposed Build Alternatives would incorporate IAMFs that require the contractor to prepare a plan to demonstrate how construction impacts, including those toward EJ populations, will be maintained below applicable standards.

Appendix 2-H, Regional and Local Policy Consistency Analysis, provides a Regional and Local Policy Consistency Table, which lists EJ goals and policies applicable to the Palmdale to Burbank Project Section and notes the Build Alternatives' consistency or inconsistency with each. The Authority reviewed 10 plans, which contained a combined total of 20 policies related to EJ. Each of the six Build Alternatives is consistent with 19 of these policies and inconsistent with 1 of the policies considered. The policy that the Palmdale to Burbank Project Section Build Alternatives is inconsistent with is discussed below.

- **Policy 1.7 (City of Los Angeles Plan for a Healthy Los Angeles)**—Displacement and Health: Reduce the harmful health impacts of displacement on individuals, families, and communities by pursuing strategies to create opportunities for existing residents to benefit from local revitalization efforts by: creating local employment and economic opportunities for low-income residents and local small businesses; expanding and preserving existing housing opportunities available to low-income residents; preserving cultural and social resources; and creating and implementing tools to evaluate and mitigate the potential displacement caused by large-scale investment and development.
  - **Inconsistent for the Refined SR14, SR14A, E1, and E1A Build Alternatives**—In the long term, the areas around the Palmdale and Burbank Stations would likely be revitalized, bringing economic benefits to their communities. In the short term, the project would result in a substantial number of residential and nonresidential displacements (including displacement of environmental justice populations). The gap analysis performed identified insufficient availability of replacement units to accommodate all displaced residents in Sun Valley (Authority 2019b).
  - **Inconsistent for the E2 and E2A Build Alternatives**—In addition to Sun Valley, Lake View Terrace would also have insufficient replacement units available to accommodate all displaced residents for the E2 and E2A Build Alternatives.

Despite the inconsistencies, the project is still "consistent" overall. Although it may not be possible to meet all regional and local general plan goals and policies relevant to EJ populations as outlined in Table 5-1, IAMFs and mitigation measures will generally minimize impacts and would ultimately meet the overall objectives of the local policies.

5.4 Methods for Evaluating Impacts

The methodology used to identify low-income populations and minority populations also incorporates guidance from the CEQ, which has oversight of the federal government's compliance with USEO 12898 and NEPA (CEQ 1997). This methodology also incorporates guidance pursuant to USDOT EJ Order 5610.2C and the FRA's *Procedures for Considering Environmental Impacts* Section 10(b).

Addressing EJ issues involves procedural and technical considerations. Procedural considerations include reaching out to ensure that minority and/or low-income populations and

other traditionally underserved populations are effectively engaged in public involvement processes. The following section does not address the procedural process, but rather focuses on the technical analysis conducted for this EIR/EIS (refer to Appendix 5-A for the complete Environmental Justice Outreach Plan, including discussion of procedural considerations). Technical considerations involve such issues as the choice of appropriate data sets and assumptions used for the identification of potentially affected populations for EJ assessments. The basic steps undertaken for this analysis are outlined in Section 5.4.1 through Section 5.4.3, below.

5.4.1 Defining Reference Community and Resource Study Area

For this analysis, the reference community is Los Angeles County because the project is entirely contained within Los Angeles County. Since the percentage of Los Angeles County's population that is low-income or minority is higher than that of California, using Los Angeles County as the reference community provides the appropriate regional context. Information for the Los Angeles County reference community is presented throughout this analysis, and specifically in Section 5.5 including Table 5-2, to provide context and to allow for comparison between communities within the RSA and the reference community.

As defined in Section 3.1, Introduction, RSAs are the geographic boundaries in which the environmental investigations specific to each resource topic were conducted. For this EJ analysis, the RSA extends 0.5 mile beyond the project alignment footprint and 0.5 mile beyond the edges of a rectangular-shaped area around the perimeter of potential station footprints. The RSA comprises census block groups that overlap the 0.5-mile buffer area and was expanded when necessary to avoid splitting census block groups. The RSAs for each of the Build Alternatives are mapped in Section 5.5.1 through Section 5.5.5.2. Table 5-3 later in this chapter provides demographic information, including the percentage of populations considered that are minority populations or low-income populations, for each of the Build Alternatives. Where the population density is low, census block groups are larger. Within the RSA, several block groups are large and can extend for miles beyond the Build Alternatives' footprints (e.g., within the Angeles National Forest [ANF] including the San Gabriel Mountains National Monument [SGMNM]).

As described further in Section 5.4.3.2, if the minority percentage of a census block group within the RSA exceeds the minority population percentage of the reference community (Los Angeles County; approximately 73 percent [U.S. Census 2015]), then the population of the census block group is considered to be an "EJ population" in this analysis. Low-income communities are considered to be EJ populations if the percentage of low-income households within a census block group exceeds the corresponding percentage for Los Angeles County (approximately 18 percent [U.S. Census 2015]), based on CEQ recommendations discussed further in Section 5.4.3.2.

Affected EJ populations within the RSA are located in the cities of Palmdale and Burbank and the communities of Sylmar, Pacoima, Sun Valley, and Lake View Terrace. Because much of the Central Subsection traverses the ANF including the SGMNM, there is a low population density in the Central Subsection, and few EJ populations.

The cumulative RSA for EJ is defined as the entirety of Los Angeles County. The cumulative RSA for EJ is larger than the RSAs for direct and indirect effects on low-income populations and minority populations in order to capture EJ effects associated with the construction and operations of the Build Alternatives as well as regional EJ effects associated with anticipated planned development.

5.4.2 Impact Avoidance and Minimization Features

IAMFs are project features the Authority has incorporated into each of the six Build Alternatives for purposes of the environmental impact analysis. The full text of the IAMFs that are applicable to the Palmdale to Burbank Project Section is provided in Volume 2, Appendix 2-E, Impact Avoidance and Minimization Features.

The following IAMFs were incorporated into the EJ analysis[1]:

- **TR-IAMF#1:** Protection of Public Roadways during Construction
- **TR-IAMF#2:** Construction Transportation Plan
- **TR-IAMF#3:** Off-Street Parking for Construction-Related Vehicles
- **TR-IAMF#4:** Maintenance of Pedestrian Access
- **TR-IAMF#5:** Maintenance of Bicycle Access
- **TR–IAMF#6:** Restriction on Construction Hours
- **TR-IAMF#7:** Construction Truck Routes
- **TR-IAMF#8:** Construction during Special Events
- **TR-IAMF#9:** Protection of Freight and Passenger Rail during Construction
- **TR-IAMF#11:** Maintenance of Transit Access
- **TR-IAMF#12:** Pedestrian and Bicycle Safety
- **AQ-IAMF#1:** Fugitive Dust Emissions
- **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 Exhaust Emissions from On-Road Construction Equipment
- **AQ-IAMF#6:** Reduce the Potential Impact of Concrete Batch Plants
- **N&V-IAMF#1:** Noise and Vibration
- **EMI/EMF-IAMF#1:** Preventing Interference with Adjacent Railroads
- **EMI/EMF-IAMF#2:** Controlling Electromagnetic Fields/electromagnetic Interference
- **HYD-IAMF#1:** Storm Water Management
- **HYD-IAMF#2:** Flood Protection
- **HYD-IAMF#3:** Prepare and Implement a Construction Stormwater Pollution Prevention Plan
- **HYD-IAMF#4:** Prepare and Implement an Industrial Stormwater Pollution Prevention Plan
- **HYD-IAMF#5:** Tunnel Boring Machine and Design Features
- **HYD-IAMF#6:** Tunnel Lining System
- **HYD-IAMF#7:** Grouting
- **HMW-IAMF#1:** Property Acquisition Phase I and II Environmental Site Assessments
- **HMW-IAMF#2:** Landfill
- **HMW-IAMF#3:** Work Barriers
- **HMW-IAMF#4:** Undocumented Contamination
- **HMW-IAMF#5:** Demolition Plans
- **HMW-IAMF#6:** Spill Prevention
- **HMW-IAMF#7:** Transport of Materials
- **HMW-IAMF#8:** Permit Conditions
- **HMW-IAMF#9:** Environmental Management System
- **HMW-IAMF#10**: Hazardous Materials Plans
- **SS-IAMF#1:** Construction Safety Transportation Management Plan
- **SS-IAMF#2:** Safety and Security Management Plan
- **SS-IAMF#3:** Hazard Analyses
- **SS-IAMF#4:** Oil and Gas Wells
- **SS-IAMF#5:** Aviation Safety
- **SS-IAMF#6:** Stakeholder Coordination for the Hollywood Burbank Airport
- **SOCIO IAMF#1:** Construction Management Plan
- **SOCIO-IAMF#2:** Compliance with Uniform Relocation Assistance and Real Property Acquisition Policies Act
- **SOCIO-IAMF#3:** Relocation Mitigation Plan

[1] As discussed in Section 5.4.3.2, Data Collection and Analysis, not every section within Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, is relevant to this EJ Analysis. The above list of IAMFs only includes those IAMFs included in the relevant sections listed in Section 5.4.3.2.

- **PK-IAMF#1:** Parks, Recreation, and Open Space
- **AVQ-IAMF#1:** Aesthetic Options
- **AVQ-IAMF#2:** Aesthetic Review Process
- **CUL-IAMF#1:** Geospatial Data Layer and Archaeological Sensitivity Map
- **CUL-IAMF#2:** Worker Environmental Awareness Program Training Session
- **CUL-IAMF#3:** Pre-construction Cultural Resource Surveys
- **CUL-IAMF#5:** Archaeological Monitoring Plan and Implementation
- **CUL-IAMF#6:** Preconstruction Conditions Assessment, Plan for Protection of Historic Built Resources, and Repair of Inadvertent Damage
- **CUL-IAMF#7:** Built Environment Monitoring Plan
- **CUL-IAMF#8:** Implement Protection and/or Stabilization Measures

This EJ analysis considers these IAMFs as part of the project design. Within Section 5.6, Environmental Consequences, each narrative discussion describes how these project features are applicable and, where appropriate, effective at avoiding or minimizing impacts.

5.4.3 Methods for Environmental Justice Impact Analysis

5.4.3.1 Overview

The methodology used to identify low-income populations and minority populations incorporates guidance from the CEQ, an agency that has oversight of the federal government's compliance with USEO 12898 and NEPA (CEQ 1997). Although low-income and minority populations are distinguished for transparency and disclosure purposes, low-income and minority populations are both considered EJ populations for purposes of environmental justice analysis under NEPA.

The presence of low-income populations and minority populations was determined by an evaluation of U.S. Census data. This EJ analysis includes 2010 U.S. Census data, and ACS 2010–2014 data for the Central and Burbank Subsections.[2] The ACS is an ongoing U.S. Census survey sent to a sample of the population. Data were collected at the county, city, and census block group levels. Section 5.4.3.2 further details the methodology used to identify EJ populations within the RSA.

In accordance with USDOT Order 5610.2C, if adverse effects would predominantly affect EJ populations (i.e., substantially more than non-EJ populations), and/or adverse effects experienced by EJ populations would be more severe than those experienced by non-EJ populations, the effect would be considered disproportionately high and adverse for EJ populations. Section 5.4.3.2 further details the methodology used to determine if adverse effects would disproportionately affect EJ populations.

5.4.3.2 Data Collection and Analysis

The following steps were taken to evaluate whether or not effects would be borne disproportionately by EJ communities.

[2] The 2010 Census and ACS 2010-2014 data were the best available data at the time of this analysis for the baseline year of 2015.

Step 1: Identification of Environmental Justice Populations

The CEQ guidance recommends identifying minority populations where either (1) the minority population of the affected area exceeds 50 percent, or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (CEQ 1997). For this EJ analysis, minority populations of a census block group within the RSA were compared to the minority population percentage of Los Angeles County (approximately 73 percent).[3] Census block groups that exceeded the Los Angeles County average were identified as EJ communities. Although the official definition of low-income in USEO 12898 is based on the Department of Health and Human Services' poverty guidelines, due to limitations, the CEQ guidance recommends identifying low-income populations in an affected area by applying the annual statistical poverty thresholds from the U.S. Census Current Population Reports, Series P-60 on Income and Poverty.[4] These reports provide statistics on a statewide level, but do not provide county-level statistics. Therefore, block groups with low-income populations that exceeded the Los Angeles County average low-income population (approximately 18 percent) were identified as EJ populations.

The following definitions were used in assessing whether the Build Alternatives would result in disproportionately high and adverse effects on low-income populations and minority populations and whether those alternatives would result in benefits for those populations:

Minority Populations

The term *minority* includes the following racial and ethnic groups:

- Black or African American—A person having origins in any of the black racial groups of Africa.
- American Indian or Alaska Native—A person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment.
- Native Hawaiian or other Pacific Islander—A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. This includes people who indicate their race as Native Hawaiian, Guamanian or Chamorro, Samoan, or Other Pacific Islander.
- Asian—A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This includes Asian Indian, Chinese, Filipino, Korean, Japanese, Vietnamese, and Other Asian.

Other Underserved Populations

This analysis studies whether effects on minority and/or low-income populations are disproportionate. The following populations are also discussed and considered in a supplementary manner for context:

Elderly Populations—For purposes of this document, the term elderly refers to individuals who are 65 years of age or older.

Limited English Proficiency Populations—It is the policy of the Authority to communicate effectively and provide meaningful access to limited English proficiency (LEP) individuals on all of the Authority's programs, services and activities (see Section 5.2.2, above). Individuals who are considered to have LEP are those over 5 years old who have a limited ability to read, write, speak, or understand English. For the purposes of this document, LEP communities are considered to be those in which 5 percent or more of the population has limited ability to read, write, speak, or understand English.

[3] This analysis uses the minority percentage of Los Angeles County (72.873 percent) rather than an arbitrary 50 percent threshold to better account for the diverse nature of the local population.

[4] The official U.S. poverty measure is a measurement of cash resources that assumes all people living together who are related by birth, marriage, or adoption share an income. This poverty measure assumes that food costs for a household amount to three times the cost of 1963 food prices, and it does not take into account geographic variations in cost of living in the United States (U.S. Census 2017).

- Hispanic or Latino—Considered an ethnicity, not a race. Hispanic and Latino persons may be of any race. All people who identify themselves as Hispanic are considered a minority, independent of their race. Those in this category have indicated that they are Mexican, Puerto Rican, or Cuban, along with those who have indicated that they are other Spanish, Hispanic, or Latino.

Low-Income Populations

Low-income is defined as household income that is at or below the poverty threshold established by the U.S. Census. U.S. Census poverty thresholds vary by the size of the family unit, the number of related children under age 18, and the number of persons over the age of 65. For a four-person household with two related children, the poverty threshold is $24,008 (year 2014 dollars). The United States Department of Health and Human Services provides poverty guidelines to determine eligibility for federal programs. For the low-income analysis, the Department of Health and Human Services recommends using U.S. Census poverty thresholds. No California-specific poverty guidelines or thresholds exist. The Department of Health and Human Services annually updates the federal poverty guideline in the *Federal Register*. Households below the applicable threshold meet the minimum eligibility requirements for income-based programs and are considered low-income households.

For a comprehensive discussion on EJ populations, refer to the *Palmdale to Burbank Section Draft EIR/EIS Section: Community Impact Assessment* (Authority 2019a).

Step 2: Identification of Potential Adverse Effects on Environmental Justice Populations

The analysis conducted in Step 1 above identified the location of substantial low-income or minority populations (low-income or minority populations that are meaningfully greater than that in the general population in the reference community) in the EJ RSA. USEO 12898, the federal EJ policy, requires federal agencies to address the potential for their programs, policies, and activities to have disproportionately high and adverse human health and environmental effects on minority and/or low-income populations. USDOT Order 5610.2C on EJ defines a “disproportionately high and adverse effect on minority and/or low-income populations” to mean an adverse effect that is predominantly borne by a minority population and/or a low-income population, or will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population.

Analyses conducted by various resource specialists identified the project’s effects on environmental resources in the EJ RSA. Project effects for each resource area are summarized in the NEPA effects summary tables provided at the end of each resource section in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures.

While the effects for each resource area were identified by region, alternative alignment, and type of effect, the NEPA summary tables provided at the end of each resource section do not specifically identify adverse effects. Therefore, it was incumbent upon EJ analysts and subject matter experts to carefully scrutinize those effects provided in each resource section, consider supplementary information provided by CEQA findings, and assess whether the effects may represent an adverse individual effect or cumulative effect on human health and the environment to EJ populations. Consistent with USDOT EJ guidance, the determination of whether an effect is adverse is preliminary and may be revised based on input received from public comment and from any relevant EJ communities.

The analysis of the following resource topics either did not identify any adverse effects, or identified that the effects would be regional in nature such that neither EJ nor non-EJ communities would experience a disproportionately high and adverse effect; therefore, they are not discussed further in this chapter:

- Section 3.6, Public Utilities and Energy
- Section 3.7, Biological Resources and Wetlands
- Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources

- Section 3.13, Station Planning, Land Use, and Development
- Section 3.14, Agricultural Farmland and Forest Land
- Section 3.18, Regional Growth

The following resource sections were identified to have some potentially adverse effects on EJ communities and are therefore discussed in this chapter:

- Section 3.2, Transportation
- Section 3.3, Air Quality and Global Climate Change
- Section 3.4, Noise and Vibration
- Section 3.5, Electromagnetic Interference and Electromagnetic Fields
- Section 3.8, Hydrology and Water Resources
- Section 3.10, Hazardous Materials and Wastes
- Section 3.11, Safety and Security
- Section 3.12, Socioeconomics and Communities
- Section 3.15, Parks, Recreation, and Open Space
- Section 3.16, Aesthetics and Visual Quality
- Section 3.17, Cultural Resources
- Section 3.19, Cumulative Impacts

Findings relevant to EJ communities were reviewed and summarized in Section 5.7, Environmental Consequences. Implementation of IAMFs, mitigation measures, and the offsetting value of generalized project benefits (e.g., proximity and access to stations, employment opportunities before and after construction, and property and sales tax revenue changes) were evaluated to determine whether an adverse effect would remain. Where effects were found not to be adverse—or where no effect was determined—after consideration of IAMFs, mitigations, and project benefits, no further analysis was conducted on the potential to affect low-income and/or minority populations. Adverse effects were further analyzed as described under Step 3.

Step 3: Identification of Disproportionately High and Adverse Effects on Environmental Justice Populations

Adverse effects on substantial low-income or minority populations were further analyzed to determine whether they would disproportionately affect such populations. This analysis involved determining whether adverse effects occurred predominantly in areas with substantial minority populations and low-income populations, or if the adverse effects were appreciably more severe or greater in magnitude in areas with substantial minority and/or low-income populations. An adverse effect was determined to be disproportionate based on the “totality of the circumstances” standard established in USDOT EJ policy guidance (FTA 2012). If an adverse effect was determined to be disproportionate in an area with a substantial concentration of minority and/or low-income populations, then there would be a disproportionately high and adverse effect on minority and/or low-income populations. If effects were concentrated in areas where substantial minority and/or low-income populations are not present, or were evenly distributed along the entire alignment, it was determined that disproportionate effects on minority and/or low-income populations would not occur.

The analysis described above is conducted in Section 5.6. A summary of adverse effects identified in Chapter 3 of this Draft EIR/EIS is provided in Section 5.6 and an analysis of the type of effects and disproportionately high and adverse effects is provided in Section 5.7.4. A preliminary determination regarding whether the Build Alternatives would result in disproportionately high and adverse effects on EJ populations is provided in Section 5.9. All determinations are preliminary and subject to revision, after the Authority considers any new information, public comment, or EJ input received after release of the Draft EIR/EIS.

Step 4: Engagement with Environmental Justice Populations

USEO 12898 requires that federal agencies ensure effective public participation and access to information. Consequently, a key component of compliance with USEO 12898 is outreach to the potentially affected minority and/or low-income populations to discover issues of importance that

may not be captured by an analysis of publicly accessible data alone. Outreach to affected communities has been and will continue to be conducted as part of the Authority decision-making processes. An extensive public and agency outreach program will continue throughout the EIR/EIS process and the design and construction phases. As detailed in Section 5.5, Environmental Justice Engagement, and Chapter 9, Public and Agency Involvement, the Authority conducted meetings with local officials; public, local, and regional organizations; government agencies; and other interested parties and stakeholders. Meetings were also held with representatives of affected communities along the footprint of the Build Alternatives, including those communities containing predominantly minority and/or low-income populations. In addition to weighing the potential for disproportionately high and adverse effects on EJ populations, the analysis considered the community perception of the project (see Section 5.8.2) and potential project benefits (see Section 5.8.3) to EJ populations.

5.5 Affected Environment

As described above, EJ populations within the RSA were identified by comparing the percentage of minority and/or low-income households within each block group to the percentage of minority and/or low-income households of the reference community (Los Angeles County). Since the percentage of Los Angeles County's population that is low-income and/or minority is higher than that of the state of California, using Los Angeles County as the reference community (in place of the state as a whole) provides the appropriate regional context for discussing potential EJ effects. If the minority and/or low-income population percentages of a census block group within the RSA exceeded the minority and/or low-income population percentage of the reference community (Los Angeles County), then the population of the census block group was considered to be an EJ population. Accordingly, Table 5-2 provides a summary of demographics of the reference community (Los Angeles County). Section 5.5.1 through 5.5.4 detail the affected environment of all Build Alternative RSAs and include maps of the minority and/or low-income populations within the RSAs.

Table 5-2 Reference Community Demographics

Jurisdiction	Percentage of Total Population				
	EJ Populations			Other Considerations	
	Minority	Predominant Minority Demographic	Low-Income Households	LEP Households	Age 65 Years or Older
Los Angeles County	72.8	Hispanic/Latino	18.4	14.0	11.6

Source: U.S. Census, 2015
EJ = Environmental Justice; LEP = limited English proficiency

Table 5-2 also shows other types of disadvantaged populations, including LEP households and residents aged 65 or older. While USDOT Order 5610.2C only requires analysis of disproportionately high and adverse effects on minority and low-income populations, the Authority considered LEP household and residents aged 65 and older when developing the *Palmdale to Burbank Project Section: Environmental Justice Outreach Plan* (Appendix 5-A), in compliance with Title VI and the Authority's LEP Policy (Authority 2012b). Therefore, these communities are described here only to contextualize the Authority's outreach efforts.

In the cities of Los Angeles and San Fernando, there are larger populations of LEP households than in Los Angeles County. Compared to Los Angeles County, only the city of Burbank has a greater percentage of residents that are age 65 years or older. None of the cities considered in this EJ analysis have an unemployment rate exceeding that of Los Angeles County.

Table 5-3 provides an overview of demographic data by subsection for each Build Alternative by jurisdiction for further context.

Table 5-3 Demographics by Build Alternative

Subsection / Area	Population (2010–2014 Estimate)	Percentage of Total Population			
		Populations Considered in EJ Analysis		Other Considerations	
		Minority	Low-Income Households	LEP Households	Age 65 Years or Older
Reference Community for EJ Determination					
Los Angeles County	9,974,203	72.8	18.4	14.0	11.6
Refined SR14					
Central	148,711	80.4	16.9	13.7	9.5
Burbank	8,896	46.7	7.5	9	13.2
SR14A					
Same as Refined SR14					
E1					
Central	131,838	81.7	16.9	13.7	9.3
Burbank	8,896	46.7	7.5	9	13.2
E1A					
Same as E1					
E2					
Central	55,704	60.4	15.5	13.7	12.3
Burbank	8,896	46.7	7.5	9	13.2
E2A					
Same as E2					

Source: U.S. Census, 2015
EJ = Environmental Justice; LEP = limited English proficiency

5.5.1 Refined SR14 Build Alternative

5.5.1.1 Minority Populations

Figure 5-1 though Figure 5-3 show the distribution of minority population percentage by census block group in the Refined SR14 Build Alternative RSA. As shown in these figures, south of Palmdale, block groups within the portion of the Central Subsection that pass near Agua Dulce and the ANF are not EJ populations based on minority percentage. However, many of the block groups located in the San Fernando Valley portion of the Central Subsection within the Sylmar, Pacoima, and Sun Valley neighborhoods of the city of Los Angeles are EJ populations based on minority percentages. These neighborhoods are heavily urbanized areas featuring dense neighborhoods and a large population that identifies as Hispanic/Latino.

Minority EJ populations in the Burbank Subsection are generally located near the Hollywood Burbank Airport. The Burbank Airport Station would be built within EJ block groups. Similar to the

city of Los Angeles neighborhoods described above, the Burbank Subsection has a substantial population of residents that identify as Hispanic/Latino.

5.5.1.2 Low-Income Populations

Figure 5-1 though Figure 5-3 show the distribution of low-income population percentage by census block group in the Refined SR14 Build Alternative RSA. As shown in Figure 5-1, the block groups within the Central Subsection near Agua Dulce are not EJ communities based on low-income percentage. One large block group near the Antelope Valley Freeway, extending to the San Gabriel Mountains, is a low-income EJ community; however, the area where the Refined SR14 Build Alternative alignment would traverse is mostly uninhabited. The Central Subsection of this RSA also traverses the San Fernando Valley where block groups have a higher percentage of low-income households compared to the county average. These communities are located within the urbanized Los Angeles neighborhoods of Pacoima and Sun Valley.

There are no low-income EJ block groups within the Refined SR14 Burbank Subsection RSA, which is true for all Build Alternatives.

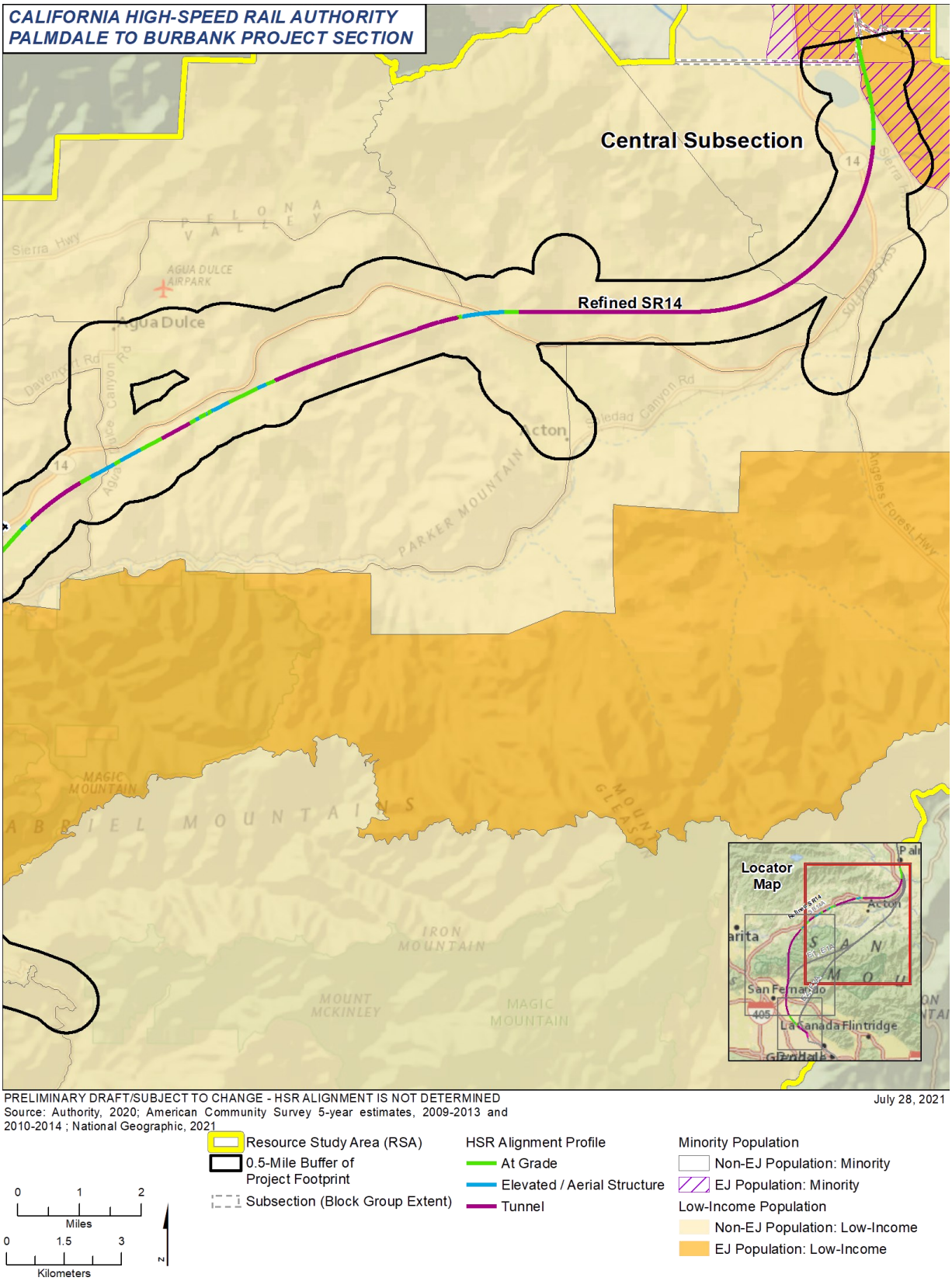

Figure 5-1 Refined SR14 Minority and/or Low-Income Populations (Map 1 of 3)

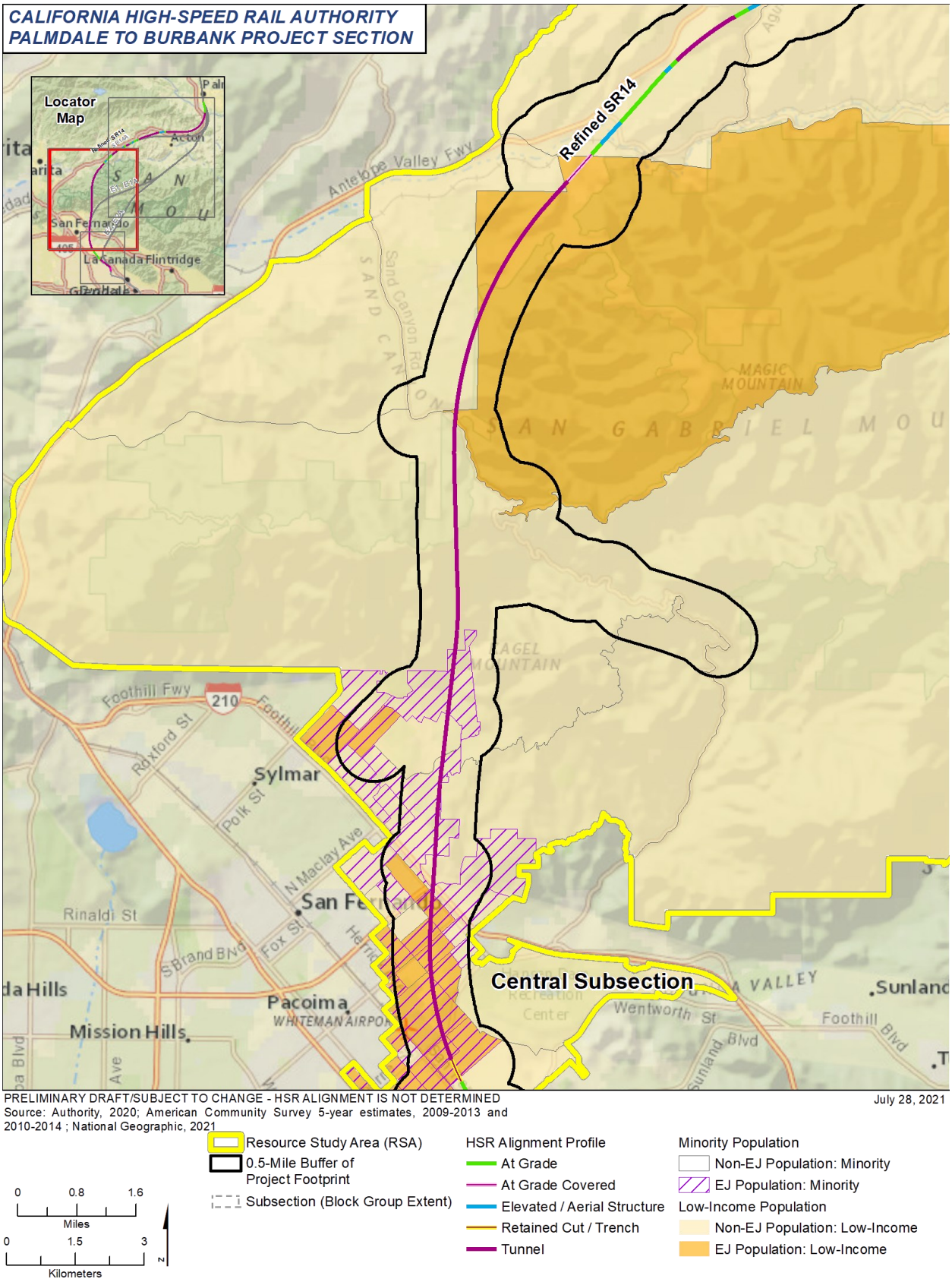

Figure 5-2 Refined SR14 Minority and/or Low-Income Populations (Map 2 of 3)

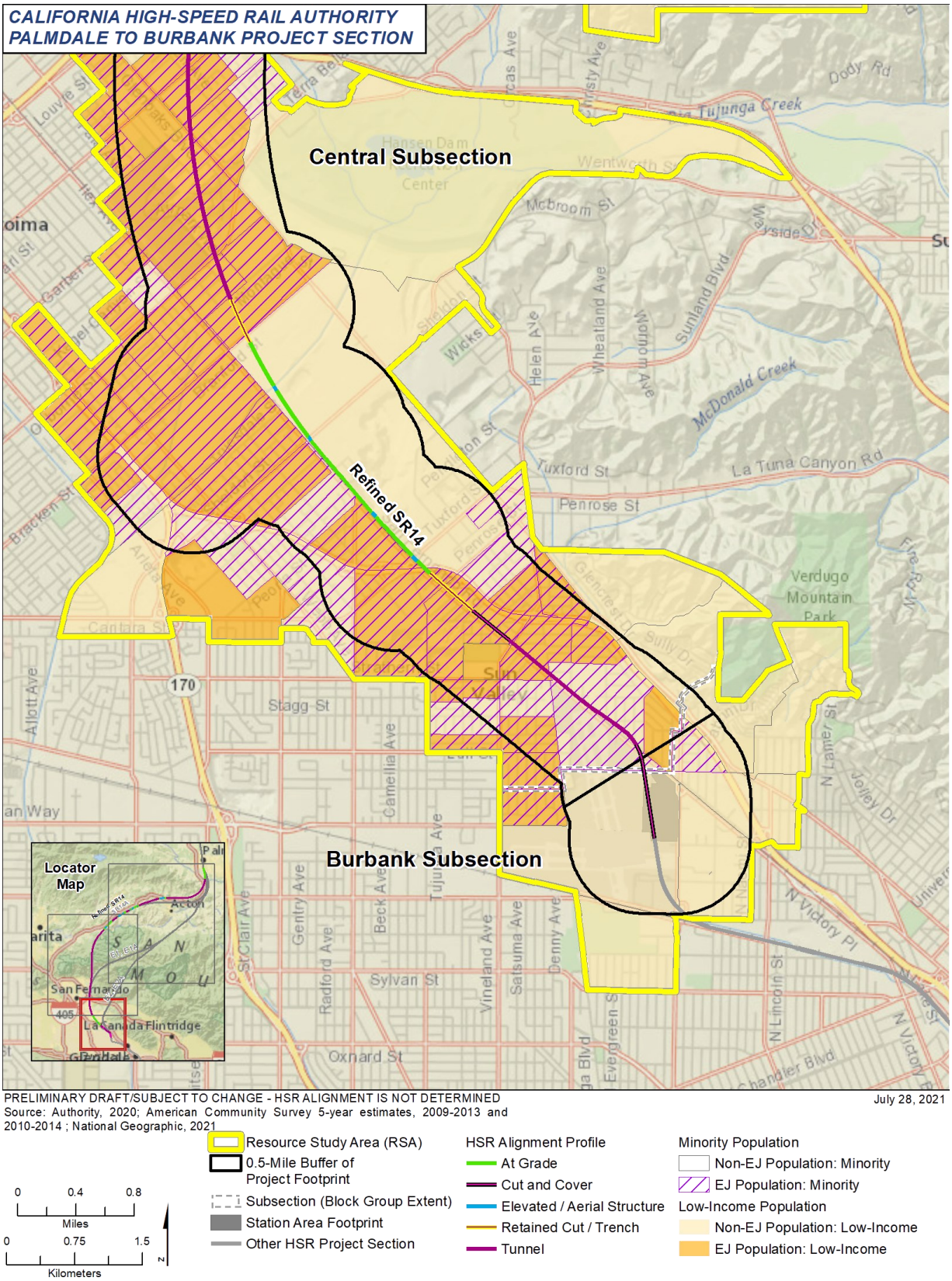

Figure 5-3 Refined SR14 Minority and/or Low-Income Populations (Map 3 of 3)

5.5.2 SR14A Build Alternative

As shown in Figure 5-4 through Figure 5-6, the SR14A Build Alternative RSA comprises the same census block groups as the Refined SR14 Build Alternative RSA. Therefore, in terms of EJ populations, the SR14A Build Alternative RSA is identical to the Refined SR14 Build Alternative RSA despite differences in alignment near Una Lake.

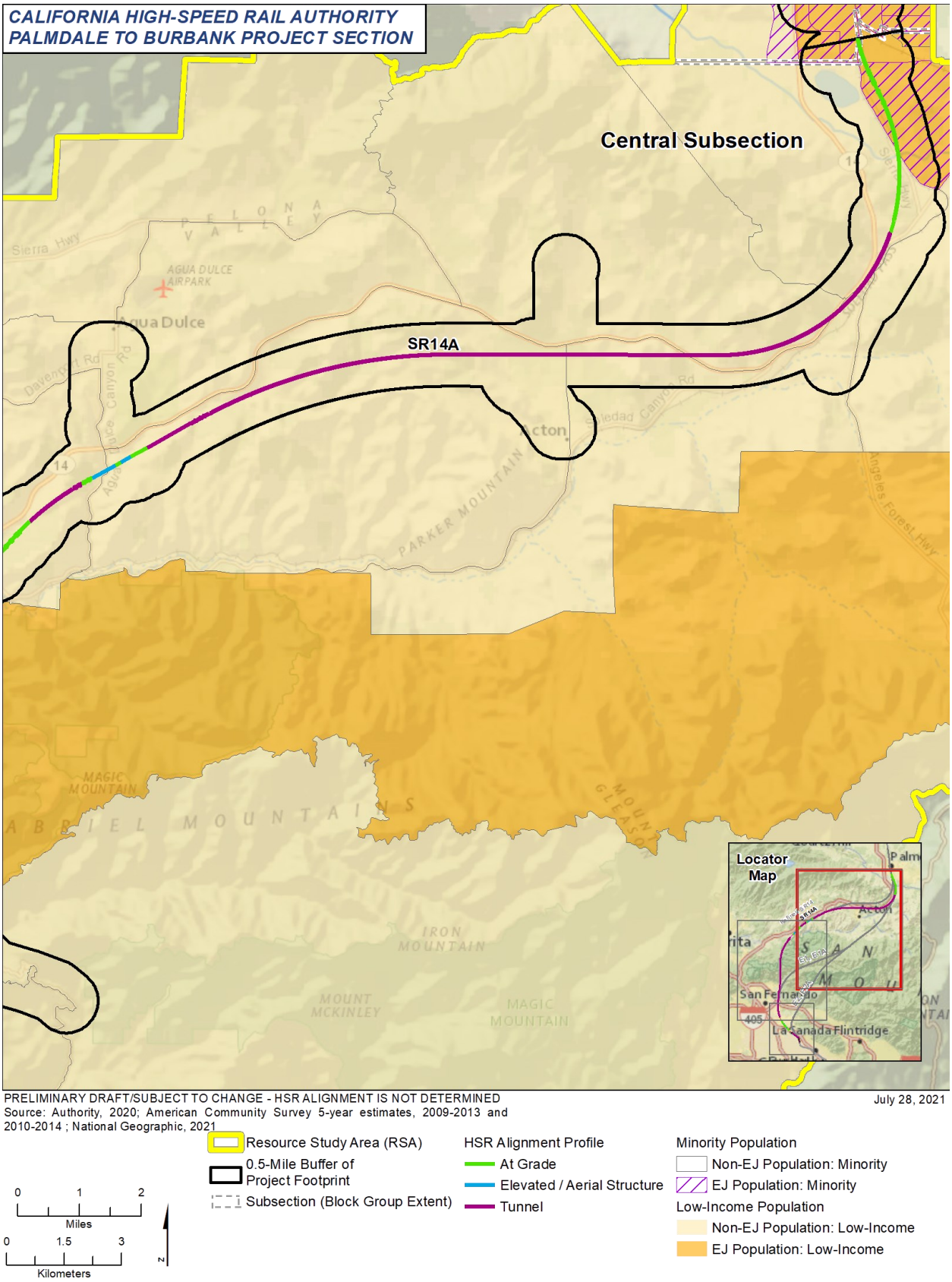

Figure 5-4 SR14A Minority and/or Low-Income Populations (Map 1 of 3)

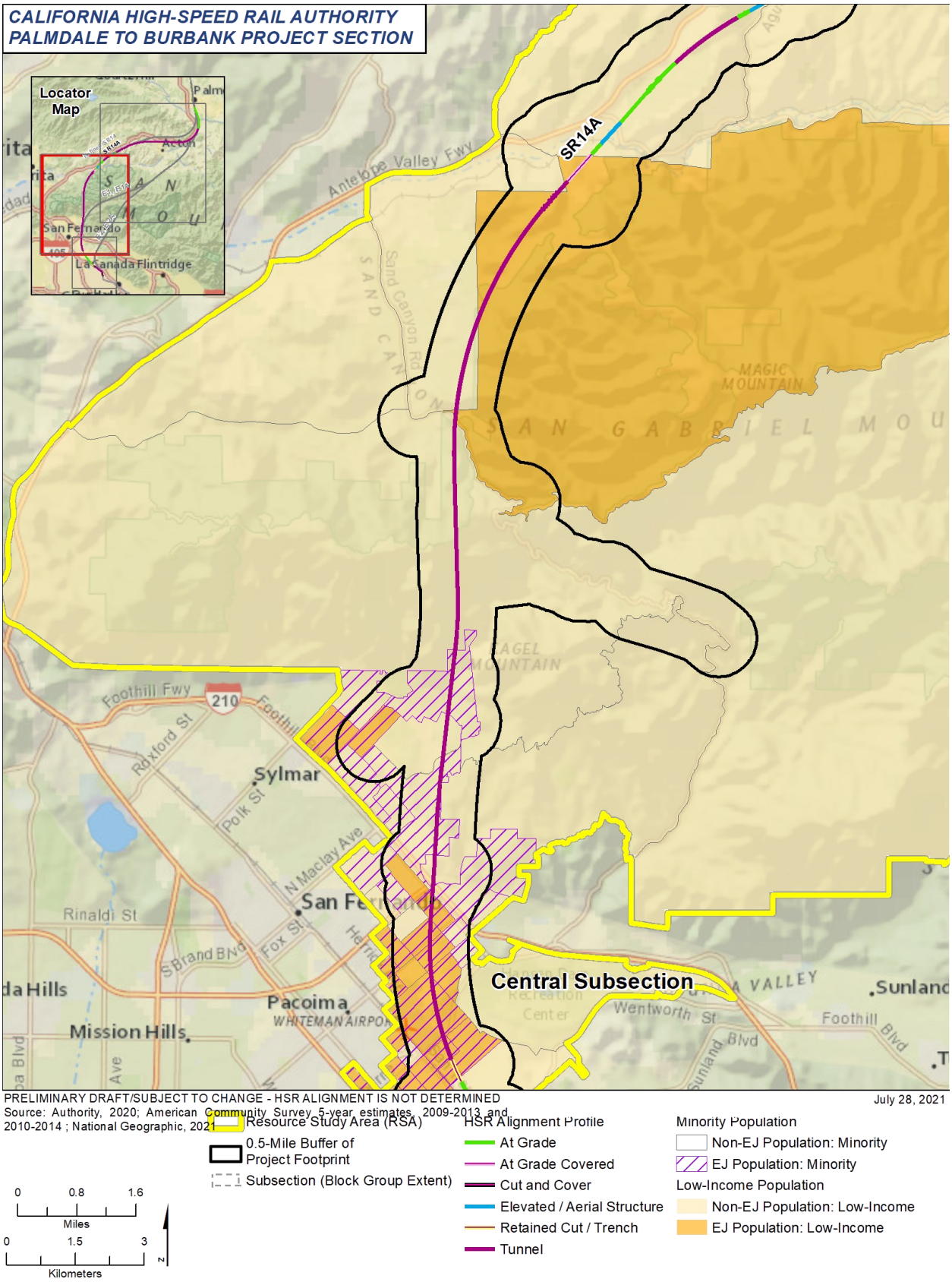

Figure 5-5 SR14A Minority and/or Low-Income Populations (Map 2 of 3)

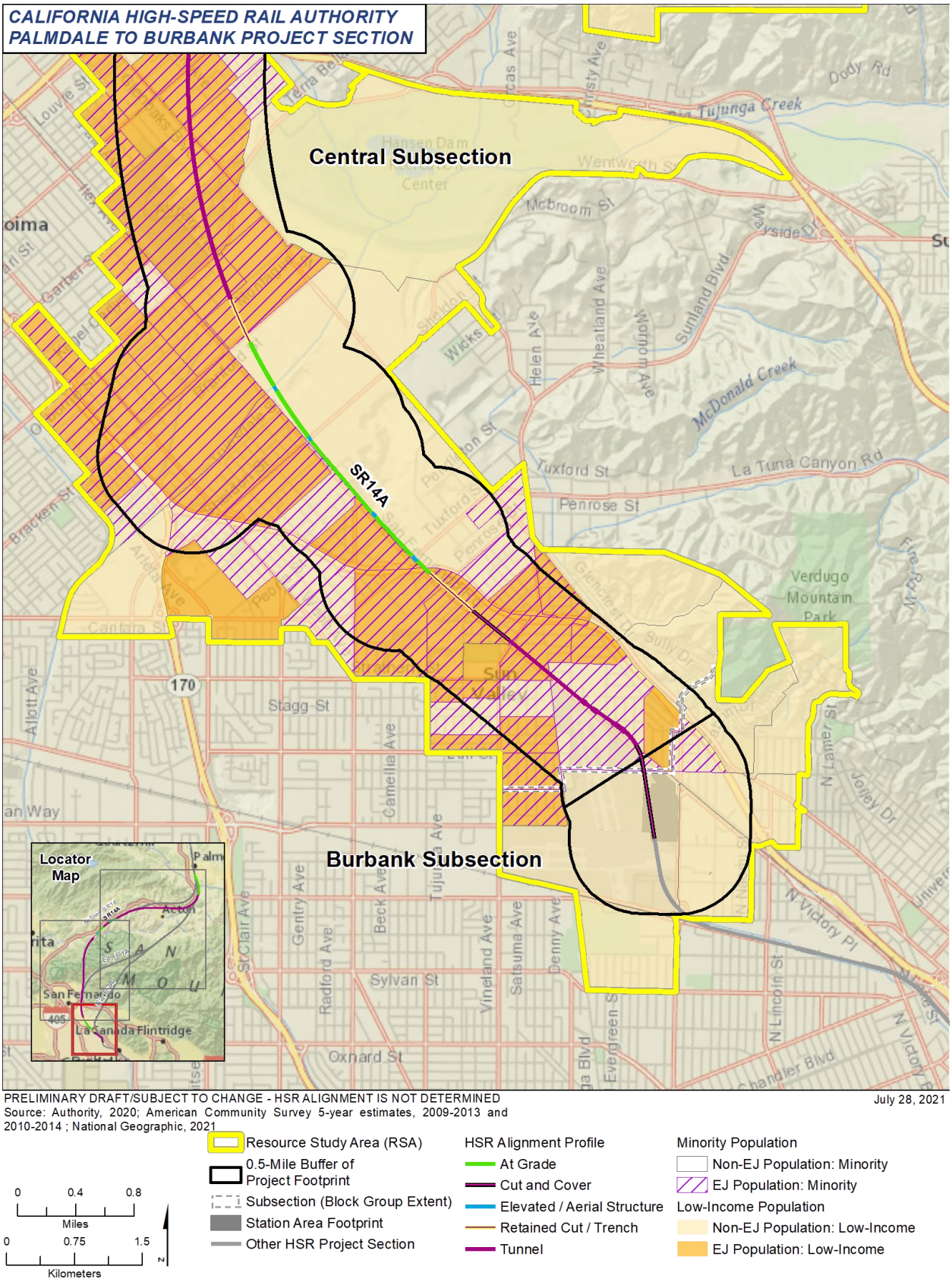

Figure 5-6 SR14A Minority and/or Low-Income Populations (Map 3 of 3)

5.5.3 E1 Build Alternative

5.5.3.1 Minority Populations

Figure 5-7 though Figure 5-9 show the minority populations by census block group in the E1 Build Alternative RSA. The block groups within the portion of the Central Subsection that pass through the ANF, including SGMNM, are not minority EJ populations. However, the Central Subsection overlaps many minority EJ block groups in the San Fernando Valley within the Sylmar, Pacoima, and Sun Valley neighborhoods. These neighborhoods, which feature large populations that identify as Hispanic, are more densely developed than the unincorporated portions of the Central Subsection.

The census block groups overlapping the E1 Build Alternative Burbank Subsection would be identical to those discussed for the Refined SR14 Build Alternative RSA (refer to Section 5.5.1, Refined SR14 Build Alternative).

5.5.3.2 Low-Income Populations

Figure 5-7 though Figure 5-9 show the census block groups in the E1 Build Alternative RSA where the percentage of low-income households is greater than the average for Los Angeles County. Similar to the Refined SR14 Build Alternative, the E1 Central Subsection RSA traverses a corridor of communities in the San Fernando Valley where census block groups have a percentage of low-income households that is higher than the county average, largely in the neighborhoods of Pacoima and Sun Valley. As with the Refined SR14 Build Alternative, the large census block group in the San Gabriel Mountains that is identified as a low-income EJ population remains largely uninhabited.

The census block groups overlapping the E1 Build Alternative Burbank Subsection would be identical to those discussed for the Refined SR14 Build Alternative (refer to Section 5.5.1, Refined SR14 Build Alternative).

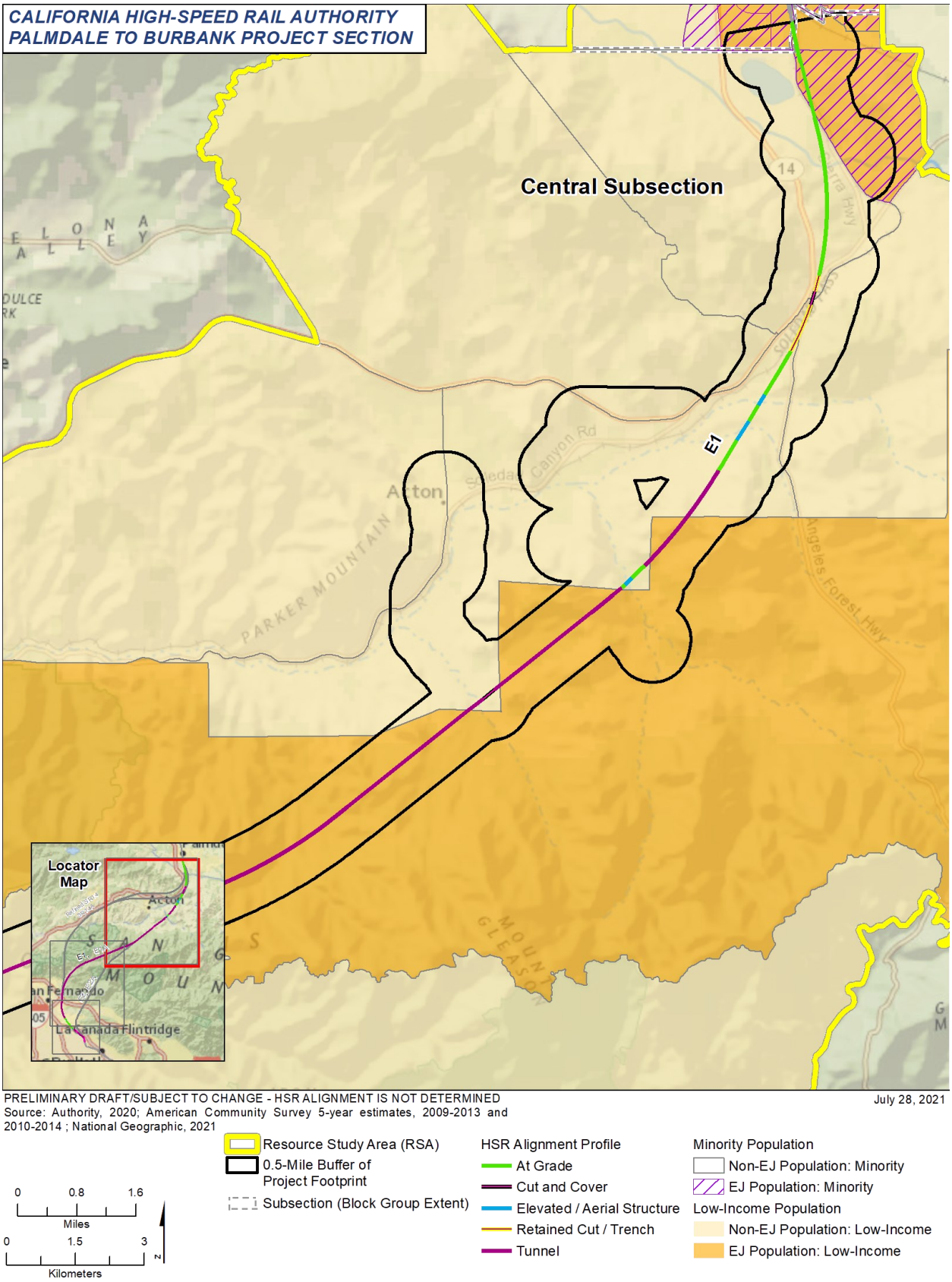

Figure 5-7 E1 Minority and/or Low-Income Populations (Map 1 of 3)

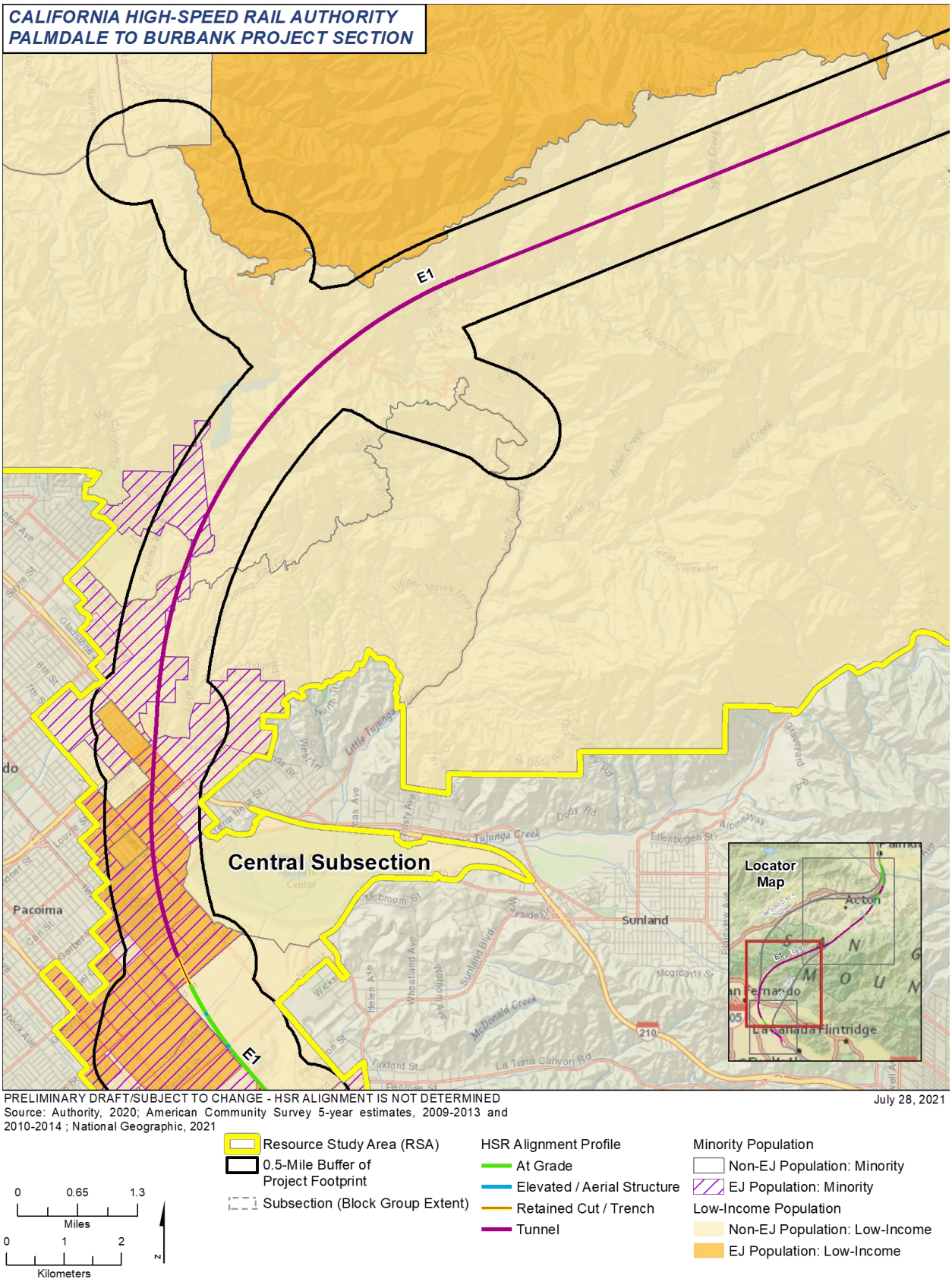

Figure 5-8 E1 Minority and/or Low-Income Populations (Map 2 of 3)

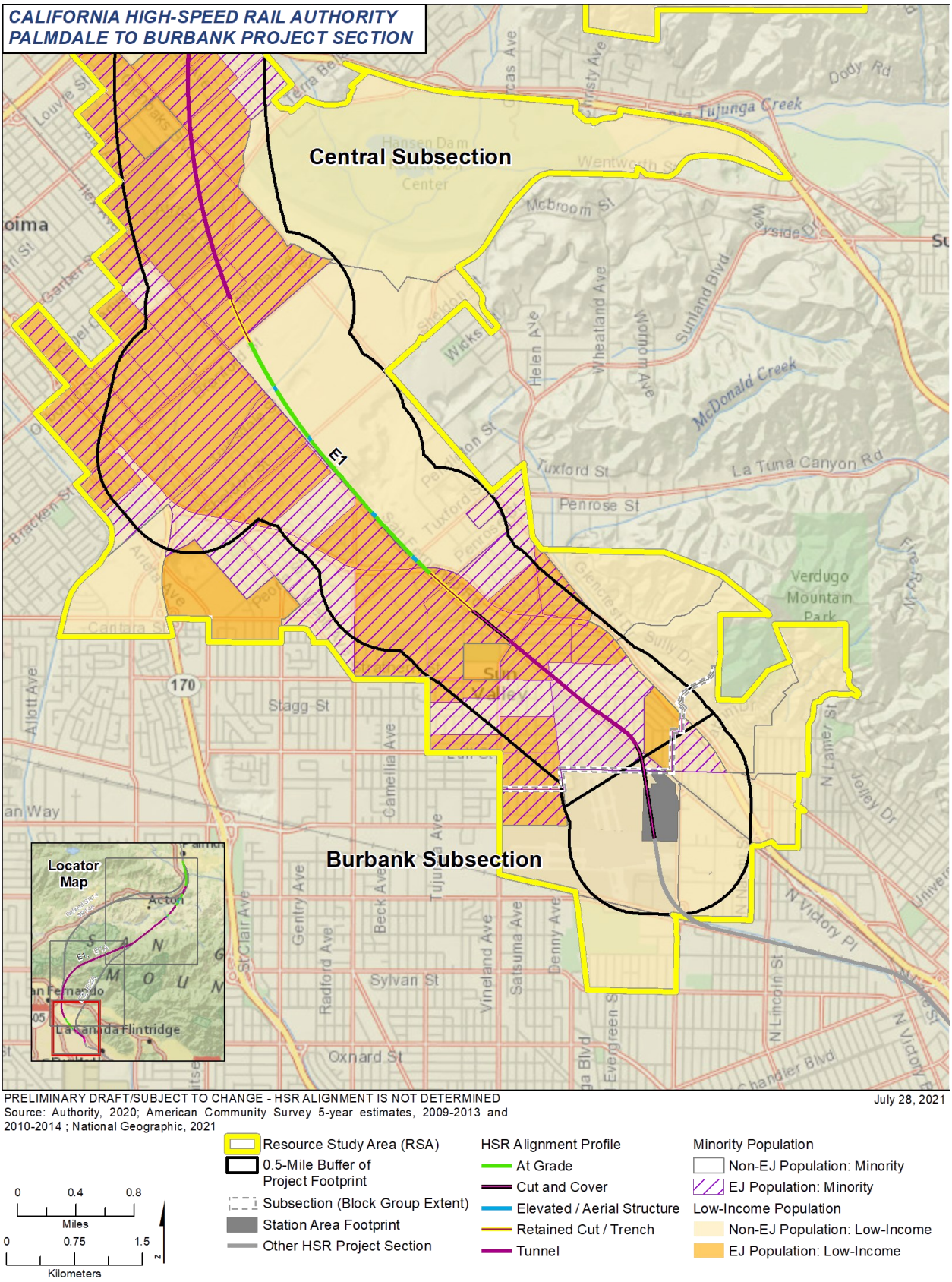

Figure 5-9 E1 Minority and/or Low-Income Populations (Map 3 of 3)

5.5.4 E1A Build Alternative

As shown in Figure 5-10 through Figure 5-12, the E1A Build Alternative RSA comprises the same census block groups as the E1 Build Alternative RSA. Therefore, in terms of EJ populations, the E1A Build Alternative RSA is identical to the E1 Build Alternative RSA despite differences in alignment near Una Lake.

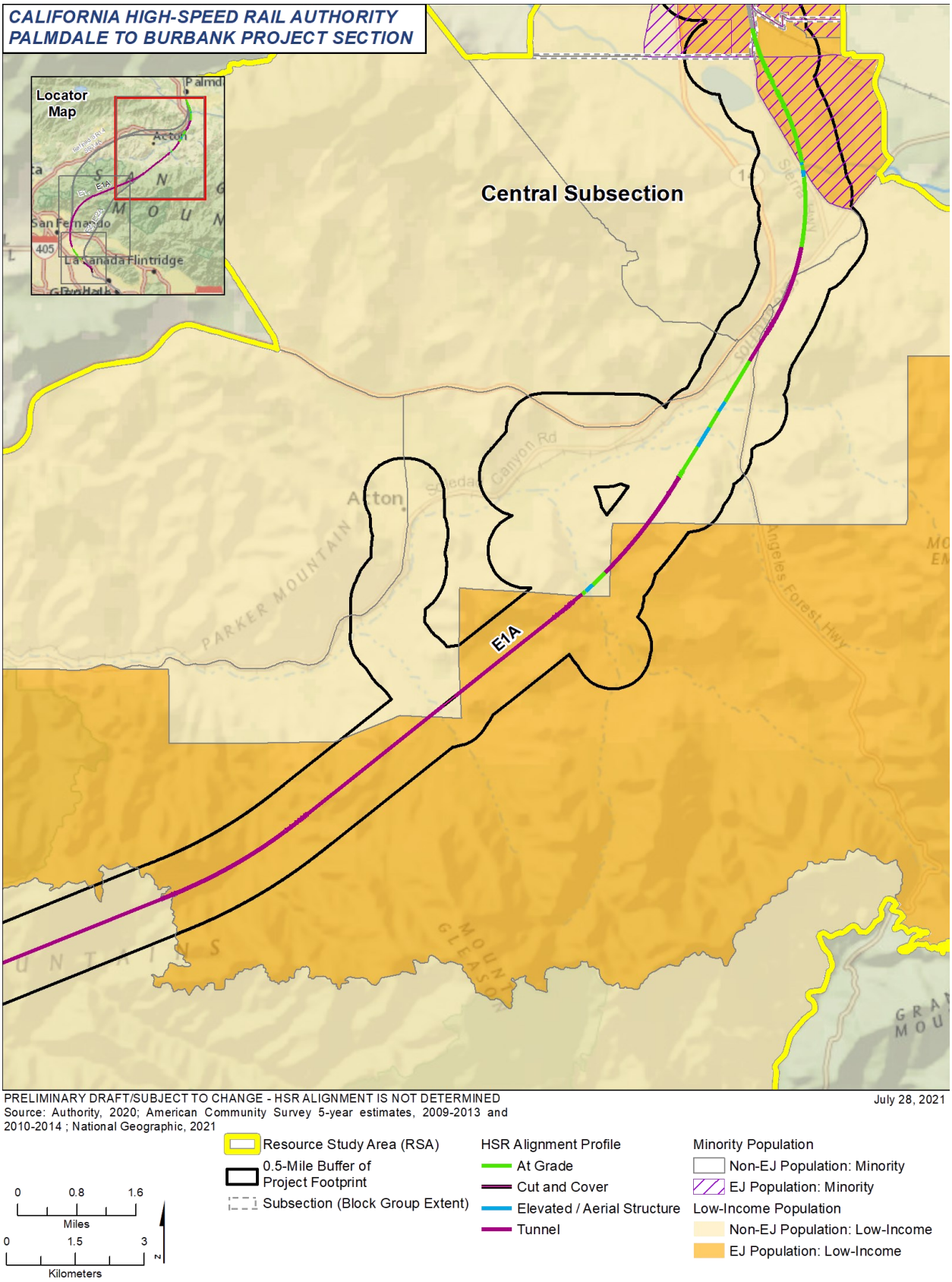

Figure 5-10 E1A Minority and/or Low-Income Populations (Map 1 of 3)

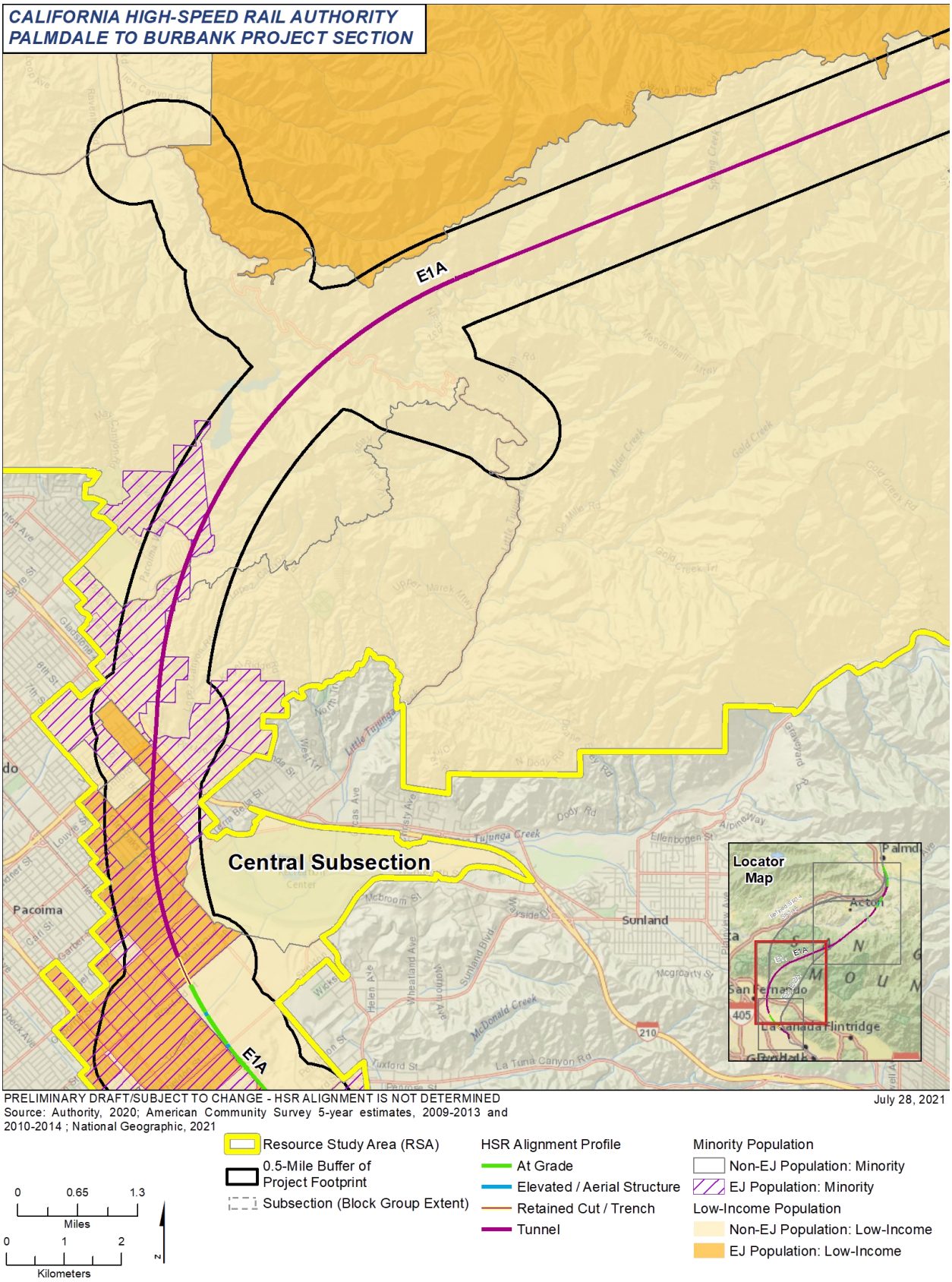

Figure 5-11 E1A Minority and/or Low-Income Populations (Map 2 of 3)

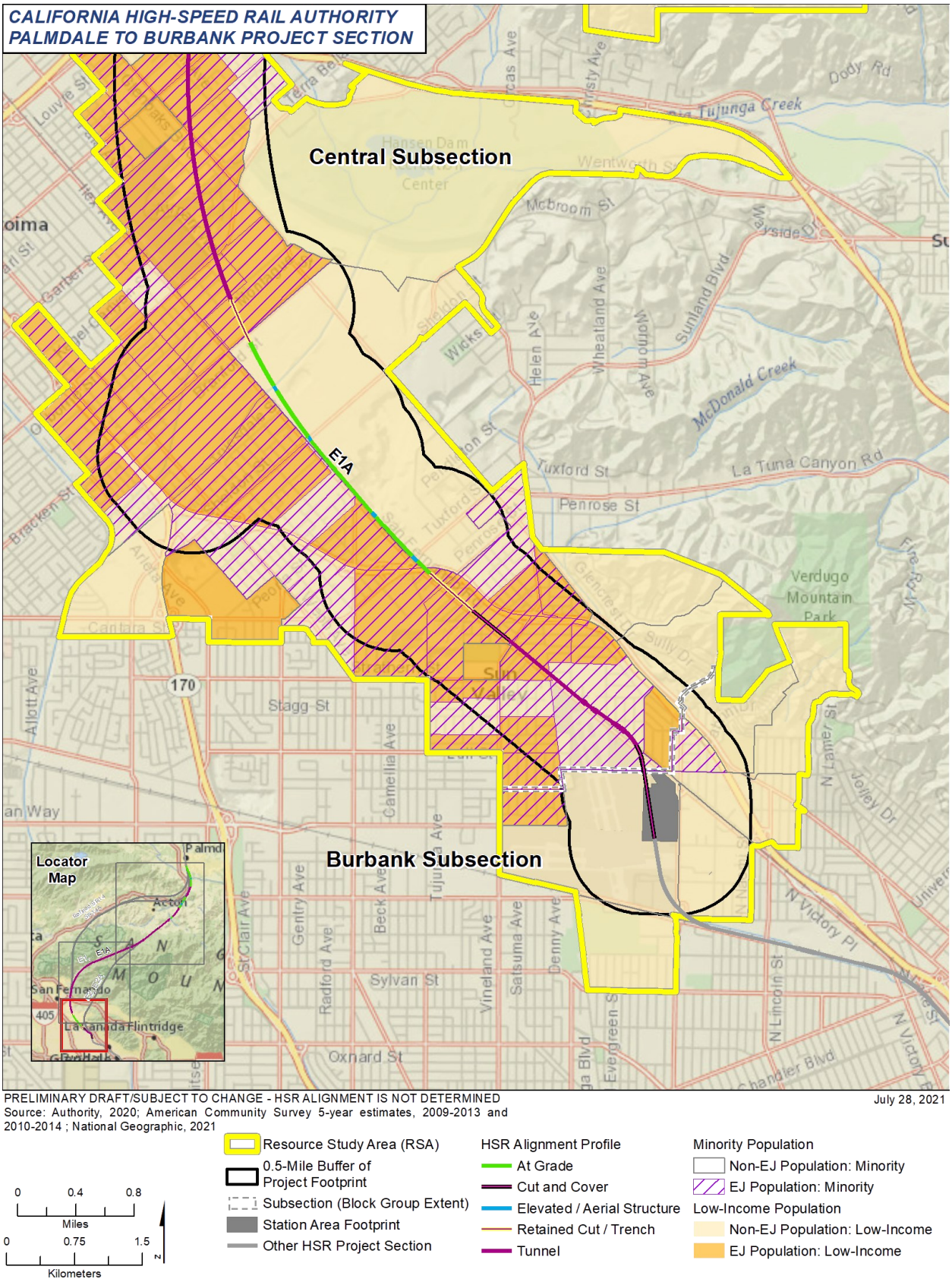

Figure 5-12 E1A Minority and/or Low-Income Populations (Map 3 of 3)

5.5.5 E2 Build Alternative

5.5.5.1 Minority Populations

Figure 5-13 through Figure 5-15 show the minority population percentage by census block group in the E2 Build Alternative RSA. The highest concentration of minority EJ block groups within the Central Subsection is located at the subsection's southern end, north of the Hollywood Burbank Airport. Although this area in the Sun Valley neighborhood contains a notable concentration of EJ populations, the Central Subsection of the E2 Build Alternative RSA crosses substantially fewer block groups that are minority EJ populations compared to the Refined SR14 and E1 Build Alternative RSAs. This is due to the E2 Build Alternative's shorter segment crossing the central San Fernando Valley, which features a large population that identifies as Hispanic/Latino.

The census block groups overlapping the E2 Build Alternative Burbank Subsection would be identical to those discussed for the Refined SR14 Build Alternative (refer to Section 5.5.1, Refined SR14 Build Alternative).

5.5.5.2 Low-Income Populations

Figure 5-13 through Figure 5-15 show the census block groups in the E2 Build Alternative RSA where the percentage of low-income households is greater than the average in Los Angeles County. The E2 Central Subsection RSA intersects a smaller number of low-income EJ populations in Sun Valley compared to the Refined SR14 and E1 Build Alternative RSAs. There are also two census block groups in the city of Los Angeles neighborhood of Lake View Terrace that are EJ populations. As discussed earlier regarding the Refined SR14 and E1 Build Alternative RSAs, the large block group in the San Gabriel Mountains that is identified as an EJ population is sparsely populated because residential development is generally prohibited, except within certain private inholdings.

The census block groups overlapping the E2 Build Alternative Burbank Subsection would be identical to those discussed for the Refined SR14 Build Alternative (refer to Section 5.5.1, Refined SR14 Build Alternative).

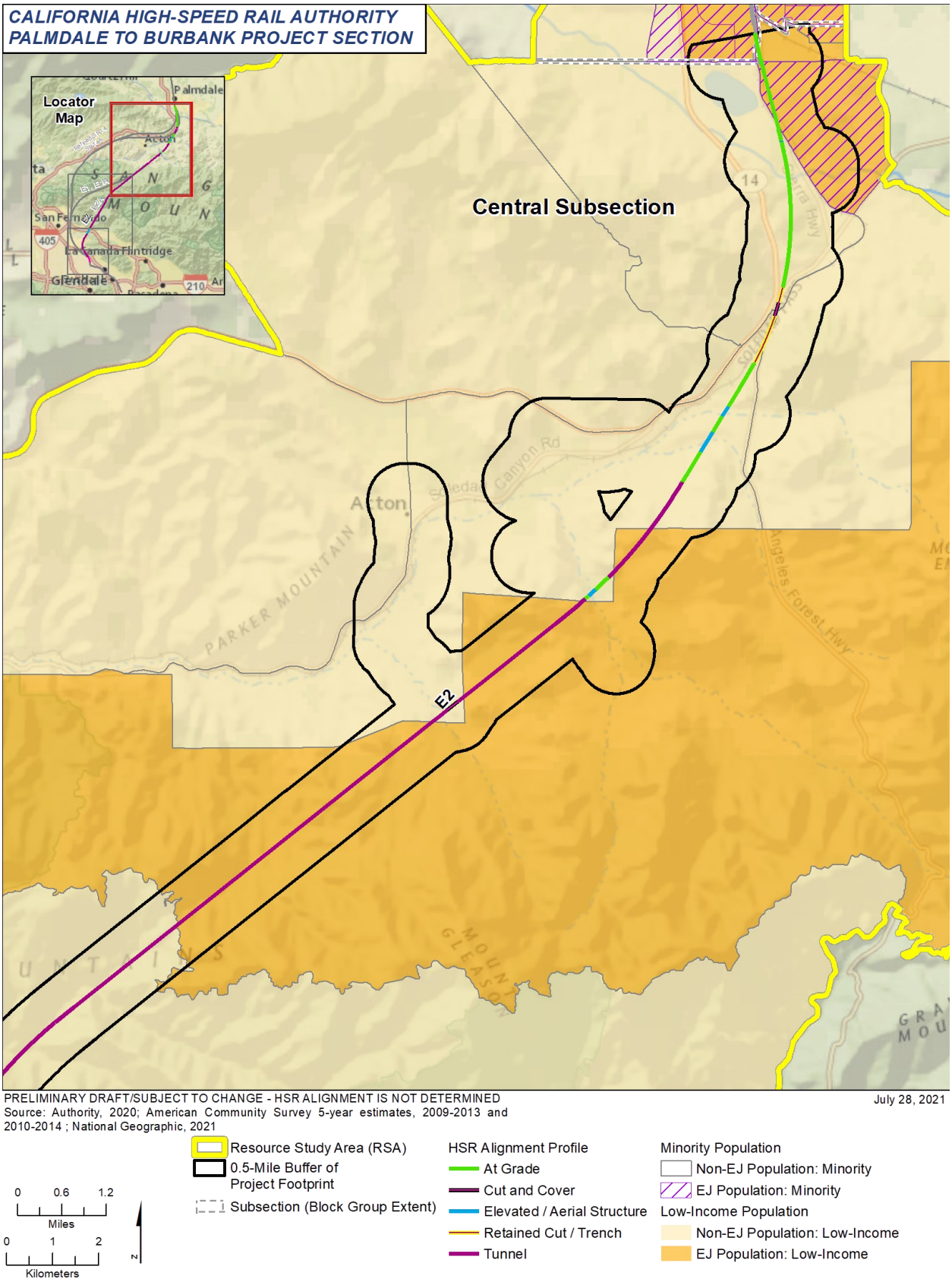

Figure 5-13 E2 Minority and/or Low-Income Populations (Map 1 of 3)

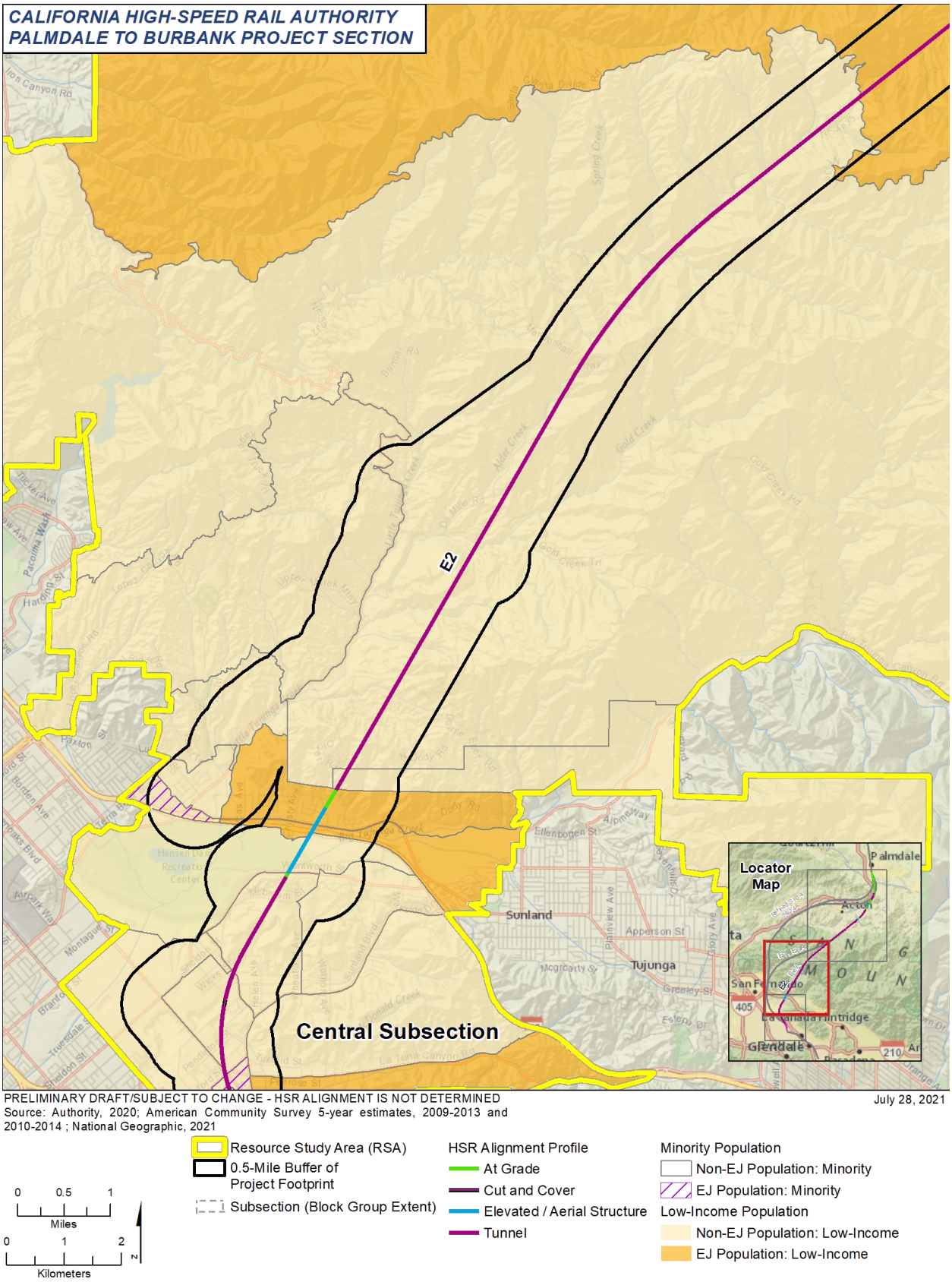

Figure 5-14 E2 Minority and/or Low-Income Populations (Map 2 of 3)

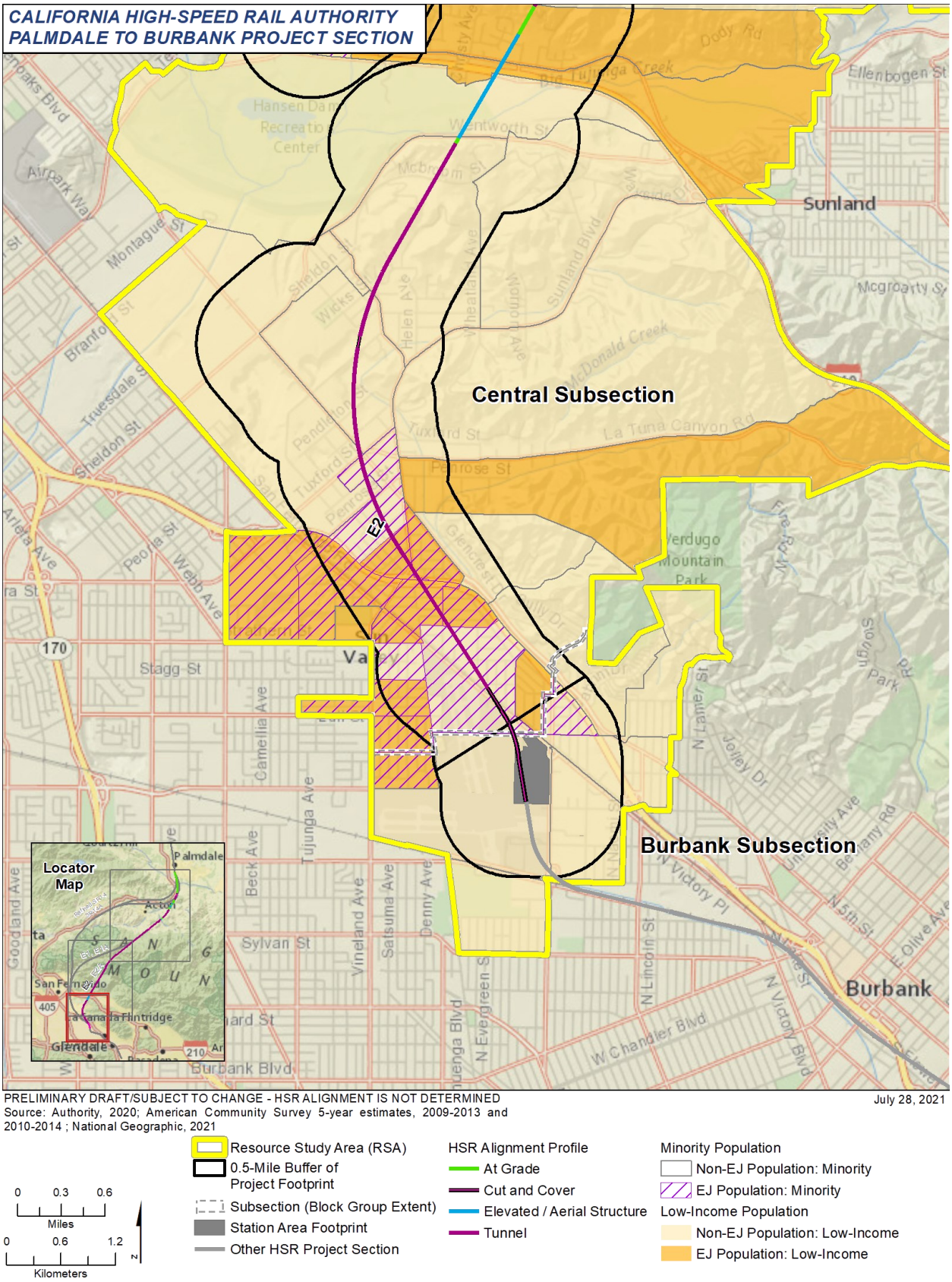

Figure 5-15 E2 Minority and/or Low-Income Populations (Map 3 of 3)

5.5.6 E2A Build Alternative

As shown in Figure 5-16 through Figure 5-18, the E2A Build Alternative RSA comprises the same census block groups as the E2 Build Alternative RSA. Therefore, in terms of EJ populations, the E2A Build Alternative RSA is identical to the E2 Build Alternative RSA despite differences in alignment near Una Lake.

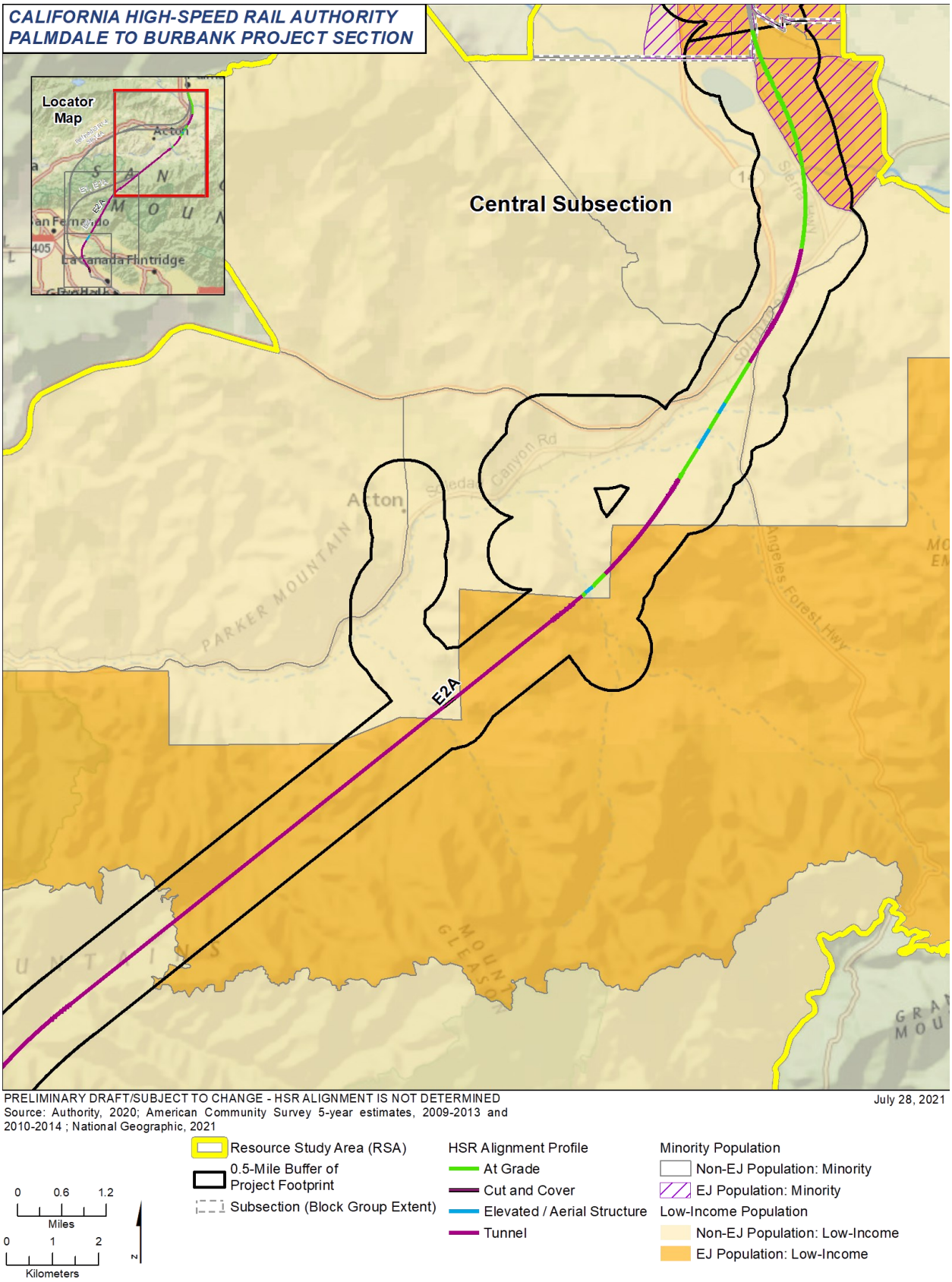

Figure 5-16 E2A Minority and/or Low-Income Populations (Map 1 of 3)

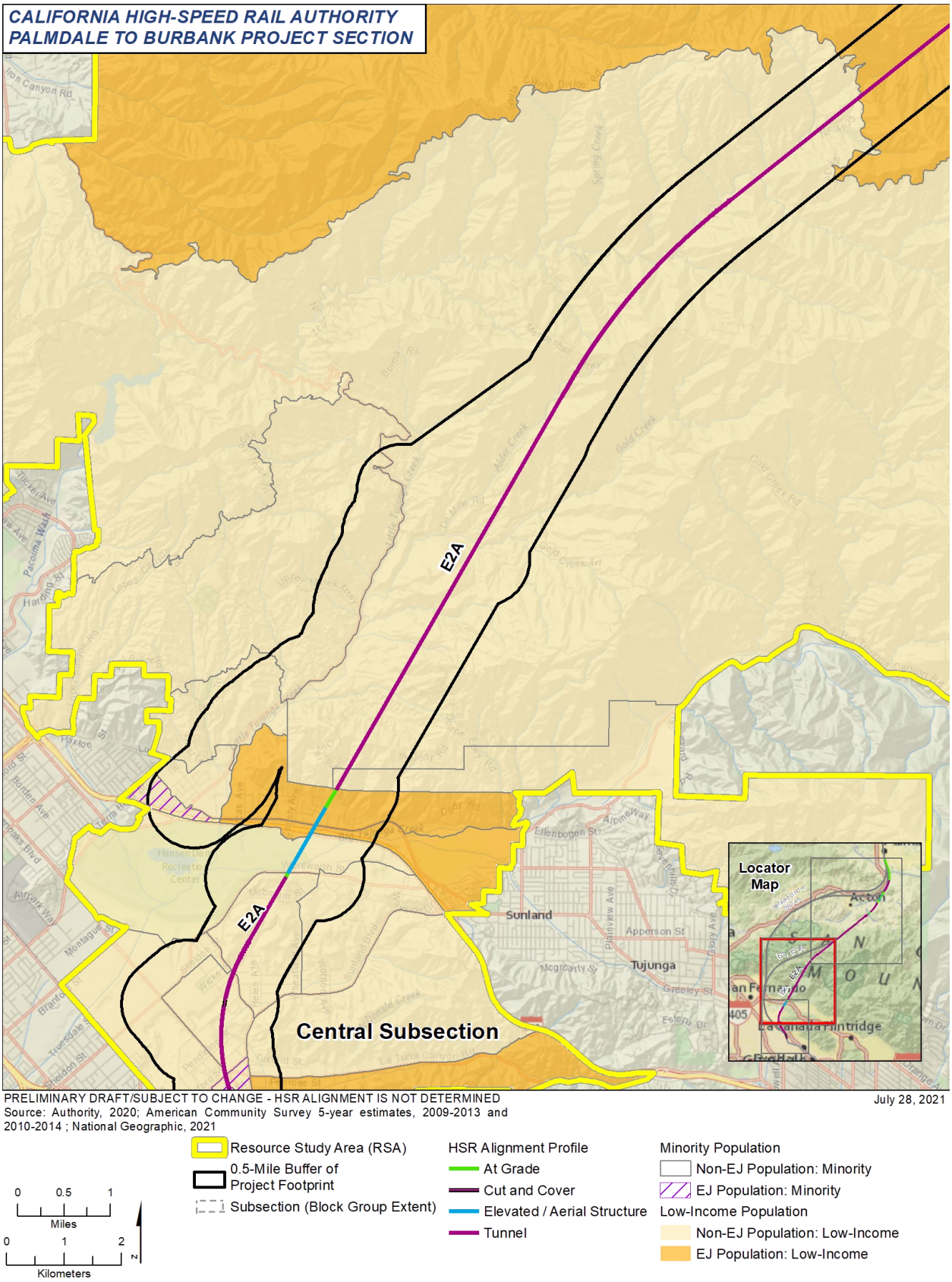

Figure 5-17 E2A Minority and/or Low-Income Populations (Map 2 of 3)

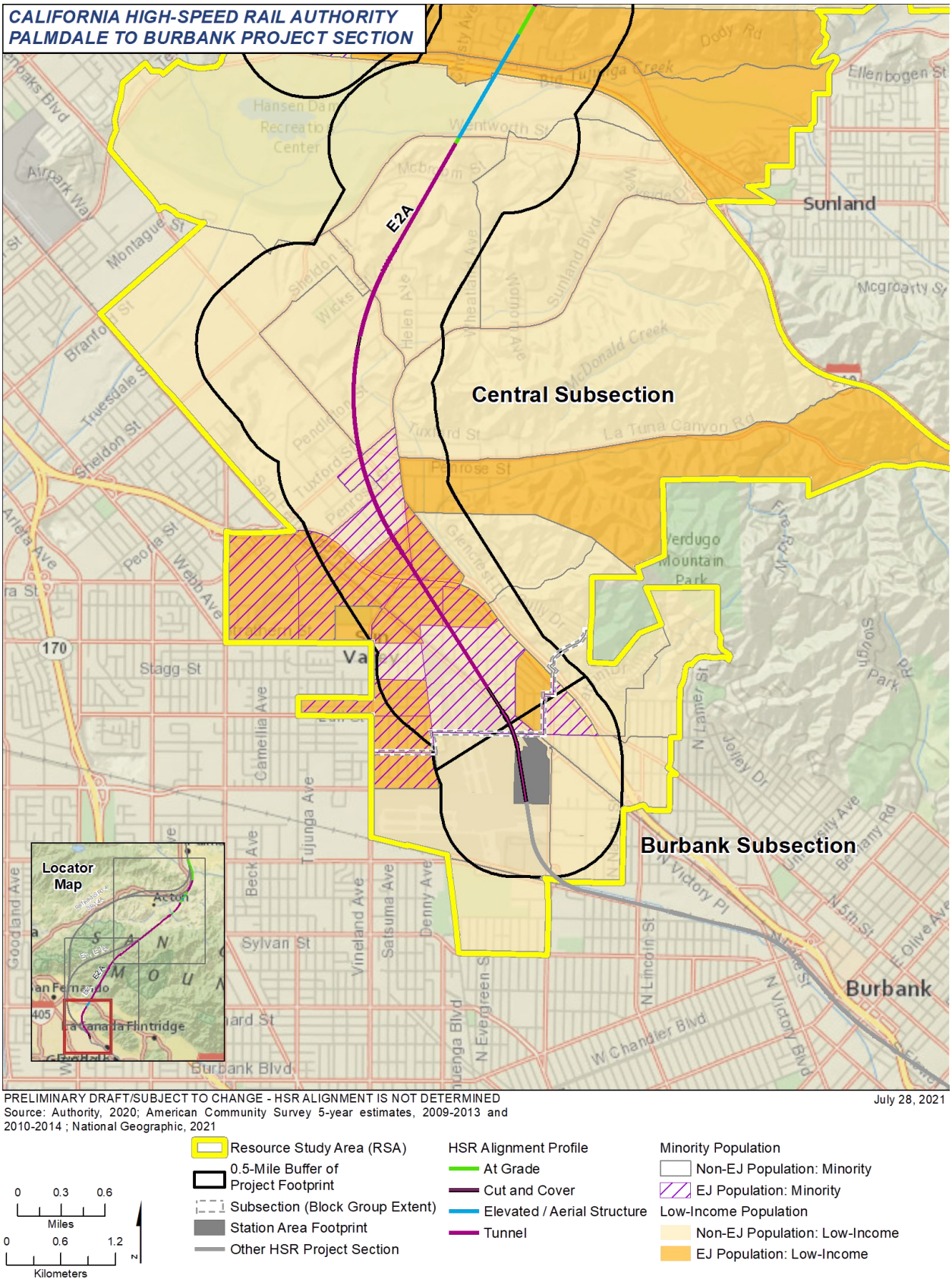

Figure 5-18 E2A Minority and/or Low-Income Populations (Map 3 of 3)

5.6 Environmental Justice Engagement

Analysis of an HSR alignment between Palmdale and Burbank began in 2010 when the Authority published a Preliminary Alternatives Analysis. Subsequently, several Supplemental Alternatives Analyses were published—in 2011, 2012, 2014, 2015, and 2016 (see Chapter 2, Alternatives, for a discussion of the alternatives evaluation process). As described below in Section 5.5.2, after the publication of each Supplemental Alternatives Analysis, the Authority refined the range of alternatives based on preliminary environmental effects findings and community input.

As discussed in Section 5.3, the Authority's outreach strategy was designed to reach a broad array of interests throughout the corridor (refer to Appendix 5-A for the complete Environmental Justice Outreach Plan). This strategy will continue to be used to engage key stakeholders during the project development process. Outreach to stakeholders along the footprint of the Build Alternatives was a different effort than EJ-specific outreach. The following discussion is separated by outreach to affected populations and issues identified through outreach.

5.6.1 Engagement Methods and Input from Environmental Justice Populations

The Authority has been conducting outreach for the Palmdale to Burbank Project Section since 2014. Such efforts have included public outreach meetings with language interpreters, notices and advertisements in ethnic media publications, and public scoping meetings. While not specifically targeted toward EJ communities, much of this outreach took place within EJ communities and was therefore helpful in creating an understanding of project effects on these populations. Additional outreach events specifically aimed toward EJ communities began in 2019 and are ongoing. Table 5-4 summarizes EJ-specific outreach events for the Palmdale to Burbank Project Section conducted to date.

There are several methods of outreach that the Authority is using to reach specific audiences. Public meetings are being used to disseminate key Authority EIR/EIS updates to all stakeholders and to receive suggestions and feedback in a more conventional, traditional manner. Organizational stakeholder contact involves connecting with EJ advocacy and community groups to gauge interest in scheduling meetings with the project team to offer project suggestions and to inform stakeholder outreach processes. This establishes a direct line of communication with influential groups in the EJ RSA and helps the Authority gather valuable local opinions and insight with regard to the challenges low-income and minority populations in the area face. The *Palmdale to Burbank Section Draft EIR/EIS Section: Community Impact Assessment* (Authority 2019a) contains a list of EJ-related interest groups engaged through outreach efforts.[5]

Local stakeholder contact is intended to directly engage members of low-income and minority populations in conversations to share information, answer questions, and listen to perspectives relevant to the HSR system in an informal, conversational manner. This type of contact takes place most effectively at HSR tables and booths at local fairs and community events or in specific "pop-ups" or "community coffees" in targeted neighborhood areas (for example, see the Antelope Valley Community Clinic event description in Table 5-4). Group stakeholder meetings intended to gather and record topical HSR information as it pertains to low-income and minority populations to inform HSR processes take place in multiparticipant collaborative or round-table meetings (for example, see the Pacoima Branch Library event in Table 5-4).

Materials are made available to attendees at the various public meetings and events, including project fact sheets, welcome sheets, comment cards, and graphic displays. All materials provided, along with meeting advertisements, are translated as appropriate and are consistent with the Authority's LEP requirements, in addition to having Spanish translation services present at all open house meetings. Furthermore, bilingual members of the outreach team (primarily

[5] It is important to note that the Palmdale to Burbank Project Section traverses the northeast San Fernando Valley, where nearly all communities are designated as low-income EJ communities. Many of these areas are also linguistically isolated, meaning that outreach efforts to these communities must provide language assistance. See the California State Office of Environmental Health and Hazard Assessment's CalEnviroScreen tool, available at: oehha.ca.gov/calenviroscreen.

Spanish speakers) attend all meetings to provide additional support at registration/information tables.

In addition to the events shown in Table 5-4, the Authority is creating digital engagement opportunities for participation online, including mobile options, to directly engage members of minority and low-income populations without requiring in-person participation so feedback can be submitted at the participant's leisure.

Table 5-4 Summary of Environmental Justice Outreach Events

Organization	Location	Community Area	Date	Attendees	Topics Discussed with Attendees
Pacoima Branch Library Outreach Event					
Pacoima Branch Library	Pacoima Branch Library 13605 Van Nuys Boulevard, Pacoima	Pacoima	2/12/2019	15	The event was a classroom setting with an English conversation class. Most students were unfamiliar with the project, but very engaged. All were nonnative English speakers. Handouts were provided in English and a factsheet in Spanish. Discussed the state map and alignment for phase 1 and phase 2. Because most participants were not familiar with the project, questions were focused on general project information. Topics discussed at the event included: ▪ Ticket prices ▪ Cost to build / funding ▪ Route location and selection ▪ Construction jobs and opportunities ▪ Train speeds ▪ Station locations ▪ Future public meetings ▪ Xpress West connection ▪ Community impacts and benefits

Organization	Location	Community Area	Date	Attendees	Topics Discussed with Attendees
BLVD Market Event					
Raw Inspiration	Lancaster Boulevard (between Fern and Ehrlich Avenues), Lancaster	Antelope Valley	2/28/2019	200 total attendees (10 Spanish speakers) 40–50 interacted with outreach team	The event was conducted in an informational booth setting at a BLVD Market (a year-round farmer's market) and was facilitated by a bilingual Spanish staff member. A short interview was given with TheAVweb.com regarding presence of the HSR project team at the event. Topics discussed at the event included: ▪ Xpress West connection ▪ Train speeds ▪ Number and location of stations ▪ Many thought the project was cancelled ▪ Ticket prices ▪ Construction jobs and opportunities ▪ Time until project operation ▪ Politics and continued viability of project ▪ Project opposition ▪ Route location and selection (e.g., Will the train go to Tehachapi, Lancaster, Van Nuys?)

Organization	Location	Community Area	Date	Attendees	Topics Discussed with Attendees
"Pacoima Beautiful" Community Inspectors Weekly Meeting Event					
Community Inspectors Weekly Meeting	13520 Van Nuys Boulevard, Suite 200, Pacoima	Pacoima	3/18/2019	25 attendees (all Spanish speakers) Meeting and presentation conducted in Spanish	This event was a presentation at the community organization's weekly meeting. The presentation and meeting were both conducted in Spanish and focused on the overall HSR program and the Palmdale to Burbank Project Section status, and ended with questions and answers. Topics expressed by attendees at the event included: ▪ Train speeds ▪ Number and location of stations ▪ Most thought the project was cancelled. ▪ Ticket prices ▪ Frequency of train run-times ▪ Opportunities for jobs in the community ▪ Time until project operations ▪ Completion date for Central Valley route ▪ Is the train electric? ▪ Plans for further outreach ▪ Better outreach; notifications for public meetings ▪ Information about the alignment in relation to individuals' homes or businesses ▪ Right-of-way process and how it works

Organization	Location	Community Area	Date	Attendees	Topics Discussed with Attendees
Youth United Towards Environmental Protection Weekly Meeting– Pacoima Beautiful Event					
Francis Polytechnic High School	Francis Polytechnic High School 12431 Roscoe Boulevard, Sun Valley	Sun Valley	3/27/2019	35 attendees, mostly students (English and Spanish speakers)	This event was a presentation at the youth organization's weekly meeting. The presentation, conducted in English, focused on the overall HSR program and Palmdale to Burbank Project Section Status, and ended with questions and answers. Topics discussed at the event included: ▪ Status and viability of project ▪ Number and location of stations between Los Angeles and San Francisco ▪ Time until project operation ▪ Top speed of trains ▪ Train speed in residential areas ▪ Train cost and affordability ▪ Project-related jobs, internships, and opportunities ▪ Safety and security for riders ▪ Project funding ▪ Train components and construction ▪ Electrification of train ▪ Station design ▪ Train and station amenities ▪ Homeless population and project ▪ Station safety ▪ Central Valley section completion date ▪ Factors such as economic changes and gentrification induced by the project ▪ Project use of recycled or renewable energy ▪ Electric wires and safety and security measures ▪ Impacts on biological and natural resources and applied mitigation

Organization	Location	Community Area	Date	Attendees	Topics Discussed with Attendees
Food Pantry Event					
Making It Happen, Inc.	Sunland-Tujunga	Sunland-Tujunga	7/20/2019	30 attendees, 15–20 attendees approached booth (English and Spanish speakers)	This event was an informational booth setting where the Palmdale to Burbank Project Section fact sheet and general HSR fact sheets and handouts were available to attendees. The community members that attended were very engaged. Most of the attendees who came to the booth did not know what HSR was and were interested in learning about the project in general, and especially interested in the status of the project. One community member expressed that the community did not want the project and advocated not proceeding with the environmental studies. Topics discussed at the event included: ▪ Overview of HSR ▪ Other HSR examples in the world ▪ Station locations ▪ Xpress West connections ▪ Construction duration ▪ Safety and security for riders ▪ Identification required for train use ▪ Electricity of train

Organization	Location	Community Area	Date	Attendees	Topics Discussed with Attendees
Emergency Food and Clothing Assistance Event					
Meet Each Need With Dignity	10641 San Fernando Road, Pacoima	Pacoima	8/10/2019	100 attendees, 40–45 attendees approached booth (90% Spanish speakers)	This event was an informational booth setting and was facilitated by two staff, one of whom was bilingual (Spanish). A table was set up with informational material outside of the facility to engage with the participants as they entered and exited. Out of the approximately 100 attendees, about 40 to 45 people approached the table to ask about HSR rail. Most had not heard of the program and were excited to learn that it was under construction in the Central Valley. Some of the younger attendees were very happy to receive information and the HSR shield stickers. Community members were engaged and open to information about the HSR program and the new technologies that the train will use, including positive train control, all electric, and renewable energy. Overall, it was a positive reception from the group. Topics discussed at the event included: ▪ Overview of HSR ▪ Station locations ▪ Number of stops between Los Angeles and San Francisco ▪ Train speeds ▪ Time until project operations ▪ Advocated need for station in Pacoima ▪ Affordability ▪ Jobs and opportunities ▪ Electricity of train

Several outreach events scheduled to occur were ultimately cancelled if the event was not approved by the Authority or by the hosting organization. Cancelled events are not included in the table. For further information regarding the Authority's outreach efforts, refer to Chapter 9, Public and Agency Involvement.
Authority = California High-Speed Rail Authority; HSR = high-speed rail

5.6.2 Response to Issues and Concerns of Environmental Justice Populations

In response to the extensive outreach performed by the Authority to date, community members along the Palmdale to Burbank Project Section have provided feedback on the California HSR Project at various stages in the project development. Since the *2010 Preliminary Alternatives Analysis for the Palmdale to Los Angeles Project Section* (Authority and FRA 2010), which analyzed an HSR corridor that would roughly follow State Route (SR) 14, alignment refinements were made in response to community feedback. The Refined SR14 Build Alternative, as presented in this analysis, was refined to avoid EJ communities in the San Fernando Valley by tunneling beneath a portion of the ANF including SGMNM. The East Corridor, which includes the E1, E1A, E2, and E2A Build Alternatives presented in this analysis, was introduced to avoid both EJ and non-EJ community effects by traveling long distances in tunnels beneath the ANF including SGMNM. For a full summary of the feedback received during the public engagement periods, refer to Chapter 9, Public and Agency Involvement.

5.6.3 Summary of Environmental Justice Engagement

EJ-specific outreach for the Palmdale to Burbank Project Section is an ongoing effort that began in 2019. EJ outreach involves engaging minority and/or low-income populations in the RSA to communicate project information, listening to and responding to community thoughts and concerns, and identifying potential actions to mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and/or low-income populations. The purpose of these outreach activities is to inform local community members of the California HSR Project and its status and to provide opportunities by which minority and/or low-income communities can effectively take part in the planning process for the project.

During the Authority's outreach, EJ communities raised concerns about project funding, ticket prices, station locations, construction disruption to communities, and other general community effects and benefits thus far (see Table 5-4).

5.7 Environmental Consequences

As described in Section 5.3, this section summarizes the adverse effects discussed in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, of this Draft EIR/EIS. The analysis considers both IAMFs and mitigation measures in determining whether EJ populations would experience adverse effects. All effects in the relevant Chapter 3 sections were reviewed. However, only those effects determined to be relevant for this chapter's analysis and/or occurring in EJ communities are included in this section.

5.7.1 No Project Alternative

The No Project Alternative assumes the construction and operation of planned and programmed projects (see Chapter 2, Alternatives), which have the potential to result in environmental effects on EJ populations. Planned and programmed projects under the No Project Alternative conditions would primarily occur within existing urbanized areas in the San Fernando Valley, including the city of Burbank. These projects would generally avoid the Central Subsection and the ANF, including SGMNM, which largely preclude development due to protected land designations set by the United States Forest Service. Environmental effects of the No Project Alternative with the potential to result in effects on EJ populations are discussed below.

5.7.1.1 Transportation

As discussed in Section 3.2, Transportation, the transportation analysis incorporated the anticipated increase in travel patterns for the projected increase in population and employment. Under the No Project Alternative, several roadway segments and intersections would operate at level of service (LOS) E or F during peak periods in 2040. Under No Project Alternative 2040 conditions, there would be adequate ramp queuing capacity and similar or improved pedestrian and bicycle facilities around the Burbank Airport Station area. Cities and counties in the region would evaluate the transportation effects of projects in the course of separate environmental

review and require that projects incorporate measures to avoid, minimize, or mitigate adverse effects to the extent feasible. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

Under the No Project Alternative, neither EJ nor non-EJ communities would benefit from the project-related reduction of vehicle trips and vehicle miles traveled (VMT) on freeways through the provision of another mode of intercity passenger transportation.

5.7.1.2 Air Quality and Global Climate Change

Total No Project Alternative emissions for some pollutants—volatile organic compounds (VOC), carbon monoxide (CO), and nitrogen oxides (NO_X)— would decrease from 2015 to 2040, mainly owing to anticipated improvements in automobile emissions standards over time. For other pollutants—sulfur dioxide, respirable particulate matter, and fine particulate matter—total emissions would increase during the same period (see Section 3.3, Air Quality and Global Climate Change). Such emissions would affect both EJ and non-EJ populations.

Emissions from on-road vehicles would decrease over time because newer, lower-emitting vehicles would replace older, higher-emitting vehicles that are retired, and these decreases would more than offset increases due to a higher number of VMT brought about by population and economic growth. Emissions from power plants would increase because electrical demand is expected to grow as demand for energy and industrial products rise along with population and economic growth. This growth would more than offset reductions in electrical generation emissions due to the use of renewable energy sources (see Section 3.3, Air Quality and Global Climate Change). Projects assumed as part of the No Project Alternative would undergo separate environmental review to identify any adverse effects. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

Under the No Project Alternative, neither EJ nor non-EJ communities would benefit from a project-related reduction in long-term automobile emissions associated with the decrease in VMT created by providing another mode of intercity passenger transportation.

5.7.1.3 Noise and Vibration

The No Project Alternative assumes that the population in the RSA would continue to grow, and changes and improvements to transportation infrastructure in and near the Palmdale to Burbank Project Section would be implemented by other projects. The effects of the existing built environment on noise would continue, including effects from continued operation of existing highways, airports, and railways. Highways would experience higher VMT under the No Project Alternative, which would generate greater levels of noise in the RSA. The anticipated growth includes other projects, which would result in changes to the noise effects. Foreseeable development under the No Project Alternative would not entail the construction of long tunnels in the project area. Such construction, which is unique to the Build Alternatives, would decrease transportation-related noise effects by rerouting traffic that can be anticipated from the continued growth under the No Project Alternative, thereby reducing future transportation noise in the project area. Therefore, noise levels are expected to increase over time in the RSA with the No Project Alternative.

Under the No Project Alternative, existing vibration effects would continue and would increase along major transportation corridors through undeveloped areas between Palmdale and Burbank. Higher VMT under the No Project Alternative could generate greater vibration effects that could require assessment in the environmental documents of any proposed project. The anticipated growth includes other projects, which would result in changes to the vibration effects. Cities and counties in the region would evaluate the noise and vibration effects of projects in the course of separate environmental review, and would require that projects incorporate measures to avoid, minimize, or mitigate adverse effects to the extent feasible. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

5.7.1.4 Electromagnetic Interference and Electromagnetic Fields

The use of electricity and radio frequency communication equipment, including high-voltage power lines and directional and nondirectional (cell and broadcast) antennas that result in EMFs and EMI, currently occurs and would continue to occur along the Palmdale to Burbank Project Section. Under the No Project Alternative, future conditions would be likely to result in additional use of electricity and radio frequency communications, consistent with that found in the urban and rural environments in the RSA today. It is reasonable to assume that, by 2040 with the No Project conditions, the use of electricity and radio frequency communications would increase because of increased development, greater use of electrical devices, and technological advances in wireless transmission (such as wireless data communication). As a result, generation of EMFs and EMI that might affect people and sensitive receptors would continue in the area with implementation of the No Project Alternative.

Projects planned under the No Project Alternative would undergo separate environmental review to determine whether the projects would result in adverse effects related to EMI/EMF. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

5.7.1.5 Hydrology and Water Resources

The No Project Alternative assumes that the population in the RSA would continue to grow. The effects of the existing built environment on hydrology and water resources would continue. Construction projects could alter surface water drainage patterns, modify watercourse capacity and water-flow height, increase erosion and sedimentation, degrade surface water or groundwater quality, and increase flood risks by altering flood hazard areas. Long-term effects associated with these projects could increase stormwater runoff speed and rates, permanently alter watercourse hydraulic capacity, degrade surface water or groundwater quality, increase flood heights, or decrease groundwater recharge. Such development could occur in EJ populations. However, new development projects would be subject to federal, state, and local regulations designed to control stormwater runoff, which require construction-period pollution controls, prevent floodplain development, provide for adequate groundwater recharge, and otherwise protect hydrologic resources and water quality. Adherence to these regulations would avoid and minimize hydrology and water resource effects under No Project Alternative conditions.

However, it is reasonable to assume that projects planned under the No Project Alternative would undergo separate environmental review to determine whether the projects would result in adverse effects, which would include an analysis of mitigation measures to mitigate effects. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

5.7.1.6 Hazardous Materials and Wastes

Anticipated growth under the No Project Alternative includes other projects that would require or encounter hazardous materials in types that would be comparable to those encountered by the Build Alternatives—including hazardous building materials, residual pesticides, landfill sites, educational facilities, oil and gas infrastructure, roadway and railway contamination, and other hazardous materials required for construction or operation activities.

By 2040, redevelopment on lands with existing Potential Environmental Concerns sites is likely throughout the project area. This redevelopment would necessitate investigation and remediation with appropriate oversight. Projects associated with the No Project Alternative would be subject to federal and state oversight regulating the investigation and remediation of hazardous waste during the development process. Accidental spills or releases of hazardous materials and wastes could result from continued operation of commercial and industrial facilities or during transportation of these products. Such accidents might result in new Potential Environmental Concerns sites that could affect future No Project Alternative improvements. Projects planned under the No Project Alternative would undergo separate environmental review to determine whether the projects would result in adverse effects. For projects subject to USEO 12898, the

separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

Incorporation of standard best management practices, IAMFs, and coordination with regulatory agencies would reduce risks associated with hazardous materials and wastes throughout the No Project Alternative timeline. None of the anticipated developments comprising the No Project Alternative would entail the extensive level of excavation necessary for the Build Alternatives. Given that extensive tunneling would likely not be required, the No Project Alternative would be unlikely to generate similar quantities of hazardous spoils.

5.7.1.7 Safety and Security

It is anticipated that under the No Project Alternative, safety and security in the RSA would follow current trends of emergency service response times. Under the No Project Alternative, existing emergency response plans and procedures would remain effective in the RSA. However, revisions and amendments to these plans and procedures could be made as a result of the anticipated population growth and implementation of the development projects.

As discussed in Section 3.11, Safety and Security, emergency responders would continue to experience delays throughout the study area at numerous at-grade crossings of the existing Union Pacific Railroad, BNSF, and San Joaquin Valley Rail under the No Project Alternative. While the Southern California Association of Governments (SCAG) region is anticipated to improve regional congestion as a whole in future years, alleviating delays experienced by emergency service providers, Los Angeles County is anticipated to experience the largest amount of delay (11.5-minute daily delay per capita) within the SCAG region in future years (SCAG 2016). Thus, it is expected that existing levels of delays for emergency service providers in the project area would continue into the future. By 2040, the Los Angeles County population is projected to increase by approximately 13 percent over 2015 levels. Modest growth is expected for the cities of Los Angeles and Burbank (16 and 12 percent, respectively). Between 2010 and 2015, violent crime decreased by approximately 3 percent while property crime remained relatively constant. The demand for law enforcement, fire, and emergency services would be expected to change commensurate with anticipated population growth.

Projects anticipated as part of the No Project Alternative would undergo separate environmental review to determine whether the projects would result in adverse effects related to safety and security. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

5.7.1.8 Socioeconomics and Communities

Anticipated growth under the No Project Alternative includes other projects (as described in Chapter 2, Alternatives) that would result in permanent displacement of residences and commercial and industrial businesses. Such projects would be located within the existing urban and suburban areas of Palmdale, Los Angeles, and Burbank. Land use restrictions established by the United States Forest Service would largely preclude projects within the ANF, including SGMNM, under the No Project Alternative. Additionally, the No Project Alternative could result in economic effects, disrupt or divide established communities, and/or reduce community cohesion. Such effects could occur in EJ populations and result in adverse effects on EJ communities. Projects anticipated with the No Project Alternative would undergo separate environmental review to determine whether the projects would result in adverse effects. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

5.7.1.9 Parks, Recreation, and Open Space

As discussed in Section 3.15, Parks, Recreation, and Open Space, future developments planned under the No Project Alternative would require individual environmental review. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

This review would include an analysis of future development effects on parks, recreation, and open space resources, and the environmental effects of acquiring new parks and constructing new recreational facilities necessary to meet acceptable service ratios. Otherwise, the No Project Alternative would not result in the physical alteration of existing parks or other recreational facilities or result in a need to provide new parks or other recreational facilities, the construction of which could cause significant environmental effects, in order to maintain acceptable service ratios or other performance objectives.

5.7.1.10 Aesthetics and Visual Quality

Planned growth in Los Angeles County would add residential and commercial developments and associated infrastructure to the viewed landscape. These include both instances of suburban expansion and development in existing urban areas. These proposed projects would influence the future visual character of the RSA. Such development could be located within census block groups with EJ populations. Projects assumed as part of the No Project Alternative would undergo separate environmental review to identify any adverse effects. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

5.7.1.11 Cultural Resources

The No Project Alternative would be likely to avoid adverse effects on archaeological and historic built resources that would result from the Build Alternatives. To avoid sensitive environmental and community resources on the surface, the Palmdale to Burbank Project Section proposes extensive tunneling throughout the region. Project construction could impact known and unknown archaeological resources, resulting in an adverse effect. For the No Project Alternative, other projects would not require extensive tunneling, and there would be increased opportunities to implement monitoring to observe and protect known and unknown archaeological resource sites.

Projects planned under the No Project Alternative would undergo separate environmental review to determine whether the projects would result in adverse effects related to cultural resources. For projects subject to USEO 12898, the separate environmental review would include analysis to determine whether the projects would have disproportionately high and adverse effects on EJ populations.

5.7.2 Build Alternatives

For each of the Build Alternatives, the project would result in environmental effects that could affect EJ populations. Adverse environmental effects of the Build Alternatives are discussed below. Table 5-5 summarizes all of the effects of the each of the Build Alternatives in topic areas relevant to this EJ analysis. Section 5.7.4 includes a condensed summary of environmental topic areas with adverse effects on EJ populations.

Table 5-5 Summary of Effects on Environmental Justice Populations – All Build Alternatives

Environmental Topic	Refined SR14	SR14A	E1	E1A	E2	E2A
Transportation	Adverse (spoils hauling)[1]	Adverse (spoils hauling)[1]	Adverse (spoils hauling)[1]	Adverse (spoils hauling)[1]	Adverse (spoils hauling)[1]	Adverse (spoils hauling)[1]
Air Quality and Global Climate Change	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse
Noise and Vibration	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse
Electromagnetic Interference and Electromagnetic Fields	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse
Hydrology and Water Resources	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse
Hazardous Materials and Wastes	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse
Safety and Security	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse
Socioeconomics and Communities	Adverse (business displacements)[2]	Adverse (business displacements and community cohesion)[2,3]	Adverse (business displacements)[2]	Adverse (business displacements and community cohesion)[2,3]	Adverse (business displacements and community cohesion)[4]	Adverse (business displacements and community cohesion)[4]
Parks, Recreation, and Open Space	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse
Aesthetics and Visual Quality	Adverse (permanent effects)[5]	Adverse (permanent effects)[5]	Adverse (permanent effects)[5]	Adverse (permanent effects)[5]	Adverse (permanent effects) [5,6]	Adverse (permanent effects) [5,6]
Cultural Resources	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse	Not Adverse

[1] Because spoils hauling effects would occur at intersections and roadway segments that are connected to the regional roadway network, they would be experienced by both EJ and non-EJ populations throughout the RSA.
[2] The Refined SR14, SR14A, E1, and E1A Build Alternatives would have adverse effects from business displacements in the following EJ census block groups: **Pacoima**: 60371047031, 60371042041 (Window Option W2 Only); **Sun Valley**: 60371222002, 60371212101, 60371212221, and 60371221223.
[3] The SR14A and E1A Build Alternatives would have adverse effects from loss of cohesion in the following EJ census block groups: **Palmdale**: 60379107071 (Boulders at the Lake mobile home park)
[4] The E2 and E2A Build Alternatives would have adverse effects from business displacements in the following EJ census block groups: **Sun Valley**: 60371211023 and 60371222002; they would also have adverse effects from loss of cohesion in the following EJ census block group: **Lake View Terrace**: 60371032001.
[5] Effects would occur in census block group 60379107071.
[6] Effects would occur in census block group 60379107071.

5.7.2.1 Transportation

Construction

All Six Build Alternatives

A construction-period effect on roadway segments and intersections would occur as a result of temporary roadway and 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). Construction would occur throughout the alignment and pass through several geographical regions containing EJ populations. Construction-related disruptions caused by the project, such as temporary lane or road closures, underground utility work, or truck traffic, would result in decreases to level of service (LOS) on roadway segments and intersections. Construction-related effects on roadway segments and intersections would occur surrounding the station area in the Burbank Subsection, which contains several EJ census block groups. These effects would result in temporary increases in automobile delay and travel times in these areas (refer to Section 3.2, Transportation, for further discussion of effects on roadways and intersections during construction).

The project would incorporate TR-IAMF#2, TR-IAMF#6, and TR-IAMF#7, which will require preparation and implementation of a CTP to minimize construction-related traffic, restrict construction material deliveries during peak-hour travel times, and ensure construction-related travel utilize appropriate truck routes for delivering materials. Additionally, implementation of Mitigation Measure TRA-MM#1 will add travel lanes to affected roadway segments, thereby increasing capacity and improving LOS to adequate levels. Mitigation Measures TRA-MM#2 through TRA-MM#6 and TRA-MM#8 would minimize affected intersections through modified signal timing and phasing, as well as widening, restriping, and reconfiguring intersections, such that intersection operations improve to an adequate LOS.

Considering both the IAMFs incorporated into the project and implementation of the above-mentioned mitigation measures, adverse effects on roadways and intersections from construction would not occur under any of the Build Alternatives. Therefore, construction-period effects on roadway segments and intersections are not discussed further in this chapter.

Transit and Nonmotorized Modes of Transportation

All Six Build Alternatives

Construction-period effects on transit services and nonmotorized modes of transportation would include effects on circulation, transit routes, pedestrian and bicycle movement, and access during construction of the project. Construction-related effects on transit services and nonmotorized modes of transportation would generally occur within EJ census block groups, specifically in areas surrounding the station area in the Burbank Subsection. Effects within the Central Subsection would be limited, given the relative lack of transit services in more rural and suburban areas. However, as described in Section 3.2, Transportation, effects on transit services and nonmotorized modes of transportation would be mitigated and would not result in an adverse effect. Because no adverse effects on transit services and nonmotorized modes of transportation were identified during the construction period, this resource topic is not discussed further.

Spoils Hauling

All Six Build Alternatives

Construction-period earthwork and tunneling activities associated with each of the Build Alternatives would generate substantial spoils material (rock and dirt). This spoils material would be hauled via truck to various disposal sites in the Palmdale to Burbank region, which would affect the regional transportation network, causing longer travel times and inconvenience for residents. Table 5-6 through Table 5-11 list the roadway segments and intersections that would be affected under each of the six Build Alternatives. Each of the affected roadways and intersections are located within the Central Subsection.

Table 5-6 Roadway Segments and Intersections Affected by Spoils Hauling Prior to Mitigation – Refined SR14 Build Alternative

Roadway Segment/Intersection	Routing Direction	AM/PM Peak Hour
Roadway Segments		
Sierra Highway – West of Pearblossom Highway	Northbound	AM/PM
Sierra Highway – West of Red Rover Mine Road	Northbound	AM
Hubbard Street – North of I-210 WB Ramps	Northbound	AM
Laurel Canyon Road – East of Osborne Street	Northbound	PM
Hollywood Way – South of I-5 SB Ramps	Northbound	AM/PM
Sierra Highway – West of Pearblossom Highway	Southbound	AM/PM
Sierra Highway – West of Red Rover Mine Road	Southbound	AM/PM
Hubbard Street – North of I-210 WB Ramps	Southbound	AM
Laurel Canyon Road – East of Osborne Street	Southbound	PM
Hollywood Way – South of I-5 SB Ramps	Southbound	AM/PM
Intersections		
Sierra Highway at SR 14 SB Ramps	Northbound	PM
SR 14 SB Off-Ramp at Sierra Highway	Northbound	AM
Ward Road at SR 14 SB On-Ramp/Sierra Highway	Northbound	PM
Hubbard Street at I-210 EB Ramps	Northbound	AM
I-210 WB Ramps at Paxton Street	Northbound	AM/PM
Foothill Boulevard at Spoils Area 15 Access Road 2	Northbound	AM/PM
Branford Street at San Fernando Road	Northbound	PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Northbound	PM
Hollywood Way at I-5 SB Ramps	Northbound	AM/PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Southbound	AM
SR 14 SB Off-Ramp at Sierra Highway	Southbound	AM
Ward Road at SR 14 SB On-Ramp/Sierra Highway	Southbound	PM
Hubbard Street at I-210 EB Ramps	Southbound	AM
I-210 WB Ramps at Paxton Street	Southbound	AM/PM
Foothill Boulevard at Spoils Area 15 Access Road 2	Southbound	AM/PM
Branford Street at San Fernando Road	Southbound	PM
Spoils Area 44 Access Road at San Fernando Road	Southbound	AM/PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Southbound	AM/PM
Hollywood Way at I-5 SB Ramps	Southbound	AM

EB = eastbound; EJ = Environmental Justice; I = Interstate Highway; NB = northbound; SB = southbound; SR = State Route; WB = westbound

Table 5-7 Roadway Segments and Intersections Affected by Spoils Hauling Prior to Mitigation – SR14A Build Alternative

Roadway Segment/Intersection	Routing Direction	AM/PM Peak Hour
Roadway Segments		
Sierra Highway – West of Pearblossom Highway	Northbound	AM/PM
Hubbard Street – North of I-210 WB Ramps	Northbound	AM
Laurel Canyon Road – East of Osborne Street	Northbound	PM
Hollywood Way – South of I-5 SB Ramps	Northbound	AM/PM
Sierra Highway – West of Pearblossom Highway	Southbound	AM/PM
Hubbard Street – North of I-210 WB Ramps	Southbound	AM
Laurel Canyon Road – East of Osborne Street	Southbound	PM
Sierra Highway – North of Angeles Forest Highway	Southbound	PM
Intersections		
Sierra Highway at SR 14 SB Ramps	Northbound	PM
Hubbard Street at I-210 EB Ramps	Northbound	AM
I-210 WB Ramps at Paxton Street	Northbound	AM/PM
Foothill Boulevard at Spoils Area 15 Access Road 2	Northbound	AM/PM
Branford Street at San Fernando Road	Northbound	PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Northbound	PM
Hollywood Way at I-5 SB Ramps	Northbound	AM/PM
Crown Valley Road & SR 14 WB Ramps	Northbound	AM/PM
Crown Valley Road & SR 14 EB Ramps	Northbound	PM
Crown Valley Road & Antelope Woods Road	Northbound	AM/PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Southbound	AM
Sierra Highway at SR 14 SB Ramps	Southbound	PM
Hubbard Street at I-210 EB Ramps	Southbound	AM
I-210 WB Ramps at Paxton Street	Southbound	AM/PM
Foothill Boulevard at Spoils Area 15 Access Road 2	Southbound	AM/PM
Branford Street at San Fernando Road	Southbound	PM
Spoils Area 44 Access Road at San Fernando Road	Southbound	AM/PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Southbound	AM/PM
Hollywood Way at I-5 SB Ramps	Southbound	AM
Crown Valley Road & SR 14 WB Ramps	Southbound	AM/PM
Crown Valley Road & Antelope Woods Road	Southbound	AM/PM

EB = eastbound; EJ = Environmental Justice; I = Interstate Highway; NB = northbound; SB = southbound; SR = State Route; WB = westbound

Table 5-8 Roadway Segments and Intersections Affected Spoils Hauling Prior to Mitigation – E1 Build Alternative

Roadway Segment/Intersection	Routing Direction	AM/PM Peak Hour
Roadway Segments		
Sierra Highway – West of Pearblossom Highway	Northbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Northbound	AM/PM
Sierra Highway – West of Soledad Canyon Road	Northbound	PM
Sierra Highway – North of Placerita Canyon Road	Northbound	AM
Laurel Canyon Road – East of Osborne Street	Northbound	PM
Soledad Canyon Road – South of Sierra Highway	Northbound	AM/PM
Placerita Canyon Road – East of SR 14 NB Ramps	Northbound	AM
Hollywood Way – South of I-5 SB Ramps	Northbound	AM/PM
Sierra Highway – West of Pearblossom Highway	Southbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Southbound	AM/PM
Sierra Highway – West of Soledad Canyon Road	Southbound	PM
Sierra Highway – North of Placerita Canyon Road	Southbound	AM
Laurel Canyon Road – East of Osborne Street	Southbound	PM
Soledad Canyon Road – South of Sierra Highway	Southbound	AM/PM
Placerita Canyon Road – East of SR 14 NB Ramps	Southbound	AM
Intersections		
Sierra Highway at SR 14 SB Ramps	Northbound	PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Northbound	AM/PM
I-210 WB Ramps at Paxton Street	Northbound	AM/PM
Foothill Boulevard at Spoils Area 15 Access Road 2	Northbound	AM/PM
Branford Street at San Fernando Road	Northbound	PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Northbound	PM
Hollywood Way at I-5 SB Ramps	Northbound	AM
Sierra Highway at Spoils Area 21/22 Access Road	Northbound	AM/PM
Sierra Highway at Spoils Area 22 Access Road	Northbound	AM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Northbound	AM/PM
Sierra Highway at Placerita Canyon Road	Northbound	AM/PM
Hollywood Way at I-5 SB Ramps	Northbound	AM/PM
Sierra Highway at SR 14 SB Ramps	Southbound	PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Southbound	AM/PM
I-210 WB Ramps at Paxton Street	Southbound	AM/PM

Roadway Segment/Intersection	Routing Direction	AM/PM Peak Hour
Foothill Boulevard at Spoils Area 15 Access Road 2	Southbound	AM/PM
Branford Street at San Fernando Road	Southbound	PM
Spoils Area 44 Access Road at San Fernando Road	Southbound	AM/PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Southbound	AM/PM
Hollywood Way at I-5 SB Ramps	Southbound	AM/PM
Sierra Highway at Spoils Area 21/22 Access Road	Southbound	AM/PM
Sierra Highway at Spoils Area 22 Access Road	Southbound	AM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Southbound	AM/PM
Sierra Highway at Placerita Canyon Road	Southbound	AM/PM

EJ = Environmental Justice; I = Interstate; NB = northbound; SB = southbound; SR = State Route; WB = westbound

Table 5-9 Roadway Segments and Intersections Affected Spoils Hauling Prior to Mitigation – E1A Build Alternative

Roadway Segment/Intersections	Routing Direction	AM/PM Peak Hour
Roadway Segments		
Sierra Highway – West of Pearblossom Highway	Northbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Northbound	PM
Sierra Highway – West of Soledad Canyon Road	Northbound	PM
Sierra Highway – North of Placerita Canyon Road	Northbound	AM
Laurel Canyon Road – East of Osborne Street	Northbound	PM
Soledad Canyon Road – South of Sierra Highway	Northbound	AM/PM
Placerita Canyon Road – East of SR 14 NB Ramps	Northbound	AM
Hollywood Way – South of I-5 SB Ramps	Northbound	AM/PM
Sierra Highway – West of Pearblossom Highway	Southbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Southbound	PM
Sierra Highway – West of Soledad Canyon Road	Southbound	PM
Sierra Highway – North of Placerita Canyon Road	Southbound	AM
Laurel Canyon Road – East of Osborne Street	Southbound	PM
Soledad Canyon Road – South of Sierra Highway	Southbound	AM/PM
Placerita Canyon Road – East of SR 14 NB Ramps	Southbound	AM
Intersections		
Sierra Highway at SR 14 SB Ramps	Northbound	PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Northbound	AM/PM
I-210 WB Ramps at Paxton Street	Northbound	AM/PM

Roadway Segment/Intersections	Routing Direction	AM/PM Peak Hour
Branford Street at San Fernando Road	Northbound	PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Northbound	PM
Hollywood Way at I-5 SB Ramps	Northbound	AM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Northbound	AM/PM
Sierra Highway at Placerita Canyon Road	Northbound	AM/PM
Sierra Highway at SR 14 SB Ramps	Southbound	PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Southbound	AM/PM
I-210 WB Ramps at Paxton Street	Southbound	AM/PM
Foothill Boulevard at Spoils Area 15 Access Road 2	Southbound	AM/PM
Branford Street at San Fernando Road	Southbound	PM
Spoils Area 44 Access Road at San Fernando Road	Southbound	AM/PM
Lankershim Boulevard at Telfair Avenue/Pendleton Street	Southbound	AM/PM
Hollywood Way at I-5 SB Ramps	Southbound	AM/PM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Southbound	AM/PM
Sierra Highway at Placerita Canyon Road	Southbound	AM/PM

EJ = Environmental Justice; I = Interstate; NB = northbound; SB = southbound; SR = State Route; WB = westbound

Table 5-10 Roadway Segments and Intersections Affected Spoils Hauling Prior to Mitigation – E2 Build Alternative

Roadway Segment/Intersections	Routing Direction	AM/PM Peak Hour
Roadway Segments		
Sierra Highway – West of Pearblossom Highway	Northbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Northbound	PM
Sierra Highway – West of Soledad Canyon Road	Northbound	PM
Soledad Canyon Road – South of Sierra Highway	Northbound	AM/PM
Sunland Boulevard – West of Fenwick Street	Northbound	AM/PM
Hollywood Way – South of I-5 SB Ramps	Northbound	AM/PM
Sierra Highway – West of Pearblossom Highway	Southbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Southbound	AM/PM
Sierra Highway – West of Soledad Canyon Road	Southbound	PM
Soledad Canyon Road – South of Sierra Highway	Southbound	AM/PM
Intersections		
Sierra Highway at SR 14 NB On-Ramp	Northbound	PM
Sierra Highway at SR 14 SB Ramps	Northbound	AM/PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Northbound	AM/PM
Hollywood Way at I-5 SB Ramps	Northbound	AM

Roadway Segment/Intersections	Routing Direction	AM/PM Peak Hour
Sierra Highway at Spoils Area 21/22 Access Road	Northbound	AM/PM
Sierra Highway at Spoils Area 22 Access Road	Northbound	AM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Northbound	AM/PM
Sierra Highway at SR 14 SB Ramps	Southbound	PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles	Southbound	AM/PM
Hollywood Way at I-5 SB Ramps	Southbound	AM
Sierra Highway at Spoils Area 21/22 Access Road	Southbound	AM/PM
Sierra Highway at Spoils Area 22 Access Road	Southbound	AM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Southbound	AM/PM

EJ = Environmental Justice; I = Interstate; NB = northbound; SB = southbound; SR = State Route

Table 5-11 Roadway Segments and Intersections Affected Spoils Hauling Prior to Mitigation – E2A Build Alternative

Roadway Segment/Intersections	Routing Direction	AM/PM Peak Hour
Roadway Segments		
Sierra Highway – West of Pearblossom Highway	Northbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Northbound	PM
Sierra Highway – West of Soledad Canyon Road	Northbound	PM
Soledad Canyon Road – South of Sierra Highway	Northbound	AM/PM
Sunland Boulevard – West of Fenwick Street	Northbound	AM/PM
Hollywood Way – South of I-5 SB Ramps	Northbound	AM/PM
Sierra Highway – West of Pearblossom Highway	Southbound	AM/PM
Sierra Highway – North of Angeles Forest Highway	Southbound	AM/PM
Sierra Highway – West of Soledad Canyon Road	Southbound	PM
Soledad Canyon Road – South of Sierra Highway	Southbound	AM/PM
Intersections		
Sierra Highway at SR 14 SB Ramps	Northbound	PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles Highway	Northbound	AM/PM
Hollywood Way at I-5 SB Ramps	Northbound	AM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Northbound	AM/PM
Sierra Highway at SR 14 SB Ramps	Southbound	PM
Sierra Highway at SR 14 NB Off-Ramp/Angeles	Southbound	AM/PM
Hollywood Way at I-5 SB Ramps	Southbound	AM
Soledad Canyon Road/SR 14 NB Ramps at Sierra Highway	Southbound	AM/PM

EJ = Environmental Justice; I = Interstate; NB = northbound; SB = southbound; SR = State Route

Traffic congestion on the roadway segments listed in Table 5-6 through Table 5-11 would occur in both EJ and non-EJ census block groups. Because they are part of the interconnected regional roadway network, affected intersections and roadway segments located in EJ census block groups would also be used by non-EJ populations at a comparable level. Similarly, affected

intersections and roadway segments located in non-EJ census block groups would be used by EJ populations at a comparable level. Most roadway segments and intersections affected by spoils hauling trips would be located in rural areas that would be relatively unaffected by past, present, and reasonably foreseeable future projects. Several roadways and intersections that would be affected by HSR spoils hauling trips are located nearby other project sites near the cities of Santa Clarita and Burbank. Both cities have significantly lower minority populations and low-income populations compared to the reference community of Los Angeles County. As such, the spoils-related traffic effects would be experienced relatively equally by both EJ and non-EJ populations, and effects would not be unique to EJ populations.

Implementation of TR-IAMF#2, TR-IAMF#6, and TR-IAMF#7 will require a CTP, limit spoils hauling hours, and establish spoils hauling routes to minimize transit service effects during spoils hauling. Additionally, implementation of Mitigation Measure TRA-MM#12 would further reduce spoils hauling effects by requiring the development of a CMP to address traffic circulation during spoils hauling activities. Furthermore, spoils-related traffic effects would be temporary and would not permanently affect major roadways due to temporary roadway and lane closures during construction and increased traffic associated with spoils activities. Even with the incorporation of IAMFs into the project and implementation of mitigation measures, spoils hauling would have a temporary adverse effect on roadway segments and intersections along the alignment near spoils extraction points. Because mitigation measures will require a consistent performance standard, the magnitude of these adverse effects would be similar throughout the RSAs for all Build Alternatives.

Operations

All Six Build Alternatives

The anticipated 2040 operational effects would only occur at the Burbank Airport Station area where the project would generate new transportation demands. Therefore, this operations discussion focuses on the Burbank Airport Station area. Project operations would cause an adverse effect if it would permanently decrease LOS at roadway segments and intersections, increasing congestion and delays and causing longer travel times and inconvenience for residents (refer to Section 3.2, Transportation, for further discussion of effects on roadways and intersections during operations). While the affected areas of Burbank contain several EJ census block groups, implementation of Mitigation Measures TRA-MM#1 through TRA-MM#8 described above would reduce the effects on roadway segments and intersections in the station areas, ensuring that 2040 operations will maintain an adequate LOS and would not result in increased congestion and travel delay at roadway segments and intersections in the station area. Because there would be no adverse traffic effects after mitigation measures are applied, this resource topic is not discussed further.

5.7.2.2 Air Quality and Global Climate Change

Construction

All Six Build Alternatives

Project construction would result in exceedances of air district and National Ambient Air Quality Standards for several criteria pollutants including NO_X and CO, resulting in the potential to cause regional air quality effects. Offsets purchased by the Authority would effectively mitigate effects caused by NO_X. Emissions offsets cannot be used to mitigate CO effects for general conformity; the South Coast Air Quality Management District would be required to determine whether the construction-period CO emissions for the Build Alternatives would result in a level of CO emissions that, together with all other emissions in the nonattainment area, would exceed the regional emissions budget specified in their planning documents. However, air quality effects from project construction would be both temporary and regional in nature. Furthermore, construction would take place in both EJ and non-EJ communities along the entire alignment. Therefore, EJ and non-EJ populations would both be affected by regional criteria pollutant emissions during construction.

The project would be constructed with all feasible standard on-site control measures and HSR IAMFs to reduce emissions and minimize effects on air quality. Fugitive dust emissions will be reduced through implementation of a dust control plan (AQ-IAMF#1). In addition, the contractor will utilize low-VOC paints to limit the emissions of VOCs, which contribute to ozone formation (AQ-IAMF#2). The contractor will use renewable diesel fuel to limit criteria pollutant exhaust emissions from off-road and on-road construction equipment (AQ-IAMF#3). Furthermore, the use of Tier 4 off-road construction diesel equipment (AQ-IAMF#4) and model year 2010 or newer on-road trucks (AQ-IAMF#5) would reduce exhaust-related pollutants from construction equipment, and AQ-IAMF#6 would reduce effects associated with new concrete batch plants. However, even with the application of IAMFs, exceedances of air district pollutant thresholds would still occur. Accordingly, Mitigation Measures AQ-MM#1, AQ-MM#2, and AQ-MM#3 are proposed to avoid, minimize, rectify, reduce, eliminate, or compensate for construction-period air quality effects from the project.

Mitigation Measure AQ-MM#1 will offset construction emissions (to the extent that offsets are available) through a South Coast Air Quality Management District rule or contractual agreement by funding equivalent emissions reductions that achieve reductions in the same years as construction emissions occur, thus offsetting project-related air quality effects in real time. Mitigation Measure AQ-MM#2 will require the Authority to enter into an agreement with Antelope Valley Air Quality Management District to mitigate (by offsetting) to net zero (to the extent that offsets are available) the project's actual emissions from construction equipment and vehicle exhaust emissions of VOC, NO_X, PM_{10} and $PM_{2.5}$. Additionally, Mitigation Measure AQ-MM#3 would reduce the effects of construction emissions through use of zero emission or net-zero emission on-road vehicles and off-road equipment. Given the application of IAMFs and mitigation measures discussed above, and that construction would take place in both EJ and non-EJ communities along the entire alignment, none of the six Build Alternatives would result in disproportionately high, adverse effects related to air quality on low-income and/or minority populations living within the EJ RSA.

Therefore, construction of each of the six Build Alternatives would not result in adverse air quality effects on EJ populations. As such, this resource topic is not discussed further.

Operations

All Six Build Alternatives

As discussed in Section 3.3, Air Quality and Global Climate Change, operation of each of the six Build Alternatives is expected to reduce statewide emissions of all pollutants when compared to existing and future No Project baselines. Furthermore, mobile-source air toxic emissions would decrease commensurately with anticipated VMT reductions for all Build Alternatives (see Section 3.2, Transportation, for a full VMT discussion). Localized increases in CO emissions at certain intersections would occur near the Burbank Airport Station but would not exceed the 1-hour or 8-hour National Ambient Air Quality Standards and California Ambient Air Quality Standards. Furthermore, fugitive dust and odor-causing emissions would not pose a health risk to sensitive receptors under any of the Build Alternatives. Because there would be no adverse operational air quality or climate change effects, operation of the Build Alternatives would not result in any adverse effects on EJ populations related to air quality. As such, this resource topic is not discussed further.

5.7.2.3 Noise and Vibration

Construction

All Six Build Alternatives

As discussed in Section 3.4, Noise and Vibration, construction of each of the six Build Alternatives would entail 13 construction phases, and three adverse construction-period effects on sensitive receivers. As indicated in Section 3.4, adverse construction-period noise effects would occur within 110 and 176 feet of construction activities during the daytime, and within 348 and 555 feet of construction activities during the nighttime. Adverse ground-borne vibration

effects would also occur as a result of construction activities. Adverse vibration effects would occur between 105 and 230 feet from construction activities. Noise and vibration effects from construction would be a nuisance to nearby residences and other noise-sensitive land uses. Because construction activities would occur along the entire alignment, construction-generated noise and vibration effects would be experienced by both EJ and non-EJ populations. Construction of the each of the six Build Alternatives would require spoil haul routes, which would also result in adverse noise effects in both EJ and non-EJ populations.

N&V-IAMF#1 would avoid and minimize construction-related noise and vibration effects on sensitive receivers by requiring temporary noise barriers, routing of truck traffic away from residential streets, avoiding pile driving where possible, and other typical construction practices contained in the FTA and FRA guidelines for minimizing construction noise and vibration. Implementation of Mitigation Measures N&V-MM#1 and N&V-MM#2 would further reduce construction-related noise and vibration to have no adverse effects on sensitive receptors by implementing a noise-monitoring program and requiring the contractors to meet project pile driving criteria. With implementation of these mitigation measures, there would be no adverse effect on either EJ or non-EJ communities. Therefore, construction of each of the six Build Alternatives would not result in any adverse noise and vibration effects on EJ populations. As such, this resource topic is not discussed further.

Operations

All Six Build Alternatives

As discussed in Section 3.4, Noise and Vibration, operation of each of the six Build Alternatives would result in the following adverse operational effects prior to mitigation: traffic noise effects on sensitive receptors; noise effects from stationary sources; and operational noise and vibration effects. Operation of each of the six Build Alternatives would entail traffic changes and would result in adverse operational traffic noise effects on sensitive receptors, and would result in noise and vibration from stationary facilities (e.g., the Burbank Airport Station).

Implementation of Mitigation Measures N&V-MM#3, N&V-MM#7, and N&V-MM#8 would reduce the operational noise and vibration effects identified above by ensuring the effective implementation of noise and vibration reduction strategies, including sound walls and insulation. Mitigation Measure N&V-MM#6 will require further noise analysis following final design to ensure that the determinations in this analysis remain valid. Furthermore, the project would comply with all federal and state noise regulations. With the incorporation of the above-mentioned mitigation measures, operation of each of the six Build Alternatives would not result in any adverse noise and vibration effects on EJ or non-EJ communities. Therefore, this resource topic is not discussed further.

5.7.2.4 Electromagnetic Interference and Electromagnetic Fields

Construction

All Six Build Alternatives

As discussed in Section 3.5, Electromagnetic Interference and Electromagnetic Fields, implementation of each of the six Build Alternatives would require construction activities and equipment that may pose a risk of EMI/EMF exposure to nearby communities during construction. However, the equipment utilized would generate low levels of EMFs and EMI such that electromagnetic effects would be of negligible intensity. Incorporation of EMI/EMF-IAMF#2, would avoid and minimize all EMI/EMF construction-period effects by ensuring compliance with international guidelines and applicable federal and state laws and regulations. As such, construction of the Palmdale to Burbank Project Section would not result in any adverse effects on EJ populations related to EMI/EMF exposure.

Operations

All Six Build Alternatives

Operation of each of the six Build Alternatives could adversely affect persons with implanted medical devices. Adverse effects from human exposure to EMFs and nearby sensitive equipment would occur at passenger stations, traction power substations, and nearby medical facilities.

In addition to the effects identified above, operation of each of the six Build Alternative could adversely interfere with existing rail lines. Existing rail lines are linear tracks located in areas with both EJ and non-EJ populations. EMI/EMF-IAMF#1 would avoid and minimize effects associated with EMFs along existing railroad tracks by ensuring compliance with international guidelines as well as all applicable federal and state laws and regulations. Implementation of Mitigation Measure EMI/EMF-MM#1 will protect sensitive equipment from EMI. With implementation of Mitigation Measure EMI/EMF-MM#1, all EMI/EMF operational effects would be reduced to have no adverse effect on people and sensitive equipment. As such, this resource topic is not discussed further.

5.7.2.5 Hydrology and Water Resources

Construction

All Six Build Alternatives

As discussed in Section 3.8, Hydrology and Water Resources, implementation of each of the six Build Alternatives would (1) require construction of project features within Federal Emergency Management Agency-designated Special Flood Hazard Areas; (2) develop over four groundwater basins; and (3) construct long tunnels beneath the ANF, including SGMNM. Construction of project features within Special Flood Hazard Areas could impede, channelize, or redirect flood flows, resulting in adverse flood risks to construction facilities, workers, and EJ and non-EJ communities located in flood-prone areas. Additionally, construction activities would increase the risk of release of sediment or construction pollutants during a storm event by increasing the potential for erosion and water quality degradation, which may pose health risks for nearby communities.

Construction of all six Build Alternatives would introduce impermeable surfaces that would disrupt the infiltration of water from the surface to groundwater basins, permanently affecting groundwater recharge and regional groundwater availability. Additionally, construction of each of the six Build Alternatives would entail tunneling within groundwater basins, which could result in adverse effects on surface and/or groundwater resources.

Incorporation of HYD-IAMF#1 and HYD-IAMF#2 would avoid and minimize effects associated with construction-period flood risk and effects on surface and groundwater resources by requiring stormwater management facilities to reduce the project's contribution of runoff during flood events and by implementing best management practices to reduce short-term increases in construction site runoff. Additionally, HYD-IAMF#3 will require preparation and implementation of a Stormwater Pollution Prevention Plan, which would require implementation of erosion-control best management practices during construction. As discussed in Section 3.8, Hydrology and Water Resources, Mitigation Measure HWR-MM#1 will require the Authority to treat potential groundwater pursuant to regional permit requirements, and Mitigation Measure HWR-MM#2 will require the Authority to avoid placing permanent facilities within floodplains and minimize encroachment during construction into surface water resources. Therefore, with implementation of Mitigation Measures HWR-MM#1 and HWR-MM#2, all adverse construction-period effects would be reduced to have no adverse effect on flood risk and surface and/or groundwater resources.

Additionally, HYD-IAMF#5, HYD-IAMF#6, and HYD-IAMF#7 would minimize the potential for groundwater to seep into tunnels during construction, and Mitigation Measure HWR-MM#3 will require the Authority to provide replacement groundwater recharge areas and ensure there is no net loss in recharge area capacity. As such, construction each of the six Build Alternatives would

not result in any adverse effects on flood risk or surface and groundwater resources. Because there would be no adverse hydrology and water resources effects, this resource topic is not discussed further.

Operations

All Six Build Alternatives

As discussed in Section 3.8, Hydrology and Water Resources, operation of the Build Alternatives could generate pollutants and stormwater discharge that could degrade water quality, which may result in health risks for nearby communities. HYD-IAMF#1 and HYD-IAMF#4 will ensure that stormwater runoff throughout the project would be controlled and treated prior to discharge. With incorporation of these IAMFs, the Build Alternatives would not result in any adverse effects on water quality. Therefore, this resource topic is not discussed further.

5.7.2.6 Hazardous Materials and Wastes

Construction

All Six Build Alternatives

Construction of the Palmdale to Burbank Project Section would require the handling of hazardous material or waste within 0.25 mile of 20-23 educational facilities for the Refined SR14 Build Alternative, 23-26 educational facilities for the SR14A Build Alternative, 12 educational facilities for the E1 Build Alternative, 12 educational facilities for the E1A Build Alternative, 6 educational facilities for the E2 Build Alternative, and 6 educational facilities for the E2A Build Alternative. A majority of these educational facilities are located in EJ communities (see Section 3.10, Hazardous Materials and Wastes, for figures depicting the locations of these facilities). Mitigation Measure HMW-MM#1 will require the contractor to prepare a memorandum confirming that the contractor will not, within 0.25 mile of a school, handle or store an extremely hazardous substance or a mixture of extremely hazardous substances in a quantity greater than or equal to the state threshold specified in the Health and Safety Code. Therefore, there would be no adverse effect. Because there would be no adverse effects regarding the handling of hazardous material or waste, this resource topic is not discussed further.

Operations

All Six Build Alternatives

As with construction, operation of each of the six Build Alternatives would require the handling of hazardous material or waste within 0.25 mile of the same education facilities. The same mitigation would apply, resulting in no adverse effects. Because there would be no adverse effects regarding the handling of hazardous material or waste, this resource is not discussed further.

5.7.2.7 Safety and Security

Construction

All Six Build Alternatives

Construction of the Palmdale to Burbank Project Section would take place along the entire selected alignment, traversing both EJ and non-EJ communities. During construction, there is a potential for accidents at construction sites and accidental injuries and deaths of workers or the general public. However, all applicable construction safety codes and regulations would be followed by employees engaged in construction activities. Standard implementation of a construction safety and health plan during construction, in compliance with legal requirements, would reduce risk to human health during construction. In addition, contractors would be required to develop Safety and Security Management Plans, site-specific health and safety plans and a site-specific security plan as part of S&S-IAMF#2 (Safety and Security Management Plan). With implementation of S&S-IAMF#2, the potential for construction site accidents would be greatly reduced for all Build Alternatives. Therefore, no communities, including low-income populations

and minority populations, would experience adverse effects related to accidents at construction sites and accidents associated with construction-related detours. As such, this resource topic is not discussed further.

There is a potential for individuals to be exposed to Valley fever during ground-disturbing activities. Valley fever is an infection caused by a fungus that lives in arid soils in the southwestern U.S. Appropriate precautions would be taken to educate construction workers and contractors about the signs and risks of Valley fever. Additionally, a fugitive dust control plan (AQ-IAMF#1) and Construction Safety and Health Plans (S&S-IAMF#2) would be implemented during construction that would include measures to reduce the likelihood of Valley fever fungal infection during construction. Therefore, no communities, including low-income populations and minority populations, would experience adverse effects related to Valley fever during construction. As such, this resource topic is not discussed further.

Under all of the Build Alternatives, road closures and modified traffic routing along the HSR alignment during construction could result in increased response times for emergency responders. For a full list of temporary construction-related closures for the Build Alternatives, refer to Section 3.11, Safety and Security. Emergency responders within the RSA would be notified in advance of any road closures that could disrupt access or result in delays in emergency response times, and appropriate detour routes with advance signage to notify emergency providers of road closure would be provided. The above measures would reduce the intensity of effects for all Build Alternatives such that there would be no adverse effect. As such, this resource topic is not discussed further.

Criminal activity around HSR construction sites would be typical of the types of crimes that occur at other heavy construction sites, such as theft of equipment and materials or vandalism after work hours. Construction contractors would institute security measures common to construction sites, including securing equipment and materials in fenced and locked storage areas, as well as the use of security personnel after working hours. Security lighting would be required to be focused on the site, minimizing light spillage onto neighboring properties. With implementation of these security measures, no communities, including low-income populations and minority populations, would experience adverse effects related to criminal activity at construction sites. As such, this resource topic is not discussed further.

Operations

All Six Build Alternatives

Operation of the Palmdale to Burbank Project Section would entail multiple types of operational effects relating to safety and security. For example, train-to-train collisions, collisions with vehicles, or train derailments could impact safety near potential accident sites. However, all Build Alternatives would implement the highest design standards, including system-design approach, grade separated crossings, and physical protection barriers. The Authority will also prepare hazard and threat vulnerability analyses to identify hazards ahead of operations and plan solutions to eliminate or minimize risks (S&S-IAMF#3). Therefore, no communities, including low-income populations and minority populations, would experience adverse effects. As such, this resource topic is not discussed further.

All Build Alternatives would include grade separations for motorists, cyclists, and pedestrians. Therefore, no adverse effects on motor vehicle passenger, pedestrian, and bicyclist safety would occur. As such, this resource topic is not discussed further.

The context for project effects from fire would be local; seismic hazard contexts with regard to schools, post-wildfire flooding, and landslide risks could be local or regional. Considering standard design techniques for seismically active regions of California, the fact that the California HSR System would not carry fuel or large quantities of flammable materials, and given the safety record of other HSR systems in seismically sensitive areas, the potential for these hazards would be low. Oil and gas wells within 200 feet of the HSR tracks pose a safety hazard during project construction. Active wells in this zone would be plugged and relocated, and inactive wells would be examined and re-abandoned, as necessary. Additionally, design features and standard

operating and emergency response plans would be implemented. Therefore, no communities, including low-income populations and minority populations, would experience adverse effects. As such, this resource topic is not discussed further.

To reduce potential increases in response times for emergency responders, standard design features and emergency response plans would be implemented. Additionally, the Authority would compensate emergency service providers for increased services required due to the California HSR System (S&S-MM#1). The number of people who may be present at HSR stations in Palmdale and Burbank could result in a concentration of additional emergencies in a localized area. Although emergency responses may be more frequent, the facilities and emergency responses can be achieved considering the available emergency service equipment and staff in the region and the increase in response times would be minimal. Considering the available emergency service equipment and staff in the region, response times, and the safety record of international HSR systems, this effect would be minimal. Therefore, no communities, including low-income populations and minority populations, would experience adverse effects. As such, this resource topic is not discussed further.

Criminal activity exists within the RSA and could occur on trains and at stations. Standard design features and operating plans would be implemented to reduce the risk of criminal and terrorist activity in the regional/statewide contexts and the probability for a criminal or terrorist activity to occur in the project corridor is remote. Therefore, no communities, including low-income populations and minority populations, would experience adverse effects. As such, this resource topic is not discussed further.

The risk of accidents affecting the safety of residents, schoolchildren, and school employees would be minimal given that the risk would be limited to the physical effect of a derailed train leaving the right-of-way and that implementation of standard design features would keep trains within the right-of-way. Given that this risk would be minimal throughout the Palmdale to Burbank Project Section, this would not represent an adverse effect. As such, this resource topic is not discussed further.

5.7.2.8 Socioeconomics and Communities

Construction

Refined SR14 Build Alternative

Construction of the Refined SR14 Build Alternative would have two adverse socioeconomic effects: permanent displacement of businesses and permanent division of existing communities.

The Refined SR14 Build Alternative would displace residences and commercial and industrial businesses. The residential, commercial, and industrial business displacements would occur along the alignment within the Acton area, Agua Dulce area, San Fernando Valley area, and Burbank Subsection. As shown in Table 5-12, most residential displacements (78 percent) would take place in non-EJ communities. Most business displacements (78 – 80 percent depending on the window option selected) would take place in EJ communities. There would also be 5 residential displacements and 41 business displacements in census block group 60371222002.

Table 5-12 Displacements within the Environmental Justice Resource Study Area – Refined SR14 Build Alternative

Residential and Business Displacements	Number of Displacements (Percentage of Total Displacements)
Total Number of Residential Displacements in RSA [1]	**51 – 54**
Low-Income EJ Residential Displacements [1]	7 (13 - 14%)
Minority EJ Residential Displacements [1]	12 (22 - 24%)
Total EJ Residential Displacements [1,2]	12 (22 - 24%)

Residential and Business Displacements	Number of Displacements (Percentage of Total Displacements)
Total Non-EJ Residential Displacements [1]	39 – 42 (76 - 78%)
Total Number of Business Displacements in RSA [3]	**161 – 178**
Low-Income EJ Business Displacements [3]	84 – 101 (52 – 57%)
Minority EJ Business Displacements [3]	125 – 142 (78 – 80%)
Total EJ Business Displacements [2,3]	125 – 142 (78 – 80%)
Total Non-EJ Business Displacements [3]	36 (20 – 22%)

Source: U.S. Census, 2015; Authority, 2019b
[1] Variation due to Adit Option A1 in Tujunga Canyon, which (if chosen) would displace 3 residences in block group 60379302002.
[2] Low-income and minority EJ designations are not mutually exclusive. A block group may be EJ for low-income percentage, minority percentage, or both. Therefore, the total number of EJ displacements will not necessarily represent a sum of low-income displacements plus minority EJ displacements. Refer to Section 5.4.3.2 for a discussion of how the Authority identified EJ populations.
[3] Variation due to Window Option W2 in Pacoima, which (if chosen) would displace 17 businesses in block group 60371042041.
Authority = California High-Speed Rail Authority; EJ = Environmental Justice; RSA = resource study area

As demonstrated in Table 5-12, the business displacements resulting from the Refined SR14 Build Alternative would affect EJ populations to a greater degree than non-EJ populations, but residential displacements would primarily affect non-EJ communities. As discussed in Section 3.12, Socioeconomics and Communities, sufficient replacement housing for the units displaced by the Refined SR14 Build Alternative would be available, except in southeast Antelope Valley. Displacements in this area would occur in census block group 60379102051. Adequate replacement housing would be available in neighboring communities within 5 miles, provided such housing can be made available at affordable prices. Therefore, this effect would not be adverse.

While sufficient replacement properties are available to accommodate most businesses displaced by the Refined SR14 Build Alternative, the Los Angeles neighborhoods of Pacoima and Sun Valley lack sufficient replacement sites for displaced industrial businesses to relocate within their same communities (refer to Section 3.12, Socioeconomics and Communities, for a detailed gap analysis of replacement properties). Pacoima would experience a total of 81 business displacements, 68 of which would occur in census block group 60371047031. An additional 17 Pacoima business displacements would occur in census block group 60371042041 with selection of Window Option W2. Sun Valley would experience 72 business displacements, 57 of which would occur in census block groups 60371222002, 60371212101, 60371212221, and 60371221223. Displaced business in Pacoima could relocate within 10 miles of their existing locations to communities in San Fernando, Panorama City, Sylmar, Van Nuys, North Hollywood, or Burbank. Sun Valley businesses could be relocated within 6 miles to North Hollywood or Burbank. However, given the number of businesses in Pacoima and Sun Valley that would have to relocate outside of their current communities—and potentially cities—this effect would be adverse.

Finally, construction of the Refined SR14 Build Alternative would also divide established communities, resulting in a loss of cohesion. New physical and visual barriers from at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect the community of Harold (census block group 60379102051), located south of Lake Palmdale along East Barrel Springs Road, and in a community in Agua Dulce (census block group 60379108101) located near Big Springs Road. Neither of these communities are EJ populations. Therefore, there would be no adverse effect on EJ populations, and this resource area is not discussed further.

Construction of the California HSR System would also result in direct, indirect, and induced employment as well as an increase in sales tax revenue, which would be beneficial to the regional economy. The Authority established a Community Benefits Agreement designed to

assist small businesses and job seekers in finding or obtaining construction contracts, jobs, and training opportunities for residents who live in economically disadvantaged areas along the HSR alignment (Authority 2013).

SR14A Build Alternative

Construction of the SR14A Build Alternative would have two adverse socioeconomic effects: permanent displacement of businesses and permanent division of existing communities.

The SR14A Build Alternative would displace residences and commercial and industrial businesses. The residential, commercial, and industrial business displacements would occur along the alignment within the Acton area, Agua Dulce area, San Fernando Valley area, and Burbank Subsection. As shown in Table 5-13, most residential displacements (80 – 86 percent, depending on the adit options chosen) and business displacements (74 – 77 percent, depending on window options chosen) would take place in EJ communities. For the SR14A Build Alternative, all of the low-income displacements would occur in census block groups that are both low-income and minority EJ populations. There would also be 5 residential displacements and 41 business displacements in census block group 60371222002.

Table 5-13 Displacements within the Environmental Justice Resource Study Area – SR14A Build Alternative

Residential and Business Displacements	Number of Displacements (Percentage)
Total Number of Residential Displacements in RSA [1]	**37 – 40**
Low-Income EJ Residential Displacements [1]	27 (68 – 73%)
Minority EJ Residential Displacements [1]	32 (80 – 86%)
Total EJ Residential Displacements [1,2]	32 (80 – 86%)
Total Non-EJ Residential Displacements [1]	5 – 8 (14 – 20%)
Total Number of Business Displacements in RSA [3]	**160 – 177**
Low-Income EJ Business Displacements [3]	78 – 95 (49 – 54%)
Minority EJ Business Displacements [3]	119 – 136 (74 – 77%)
Total EJ Business Displacements [2,3]	119 – 136 (74 – 77%)
Total Non-EJ Business Displacements [3]	41 (23 – 26%)

Source: U.S. Census, 2015; Authority, 2019b
[1] Variation due to Adit Option A1 in Tujunga Canyon, which (if chosen) would displace three residences in block group 60379302002.
[2] Low-income and minority EJ designations are not mutually exclusive. A block group may be EJ for low-income percentage, minority percentage, or both. Therefore, the total number of EJ displacements will not necessarily represent a sum of low-income displacements plus minority EJ displacements. Refer to Section 5.4.3.2 for a discussion of how the Authority identified EJ populations.
[3] Variation due to Window Option W2 in Pacoima, which (if chosen) would displace 17 businesses in block group 60371042041.
Authority = California High-Speed Rail Authority; EJ = Environmental Justice; RSA = resource study area

As demonstrated in Table 5-13, the residential displacements resulting from the SR14A Build Alternative would affect EJ populations to a greater degree than non-EJ populations. However, as discussed in Section 3.12, Socioeconomics and Communities, sufficient replacement housing would be available for the units displaced by the SR14A Build Alternative. Therefore, this effect would not be adverse.

Like the Refined SR14 Build Alternative, sufficient replacement properties would be available to accommodate most businesses displaced by the SR14A Build Alternative except within the Los Angeles neighborhoods of Pacoima and Sun Valley (refer to Section 3.12, Socioeconomics and Communities for a detailed gap analysis of replacement properties). Business displacements in these communities would be identical to those described for the Refined SR14 Build Alternative. Given the number of businesses in Pacoima and Sun Valley that would have to relocate outside of their current communities—and potentially cities—this effect would be adverse.

Finally, construction of the SR14A Build Alternative would also divide established communities, resulting in a loss of cohesion. New physical and visual barriers from at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect Boulders at the Lake Mobile Home Park (census block group 60379107071) south of Avenue S and east of Sierra Highway, and a community in Agua Dulce near Big Springs Road (census block group 60379108101). While the Agua Dulce community is not an EJ community, the Boulders at the Lake Mobile Home Park is both a minority and low-income EJ community. Furthermore, the Boulders at the Lake Mobile Home Park is owned by the Housing Authority of the City of Palmdale, and is a rent-controlled property under the Housing Authority's regulatory agreement, which further dedicates these housing units to all-age, low- and moderate-income households (City of Palmdale 2021). Long-term affordability covenants are income restrictions on housing units for a fixed term. Therefore, it is reasonable to conclude that low-income (50 percent to 80 percent of the local area median income) and moderate-income (80 percent to 120 percent of the local area median income) residents comprise 100 percent of the tenant population at the mobile home park. At-grade facilities would be built within the western portion of Boulders at the Lake Mobile Home Park south of East Avenue S and east of Sierra Highway (see Figure 3.12 2). Construction in this area would require the displacement of 23 residential properties (of approximately 200 total residential units). Since at-grade facilities would be built only within the western portion, the project would not present a new physical and visual barrier within the existing community. Additionally, access between the remaining homes and the regional road network would be preserved via East Avenue S, which would be modified as an overcrossing over the SR14A Build Alternative alignment. Therefore, there would be no adverse effect on EJ populations, and this resource area is not discussed further.

Construction of the California HSR System would also result in direct, indirect, and induced employment as well as an increase in sales tax revenue, which would be beneficial to the regional economy. The Authority established a Community Benefits Agreement designed to assist small businesses and job seekers in finding or obtaining construction contracts, jobs, and training opportunities for residents who live in economically disadvantaged areas along the HSR alignment (Authority 2013).

E1 Build Alternative

Construction of the E1 Build Alternative would have two adverse socioeconomic effects: permanent displacement of businesses and permanent division of existing communities.

The E1 Build Alternative would displace residences and commercial and industrial businesses. Such displacements would occur along the alignment within the Acton area, San Fernando Valley area, and Burbank Subsection. As shown in Table 5-14, most residential displacements (83 – 86 percent, depending on the adit options selected) would occur in non-EJ communities. Most business displacements (79 – 81 percent depending on the window options selected) would take place in EJ communities. For the E1 Build Alternative, all of the low-income displacements would occur in census block groups that are EJ for both low-income and minority. There would also be 5 residential displacements and 41 business displacements in census block group 60371222002.

Table 5-14 Displacements within the Environmental Justice Resource Study Area – E1 Build Alternative

Block Groups/Residential and Business Displacements	Number of Displacements (Percentage)
Total Number of Residential Displacements in RSA [1]	**24 – 29**
Low-Income EJ Residential Displacements	0 (0%)
Minority EJ Residential Displacements [1]	4 (14 – 17%)
Total EJ Residential Displacements [1,2]	4 (14 – 17%)
Total Non-EJ Residential Displacements [1]	20 – 25 (83 – 86%)

Block Groups/Residential and Business Displacements	Number of Displacements (Percentage)
Total Number of Business Displacements in RSA [3]	**160 – 177**
Low-Income EJ Business Displacements [3]	84 – 101 (53 – 57%)
Minority EJ Business Displacements [3]	126 – 143 (79 – 81%)
Total EJ Business Displacements [2,3]	126 – 143 (79 – 81%)
Total Non-EJ Business Displacements [3]	34 (19 – 21%)

Source: U.S. Census, 2015; Authority, 2019b
[1] Variation due to Adit Option A1 in Tujunga Canyon, which (if chosen) would displace 5 residences in block group 60379302002 (non-EJ for both low-income and minority.
[2] Low-income and minority EJ designations are not mutually exclusive. A block group may be EJ for low-income percentage, minority percentage, or both. Therefore, the total number of EJ displacements will not necessarily represent a sum of low-income displacements plus minority EJ displacements. Refer to Section 5.4.3.2 for a discussion of how the Authority identified EJ populations.
[3] Variation due to Window Option W2 in Pacoima, which (if chosen) would displace 17 businesses in block group 60371042041 (EJ for both low-income and minority).
Authority = California High-Speed Rail Authority; EJ = Environmental Justice; RSA = resource study area

As demonstrated in Table 5-14, the business displacements resulting from the E1 Build Alternative would affect EJ populations to a greater degree than non-EJ populations, but residential displacements would primarily affect non-EJ communities. As discussed in Section 3.12, Socioeconomics and Communities, sufficient replacement housing for the units displaced by the E1 Build Alternative would be available except in Southeast Antelope Valley. Displacements in this area would occur in census block group 60379102051, which is neither a low-income nor a minority EJ community. Adequate replacement housing would be available in neighboring communities within 5 miles, provided such housing can be made available at affordable prices. Therefore, this effect would not be adverse.

While sufficient replacement properties are available to accommodate most businesses displaced by the E1 Build Alternative, the Los Angeles neighborhoods of Pacoima and Sun Valley would lack sufficient replacement sites for displaced industrial businesses to relocate within their same communities (refer to Section 3.12, Socioeconomics and Communities for a detailed gap analysis of replacement properties). Business displacements in these communities would be identical to those described for the Refined SR14 Build Alternative. Given the number of businesses in Pacoima and Sun Valley that would have to relocate outside of their current communities—and potentially cities—this effect would be adverse.

Finally, construction of the E1 Build Alternative would divide established communities, resulting in a loss of cohesion. New physical and visual barriers from the at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect the community of Harold (census block group 60379102051), located south of Lake Palmdale along East Barrel Springs Road, and a community south of Palmdale near the SCE Vincent Substation (census block group 60379108052). Neither of these communities is an EJ population. Therefore, there would be no adverse effects on EJ populations, and this resource topic is not discussed further.

Construction of the California HSR System would also result in direct, indirect, and induced employment as well as an increase in sales tax revenue, which would be beneficial to the regional economy. The Authority established a Community Benefits Agreement designed to assist small businesses and job seekers in finding or obtaining construction contracts, jobs, and training opportunities for residents who live in economically disadvantaged areas along the HSR alignment (Authority 2013).

E1A Build Alternative

Construction of the E1A Build Alternative would have two adverse socioeconomic effects: permanent displacement of businesses and permanent division of existing communities.

The E1A Build Alternative would displace residences and commercial and industrial businesses. Such displacements would occur along the alignment within the Acton area, San Fernando Valley area, and Burbank Subsection. As shown in Table 5-15, most residential displacements (73 – 82 percent depending on the adit options selected) and business displacements (77 – 79 percent, depending on the window options selected) would take place within EJ communities. For the E1A Build Alternative, all of the low-income displacements would occur in census block groups that are EJ for both low-income and minority. There would also be 5 residential displacements and 41 business displacements in census block group 60371222002, which is EJ for minority but not for low-income.

Table 5-15 Displacements within the Environmental Justice Resource Study Area – E1A Build Alternative

Block Groups/Residential and Business Displacements	Number of Displacements (Percentage)
Total Number of Residential Displacements in RSA[1,2]	**39 – 44**
Low-Income EJ Residential Displacements [1]	27 (61 – 69%)
Minority EJ Residential Displacements [1]	32 (73 – 82%)
Total EJ Residential Displacements [1,2]	32 (73 – 82%)
Total Non-EJ Residential Displacements [1]	7 – 12 (18 -27%)
Total Number of Business Displacements in RSA [3]	**162 – 179**
Low-Income EJ Business Displacements [3]	84 – 101 (52 – 56%)
Minority EJ Business Displacements [3]	125 – 142 (77 – 79%)
Total EJ Business Displacements [2,3]	125 – 142 (77 – 79%)
Total Non-EJ Business Displacements [3]	37 (21 – 23%)

Source: U.S. Census, 2015; Authority, 2019b
[1] Variation due to Adit Option A1 in Tujunga Canyon, which (if chosen) would displace five residences in block group 60379302002 (non-EJ for both low-income and minority.
[2] Low-income and minority EJ designations are not mutually exclusive. A block group may be EJ for low-income percentage, minority percentage, or both. Therefore, the total number of EJ displacements will not necessarily represent a sum of low-income displacements plus minority EJ displacements. Refer to Section 5.4.3.2 for a discussion of how the Authority identified EJ populations.
[3] Variation due to Window Option W2 in Pacoima, which (if chosen) would displace 17 businesses in block group 60371042041 (EJ for both low-income and minority).
Authority = California High-Speed Rail Authority; EJ = Environmental Justice; RSA = resource study area

As demonstrated in Table 5-15, the residential displacements resulting from the E1A Build Alternative would affect EJ populations to a greater degree than non-EJ populations. However, as discussed in Section 3.12, Socioeconomics and Communities, sufficient replacement housing for the units displaced by the E1A Build Alternative would be available. Therefore, this effect would not be adverse.

Like the E1 Build Alternative, sufficient replacement properties would be available to accommodate most businesses displaced by the E1A Build Alternative, except within the Los Angeles neighborhoods of Pacoima and Sun Valley (refer to Section 3.12, Socioeconomics and Communities for a detailed gap analysis of replacement properties). Business displacements in these communities would be identical to those described for the Refined SR14 Build Alternative. Given the number of businesses in Pacoima and Sun Valley that would have to relocate outside of their current communities (and potentially cities), this effect would be adverse.

Finally, construction of the E1A Build Alternative would also divide established communities, resulting in a loss of cohesion. New physical and visual barriers from at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect the Boulders at the Lake Mobile Home Park (census block group 60379107071) south of Avenue S and east of Sierra Highway, and a community in Agua Dulce near Big Springs Road (census block group 60379108101). While the Agua Dulce community is not an EJ community, the Boulders at the Lake Mobile Home Park is an EJ community for both minority and low-income. Effects on these communities would be identical to those described for the SR14A Build Alternative. Therefore, there would be no adverse effects on EJ populations.

Construction of the California HSR System would also result in direct, indirect, and induced employment as well as an increase in sales tax revenue, which would be beneficial to the regional economy. The Authority established a Community Benefits Agreement designed to assist small businesses and job seekers in finding or obtaining construction contracts, jobs, and training opportunities for residents who live in economically disadvantaged areas along the HSR alignment (Authority 2013).

E2 Build Alternative

Construction of the E2 Build Alternative would have two adverse socioeconomic effects: permanent displacement of businesses and permanent division of existing communities.

Construction of the E2 Build Alternative would displace one community facility: the Los Angeles County Department of Public Social Services San Fernando Sub Office in Sun Valley (census block group 60371211022). This block group is non-EJ for both minority and low-income. As discussed in Section 3.12, Socioeconomics and Communities, the neighborhood of Sun Valley has a deficit of commercial and industrial business spaces, but over 150 spaces are available in nearby Burbank. The Los Angeles County office would therefore have the opportunity to relocate within 5 miles of its original site and could continue to serve residents of the San Fernando Valley. Because there would be no adverse effects on EJ communities resulting from the displacement of community facilities, this resource topic is not discussed further.

The E2 Build Alternative would also displace residences and commercial and industrial businesses. Such displacements would occur along the alignment within the Acton area, Lake View Terrace neighborhood, and Burbank Subsection. As shown in Table 5-16, most residential displacements. (71 percent) would occur in EJ communities. Unlike the Refined SR14, SR14A, E1, and E1A Build Alternatives, the E2 Build Alternative would only have seven residential displacements in a census block group that is EJ for both minority and low-income (census block group 60379107071). These displacements would occur in the Boulders at the Lake mobile home park in Palmdale. All other displacements would be in census block groups that are EJ for minority but not low-income, or low-income but not minority.

Table 5-16 Displacements within the Environmental Justice Resource Study Area – E2 Build Alternative

Block Groups/Residential and Business Displacements	Number of Displacements (Percentage)
Total Number of Residential Displacements in RSA	**49**
Low-Income EJ Residential Displacements	30 (49%)
Minority EJ Residential Displacements	12 (24%)
Total EJ Residential Displacements [1]	35 (71%)
Total Non-EJ Residential Displacements	14 (29%)
Total Number of Business Displacements in RSA	**68**
Low-Income EJ Business Displacements	1 (1%)

Block Groups/Residential and Business Displacements	Number of Displacements (Percentage)
Minority EJ Business Displacements	52 (76%)
Total EJ Business Displacements [1]	53 (78%)
Total Non-EJ Business Displacements	15 (22%)

Source: U.S. Census, 2010; Authority, 2017
[1] Low-income and minority EJ designations are not mutually exclusive. A block group may be EJ for low-income percentage, minority percentage, or both. Therefore, the total number of EJ displacements will not necessarily represent a sum of low-income displacements plus minority EJ displacements. Refer to Section 5.4.3.2 for a discussion of how the Authority identified EJ populations.
Authority = California High-Speed Rail Authority; EJ = Environmental Justice; RSA = resource study area

As demonstrated in Table 5-16, the residential and business displacements resulting from the E2 Build Alternative would affect EJ populations to a greater degree than non-EJ populations. As discussed in Section 3.12, Socioeconomics and Communities, sufficient replacement housing for the units displaced by the E2 Build Alternative would be available, except in the northern Los Angeles neighborhood of Lake View Terrace (census block group 60371032001), which is a low-income EJ community but not a minority EJ Community. Adequate replacement housing would be available in neighboring communities within approximately 5 miles, provided such housing can be made available at affordable prices. Therefore, this effect would not be adverse.

While sufficient replacement properties are available to accommodate most businesses displaced by the E2 Build Alternative, the Los Angeles neighborhoods of Shadow Hills and Sun Valley would lack sufficient replacement sites for displaced commercial and industrial businesses to relocate within their same communities (refer to Section 3.12, Socioeconomics and Communities for a detailed gap analysis of replacement properties). Shadow Hills would experience a total of six displacements in census block group 60371211022, which is not an EJ community. Sun Valley would experience 2 business displacements in census block groups 60371211021 (non-EJ) and 52 business displacements in census block groups 60371211023 and 60371222002 (minority EJ only). Businesses in Shadow Hills could relocate approximately 4 to 5 miles to Pacoima. Sun Valley businesses could relocate to North Hollywood, which is within 6 miles. Another possible location for displaced Sun Valley businesses is Burbank, which could reduce the distance that certain businesses have to move. However, given the number of businesses in Sun Valley that would have to relocate outside of their current communities—and potentially cities—this effect would be adverse.

Finally, construction of the E2 Build Alternative would divide established communities, resulting in a loss of cohesion. New physical and visual barriers from the at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect the community of Harold (census block group 60379102051), located south of Lake Palmdale along East Barrel Springs Road, a community located south of Palmdale near the SCE Vincent Substation (census block group 60379108052), and a community in Lake View Terrace (60371032001). Of these established communities, only Lake View Terrace is identified as an EJ population (low-income only). The permanent loss of cohesion in this community would represent an adverse effect.

Construction of the California HSR System would also result in direct, indirect, and induced employment as well as an increase in sales tax revenue, which would be beneficial to the regional economy. The Authority established a Community Benefits Agreement designed to assist small businesses and job seekers in finding or obtaining construction contracts, jobs, and training opportunities for residents who live in economically disadvantaged areas along the HSR alignment (Authority 2013).

E2A Build Alternative

Construction of the E2A Build Alternative would have two adverse socioeconomic effects: permanent displacement of businesses and permanent division of existing communities.

Like the E2 Build Alternative, construction of the E2A Build Alternative would displace one community facility: the Los Angeles County Department of Public Social Services San Fernando

Sub Office in Sun Valley (census block group 60371211022). This census block group is not an EJ community. As discussed in Section 3.12, Socioeconomics and Communities, the neighborhood of Sun Valley has a deficit of commercial and industrial business spaces, but over 150 spaces are available in nearby Burbank. The Los Angeles County office would therefore have the opportunity to relocate within 5 miles of its original site and could continue to serve residents of the San Fernando Valley. Because there would be no adverse effects on EJ communities resulting from the displacement of community facilities, this resource topic is not discussed further.

The E2A Build Alternative would also displace residences and commercial and industrial businesses. Such displacements would occur along the alignment within the Acton area, Lake View Terrace neighborhood, and Burbank Subsection. As shown on Table 5-17, most residential displacements (94 percent) would occur in EJ communities. Similarly, most business displacements (78 percent) would occur in EJ communities. The vast majority of EJ residential displacements (50 of 51) would be in census block groups that are EJ for low-income while most EJ business displacements (52 of 53) would occur in census block groups that are EJ for minority but not low-income.

Table 5-17 Displacements within the Environmental Justice Resource Study Area – E2A Build Alternative

Block Groups/Residential and Business Displacements	Number of Displacements (Percentage)
Total Number of Residential Displacements in RSA	**53**
Low-Income EJ Residential Displacements	50 (94%)
Minority EJ Residential Displacements	28 (53%)
Total EJ Residential Displacements [1]	51 (96%)
Non-EJ Residential Displacements	2 (4%)
Total Number of Business Displacements in RSA	**70**
Low-Income EJ Business Displacements	1 (1%)
Minority EJ Business Displacements	52 (74%)
Total EJ Business Displacements [1]	53 (76%)
Non-EJ Business Displacements	17 (24%)

Source: U.S. Census, 2010; Authority, 2017
[1] Low-income and minority EJ designations are not mutually exclusive. A block group may be EJ for low-income percentage, minority percentage, or both. Therefore, the total number of EJ displacements will not necessarily represent a sum of low-income displacements plus minority EJ displacements. Refer to Section 5.4.3.2 for a discussion of how the Authority identified EJ populations.
Authority = California High-Speed Rail Authority; EJ = Environmental Justice; RSA = resource study area

As demonstrated in Table 5-17, the residential displacements resulting from the E2A Build Alternative would affect EJ populations to a greater degree than non-EJ populations. As discussed in Section 3.12, Socioeconomics and Communities, sufficient replacement housing for the units displaced by the E2A Build Alternative would be available, except in the northern Los Angeles neighborhood of Lake View Terrace (census block group 60371032001), which is a low-income EJ community but not a minority EJ Community. Adequate replacement housing would be available in neighboring communities within approximately 5 miles, provided such housing can be made available at affordable prices. Therefore, this effect would not be adverse.

While sufficient replacement properties are available to accommodate most businesses displaced by the E2A Build Alternative, the Los Angeles neighborhoods of Shadow Hills and Sun Valley would lack sufficient replacement sites for displaced commercial and industrial businesses to relocate within their same communities (refer to Section 3.12, Socioeconomics and Communities

for a detailed gap analysis of replacement properties). Shadow Hills would experience a total of six displacements in census block group 60371211022, which is not an EJ community. Sun Valley would experience 2 business displacements in census block groups 60371211021 (non-EJ) and 52 business displacements in census block groups 60371211023 and 60371222002 (minority EJ only). Businesses in Shadow Hills could relocate approximately 4 to 5 miles to Pacoima. Sun Valley businesses could relocate to North Hollywood, which is within 6 miles. Another possible location for displaced Sun Valley businesses is Burbank, which could reduce the distance that certain businesses have to move. However, given the number of businesses in Sun Valley that would have to relocate outside of their current communities—and potentially cities—this effect would be adverse.

Finally, construction of the E2A Build Alternative would divide established communities, resulting in a loss of cohesion. New physical and visual barriers from at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect the Boulders at the Lake Mobile Home Park (census block group 60379107071) south of Avenue S and east of Sierra Highway, a community located south of Palmdale near the SCE Vincent Substation (census block group 60379108052), and a community in Lake View Terrace (census block group 60371032001). Of these established communities, only Lake View Terrace is identified as an EJ population (low-income only). The permanent loss of cohesion in this community would represent an adverse effect.

Construction of the California HSR System would also result in direct, indirect, and induced employment as well as an increase in sales tax revenue, which would be beneficial to the regional economy. The Authority established a Community Benefits Agreement designed to assist small businesses and job seekers in finding or obtaining construction contracts, jobs, and training opportunities for residents who live in economically disadvantaged areas along the HSR alignment (Authority 2013).

Operations

All Six Build Alternatives

Most socioeconomic effects would occur during construction of the Build Alternatives and would persist during the operations phase. However, because these effects would originate during construction, they are considered construction effects.

Operation of the Palmdale to Burbank Project Section would bring social benefits to the region by improving access to jobs and community amenities, reducing travel times, reducing traffic congestion, and providing new employment opportunities during operation. As discussed in Section 3.18, Regional Growth, operation of the Build Alternatives would result in an estimated 5,400 direct, indirect, and induced jobs in Los Angeles County. Combined with anticipated sales tax revenues from project spending on operation and maintenance of the Burbank Airport Station, this would represent an economic benefit for the region.

5.7.2.9 Parks, Recreation, and Open Space

Construction

All Six Build Alternatives

As discussed in Section 3.15, Parks, Recreation, and Open Space, construction of each of the six Build Alternatives would result in temporary impact areas, temporary facility closures, and temporary detours. Construction of the project would require the acquisition of property from parks and recreation areas. Additionally, construction of the each of the Build Alternatives would result in adverse construction-period effects associated with access, air quality, noise, and visual quality at recreational resources within the Palmdale to Burbank Project Section.

AQ-IAMF#1, N&V-IAMF#1, and PK-IAMF#1 would avoid and minimize effects associated with temporary air quality, noise and vibration, and access-related effects on recreational resources by preparing a fugitive dust control plan, a noise and vibration technical memorandum, and a technical memorandum that identifies project design features to be implemented to minimize

effects on parks, recreation, and open space. Mitigation Measures PR-MM#1 through PR-MM#9 would reduce construction effects on parks, recreation, and open space resources by (1) providing detour routes and connections for park facilities where access is restricted during construction; (2) implementing standard construction safety measures; (3) implementing a trail facilities plan; (4) applying strategies for temporary facility relocation; (5) placing requirements for return of land post construction; and (6) requiring the Authority to consult with the property owner regarding any permanent changes to public facilities in accordance with the Uniform Act and the California Park Preservation Act. With implementation of Mitigation Measures PR-MM#1 through PR-MM#9, all adverse construction-period effects would be reduced to have no adverse effects on parks, recreation, and open space resources. As such, construction of the each of the six Build Alternatives would not result in any adverse effects on parks, recreation, and open space resources. Because there would be no adverse construction effects on parks, recreation, and open space resources, this resource area is not discussed further.

Operations

All Six Build Alternatives

As discussed in Section 3.15, Parks, Recreation, and Open Space, there would be no permanent increased or decreased use of park facilities as a result of construction of each of the six Build Alternatives. However, construction of the Build Alternatives would result in physical changes to parks and their character. Adverse effects from the physical alteration of existing facilities, or a need to provide new parks or other recreational facilities, would occur at recreational resources within the Palmdale to Burbank Project Section. Additionally, operational noise and vibration could result in adverse effects on users of park facilities and other open space resources.

Mitigation Measure PR-MM#8 will require the Authority to consult with the property owner regarding permanent changes to parks, recreational resources, and/or trails to ensure that accessibility to affected park facilities is maintained and that project improvement would not result in physical deterioration of the resource. As discussed in Section 5.7.2.3, implementation of Mitigation Measures N&V-MM#3, N&V-MM#7, and N&V-MM#8 will ensure that operation of the Build Alternatives would not result in adverse noise and vibration effects, including at parks and other recreational facilities. With implementation of Mitigation Measures PR-MM#8, N&V-MM#3, N&V-MM#7, and N&V-MM#8, all adverse operational effects would be reduced to no adverse effect on parks, recreation, and open space resources. As such, operation of the Palmdale to Burbank Project Section would not result in any adverse effects on parks, recreation, and open space resources and this resource topic is not discussed further.

5.7.2.10 Aesthetics and Visual Quality

Construction

Temporary Construction Effects

All Six Build Alternatives

As discussed in Section 3.16, Aesthetics and Visual Quality, construction of each of the six Build Alternatives would result in three adverse effects: effects on existing visual quality, effects on viewers by adding new sources of light and glare during construction, and effects on scenic vistas and drives. All three adverse effects would occur within the Central Subsection for each of the Build Alternatives.

Mitigation Measure AVQ-MM#1 will require that, prior to construction, the contractor prepare a technical memorandum identifying how the project would minimize construction-related visual and aesthetic disruption. Additionally, Mitigation Measure AVQ-MM#2 will require the contractor to prepare a technical memorandum verifying how they would shield nighttime construction lighting and direct it downward such that lighting that falls outside the construction site boundaries is minimized. Implementation of Mitigation Measures AVQ-MM#1 and AVQ-MM#2 would reduce visual effects from construction to a non-adverse level. As such, this resource topic is not discussed further.

Permanent Construction Effects

Refined SR14 Build Alternative

Construction of the Refined SR14 Build Alternative would have permanent adverse effects on visual quality in some areas. HSR-related structures, including stations, elevated guideways, maintenance facilities, and ancillary features, would block views, cast shadows, and add built features to the landscape. The Refined SR14 Build Alternative would include substantial below-ground portions but would necessitate the construction of large-scale overcrossing structures over various waterways and other scenic natural resources, which would cause greater changes in visual quality due to permanent construction effects. Table 5-18 provides a summary of the permanent changes in visual quality under the Refined SR14 Build Alternative on key viewpoints (KVP), including whether each KVP is an area with an EJ population, and which mitigation measures will apply (refer to Section 3.16, Aesthetics and Visual Quality, for KVP locations).

Table 5-18 Summary of Visual Quality Changes and Effects at Key Viewpoints – Refined SR14 Build Alternative

KVP # and Location	Mitigation Measures	Adverse Effect?	In EJ Census Block Group?
Central Subsection			
KVP 1.1: East Avenue S	N/A	No	Yes
KVP 1.2: Sierra Highway	AVQ-MM#4 AVQ-MM#5 AVQ-MM#6	Yes	Yes
KVP 1.5: Lamont Odett Vista Point 1	N/A	No	No
KVP 1.6: Lamont Odett Vista Point 2	N/A	No	No
KVP 1.7: Acton Agua Dulce Library	N/A	No	No
KVP 1.8: Red Rover Mine Road	AVQ-MM#3 AVQ-MM#4	Yes	No
KVP 1.10: State Route 14 East	AVQ-MM#3 AVQ-MM#4	Yes	No
KVP 1.11: Escondido Canyon Road	AVQ-MM#3 AVQ-MM#4	Yes	No
KVP 1.14: Pacific Crest Trail	AVQ-MM#3 AVQ-MM#4	Yes	No
KVP 1.15: Vazquez Rocks	N/A	No	No
KVP 1.16: Agua Dulce Canyon Road	AVQ-MM#3 AVQ-MM#4	Yes	No
KVP 1.17: State Route 14	N/A	No	No
KVP 1.18: Soledad Canyon Road 1	N/A	No	No
KVP 1.19: Soledad Canyon Road 2	N/A	No	No
KVP 1.20: Sequoia Road	N/A	No	No
KVP 1.26: Gladstone Street	N/A	No	No
KVP 1.27: Hansen Spreading Grounds	N/A	No	No
KVP 1.28: Sheldon Street	N/A	No	Yes

KVP # and Location	Mitigation Measures	Adverse Effect?	In EJ Census Block Group?
KVP 1.29: Sun Valley Road	N/A	No	Yes
Burbank Subsection			
KVP 2.1: San Fernando Road	N/A	No	No

EJ = Environmental Justice; KVP = key viewpoint; N/A = not applicable

As shown in Table 5-18, the Refined SR14 Build Alternative would result in permanent effects on visual quality at 6 of the 20 KVPs encountered. One of the six KVPs (KVP 1.2) is within an EJ population: census block group 60379107071, which is both a minority and low-income EJ population. Incorporation of AVQ-IAMF#1 and AVQ-IAMF#2 will require application of the Authority's aesthetic guidelines to minimize visual effects and guide the development of non-station area structures based on local aesthetic preferences. Implementation of Mitigation Measures AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, and AVQ-MM#6 would further reduce the various effects on visual quality. These measures will incorporate local design and aesthetic preferences into viaduct design, require landscape treatments adjacent to elevated guideways, landscape treatments along the embankment, and the planting of vegetation within land for the project not used for HSR supporting infrastructure. Even with implementation of IAMFs and mitigation measures, the Refined SR14 Build Alternative would still result in adverse effects. However, the implementation of consistent performance standards would ensure that such adverse effects are similar in magnitude in both EJ and non-EJ populations.

SR14A Build Alternative

The SR14A Build Alternative would result in permanent adverse effects from construction on visual quality in some areas. HSR-related structures, including stations, elevated guideways, maintenance facilities, and ancillary features, would block views, cast shadows, and add built features to the landscape. The SR14A Build Alternative would include substantial below-ground portions and would also require the construction of large-scale overcrossing structures over various waterways and other scenic natural resources, which would cause greater changes in visual quality due to permanent construction effects. Table 5-19 provides a summary of the permanent changes in visual quality under the SR14A Build Alternative on KVPs, including whether each KVP is an area with an EJ population, and which mitigation measures will apply (refer to Section 3.16, Aesthetics and Visual Quality, for KVP locations).

Table 5-19 Summary of Visual Quality Changes and Effects at Key Viewpoints – SR14A Build Alternative

KVP # and Location	Mitigation Measures	Adverse Effect?	In Area with an EJ Population?
Central Subsection			
KVP 1.1: East Avenue S	N/A	No	Yes
KVP 1.2: Sierra Highway	N/A	No	Yes
KVP 1.3: Soledad Siphon	AVQ-MM#3, AVQ-MM#4	Yes	Yes
KVP 1.4: Soledad Siphon	N/A	No	Yes
KVP 1.5: Lamont Odett Vista Point 1	N/A	No	No
KVP 1.6: Lamont Odett Vista Point 2	N/A	No	No
KVP 1.7: Acton Agua Dulce Library	N/A	No	No

KVP # and Location	Mitigation Measures	Adverse Effect?	In Area with an EJ Population?
KVP 1.9: SR14A Acton Intermediate Window	N/A	No	No
KVP 1.16: Agua Dulce Canyon Road	AVQ-MM#3, AVQ-MM#4	Yes	No
KVP 1.17: State Route 14	N/A	No	No
KVP 1.18: Soledad Canyon Road 1	N/A	No	No
KVP 1.19: Soledad Canyon Road 2	N/A	No	No
KVP 1.20: Sequoia Road	N/A	No	No
KVP 1.26: Gladstone Street	N/A	No	No
KVP 1.27: Hansen Spreading Grounds	N/A	No	No
KVP 1.28: Sheldon Street	N/A	No	Yes
KVP 1.29: Sun Valley Road	N/A	No	Yes
Burbank Subsection			
KVP 2.1: San Fernando Road	N/A	No	No

EJ = Environmental Justice; KVP = key viewpoint; N/A = not applicable

The SR14A Build Alternative would result in permanent effects on visual quality at 2 of the 18 encountered KVPs. Of the two affected KVPs, only KVP 1.3 is within an area with an EJ population: census block group 60379107071, which is both a minority and a low-income EJ population. Incorporation of AVQ-IAMF#1 and AVQ-IAMF#2 will require application of the Authority's aesthetic guidelines to minimize visual effects and guide the development of non-station area structures based on local aesthetic preferences. Implementation of Mitigation Measures AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, and AVQ-MM#6 would further reduce the various effects on visual quality. These measures will incorporate local design and aesthetic preferences into viaduct design, require landscape treatments adjacent to elevated guideways, landscape treatments along the embankment, and the planting of vegetation within land acquired for the project but not used for HSR supporting infrastructure. Even with implementation of these mitigation measures, the SR14A Build Alternative would still result in adverse effects on visual quality.

As discussed above, some of these adverse effects would affect EJ populations. However, because Mitigation Measures AVQ-MM#3 through AVQ-MM#6 will require a consistent performance standard, the adverse effects experienced by EJ populations would be similar in type and magnitude to those experienced by non-EJ populations.

E1 Build Alternative

Regarding permanent construction effects, the E1 Build Alternative would have adverse effects on visual quality in some areas. HSR-related structures, including stations, elevated guideways, maintenance facilities, and ancillary features, would block views, cast shadows, and add built features to the landscape. The E1 Build Alternative would include substantial below-ground portions and would also necessitate the construction of large-scale overcrossing structures over various waterways and other scenic natural resources, which would cause greater changes in visual quality due to permanent construction effects. Table 5-20 provides a summary of the permanent changes in visual quality under the E1 Build Alternative on KVPs, including whether each KVP is within an area with an EJ population, and which mitigation measures will apply (refer to Section 3.16, Aesthetics and Visual Quality, for KVP locations).

Table 5-20 Summary of Visual Quality Changes and Effects at Key Viewpoints – E1 Build Alternative

KVP # and Location	Mitigation Measures	Adverse Effect?	In Area with an EJ Population?
Central Subsection			
KVP 1.1: East Avenue S	N/A	No	Yes
KVP 1.2: Sierra Highway	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	Yes
KVP 1.5: Lamont Odett Vista Point 1	N/A	No	No
KVP 1.6: Lamont Odett Vista Point 2	N/A	No	No
KVP 1.12: Foreston Drive	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	No
KVP 1.13: Aliso Canyon Road	N/A	No	Yes
KVP 1.21: Arrastre Canyon Road	N/A	No	No
KVP 1.26: Gladstone Street	N/A	No	No
KVP 1.27: Hansen Spreading Grounds	N/A	No	No
KVP 1.28: Sheldon Street	N/A	No	Yes
KVP 1.29: Sun Valley Road	N/A	No	Yes
Burbank Subsection			
KVP 2.1: San Fernando Road	N/A	No	No

EJ = Environmental Justice; KVP = key viewpoint; N/A = not applicable

As shown in Table 5-20, the E1 Build Alternative would result in permanent effects on visual quality at two of the 12 KVPs encountered. One of the two KVPs (KVP 1.2) is within an EJ population: census block group 60379107071, which is both a minority and a low-income EJ population. Incorporation of AVQ-IAMF#1 and AVQ-IAMF#2 will require application of the Authority's aesthetic guidelines to minimize visual effects and guide the development of non-station area structures based on local aesthetic preferences. Implementation of Mitigation Measures AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, and AVQ-MM#6 would further reduce the various effects on visual quality. These measures will incorporate local design and aesthetic preferences into viaduct design, require landscape treatments adjacent to elevated guideways, landscape treatments along the embankment, and the planting of vegetation within land acquired for the project but not used for HSR supporting infrastructure. Even with implementation of these mitigation measures, the E1 Build Alternative would still result in adverse effects.

As discussed above, some of these adverse effects would affect EJ populations. However, because Mitigation Measures AVQ-MM#3 through AVQ-MM#6 will require a consistent performance standard, the adverse effects experienced by EJ populations would be similar in type and magnitude to those experienced by non-EJ populations.

E1A Build Alternative

The E1A Build Alternative would result in permanent adverse effects from construction on visual quality in some areas. HSR-related structures, including stations, elevated guideways, maintenance facilities, and ancillary features, would block views, cast shadows, and add built

features to the landscape. The E1A Build Alternative would include substantial below-ground portions. However, the E1A Build Alternative would also implement construction of large-scale overcrossing structures over various waterways and other scenic natural resources, which would cause greater changes in visual quality due to permanent construction effects. Table 5-21 provides a summary of the permanent changes in visual quality under the E1A Build Alternative on KVPs, including whether each KVP is within an area with an EJ population, and which mitigation measures will apply (refer to Section 3.16, Aesthetics and Visual Quality, for KVP locations).

Table 5-21 Summary of Visual Quality Changes and Effects at Key Viewpoints – E1A Build Alternative

KVP # and Location	Mitigation Measures	Adverse Effect?	In Area with an EJ Population?
Central Subsection			
KVP 1.1: East Avenue S	N/A	No	Yes
KVP 1.2: Sierra Highway	N/A	No	Yes
KVP 1.3: Soledad Siphon	AVQ-MM#3, AVQ-MM#4	Yes	Yes
KVP 1.4: Soledad Siphon	N/A	No	Yes
KVP 1.5: Lamont Odett Vista Point 1	N/A	No	No
KVP 1.6: Lamont Odett Vista Point 2	N/A	No	No
KVP 1.12: Foreston Drive	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	No
KVP 1.13: Aliso Canyon Road	N/A	No	No
KVP 1.21: Arrastre Canyon Road	N/A	Yes	No
KVP 1.26: Gladstone Street	N/A	No	No
KVP 1.27: Hansen Spreading Grounds	N/A	No	No
KVP 1.28: Sheldon Street	N/A	No	Yes
KVP 1.29: Sun Valley Road	N/A	No	Yes
Burbank Subsection			
KVP 2.1: San Fernando Road	N/A	No	No

EJ = Environmental Justice; KVP = key viewpoint; N/A = not applicable

The E1A Build Alternative would result in permanent effects on visual quality at two of the 14 KVPs encountered. Of the two KVPs, only KVP 1.3 is within an EJ population: census block group 60379107071, which is both a minority and a low-income EJ population. Incorporation of AVQ-IAMF#1 and AVQ-IAMF#2 will require application of the Authority's aesthetic guidelines to minimize visual effects and guide the development of non-station area structures based on local aesthetic preferences. Implementation of Mitigation Measures AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, and AVQ-MM#6 would further reduce the various effects on visual quality. These measures will incorporate local design and aesthetic preferences into viaduct design, require landscape treatments adjacent to elevated guideways, landscape treatments along the embankment, and the planting of vegetation within land for the project not used for HSR

supporting infrastructure. Even with implementation of these mitigation measures, the E1A Build Alternative would still result in adverse effects on visual quality.

As discussed above, some of these adverse effects would affect EJ populations. However, because Mitigation Measures AVQ-MM#3 through AVQ-MM#6 will require a consistent performance standard, the adverse effects experienced by EJ populations would be similar in type and magnitude to those experienced by non-EJ populations.

E2 Build Alternative

Regarding permanent construction effects, the E2 Build Alternative would have adverse effects on visual quality in some areas. HSR-related structures, including stations, elevated guideways, maintenance facilities, and ancillary features, would block views, cast shadows, and add built features to the landscape. The E2 Build Alternative would include substantial below-ground portions but would necessitate the construction of large-scale overcrossing structures over various waterways and other scenic natural resources, which would cause greater changes in visual quality due to permanent construction effects. Table 5-22 provides a summary of the permanent changes in visual quality under the E2 Build Alternative on KVPs, including whether each KVP is an area with an EJ population, and which mitigation measures will apply (refer to Section 3.16, Aesthetics and Visual Quality, for KVP locations).

Table 5-22 Summary of Visual Quality Changes and Effects at Key Viewpoints – E2 Build Alternative

KVP # and Location	Mitigation Measures	Adverse Effect?	In Area with an EJ Population?
Central Subsection			
KVP 1.1: East Avenue S	N/A	No	Yes
KVP 1.2: Sierra Highway	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	Yes
KVP 1.5: Lamont Odett Vista Point 1	N/A	No	No
KVP 1.6: Lamont Odett Vista Point 2	N/A	No	No
KVP 1.12: Foreston Drive	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	No
KVP 1.13: Aliso Canyon Road	N/A	No	Yes
KVP 1.21: Arrastre Canyon Road	N/A	No	No
KVP 1.22: Lake View Terrace	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	Yes
KVP 1.23: Lake View Terrace 2	N/A	No	Yes
KVP 1.24: Big Tujunga Wash	AVQ-MM#3, AVQ-MM#4	Yes	No
KVP 1.25: Interstate 210	N/A	No	Yes
Burbank Subsection			
KVP 2.1: San Fernando Road	N/A	No	No

EJ = Environmental Justice; KVP = key viewpoint; N/A = not applicable

As shown in Table 5-22, the E2 Build Alternative would result in permanent effects on visual quality at four of the 12 KVPs encountered. Two of the four adversely affected KVPs are located within an area with EJ populations. KVP 1.2 is located in census block group 60379107071 (EJ for both minority and low-income) and KVP 1.22 is in census block group 60371032001 (low-income EJ only). Incorporation of AVQ-IAMF#1 and AVQ-IAMF#2, and implementation of Mitigation Measures AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, and AVQ-MM#6 will be required to reduce the various effects on visual quality. Even with implementation of these mitigation measures, the E2 Build Alternative would still result in adverse effects on visual quality. However, because Mitigation Measures AVQ-MM#3 through AVQ-MM#6 will require a consistent performance standard, the adverse effects experienced by EJ populations would be similar in type and magnitude to those experienced by non-EJ populations.

E2A Build Alternative

The E2A Build Alternative would result in permanent adverse effects from construction on visual quality in some areas. HSR-related structures, including stations, elevated guideways, maintenance facilities, and ancillary features, would block views, cast shadows, and add built features to the landscape. The E2A Build Alternative would include substantial below-ground portions. However, the E2A Build Alternative would also implement construction of large-scale overcrossing structures over various waterways and other scenic natural resources, which would cause greater changes in visual quality due to permanent construction effects. Table 5-23 provides a summary of the permanent changes in visual quality under the E2A Build Alternative on KVPs, including whether each KVP is within an area with an EJ population, and which mitigation measures will apply (refer to Section 3.16, Aesthetics and Visual Quality, for KVP locations).

Table 5-23 Summary of Visual Quality Changes and Effects at Key Viewpoints – E2A Build Alternative

KVP # and Location	Mitigation Measures	Adverse Effect?	In Area with an EJ Population?
Central Subsection			
KVP 1.1: East Avenue S	N/A	No	Yes
KVP 1.2: Sierra Highway	N/A	No	Yes
KVP 1.3: Soledad Siphon	AVQ-MM#3, AVQ-MM#4	Yes	Yes
KVP 1.4: Soledad Siphon	N/A	No	Yes
KVP 1.5: Lamont Odett Vista Point 1	N/A	No	No
KVP 1.6: Lamont Odett Vista Point 2	N/A	No	No
KVP 1.12: Foreston Drive	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	No
KVP 1.13: Aliso Canyon Road	N/A	No	Yes
KVP 1.21: Arrastre Canyon Road	N/A	No	No
KVP 1.22: Lake View Terrace	AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Yes	Yes
KVP 1.23: Lake View Terrace 2	N/A	No	Yes

KVP # and Location	Mitigation Measures	Adverse Effect?	In Area with an EJ Population?
KVP 1.24: Big Tujunga Wash	AVQ-MM#3, AVQ-MM#4	Yes	No
KVP 1.25: Interstate 210	N/A	No	Yes
Burbank Subsection			
KVP 2.1: San Fernando Road	N/A	No	No

EJ = Environmental Justice; KVP = key viewpoint; N/A = not applicable

The E2A Build Alternative would result in permanent effects on visual quality at 4 of the 14 KVPs encountered. Two of the four adversely affected KVPs are located within an area with EJ populations. KVP 1.2 is located in census block group 60379107071 (EJ for both minority and low-income) and KVP 1.22 is in census block group 60371032001 (low-income EJ only). Incorporation of AVQ-IAMF#1 and AVQ-IAMF#2, and implementation of Mitigation Measures AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, and AVQ-MM#6, will be required to reduce the various effects on visual quality. Even with implementation of these mitigation measures, the E2A Build Alternative would still result in adverse effects on visual quality. However, because Mitigation Measures AVQ-MM#3 through AVQ-MM#6 will require a consistent performance standard, the adverse effects experienced by EJ populations would be similar in type and magnitude to those experienced by non-EJ populations.

Operations

All Six Build Alternatives

As discussed in Section 3.16, Aesthetics and Visual Quality, visual changes resulting from project operation would result from high-speed trains running on the system, increased activity and traffic on local roadways from passengers arriving at and departing from stations, and ongoing maintenance activities.

However, operation of each of the six Build Alternatives would not result in any adverse visual effects based on the severity of visual changes and viewer sensitivity. As such, this resource topic is not discussed further.

5.7.2.11 Cultural Resources

Construction

Refined SR14 and SR14A Build Alternatives

As described in Section 3.17, Cultural Resources, construction of the Refined SR14 and SR14A Build Alternatives would not result in any adverse effects on cultural resources. While both the Refined SR14 Build Alternative RSA and SR14A Build Alternative RSA include several cultural resources, including the East Branch of the California Aqueduct and the Palmdale Ditch, implementation of IAMFs will ensure that construction of the Refined SR14 and SR14A Build Alternatives would not adversely affect these cultural resources.

E1, E1A, E2, and E2A Build Alternatives

As described in Section 3.17, Cultural Resources, construction of the E1, E1A, E2, and E2A Build Alternatives would not result in any adverse direct effects on cultural resources. While the RSA for the E1, E1A, E2, and E2A Build Alternatives contain several cultural resources, including the East Branch of the California Aqueduct, the Palmdale Ditch, and the Eagle and Last Chance Mine Road, implementation of CUL-IAMF#6, CUL-IAMF#8, and CUL-IAMF#10 will ensure that construction of the E1, E1A, E2, and E2A Build Alternatives would not adversely affect any of these cultural resources. However, construction of the E1, E1A, E2, and E2A Build Alternatives would result in indirect adverse visual effects on the Blum Ranch and Blum Ranch Farmhouse,

which are located on Aliso Canyon Road in the Acton community, and are not located within an EJ population. While the implementation of Mitigation Measure CUL-MM#5 would reduce indirect adverse visual effects on these resources, the indirect visual effects would remain adverse. However, as noted above, the site is not within an EJ population; therefore, there would be no adverse effects on EJ populations.

Operations

Refined SR14 and SR14A Build Alternatives

As discussed in Section 3.17, Cultural Resources, operation of the Refined SR14 and SR14A Build Alternatives would not result in any adverse direct effects on cultural resources. While both the Refined SR14 Build Alternative RSA and the SR14A Build Alternative RSA include several cultural resources, including the East Branch of the California Aqueduct and the Palmdale Ditch, implementation of CUL-IAMF#6, CUL-IAMF#8, and CUL-IAMF#10 will ensure that operation of the Refined SR14 and SR14A Build Alternatives would not adversely affect any of the cultural resources. However, operation of the Refined SR14 and SR14A Build Alternatives would result in indirect adverse noise effects on the historic Pink Motel and Café, which are in an area predominantly composed of EJ populations. However, increases in noise associated with California HSR System operation would not affect the integrity or materially impair the significance of this historical site. Therefore, the Refined SR14 and SR14A Build Alternatives would not have adverse effects on cultural resources within EJ communities. As such, this resource topic is not discussed further.

E1, E1A, E2, and E2A Build Alternatives

As discussed in Section 3.17, Cultural Resources, operation of the E1 and E1A Build Alternatives would adversely affect two cultural resources: the Pink Motel and Café and the Blum Ranch Farmhouse. Effects on the Pink Motel and Café from operation of the E1 and E1A Build Alternatives would be identical to the Refined SR14 and SR14A Build Alternatives described above. The E2, and E2A Build Alternatives would adversely affect one cultural resource: the Blum Ranch Farmhouse. The Blum Ranch Farmhouse is located on Aliso Canyon Road in the Acton community and is not located within an EJ population.

The E1, E1A, E2, and E2A Build Alternatives would have a portal above ground outside the historic property boundary of Blum Ranch. The Blum Ranch Farmhouse is a residence and therefore is considered a noise-sensitive receptor. Noise associated with operation of the E1, E1A, E2, and E2A Build Alternatives would be audible from the Blum Ranch Farmhouse. However, the Blum Ranch Farmhouse is located far enough away that operational noise from the E1, E1A, E2, and E2A Build Alternatives would not be prominent, given the property's proximity to Aliso Canyon Road. The E1, E1A, E2, and E2A Build Alternatives would not have adverse effects on cultural resources within EJ communities. As such, this resource topic is not discussed further.

5.7.3 Cumulative Effects

NEPA requires examination of a project's cumulative effects (i.e., a project's effects considered in conjunction with the effects of other past, present, and reasonably foreseeable projects causing related effects). Section 3.19, Cumulative Impacts, discusses the Build Alternatives' contribution to any cumulative impact for each resource area discussed in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures. The following discussion provides additional information on the cumulative impacts that could affect low-income populations and minority populations.

Under the cumulative condition, ongoing urban development is expected to continue within the cumulative RSA. Such planned projects that are anticipated to be constructed by 2040 include residential, commercial, industrial, recreational, and transportation facilities. Construction of cumulative projects could result in temporary and permanent disruptions to minority and/or low-income populations during temporary construction activities. If the incremental effects of multiple projects were to combine to create disproportionate and adverse effects on low-income populations and minority populations in specific communities, this would be considered a

cumulative effect on EJ populations under NEPA. However, these projects are distributed throughout Los Angeles County, which has 18.4 percent low-income populations and 72.8 percent minority populations (EJ populations). Further, a number of these projects would create additional, permanent jobs in the area and would set aside land for future industrial and commercial development, which could increase the economic opportunities available to the EJ populations.

Development of planned projects would likely include the implementation of various forms of mitigation to avoid or minimize temporary and permanent cumulative effects on the population as a whole in the cumulative RSA. Remaining effects would be distributed throughout the region and would occur based on the construction timelines of the planned projects under the cumulative condition.

In addition, the Build Alternatives would result in local and regional benefits to the low-income populations and minority populations that constitute a large percentage of the region. These benefits would include improvements in mobility within the region, regional air quality improvements, and new employment opportunities during construction and operations. For a full discussion of these benefits, refer to Section 5.8.3. Because low-income populations and minority populations comprise the majority of the population within the area, these project benefits are likely to also accrue to a greater degree to low-income populations and minority populations.

As identified in Section 5.7.2, the Build Alternatives would have adverse effects on EJ populations related to the following resource topics: transportation (regional traffic effects from spoils hauling during construction, socioeconomics (business displacements and community cohesion), and aesthetics and visual quality (permanent visual effects). These adverse effects would occur despite application of project design features and mitigation measures. Congestion from spoils hauling would combine with vehicle trips generated by past, present, and reasonably foreseeable future project causing further automobile delay, and would therefore contribute to a regional adverse cumulative effect. Conversely, displacement effects, community cohesion effects and visual quality effects would be localized changes that would not combine with other planned or reasonably foreseeable projects to cause more severe effects. Therefore, these localized effects would not contribute to adverse cumulative effects.

5.7.4 Summary of Adverse Effects

Table 5-24 summarizes the adverse effects identified in Sections 5.7.2 and 5.7.3, and specifies which EJ communities would be affected at the census block group level.

Table 5-24 Summary of Adverse Effects on EJ Populations

Environmental Topic	Build Alternatives						NEPA Conclusion before Mitigation	Mitigation	NEPA Conclusion post Mitigation					
	Refined SR14	SR14A	E1	E1A	E2	E2A			Refined SR14	SR14A	E1	E1A	E2	E2A
Transportation	Construction-related disruptions caused by the project, such as temporary lane or road closures, underground utility work, or truck traffic, would result in decreases to LOS on roadway segments and intersections. Construction-period effects on transit services and nonmotorized modes of transportation would include effects on circulation, transit routes, pedestrian and bicycle movement, and access during construction of the project. Additionally, spoils material associated with construction of the project would be hauled via truck to various disposal sites in the Palmdale to Burbank region, which would affect the regional transportation network, causing longer travel times and inconvenience for residents. Anticipated 2040 operational effects would only occur at the Burbank Airport Station area where the project would generate new transportation demands.						Adverse Effect	TR-MM#1, TR-MM#2, TR-MM#3, TR-MM#4, TR-MM#5, TR-MM#6, TR-MM#7, TR-MM#8, TR-MM#9, TR-MM#10, TR-MM#11, TR-MM#12	Adverse Effect. Congestion caused by spoils hauling activities would have an adverse effect on the regional roadway network, which is shared by both EJ and non-EJ populations. This effect would be adverse for all Build Alternatives.					
Air Quality and Global Climate Change	Project construction would result in exceedances of air district and National Ambient Air Quality Standards for several criteria pollutants including NO_X and CO, resulting in the potential to cause regional air quality effects.						Adverse Effect	AQ-MM#1, AQ-MM#2, AQ-MM#3	Adverse Effect (all six Build Alternatives)					
Noise and Vibration	Noise and vibration effects from construction would be a nuisance to nearby residences and other noise-sensitive land uses. Operation of each of the six Build Alternatives would result in the following adverse operational effects prior to mitigation: traffic noise effects on sensitive receptors; noise effects from stationary sources; and operational noise and vibration effects.						Adverse Effect	N&V-MM#1, N&V-MM#2, N&V-MM#3, N&V-MM#4, N&V-M#5, N&V-MM#6, N&V-MM#7	No Adverse Effect (all six Build Alternatives)					
Electromagnetic Interference and Electromagnetic Fields	Operation of each of the six Build Alternatives could adversely affect persons with implanted medical devices. Adverse effects from human exposure to EMFs and nearby sensitive equipment would occur at passenger stations, traction power substations, and nearby medical facilities.						Adverse Effect	EMI/EMF-MM#1	No Adverse Effect (all six Build Alternatives)					
Hydrology and Water Resources	Construction of project features within Special Flood Hazard Areas could impede, channelize, or redirect flood flows, resulting in adverse flood risks to construction facilities, workers, and communities located in flood-prone areas, and would increase the risk of release of sediment or construction pollutants during a storm event by increasing the potential for erosion and water quality degradation, which may pose health risks for nearby communities. Additionally, project construction would introduce impermeable surfaces that would disrupt the infiltration of water from the surface to groundwater basins, permanently affecting groundwater recharge and regional groundwater availability. Additionally, construction of each of the six Build Alternatives would entail tunneling within groundwater basins, which could result in adverse effects on surface and/or groundwater resources.						Adverse Effect	HWR-MM#1, HWR-MM#2, HWR-MM#3, HWR-MM#4	No Adverse Effect (all six Build Alternatives)					
Hazardous Materials and Wastes	Construction and operation of the Palmdale to Burbank Project Section would require the handling of hazardous material or waste within 0.25 mile of educational facilities.						Adverse Effect	HMW-MM#1	No Adverse Effect (all six Build Alternatives)					
Safety and Security	The number of people who may be present at HSR stations in Palmdale and Burbank during operations could result in a concentration of additional emergencies in a localized area.						Adverse Effect	S&S-MM#1	No Adverse Effect (all six Build Alternatives)					

Environmental Topic	Build Alternatives						NEPA Conclusion before Mitigation	Mitigation	NEPA Conclusion post Mitigation					
	Refined SR14	SR14A	E1	E1A	E2	E2A			Refined SR14	SR14A	E1	E1A	E2	E2A
Socioeconomics and Communities	Construction of the Palmdale to Burbank Project Section would displace residences, commercial and industrial businesses, and result in the permanent division of existing communities.						Adverse Effect	SO-MM#1, SO-MM#2, SO-MM#3	Adverse effects related to business displacements would occur in the following EJ census block groups. **Pacoima:** ▪ 60371047031 ▪ 60371042041 (Window Option W2 Only) **Sun Valley:** ▪ 60371222002 ▪ 60371212101, 60371212221, and 60371221223 No adverse effects on EJ communities related to community cohesion.	Adverse effects related to business displacements would occur in the same EJ census block groups as Refined SR14. ▪ No adverse effects on EJ communities related to community cohesion.	Adverse effects related to business displacements would occur in the same EJ census block groups as Refined SR14. No adverse effects on EJ communities related to community cohesion.	Adverse effects related to business displacements would occur in the same EJ census block groups as Refined SR14. No adverse effects on EJ communities related to community cohesion.	Adverse effects related to business displacements would occur in the following EJ census block groups. **Sun Valley:** ▪ 60371211023 and 60371222002 Adverse effects related to loss of community cohesion would occur in the following EJ census block groups: **Lake View Terrace:** ▪ 60371032001	Adverse effects related to business displacements would occur in the same EJ census block groups as E2. Adverse effects related to the loss of community cohesion in Lake View Terrace would occur in the same census block group as E2.
	For the Refined SR14 Build Alternative, residential, commercial, and industrial business displacements would occur along the alignment within the Acton area, Agua Dulce area, San Fernando Valley area, and Burbank Subsection. New physical and visual barriers from at-grade or above-grade footprint with the potential to divide existing communities would occur in the community of Harold south of Lake Palmdale along East Barrel Springs Road, and a community in Agua Dulce located near Big Springs Road.	For the SR14A Build Alternative, residential, commercial, and industrial business displacements would occur along the alignment within the Acton area, Agua Dulce area, San Fernando Valley area, and Burbank Subsection. New physical and visual barriers from at-grade or above-grade footprint with the potential to divide existing communities would occur in Boulders at the Lake Mobile Home Park south of Avenue S and east of Sierra Highway, and a community in Agua Dulce near Big Springs Road	The E1 Build Alternative would displace residences and commercial and industrial businesses. Such displacements would occur along the alignment within the Acton area, San Fernando Valley area, and Burbank Subsection. New physical and visual barriers from at-grade or above-grade footprint with the potential to divide existing communities would occur in the community of Harold located south of Lake Palmdale along East Barrel Springs Road, and a community south of Palmdale near the SCE Vincent Substation	The E1A Build Alternative would displace residences and commercial and industrial businesses. Such displacements would occur along the alignment within the Acton area, San Fernando Valley area, and Burbank Subsection. New physical and visual barriers from at-grade or above-grade footprint with the potential to divide existing communities would occur in Boulders at the Lake Mobile Home Park south of Avenue S and east of Sierra Highway, and a community in Agua Dulce near Big Springs Road	The E2 Build Alternative would displace residences, commercial, and industrial businesses displacements along the alignment within the Acton area, Lake View Terrace neighborhood, and Burbank Subsection. New physical and visual barriers from the at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect the community of Harold located south of Lake Palmdale along East Barrel Springs Road, a community located south of Palmdale near the SCE Vincent Substation), and a community in Lake View Terrace.	The E2A Build Alternative would displace residences and commercial and industrial businesses. along the alignment within the Acton area, Lake View Terrace neighborhood, and Burbank Subsection. New physical and visual barriers from at-grade or above-grade Build Alternative footprint with the potential to divide existing communities would affect the Boulders at the Lake Mobile Home Park (south of Avenue S and east of Sierra Highway, a community located south of Palmdale near the SCE Vincent Substation, and a community in Lake View Terrace.							

Environmental Topic	Build Alternatives						NEPA Conclusion before Mitigation	Mitigation	NEPA Conclusion post Mitigation					
	Refined SR14	SR14A	E1	E1A	E2	E2A			Refined SR14	SR14A	E1	E1A	E2	E2A
Parks, Recreation, and Open Space	Construction of the Palmdale to Burbank Project Section would result in temporary impact areas, temporary facility closures, and temporary detours; would require the acquisition of property from parks and recreation areas; and would result in adverse construction-period effects associated with access, air quality, noise, and visual quality at recreational resources within the Palmdale to Burbank Project Section. Adverse effects from the physical alteration of existing facilities, or a need to provide new parks or other recreational facilities, would occur at recreational resources within the Palmdale to Burbank Project Section. Additionally, operational noise and vibration could result in adverse effects on users of park facilities and other open space resources.						Adverse Effect	PR-MM#1, PR-MM#2, PR-MM#3, PR-MM#4, PR-MM#5, PR-MM#6, PR-MM#7, PR-MM#8	No Adverse Effect (all six Build Alternatives)					
Aesthetics and Visual Quality	Construction of the Palmdale to Burbank Project Section would result in effects on existing visual quality, effects on viewers by adding new sources of light and glare during construction, and effects on scenic vistas and drives.						Adverse Effect	AVQ-MM#1, AVQ-MM#2, AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, AVQ-MM#6	Adverse Effect. Permanent adverse visual effects would occur near Lake Palmdale at KVP 1.2 (Refined SR14 and E1) and KVP 1.3 (SR14A and E1A), both of which are located in census block group 60379107071. For the E2 and E2A Build Alternatives, permanent adverse visual effects would occur near Lake Palmdale at KVP 1.2 (census block group 60379107071) and in Lake View Terrace at KVP 1.22 (census block group 60379107071).					
Cultural Resources	Construction and operations of the Refined SR14 and SR14A Build Alternatives would not result in any adverse effects on cultural resources within EJ communities. Construction of the E1, E1A, E2, and E2A Build Alternatives would result in indirect adverse visual effects on the Blum Ranch and Blum Ranch Farmhouse						**Refined SR14 and SR14A:** No Adverse Effect **E1, E1A, E2, and E2A:** Adverse Effect	CUL-MM#5	**Refined SR14 and SR14A:** N/A See Section 5.7.2 **E1, E1A, E2, and E2A:** No Adverse Effect					
Cumulative	Construction of cumulative projects could result in temporary and permanent disruptions to minority and/or low-income populations during temporary construction activities.						Adverse Effect	Refer to Section 5.7.1, Mitigation, for the list of mitigation measures that will be applied to the Palmdale to Burbank Project Section.	Adverse Effect. The spoils hauling effects described above would also represent contributions to adverse cumulative effects. This effect would be adverse for all Build Alternatives.					

EJ = Environmental Justice; KVPs = key viewpoints

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The Authority's EJ determination in this Draft EIR/EIS is preliminary and is subject to change based on comments received during the public comment period on this document. In accordance with USDOT Order 5610.2C, if disproportionately high and adverse effects are identified, the action would 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." This determination will be addressed in the Final EIR/EIS.

Taking all of these factors into account, the Palmdale to Burbank Project Section Build Alternatives would result in adverse effects that may be appreciably more severe or greater in magnitude on identified low-income and/or minority populations than the adverse effects experienced by non-low-income and/or nonminority populations. These disproportionately high and adverse effects would be limited to the census block groups identified above as having disproportionate effects. As part of the EJ analysis and as discussed above, the Authority identified all practicable and reasonable mitigation measures for the Palmdale to Burbank Project Section Build Alternatives to address adverse effects on minority and/or low-income populations.

The need for an HSR system exists statewide, with densely populated regions of the state contributing to this need. The Palmdale to Burbank Project Section is an essential component of the California HSR System. The capacity of California's intercity transportation system, including transportation between Palmdale and Burbank, is insufficient to meet existing and future travel demand. The current and projected future transportation system congestion will continue to result in deteriorating air quality, reduced reliability, and increased travel times.

The project's purpose is to implement the Palmdale to Burbank Project Section of the California HSR System to meet the need outlined above. The California HSR System would construct, maintain, and operate an electrified, high-speed train system, which includes the construction, improvement, upgrade, operation, and maintenance of new and existing facilities and infrastructure necessary to support the system connecting the Palmdale Transportation Center in Palmdale to the Hollywood Burbank Airport in Burbank. When completed, the California HSR System would provide the public with electric-powered HSR service that offers predictable and consistent travel times and facilitates achieving HSR service that meets Proposition 1A travel time requirements between San Francisco and Los Angeles Union Station. In addition, the California HSR System would provide enhanced connections to airports, mass transit, and the highway network from Palmdale to Burbank, and would connect the northern and southern portions of the California HSR System as a part of Phase 1 program development.

As described in Section 5.7, IAMFs and mitigation measures would reduce most of the project effects on minority and/or low-income populations; however, the Authority has preliminarily concluded that, even after applying these measures, there remains a disproportionately high and adverse effect on minority and/or low-income populations from business displacements (all six Build Alternatives), and community cohesion (E2, and E2A).

5.8 Measures to Minimize Harm

5.8.1 Mitigation

Effects on EJ populations would be reduced with implementation of the mitigation measures listed below and discussed in Section 3.2, Transportation; Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; Section 3.5, Electromagnetic Interference and Electromagnetic Fields; Section 3.8, Hydrology and Water Resources; Section 3.10, Hazardous Materials and Wastes; Section 3.11, Safety and Security; Section 3.12, Socioeconomics and Communities; Section 3.15, Parks, Recreation, and Open Space; Section 3.16, Aesthetics and Visual Quality; and Section 3.17, Cultural Resources.

It is assumed that the mitigation measures outlined below will be applied to populations that are low-income, minority, or otherwise, based on the extent of the project effects. Additional mitigation will be considered if public input provided by affected low-income and/or minority populations during the public review process suggests that the existing mitigation measures set forth in the Draft EIR/EIS do not fully address the community's concerns.

- **TRA-MM#1:** Add Lanes to the Segment
- **TRA-MM#2:** Modify Signal Timing
- **TRA-MM#3:** Modify Signal Phasing
- **TRA-MM#4:** Provide a Traffic Signal
- **TRA-MM#5:** Restripe Intersection
- **TRA-MM#6:** Widen Intersection
- **TRA-MM#7:** Add Exclusive Turn Lanes
- **TRA-MM#8:** Reconfigure Intersection
- **TR-MM#10:** Provide Pedestrian and Bicycle Facilities
- **TR-MM#11:** In-Lieu Traffic and Parking Improvements
- **TR-MM#12:** Prepare a Transportation Construction Management Plan
- **AQ-MM#1:** Offset Project Construction Emissions through SCAQMD Emissions Offsets Programs
- **AQ-MM#2:** Offset Project Construction Emissions through AVAQMD Emissions Offsets Programs
- **AQ-MM#3:** Construction Emissions Reductions – Requirements for use of Zero Emission and/or Near Zero Emission Vehicles and Off-Road Equipment
- **N&V-MM#1:** Construction Noise Mitigation Measures
- **N&V-MM#2:** Construction Vibration Mitigation Measures
- **N&V-MM#3:** Implement Proposed California High-Speed Rail Project Noise Mitigation Guidelines
- **N&V-MM#4:** Vehicle Noise Specification
- **N&V-MM#5:** Special Track Work at Crossovers and Turnouts
- **N&V-MM#6:** Additional Noise Analysis Following Final Design
- **N&V-MM#7:** Implement Operation Vibration Mitigation Measures
- **EMI/EMF-MM#1:** Protect Sensitive Equipment
- **HWR-MM#1:** Minimize Construction-period Water Quality Impacts Associated with Tunnel Construction
- **HWR-MM#2:** Minimize Impacts Associated with Construction in Floodplains Due to Permanent Structures Located within the SFHAs During Construction
- **HWR-MM#3:** Compensation for Impacts on Hansen Spreading Grounds
- **HWR-MM#4:** Implement a Water Resources Adaptive Management and Monitoring Plan Including Compensatory Mitigation Measures as Necessary
- **HMW-MM#1:** Limit Handling of Extremely Hazardous Materials Near Educational Facilities
- **S&S-MM#1:** Monitor Response of Local Fire, Rescue, and Emergency Service Providers to Incidents at Stations and Provide a Fair Share Cost of Service
- **SO-MM#1:** Implement Measures to Reduce Impacts Associated with the Division of Residential Neighborhoods
- **SO-MM#2:** Implement Measures to Reduce Impacts Associated with the Division of Communities
- **SO-MM#3:** Implement Measures to Reduce Impacts Associated with the Relocation of Important Facilities
- **PR-MM#1:** Temporary Restricted Access to Park Facilities During Construction
- **PR-MM#2:** Providing Park Access
- **PR-MM#3:** Implement Standard Safety Measures
- **PR-MM#4:** Develop and Implement a Trail Facilities Plan
- **PR-MM#5:** Modifications to Recreational Uses
- **PR-MM#6:** Return of Land Used by Temporary Impact Areas to the Property Owners
- **PR-MM#7:** Permanent Easement from Parks, Recreation Resources, and/or Trails
- **PR-MM#8:** Permanent Changes to Access to Parks, Recreation Resources, and/or Trails
- **PR-MM#9:** Permanent Acquisition of Public Property from Land and/or Trails Planned for Public Recreational Use
- **AVQ-MM#1:** Minimize Visual Disruption from Construction Activities
- **AVQ-MM#2:** Minimize Light Disturbance during Construction
- **AVQ-MM#3:** Incorporate Design Criteria for Elevated Guideways and Station Elements that can Adapt to Local Context

- **AVQ-MM#4:** Provide Vegetation Screening Along At-Grade and Elevated Guideways Adjacent to Residential Areas
- **AVQ-MM#5:** Replant Unused Portions of Land Acquired for the HSR
- **AVQ-MM#6:** Screen Traction Power Supply Stations and Radio Communication Towers
- **CUL-MM#5:** Minimize Adverse Operational Noise Effects

5.8.2 Measures to Avoid Adverse Effects on EJ Communities

As previously noted, EJ populations are prevalent in Los Angeles County. As such, any possible alignment between Palmdale and Burbank would likely encounter EJ populations. Although the Build Alternatives for the Palmdale to Burbank Project Section were designed to avoid EJ populations where reasonably possible, avoiding them entirely was not feasible. For the Palmdale to Burbank Project Section, the Authority prepared a Preliminary Alternatives Analysis (PAA) Report in 2010. This was followed by Supplemental Alternatives Analysis (SAA) Reports in 2011, 2012, 2014, and 2016. Prior to 2016, the alternatives focused on alignments that followed the SR14 freeway from Palmdale to Santa Clarita and then followed the existing Metrolink corridor from Sylmar to Burbank (see Chapter 2, Alternatives, for a detailed discussion of alternatives previously considered). The alignment through the EJ communities in the north part of the San Fernando Valley was met with significant opposition due to its impacts on those communities.

The 2016 SAA Report introduced the Refined SR14 alternative into the project. The Refined SR14 alternative was developed to be less impactful to environmental justice communities than the previously developed SR14 alternatives. Specifically, the Refined SR14 Build Alternative avoided impacts to the City of San Fernando and had reduced impacts to the communities of Sylmar and Pacoima. As documented in the 2016 SAA, the Refined SR14 Build Alternative reduced residential impacts by 8 multi-family homes and 32 single-family homes. Business displacements were reduced by 125 commercial parcels and 85 industrial parcels. The number of residential properties within 2500 feet of the HSR centerline was reduced by more than 7000. Following a presentation of the 2016 SAA to the Authority's Board in April 2016, the Refined SR14 Build Alternative was carried forward and the previous SR 14 alternatives were dropped from consideration. The primary reason for these changes was to reduce impacts to EJ communities.

As presented in the 2016 SAA Report the Refined SR14 Build Alternative, as well as the E1 alternative that is identical to the Refined SR14 Build Alternative in the San Fernando Valley, entered the Metrolink corridor in the vicinity of Sheldon Street. At that time the Refined SR14 Build Alternative included a viaduct structure to carry the project up and over the Metrolink tracks so that the HSR line could enter the Metrolink corridor on the southwest side. As the design was further developed in 2017 and 2018, and public meetings were held in 2018, significant input was received from the community and elected officials opposing the viaduct that would carry HSR over Metrolink near Sheldon Street. The primary concerns were noise and visual impacts of having the train elevated in close proximity to residential neighborhoods. As a result, the design was modified in 2018 to bring HSR into the Metrolink corridor on the northeast side (avoiding the need for HSR to cross over Metrolink) and keeping the project at ground level through Sun Valley. This design refinement was incorporated into the design of the Refined SR14 and E1 Build Alternatives when the Palmdale to Burbank Project Section was presented to the Authority's Board at the November 2018 Board meeting. At that meeting the Board adopted the Refined SR14 Build Alternative as the State's Preferred Alternative. While the Board subsequently adopted the SR14A Build Alternative as the State's Preferred Alternative in 2020, it should be noted that the SR14A Build Alternative is identical to the Refined SR14 Build Alternative in the Sun Valley area.

5.8.3 Offsetting Project Benefits to All EJ Communities or to Specific EJ Communities

Consistent with USDOT Order 5610.2C, this section considers benefits of the project that may offset the adverse effects summarized in Section 5.7.4, Summary of Adverse Effects. This summary of offsetting benefits is based on a review of the impact analysis in all relevant Chapter 3 sections.

Table 5-25 summarizes the beneficial effects that would be experienced for each environmental topic area and notes whether or not such benefits would be experienced by EJ populations.

The Build Alternatives would provide benefits to the regional transportation system by reducing vehicle trips on local freeways through the diversion of intercity trips from road trips to the HSR system. This reduction would be a net benefit to transportation and traffic operations because a reduction in VMT would help maintain or potentially improve the operating conditions of regional roadways. This reduction in future vehicle trips would improve the LOS of the regional roadway system and reduce the overall VMT compared with existing conditions and compared to the No Project Alternative. Because this benefit would be statewide, both EJ and non-EJ populations would experience this net benefit.

Reductions in VMT would have the added benefit of reducing emissions and improving air quality. As discussed in Section 5.7.1.2, operation of the Build Alternatives would result in a reduction of statewide and regional criteria pollutants compared to existing and future No Project baselines, under both the medium- and high-ridership scenarios. Statewide emissions would be reduced starting in the opening year of HSR operation and would continue to provide reductions through the horizon year of 2040. Therefore, operations of the six Build Alternatives and the rest of the California HSR System would result in a net benefit to statewide air quality. Both EJ and non-EJ populations would experience this statewide benefit.

The Build Alternatives would also provide a safe and reliable means of intercity travel, operating on a fully grade-separated, dedicated track using contemporary safety, signaling, and ATC systems and would reduce growth in air and surface traffic. The reduction in traffic congestion as a result of the California HSR System would in turn decrease the occurrence of air, vehicular, pedestrian, and cycling accidents. Design of the system also would prevent conflicts with other vehicles, pedestrians, and bicyclists. Overall, the California HSR System would provide a safety benefit for both EJ and non-EJ travelers in the RSA.

On a more local level, the Burbank Airport Station would revitalize and bring economic benefits to the Burbank subsection, which includes both EJ and non-EJ communities. Induced growth associated with the Burbank Airport Station would accelerate the implementation of local development plans in Burbank and provide an opportunity to achieve TOD planning goals. EJ census block groups directly to the north and west of the Burbank Airport Station would be likely to experience this economic benefit. These include the Sun Valley census block groups 60371222002, 60371021051, and 60371021052. As discussed in Section 5.7.2.8, census block group 60371222002 would experience both residential and business displacements under each of the six Build Alternatives.

The project would have both short-term and long-term employment benefits for the region. Construction of the Build Alternatives would generate approximately 80,000 to 85,000 direct, indirect, and induced construction job years.[6] The Authority has implemented a variety of programs to increase both the number and ability of local workers and firms to compete for available HSR construction jobs. Through a cooperative partnership with skilled craft unions, the Authority is promoting and helping to develop education, pre-apprenticeship, and apprenticeship training programs. These activities in economically disadvantaged communities focus on helping lower-income persons, persons receiving public assistance, single parents, persons with no high school or a General Education Development diploma, and/or those who suffer from chronic unemployment to compete for available jobs. Community organizations have implemented similar programs to get workers trained, retrained, and certified for upcoming construction work. Through the Community Benefits Agreement, the Authority would require each prime contractor of an awarded construction package to commit 30 percent of all construction dollars to hiring small businesses, including separate goals for the hiring of disadvantaged and disabled veterans' businesses. Moreover, many construction workers residing in the RSA may already have obtained HSR construction experience by working on one of the first several construction packages awarded by the Authority beginning in 2013. Therefore, it is anticipated that this benefit

[6] A "job-year" is 1 year of employment for one employee.

will be experienced largely by EJ communities. In addition to construction employment, operation of the Build Alternatives would create approximately 5,400 direct and indirect jobs in Los Angeles County. Such long-term employment benefits would likely be experienced by both EJ and non-EJ populations.

Table 5-25 Summary of Project Benefits to EJ Populations

Environmental Topic	All Build Alternatives
Transportation	Regional and statewide benefits experienced by both EJ and non-EJ populations.
Air Quality and Global Climate Change	Regional and statewide benefits experienced by both EJ and non-EJ populations.
Safety and Security	Regional and statewide benefits experienced by both EJ and non-EJ populations.
Socioeconomics and Communities	Localized economic benefits experienced by the following EJ block groups: 60371222002 (would experience residential and business displacements under all Build Alternatives), 60371021051, and 60371021052. Regional short-term and long-term employment benefits experienced by both EJ and non-EJ populations.

EJ = Environmental Justice

5.9 Preliminary Environmental Justice Determination

This section analyzes each resource topic for which an adverse effect on EJ populations was identified and provides a preliminary determination for whether that adverse effect would be disproportionately high and adverse. As summarized in Section 5.7.4, adverse effects on EJ populations would occur under the following resource topics: transportation (traffic congestion from spoils hauling activities), socioeconomics (business displacements and community cohesion effects), and aesthetics and visual quality (permanent visual effects). As discussed in Section 5.7.3, the adverse transportation effects would also represent contributions to adverse cumulative effects on EJ populations.

5.9.1 Transportation

As discussed in Section 5.7.2.1, traffic congestion on the roadway segments listed in Table 5-6 through Table 5-11 would occur in both EJ and non-EJ populations. Because they are part of the interconnected regional roadway network, affected intersections and roadway segments located in EJ census block groups would also be used by non-EJ populations at a comparable level. Similarly, affected intersections and roadway segments located in non-EJ census block groups would be used by EJ populations at a comparable level. As such, the spoils-related traffic effects would be experienced relatively equally by both EJ and non-EJ populations and would not be unique to EJ populations.

Implementation of TR-IAMF#2, TR-IAMF#6, and TR-IAMF#7 will require a CTP, limit spoils hauling hours, and establish spoils hauling routes to minimize transit service effects during spoils hauling. Additionally, implementation of Mitigation Measure TRA-MM#12 would further reduce spoils hauling effects by requiring the development of a CMP to address traffic circulation during spoils hauling activities. Furthermore, spoils-related traffic effects would be temporary and would not permanently affect major roadways due to temporary roadway and lane closures during construction and increased traffic associated with spoils activities. Even with the implementation of IAMFs and mitigation measures, spoils hauling would have a temporary adverse effect on roadway segments and intersections along the alignment near spoils extraction points. However, because IAMFs and mitigation measures will apply a consistent performance standard across all

affected segments and intersections, the magnitude of these adverse effects would be similar throughout the RSAs for all Build Alternatives.

While adverse effects from construction-related spoils hauling would be temporary, the Build Alternatives would provide long-term benefits to the regional transportation system by reducing vehicle trips on local freeways through the diversion of intercity trips from road trips to HSR. This reduction would be a net benefit to transportation and traffic operations because a reduction in VMT would help maintain or potentially improve the operating conditions of regional roadways. This reduction in future vehicle trips would ultimately improve the LOS of the regional roadway system and reduce the overall VMT compared with existing conditions and compared to the No Project Alternative. Because this benefit would be statewide, both EJ and non-EJ populations would experience this net benefit.

Given that adverse roadway effects would be experienced relatively equally by both EJ and non-EJ populations, and that the Build Alternatives would ultimately provide a net benefit in terms of VMT reduction and LOS improvements, the Authority has preliminarily concluded that this effect would not be disproportionately high and adverse.

5.9.2 Socioeconomics and Communities

As discussed in Section 5.7.1.8, each of the six Build Alternatives would have adverse effects related to business displacements. For the Refined SR14, SR14A, E1, and E1A Build Alternatives, these effects would occur in Pacoima and Sun Valley, which predominantly comprise EJ census block groups.[7] For the E2 and E2A Build Alternatives, adverse effects related to business displacements would occur in Shadow Hills and Sun Valley. While none of the Shadow Hills business displacements would occur in EJ census block groups, most of business displacements in Sun Valley would be in EJ census block groups.[8] Therefore, adverse effects related to business displacements would predominantly affect EJ populations for all six Build Alternatives.

The Authority did not identify any feasible mitigation measures to reduce adverse effects associated with business displacements. As discussed in Section 5.8.3, the project would have both short-term and long-term economic benefits related to employment that are expected to largely benefit EJ populations. However, such benefits would not directly offset adverse effects on displaced businesses. Therefore, the Authority has preliminarily concluded that this effect would be disproportionately high and adverse.

In addition to business displacements, the E2 and E2A Build Alternatives would have adverse effects related to loss of community cohesion in Lake View Terrace.[9] The loss of cohesion would result from residential displacements occurring in the middle of an established community. However, access between properties and the local road network would be maintained because the project would provide adequate roadway overcrossings and undercrossings to facilitate pedestrian, bicycle, and vehicular circulation. Additionally, SO-MM#2 will require special outreach to affected residential neighborhood and community residents, community organizations, and local officials, as well as require the Authority's evaluation of the community's modified access, to enable the Authority to maintain community cohesion. Upon gathering feedback from the community, the Authority will use the input to inform the development of enhancements to ameliorate effects associated with community cohesion and community division. The Authority will be responsible for implementing the measures to reduce effects through project design and through the long-term management of the measures, which will involve documenting the desired design concepts, incorporating them into the final design, and facilitating ongoing maintenance.

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[7] The Refined SR14, SR14A, E1, and E1A Build Alternatives would have adverse effects from business displacements in the following EJ census block groups: *Pacoima*: 60371047031, 60371042041 (Window Option W2 Only); *Sun Valley*: 60371222002, 60371212101, 60371212221, and 60371221223.

[8] The E2 and E2A Build Alternatives would have adverse effects from business displacements in the following EJ census block groups: Sun Valley: 60371211023 and 60371222002; they would also have adverse effects from loss of cohesion in the following EJ census block group: Lake View Terrace: 60371032001.

[9] Census block group 60371032001.

However, because this outreach has yet to occur and effective measures to reduce and ameliorate effects have not yet been identified, the Authority has preliminarily concluded that this effect would be disproportionately high and adverse.

5.9.3 Aesthetics and Visual Quality

As discussed in Section 5.7.2.10, construction of the Refined SR14, E1, and E2 Build Alternatives would have permanent adverse visual effects at KVP 1.2 near Lake Palmdale within an EJ census block group.[10] The SR14A, E1A, and E2A Build Alternatives would have permanent adverse visual effects at KVP 1.3, which is in the same census block group near Lake Palmdale. Additionally, the E2 and E2A Build Alternatives would have permanent visual effects at KVP 1.22 in Lake View Terrace.[11] In all cases effects would result from the presence of HSR-related structures including elevated guideways and ancillary features, which would block existing views, cast shadows, and add built features to the landscape.

As shown in Table 5-18 through Table 5-23, adverse effects would occur in both EJ and non-EJ census block groups and would therefore be experienced by both EJ and non-EJ populations. Implementation of Mitigation Measures AVQ-MM#3, AVQ-MM#4, AVQ-MM#5, and AVQ-MM#6 would reduce effects on visual quality. While the overall visual change would remain adverse at affected KVPs, implementation of consistent performance standards for all visible project features would ensure that effects would be similar in magnitude in both EJ and non-EJ populations.

Given that both EJ and non-EJ populations would experience adverse visual effects, and that the magnitude of such effects would be similar in both EJ and non-EJ populations, the Authority has preliminarily concluded that this effect would not be disproportionately high and adverse.

5.9.4 Summary of Preliminary Determinations

Table 5-26 provides a summary of the Authority's preliminary determinations regarding disproportionately high and adverse effects on low-income and/or minority populations by resource topic for each of the six Build Alternatives. As discussed in Section 5.7.2, the degree and locations of effects on each affected resource vary for each Build Alternative. The overall determination of effects pursuant to NEPA and the determination of disproportionately high and adverse effects on minority and/or low-income populations is different between the Refined SR14, SR14A, E1, E1A, E2, and E2A Build Alternatives. However, the Authority has preliminarily determined that all six Build Alternatives would result in disproportionately high and adverse effects on EJ populations related to socioeconomics (business displacements and community cohesion). This preliminary determination will be revised and refined, after consideration of public comment, and after further refinement of this analysis. That refinement may result in a reduction or elimination in the number of effects determined to be disproportionate.

[10] Effects would occur in census block group 60379107071.

[11] Effects would occur in census block group 60379107071.

Table 5-26 Summary of Preliminary Environmental Justice Determinations

Environmental Topic with Adverse effects on EJ Populations	Disproportionately High and Adverse EJ Effects					
	Refined SR14	SR14A	E1	E1A	E2	E2A
Transportation	No	No	No	No	No	No
Socioeconomics and Communities	Yes (Business Displacements)[1]	Yes (Business Displacements)[1]	Yes (Business Displacements)[1]	Yes (Business Displacements)[1]	Yes (Business Displacements and Community Cohesion)[2]	Yes (Business Displacements and Community Cohesion)[2]
Aesthetics and Visual Quality	No	No	No	No	No	No

[1] The Refined SR14, SR14A, E1, and E1A Build Alternatives would have adverse effects from business displacements in the following EJ census block groups: Pacoima: 60371047031, 60371042041 (Window Option W2 Only); Sun Valley: 60371222002, 60371212101, 60371212221, and 60371221223.
[2] The E2 and E2A Build Alternatives would have adverse effects from business displacements in the following EJ census block groups: **Sun Valley**: 60371211023 and 60371222002; they would also have adverse effects from loss of cohesion in the following EJ census block group: **Lake View Terrace**: 60371032001.
EJ = Environmental Justice

The Authority's EJ determination in this Draft EIR/EIS is preliminary and is subject to change based on comments received during the public comment period on this document. In accordance with USDOT Order 5610.2C, if disproportionately high and adverse effects are identified, the action would 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." This determination will be addressed in the Final EIR/EIS.

Taking all of these factors into account, the Palmdale to Burbank Project Section Build Alternatives would result in adverse effects that may be appreciably more severe or greater in magnitude on identified low-income and/or minority populations than the adverse effects experienced by non-low-income and/or nonminority populations. These disproportionately high and adverse effects would be limited to the census block groups identified above as having disproportionate effects. As part of the EJ analysis and as discussed above, the Authority identified all practicable and reasonable mitigation measures for the Palmdale to Burbank Project Section Build Alternatives to address adverse effects on minority and/or low-income populations.

The need for an HSR system exists statewide, with densely populated regions of the state contributing to this need. The Palmdale to Burbank Project Section is an essential component of the California HSR System. The capacity of California's intercity transportation system, including transportation between Palmdale and Burbank, is insufficient to meet existing and future travel demand. The current and projected future transportation system congestion will continue to result in deteriorating air quality, reduced reliability, and increased travel times.

The project's purpose is to implement the Palmdale to Burbank Project Section of the California HSR System to meet the need outlined above. The California HSR System would construct, maintain, and operate an electrified, high-speed train system, which includes the construction, improvement, upgrade, operation, and maintenance of new and existing facilities and infrastructure necessary to support the system connecting the Palmdale Transportation Center in Palmdale to the Hollywood Burbank Airport in Burbank. When completed, the California HSR System would provide the public with electric-powered HSR service that offers predictable and consistent travel times and facilitates achieving HSR service that meets Proposition 1A travel time requirements between San Francisco and Los Angeles Union Station. In addition, the California HSR System would provide enhanced connections to airports, mass transit, and the highway network from Palmdale to Burbank, and would connect the northern and southern portions of the California HSR System as a part of Phase 1 program development.

As described in Section 5.7, IAMFs and mitigation measures would reduce most of the project effects on minority and/or low-income populations; however, the Authority has preliminarily concluded that, even after applying these measures, there remains a disproportionately high and adverse effect on minority and/or low-income populations from business displacements (all six Build Alternatives), and community cohesion (E2, and E2A Build Alternatives).

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