APPENDIX J: INDIVIDUAL SECTION 4(F) FOR LANG STATION OPEN SPACE, MAY 7, 2024

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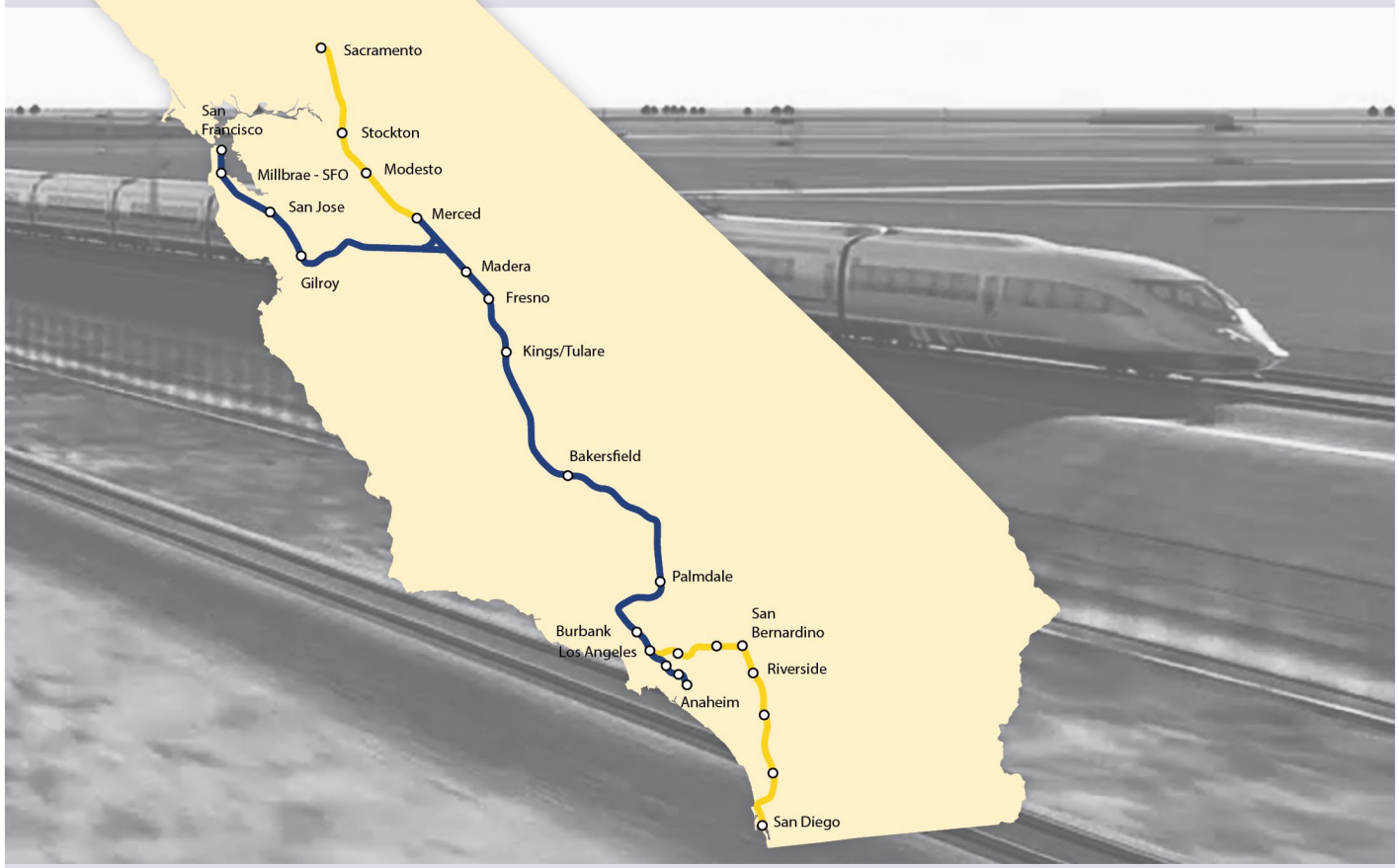
California High-Speed Rail Authority

Palmdale to Burbank Project Section

Final Environmental Impact Report/ Environmental Impact Statement

Appendix 4.0-B Lang Station Open Space Section 4(f) and Section 6(f) Evaluation

April 2024



CALIFORNIA High-Speed Rail Authority

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, and executed by the Federal Railroad Administration and the State of California.

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Lang Station Open Space Section 4(f) and Section 6(f) Evaluation

The Palmdale to Burbank Project Section Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was posted on the California High-Speed Rail Authority's (Authority) website and formally made available to California state agencies by the State Clearinghouse beginning August 31, 2022. The public review and comment period originally ran for a 60-day public review from September 2, 2022 through November 1, 2022, pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). In response to agency and stakeholder requests, the Authority extended the public review and comment period by 30 days, to December 1, 2022, for a total of 90 days after the document was published.

In June 2022, the City of Santa Clarita (City) acquired approximately 208 acres of open space known as Lang Station Open Space at Bee Canyon (Lang Station Open Space). Lang Station Open Space, which was dedicated by the City after publication of the Draft EIR/EIS, is located within the Section 4(f) resource study area (RSA). Section 3.15, Parks, Recreation, and Open Space, of the Final EIR/EIS provides a description of Lang Station Open Space.

During the extended comment period, the City submitted a comment letter (dated November 22, 2022) stating that in June 2022, "the City acquired 208 acres of open space, known as Bee Canyon, located east of State Route (SR) 14 and north of Soledad Canyon Road." The City's comment letter also stated that the SR14A Build Alternative (the Preferred Alternative) would bifurcate Lang Station Open Space at grade, which would result in potential impacts "on recreational uses and wildlife corridors within this open space" during construction and operation of the SR14A Build Alternative.

In compliance with 23 United States Code (U.S.C.) 138 and 49 U.S.C. 303.4(f) (Section 4[f]), the Authority has prepared this Section 4(f) evaluation for Lang Station Open Space. This Section 4(f) evaluation, as well as this Section 6(f) evaluation, focuses on Lang Station Open Space within the Section 4(f)/Section 6(f) RSA, and also includes a preliminary Section 4(f) least harm analysis of the Build Alternatives based on all affected Section 4(f) resources within the Section 4(f) RSA. For the evaluations of other potential Section 4(f)/Section 6(f) resources within the Section 4(f)/Section 6(f) RSA outside Lang Station Open Space, see Chapter 4, Final Section 4(f) and Section 6(f) Evaluations, of the Final EIR/EIS.

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1 INTRODUCTION

Section 4(f)

The United States Department of Transportation Act of 1966 includes special provisions for the approval of a transportation program or project that uses land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites. Effects on Section 4(f)-protected resources resulting from federally funded transportation projects are regulated. These regulations require the project to include a full evaluation to avoid impacts to these resources. If effects are unavoidable, further planning must be completed to try to minimize harm.

This evaluation provides the analysis to support the Authority's compliance with the provisions of 23 U.S.C. 138 and 49 U.S.C. 303.4(f) (Section 4(f)), and applicable sections of the Land and Water Conservation Fund (LWCF) Act of 1965 (Section 6[f]). No LWCF monies were used to acquire or develop any of the recreational resources in Lang Station Open Space. The Authority is responsible for compliance with Section 4(f) and Section 106 of the National Historic Preservation Act (NHPA), in lieu of the Federal Railroad Administration (FRA), pursuant to a memorandum of understanding (MOU) under which FRA assigned those responsibilities to the Authority in accordance with 23 U.S.C. 327.[1]

This Section 4(f) evaluation is being released for comment by the Authority pursuant to 23 U.S.C. 327 and the terms of the NEPA Assignment Memorandum of Agreement (FRA and State of California 2019) assigning to the Authority responsibility for compliance with NEPA and other federal environmental laws, including Section 4(f) and related United States Department of Transportation (U.S. DOT) orders and guidance.

Under Section 4(f), an operating administration of the U.S. DOT may not approve a project that uses protected resources, unless one of the following conditions is met:

- There is a finding of *de minimis* impact for use of resources
- If there are no prudent or feasible alternatives to such use, and the project includes all possible planning to minimize harm to such resources

Section 4(f) resources are publicly owned lands of a park, recreation area, or wildlife or waterfowl refuge; or a historical site of national, state, or local significance that is listed on or eligible for listing on the National Register of Historic Places (NRHP) as determined by the federal, state, regional, or local officials with jurisdiction (OWJ) over the resource. The State Historic Preservation Officer (SHPO) is the OWJ over historic properties. Historic properties, including archeological resources, may be publicly or privately owned. The information contained in this chapter demonstrates the Authority's compliance with Section 4(f), as follows:

- Describes the statutory requirements associated with Section 4(f)
- Identifies the resources protected by Section 4(f) in the RSA
- Preliminarily determines whether the Palmdale to Burbank Project Section would result in the use of those resources

If a Section 4(f) protected property is subject to permanent use or constructive use (see Section 1.4.31.3), the following are required for compliance with Section 4(f):

- Identification of feasible and prudent alternatives, to the extent any exist, that would avoid or minimize use of the resources
- Identification of measures to minimize harm
- A preliminary least harm analysis for the Build Alternatives that would result in the use of Section 4(f) resources

Section 6(f) resources are recreation resources created or improved with funds from the LWCF. Land purchased with these funds cannot be converted to nonrecreational use without

[1] Memorandum of Understanding for the National Environmental Policy Act Assignment (Authority 2019a)

coordination with the California Department of Parks and Recreation and the United States Department of the Interior National Park Service (NPS), and mitigation that includes replacement of the quality and quantity of land used. Lang Station Open Space is not a Section 6(f) resource, as discussed in Section 10 below.

Additional information on publicly owned parks, recreation lands, wildlife and waterfowl refuges, and historic sites, as well as public concern regarding these resources, is provided in the following Final EIR/EIS sections:

- Section 3.7, Biological Resources and Wetlands, evaluates biological resources within the parks, recreation lands, wildlife and waterfowl refuges discussed in this section.
- Section 3.15, Parks, Recreation, and Open Space, evaluates parks, recreation, and open space resources within 1,000 feet from the edge of the Build Alternatives' footprint, or further for exceptionally sensitive resources.
- Section 3.17, Cultural Resources, evaluates historic built resources and archaeological resources in the area of potential effects (APE).

In addition, the following technical reports provide more detailed information:

- *Palmdale to Burbank Project Section: Historic Architectural Survey Report* (Authority 2019b) identifies and evaluates built resources in the historic built resources APE.
- *Palmdale to Burbank Project Section Finding of Effect* (Authority 2021), evaluates impacts of the High-Speed Rail (HSR) Preferred Alternative to cultural resources.
- Appendix 2-E, Impact Avoidance and Minimization Features (IAMFs), lists IAMFs included as applicable in each of the Build Alternatives for purposes of the environmental impact analysis.

1.1 Laws, Regulations, and Orders

The Palmdale to Burbank Project Section is an intercity passenger rail project that is receiving federal funding through FRA, which therefore requires the project to comply with Sections 4(f) and 6(f). Whereas Section 4(f) applies only to programs and policies undertaken by the U.S. DOT and the Authority, Section 6(f) compliance applies to programs and policies of any federal agency.

1.1.1 United States Department of Transportation Act (23 U.S.C. 138 and 49 U.S.C. 303(c) (Section 4[f])

Projects undertaken by an operating administration of the U.S. DOT or projects that may receive federal funding or discretionary approvals from such an operating administration of the U.S. DOT must demonstrate compliance with Section 4(f). Section 4(f) protects publicly owned parks, recreational areas, and wildlife and waterfowl refuges of national, state, or local significance that are open to the public. Section 4(f) also protects historic sites of national, state, or local significance located on public or private land that are listed on or eligible for listing on the NRHP.

FRA's Procedures for Considering Environmental Impacts (64 Federal Register 25445) contains FRA processes and protocols for compliance with NEPA and other federal laws, including Section 4(f). As of November 28, 2018, FRA adopted the regulations in 23 Code of Federal Regulations (C.F.R.) Part 774 as FRA's Section 4(f) implementing regulations. FRA also considers the interpretations provided in the Federal Highway Administration's (FHWA) Section 4(f) Policy Paper (FHWA 2012) when implementing these regulations. Pursuant to U.S.C. Title 23 Section 237, under the NEPA Assignment MOU between FRA and the State of California, effective July 23, 2019, the Authority is the federal lead agency and is responsible for compliance with NEPA and other federal environmental laws, including Section 4(f) (49 U.S.C. 303) and

related U.S. DOT orders and guidance. The Authority is releasing this Section 4(f) statement for comment pursuant to 23 U.S.C. 237, 23 C.F.R. Part 774, and the NEPA Assignment MOU.[2]

The Authority may not approve the use of a Section 4(f) property, as described in 49 U.S.C. 303(c), unless it determines that there is no feasible and prudent alternative to avoid the use of the property and the action includes all possible planning to minimize harm resulting from such use, or the project has a *de minimis* impact consistent with the requirements of 49 U.S.C. 303(d) (see Section 1.4.4 for a definition of *de minimis* impacts). An alternative is not feasible if it cannot be built as a matter of sound engineering judgment. In determining whether an alternative is prudent, the Authority may consider if the alternative would result in any of the following:

- The alternative does not meet the project's stated Purpose and Need.
- The alternative would entail unacceptable safety or operational problems.
- After reasonable mitigation, the alternative would result in severe social, economic, or environmental impacts; severe disruption to established communities; severe disproportionate impacts on minority or low-income populations; or severe impacts on environmental resources protected under other federal statutes.
- The alternative would require additional construction, maintenance, or operational costs of an extraordinary magnitude.
- The alternative would pose other unique problems or unusual factors.
- The project would entail multiple factors that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

If the Authority determines there is both the use of a Section 4(f) property and that there is no prudent and feasible alternative to the use of a Section 4(f) resource, the Authority must ensure the project includes all possible planning (including coordination with and concurrence of the OWJ over the property) to minimize harm to the property, which includes all reasonable measures to minimize harm or mitigate impacts (49 U.S.C. 303(c)(2)). OWJ and "all possible planning" are defined in 23 C.F.R. 774.17. Pursuant to federal guidance, all possible planning means that all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project. With regard to public parks, recreation areas, and wildlife and waterfowl refuges, the measures may include (but are not limited to): design modifications or design goals; replacement of land or facilities of comparable value and function; or monetary compensation to enhance the remaining property or to mitigate the adverse impacts of the project in other ways. Additionally, in evaluating the reasonableness of measures, the Authority will consider preservation purpose, the views of the officials with jurisdiction, whether the cost of the measure is a reasonable public expenditure in light of the adverse impacts of the project on the Section 4(f) property and the benefits of the measure to the property, any impacts or benefits of the measures "to communities or environmental resources outside of the Section 4(f) property."

When determining if Section 4(f) approval is necessary for the use of a trail, path, bikeway, or sidewalk, the Authority must comply with 23 C.F.R. 774.13(f). If the publicly owned facility is primarily used for transportation and is an integral part of the local transportation system, the requirements of Section 4(f) would not apply since it is not a recreational area. Section 4(f) would apply to a publicly owned, shared use path, or similar facility (or portion thereof) designated or functioning primarily for recreation, unless the OWJ determines that it is not significant for such purpose.

[2] The Authority cannot make any determination that an action constitutes a constructive use of a publicly owned park, public recreation area, wildlife refuge, waterfowl refuge, or historic site under Section 4(f) without first consulting with FRA and obtaining FRA's views on such determination. Thus, any determinations of a constructive use by the Authority would be preliminary only. The Authority will provide FRA written notice of any proposed constructive use determination, and FRA will have thirty (30) calendar days to review and provide comment. If FRA objects to the constructive use determination, the Authority will not proceed with the determination.

After making a Section 4(f) determination and identifying the reasonable measures to minimize harm, if there is more than one alternative that results in the use of a Section 4(f) resource, the Authority must also compare the alternatives to determine which alternative has the potential to cause the least overall harm in light of the preservationist purpose of the statute. The least overall harm may be determined by balancing the following factors:

- The ability to mitigate adverse impacts on each Section 4(f) resource (including any measures that result in benefits to the resource)
- The relative severity of the remaining harm—after mitigation—to the protected activities, attributes, or features that qualify each Section 4(f) resource for protection
- The relative significance of each Section 4(f) resource
- The views of the OWJ over each Section 4(f) resource
- The degree to which each alternative meets the Purpose and Need for the project
- After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f)
- Substantial differences in costs among the alternatives

1.1.2 Section 6(f) of the Land and Water Conservation Fund Act of 1965 (16 U.S.C. 460l-8(f) and 36 C.F.R. Part 59.1)

State and local governments often obtain grants through the LWCF Act to acquire or make improvements to parks and recreation areas. Section 6(f) of the act prohibits the conversion of property acquired or developed with these grants to a nonrecreational purpose without the approval of the NPS. Section 6(f) directs the NPS to ensure that replacement lands of comparable value and function, or monetary compensation (used to enhance the remaining land), location, and usefulness are provided as conditions to such conversions. Lang Station Open Space is not a Section 6(f) resource, as discussed in Section 10 below.

1.1.3 National Historic Preservation Act (54 U.S.C. 300101 et seq.) including Section 106, 54 U.S.C. 306108

The NHPA, as amended, establishes the federal government's policy on historic preservation and the programs, including the NRHP, through which this policy is implemented. Under the NHPA, significant cultural resources, referred to as historic properties, include any prehistoric or historic district, site, building, structure, object, or landscape included in, or determined eligible for inclusion in, the NRHP. Historic properties also include resources determined to be National Historic Landmarks. National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting U.S. heritage. A property is considered historically significant if it meets one or more of the NRHP criteria and retains sufficient historic integrity to convey its significance. This act also established the Advisory Council on Historic Preservation, an independent agency responsible for implementing Section 106 of the NHPA by developing procedures to protect cultural resources included in, or eligible for inclusion in, the NRHP. Regulations are published in 36 C.F.R. Parts 60, 63, and 800. There are no historic properties listed or eligible for listing in the NRHP within Lang Station Open Space, as discussed in Section 5.2 below.

1.2 Definition of Resource Study Area

The Resource Study Area (RSA) for publicly owned parks, recreation resources, and wildlife and waterfowl refuges is defined as 1,000 feet from the edge of the proposed Build Alternative footprint. The RSA for cultural resources is the historic resources Area of Potential Effect.

As defined in Section 3.1, Introduction, of Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, of the Final EIR/EIS, RSAs are the geographic boundaries in which the environmental investigations specific to each resource topic were conducted. The Section 4(f) RSA comprises the geographic boundary in which the environmental investigations specific to each resource topic were conducted. The Section 4(f) RSA, as defined below, identifies the Section 4(f) resources considered for evaluation. For temporary laydown areas, utility relocations, or any other land used temporarily to implement the California HSR System that would be returned to its original condition, the RSA for Section 4(f) use is the area of direct impact unless the temporary use prevents access to a potential Section 4(f) protected property. This evaluation focuses on Lang Station Open Space. See Chapter 4, Final Section 4(f) and Section 6(f) Evaluations, of the Final EIR/EIS for a detailed discussion of each of the other resources evaluated and figures showing the specific locations of the resources evaluated within the RSA (outside Lang Station Open Space) in relation to the physical extent of the Palmdale to Burbank Project Section.

1.2.1 Public Park and Recreation Lands, and Wildlife and Waterfowl Refuges

The Section 4(f) RSA for publicly owned parks, recreational facilities, and wildlife and waterfowl refuges includes the footprint for each of the Build Alternatives, as described in Chapter 2, Alternatives, of the Final EIR/EIS, including the Burbank Airport Station, road construction, temporary laydown areas, or other land used temporarily or permanently required to implement the California HSR System.

As a means to address nonphysical impacts (i.e., noise, visual, and air quality), the Section 4(f) RSA also includes resources within 1,000 feet from the edge of the proposed Build Alternative footprint. The Section 4(f) analysis for the Palmdale to Burbank Project Section also considers parks, recreation facilities, and wildlife and waterfowl refuges that are more than 1,000 feet from the Build Alternative footprint (as described in Chapter 2, Alternatives, of the Final EIR/EIS) that may be exceptionally sensitive to noise or visual impacts. Figure 4-B-1 through Figure 4-B-4 illustrate in detail the Section 4(f) RSA for parks and recreation resources. This RSA is inclusive of parks, recreation facilities, school play areas, trails, and wildlife and waterfowl refuges.

1.2.2 Historic Properties

Because this project is a federal undertaking, it must also comply with the NHPA. A Programmatic Agreement Among the Federal Railroad Administration, the Advisory Council on Historic Preservation, SHPO, the Surface Transportation Board, and the Authority Regarding Compliance with Section 106 of the NHPA Act, as it pertains to the California High-Speed Train Project (FRA et al. 2011) outlines an approach for compliance with Section 106 of the NHPA for the California HSR System. The NHPA implementing regulations in 36 C.F.R. Section 800.4(a)(1) require the establishment of an APE. For Section 106 compliance, the APE is used for the technical reports that document the identification of historic properties and the assessment of effects. The APE is the geographic area or areas within which an undertaking may alter the character or use of historic properties, if such properties exist. Therefore, the APE serves as the RSA for Section 4(f) historic properties that are potentially eligible for listing or are listed on the NRHP.

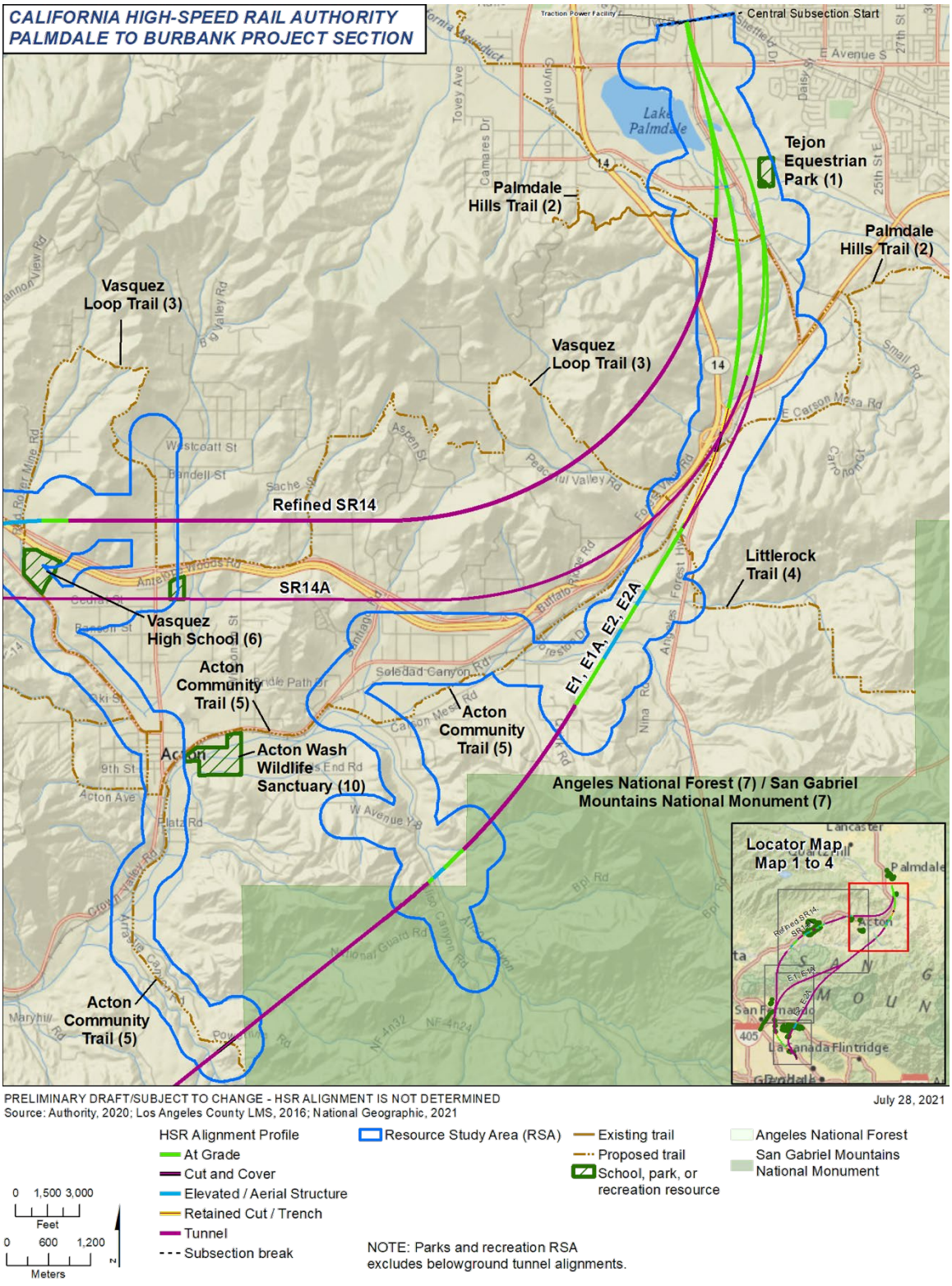

Figure 4-B-1 Parks and Recreation Resource Study Area (Map 1 of 4)

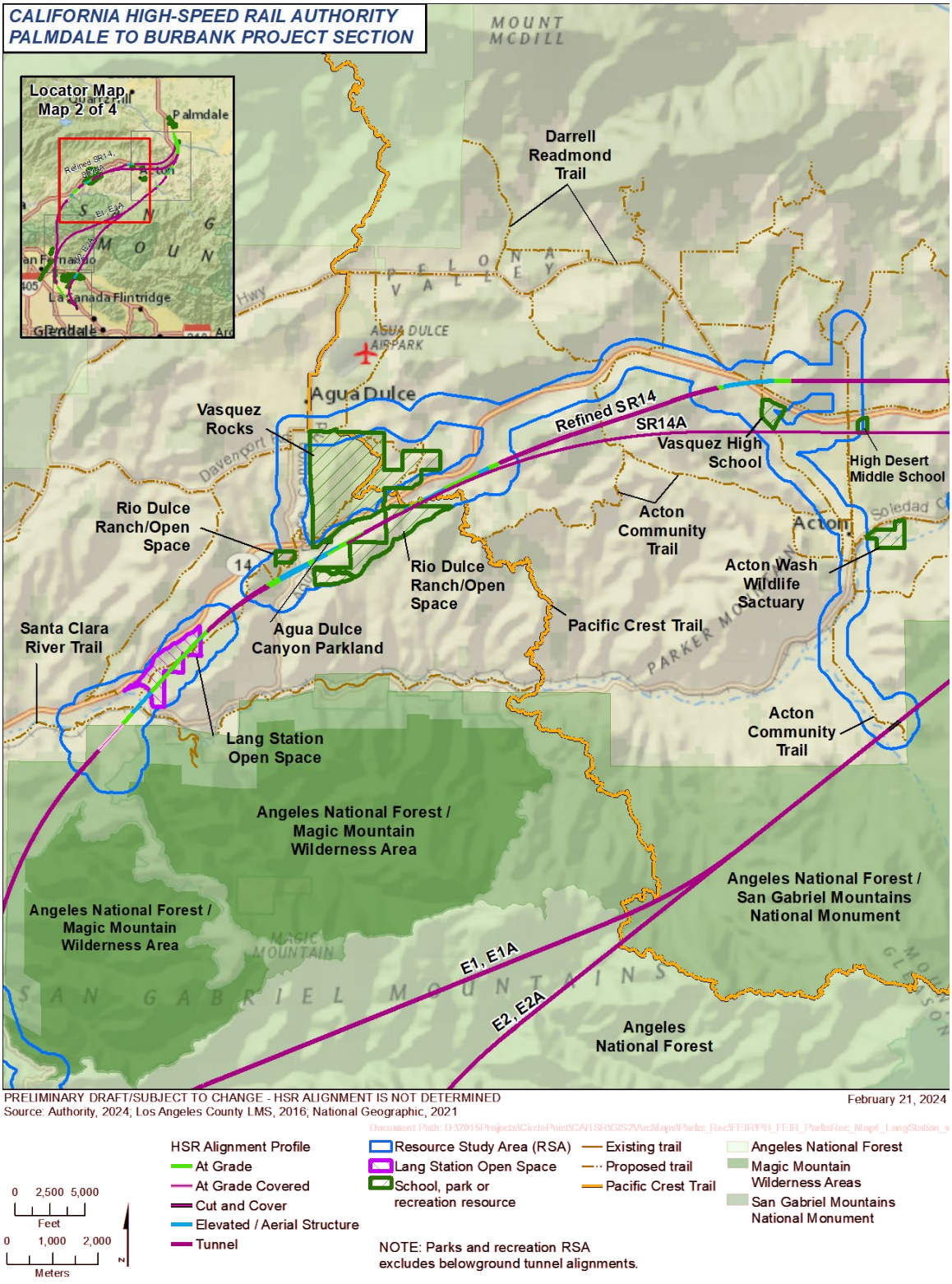

Figure 4-B-2 Parks and Recreation Resource Study Area (Map 2 of 4)

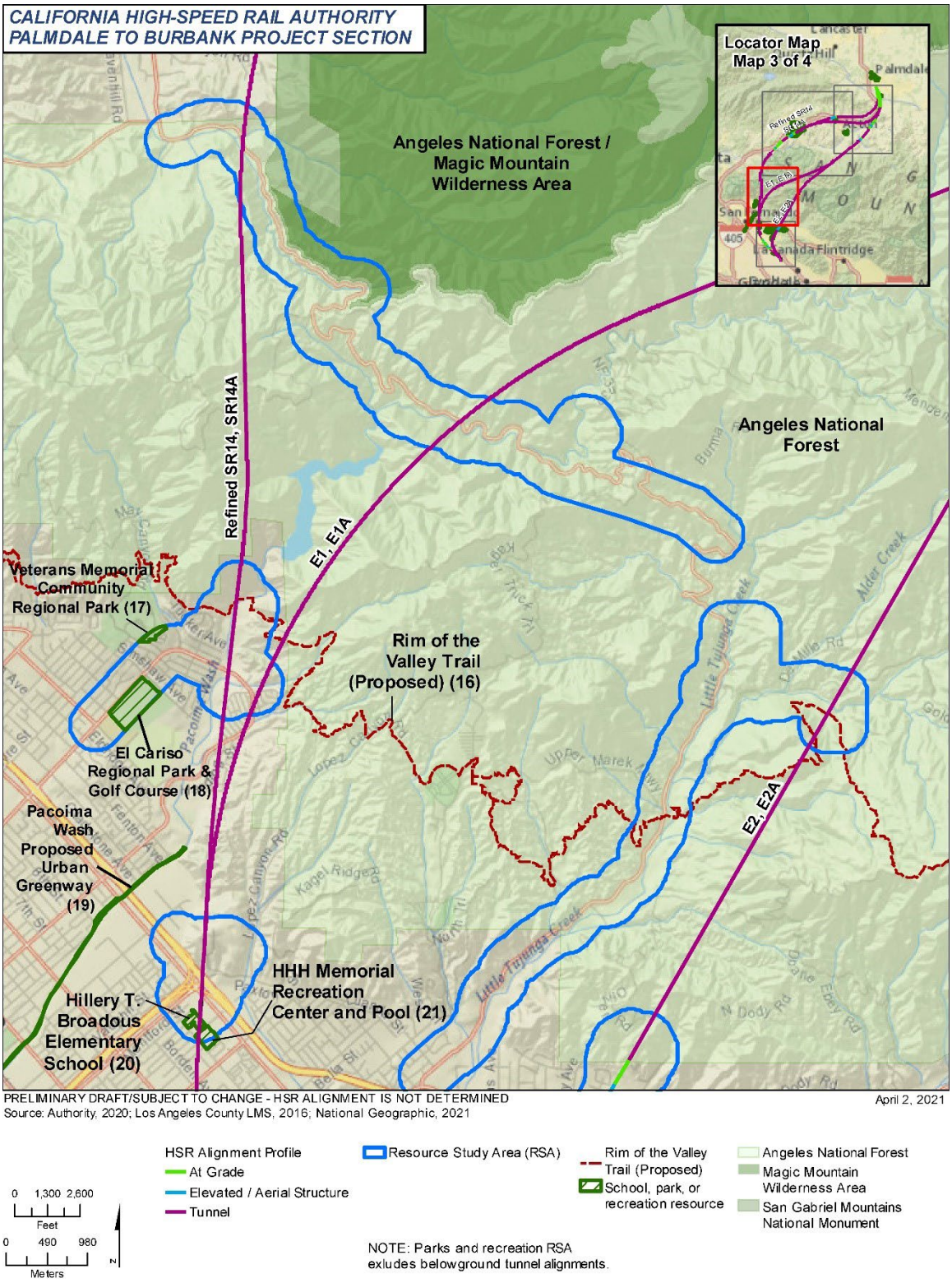

Figure 4-B-3 Parks and Recreation Resource Study Area (Map 3 of 4)

Figure 4-B-4 Parks and Recreation Resource Study Area (Map 4 of 4)

The APE takes into consideration the potential effects of the project on both archaeological and historic built resources. For archaeological resources, the APE includes each of the six Build Alternative footprints, within which ground-disturbing activities may directly and physically alter the character or use of the historic property. For built resources, the APE includes the Build Alternative footprint and any area outside the footprint where visual, atmospheric, or audible intrusions may directly alter the character or use of a historic property, as well as any area where a historic property may be indirectly affected by project-related effects that are farther removed in distance or would occur later in time but are still reasonably foreseeable. The APE for the Palmdale to Burbank Project Section is described in detail in Section 3.17, Cultural Resources, of the Final EIR/EIS.

The historic built APE includes all properties that may contain buildings, structures, objects, sites, landscapes, and districts that are 50 years of age or older at the time the cultural resources survey was conducted. The APE includes:

- Properties within the proposed right-of-way
- Properties where historic materials or associated landscape features would be demolished, moved, or altered by construction
- Properties near the undertaking where railroad materials, features, and activities have not been part of their historic setting and where the introduction of visual or audible elements may affect the use or characteristics of those properties that would be the basis for their eligibility for listing in the NRHP
- Properties near the undertaking that were either used by a railroad or served by a railroad, or where railroad materials, features, and activities have long been part of their historic setting

The historic built resources APE is delineated to take into consideration effects, such as visual, audible, or atmospheric intrusions onto a property; the potential for vibration-induced damage; demolition of resources on the surface above tunnels; or isolation of a property from its setting. Visual and audible changes have the potential to affect character-defining features of some historic built resources.

1.3 Section 4(f) Applicability

A park or recreation area qualifies for protection under Section 4(f) if it is: (1) publicly owned at the time at which the “use” occurs; (2) open to the public; (3) the land has been officially designated as a park or recreation area by a federal, state, or local agency; (4) the primary purpose is consistent with the property’s primary function and how it is intended to be managed; and (5) considered significant by the OWJ over the property. This definition of park and recreation areas includes school play areas that are open to the public.

A wildlife or waterfowl refuge qualifies for protection under Section 4(f) if it is: (1) publicly owned at the time at which the “use” occurs; (2) the land has been officially designated as a wildlife and/or waterfowl refuge area by a federal, state, or local agency; (3) its primary designated purpose is consistent with the property’s primary function and how it is intended to be managed; and (4) considered significant by the OWJ over the property. Section 4(f) applies when the public agency that owns the property has formally designated and determined it to be significant for wildlife and waterfowl refuge purposes. Evidence of formal designation would be the inclusion of the publicly owned land, and its function as a Section 4(f) property into a city or county Master Plan.

For publicly owned multi-use land holdings, Section 4(f) applies only to those portions of a property that are designated by statute or identified in an official management plan of the administering agency as being primarily for public park, recreation, or wildlife and waterfowl refuge purposes, and are determined by the OWJ to be significant for such purposes.

A historic site eligible for, or listed in, the NRHP may be protected under Section 4(f). Although the statutory requirements of Section 106 and Section 4(f) are similar, if a proposed action results in an “adverse effect” under Section 106, there will not automatically be a Section 4(f) “use.” To

determine whether a use of a historic property would occur, the Authority completes a separate Section 4(f) analysis and determination, in addition to those completed in compliance with the Section 106 process.

To qualify as a historic property to be eligible for the NRHP, a resource must meet at least one of the four NRHP criteria (i.e., Criteria A–D) described below. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- Criterion A—Properties that are associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B—Properties that are associated with the lives of persons significant in our past
- Criterion C—Properties that embody distinctive characteristics of a type, period, or method of construction; or that represent the work of a master; or that possess high-artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction
- Criterion D—Properties that have yielded, or may be likely to yield, information important in prehistory or history

An archaeological resource that is eligible solely under NRHP Criterion D, as defined above, is considered valuable primarily in terms of the data that can be recovered from it. For such resources (such as pottery scatters and refuse deposits), Section 4(f) does not apply. Conversely, archaeological resources eligible under Criteria A, B, or C, as defined above, may have value intrinsic to the resource's location and may be protected under Section 4(f).

1.4 Section 4(f) Use Definition

1.4.1 Permanent Use

A permanent use of a Section 4(f) resource occurs when property is permanently incorporated into a proposed transportation facility. This might occur as a result of partial or full acquisition, permanent easements, or temporary easements that exceed limits for temporary occupancy as defined below.

1.4.2 Temporary Occupancy

A temporary occupancy of a Section 4(f) resource occurs when a Section 4(f) property is required for construction-related activities. Temporary occupancy would be considered use if the property is not permanently incorporated into a transportation facility, but the activity is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. However, a temporary occupancy of property does not constitute a use of a Section 4(f) resource when the following conditions are satisfied:

- The occupancy must be of temporary duration (i.e., shorter than the period of construction) and must not involve a change in ownership of the property.
- The scope of work must be minor, with only minimal changes to the protected resource.
- There must be no permanent adverse physical impacts on the protected resource or temporary or permanent interference with activities or purpose of the resource.
- The property being used must be fully restored to a condition that is at least as good as existed before project construction.
- There must be documented agreement of the appropriate OWJ over the resource regarding the foregoing requirements.

1.4.3 Constructive Use

A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate the property of a protected resource, but the proximity of the project results in impacts (e.g., noise, vibration, visual, access, or ecological) after incorporation of mitigation that are so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only if the protected activities, features, or attributes of the resource are substantially diminished. This determination is made after taking the following steps:

- Identifying the current activities, features, or attributes of the resource that may be sensitive to proximity impacts
- Analyzing the proximity impacts on the resource
- Consulting with the appropriate OWJ over the resource

It is important to note that erecting a structure over a Section 4(f) resource, and thus requiring an air lease, does not by itself constitute a use, unless the effect constitutes a constructive use. Further, a noise- or visual-related adverse effect under Section 106 of the NHPA to a historic property does not in and of itself result in a constructive use.

1.4.4 De Minimis Impact

According to 49 U.S.C. 303(d), the following criteria must be met to reach a *de minimis* impact determination:

- For parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact determination may be made if the Authority concludes that the transportation project would not adversely affect the activities, features, and attributes qualifying the resource for protection under Section 4(f) after mitigation. In addition, to make a *de minimis* impact determination there must be:
  - The OWJ over the property must be informed regarding the intent to make a *de minimis* impact determination, after which, public notice and opportunity for public review and comment must be provided.
  - After consideration of comments, if the OWJ over the property concur in writing that the project would not adversely affect the activities, features or attributes that make the property eligible for Section 4(f) protection, then the Authority may finalize the finding of *de minimis* impact.
- For a historic site, a *de minimis* impact determination may be made only if, in accordance with the Section 106 process, the Authority determines that the transportation program or project would have no effect or no adverse effect on historic properties, has received written concurrence from the OWJ over the property (e.g., SHPO), and has taken into account the views of consulting parties to the Section 106 process as required by 36 C.F.R. Part 800.

2 COORDINATION

Title 49 U.S.C. Section 303(b) requires cooperation and consultation with the Secretary of the Interior (and the Secretaries of Housing and Urban Development and Agriculture, if appropriate) and with the state in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. Throughout the EIR/EIS process, the Authority is consulting with or will consult with SHPO, local jurisdictions, the Native American Heritage Commission and interested tribes, and the NPS. Section 4(f) requires consultation with the SHPO, pursuant to 36 C.F.R. Part 800, and agencies of jurisdiction in identifying Section 4(f) properties and assessing impacts on the properties. In addition, the California State Parks maintains a list of LWCF Projects throughout the State. The list was reviewed for Section 6(f) properties within Lang Station Open Space, and no Section 6(f) properties were identified (California Department of Parks and Recreation 2024).

Related activities, such as Section 106 consultation under the NHPA, are summarized in Section 3.17, Cultural Resources, of the Final EIR/EIS. The Authority and the FRA have consulted, and the Authority continues to consult, with the SHPO, the Surface Transportation Board, the U.S. Army Corps of Engineers, the U.S. Department of the Interior Bureau of Reclamation, local agencies, interested parties, the Native American Heritage Commission, and interested tribes to identify and assess impacts on cultural resources in compliance with Section 106.

The Authority has continued to consult with these agencies regarding the impacts of the project on the features and attributes of Section 4(f) properties, and provided opportunity for public comment. The Authority's preliminary Section 4(f) determinations regarding Lang Station Open Space are presented in this evaluation and the public is invited to comment on those preliminary determinations. The Final Section 4(f) determinations will be made and published as part of the Record of Decision (ROD).

2.1 Coordination with the Official with Jurisdiction

This section documents the Authority's coordination efforts with the City since 2013, specifically those efforts where the City expressed concern about potential impacts to recreation and wildlife resources. As provided in this section, the City through the outreach process did not identify Lang Station Open Space as a recreational use or a designated wildlife refuge, but rather for the preservation of natural open space in perpetuity.

The Authority and the City met on October 3, 2013 to discuss the status of the project, engineering refinements, and the Authority's 2012 Business Plan. Discussions continued through a March 12, 2014 meeting between the Authority and the City to review the proposed alignments of the Palmdale to Los Angeles Section, specifically between Palmdale and Burbank and through the City of Santa Clarita. Discussions during this meeting focused on the route options between Palmdale and Burbank, tunneling, and the Authority's 2014 Business Plan.

The Authority published the Notice of Preparation in July 2014 announcing project scoping and the preparation of an EIR for the Project Section. The NOP identified the Santa Clarita North alignment, which included more tunneling segments through the Santa Clarita Valley, while the Santa Clarita South included more at-grade and viaduct segments through Santa Clarita Valley. The two alternatives through the Santa Clarita Valley are shown on Figure 4-B-5, which is also included in Chapter 2, Alternatives, of the Final EIR/EIS as Figure 2-38. In response to the NOP, City Mayor Laurene Weste sent a letter dated August 4, 2014 to the Authority Director of Environmental Services to that stated that of the two alignments through Santa Clarita Valley, "the City Council believes the tunnel extension created far less environmental and community damage than the proposed surface alignment. … [The City Council] strongly opposes the proposed surface alignment, as it has the potential of eliminating homes and devastating neighborhoods, two local schools and an approved job center in the eastern area of our community."

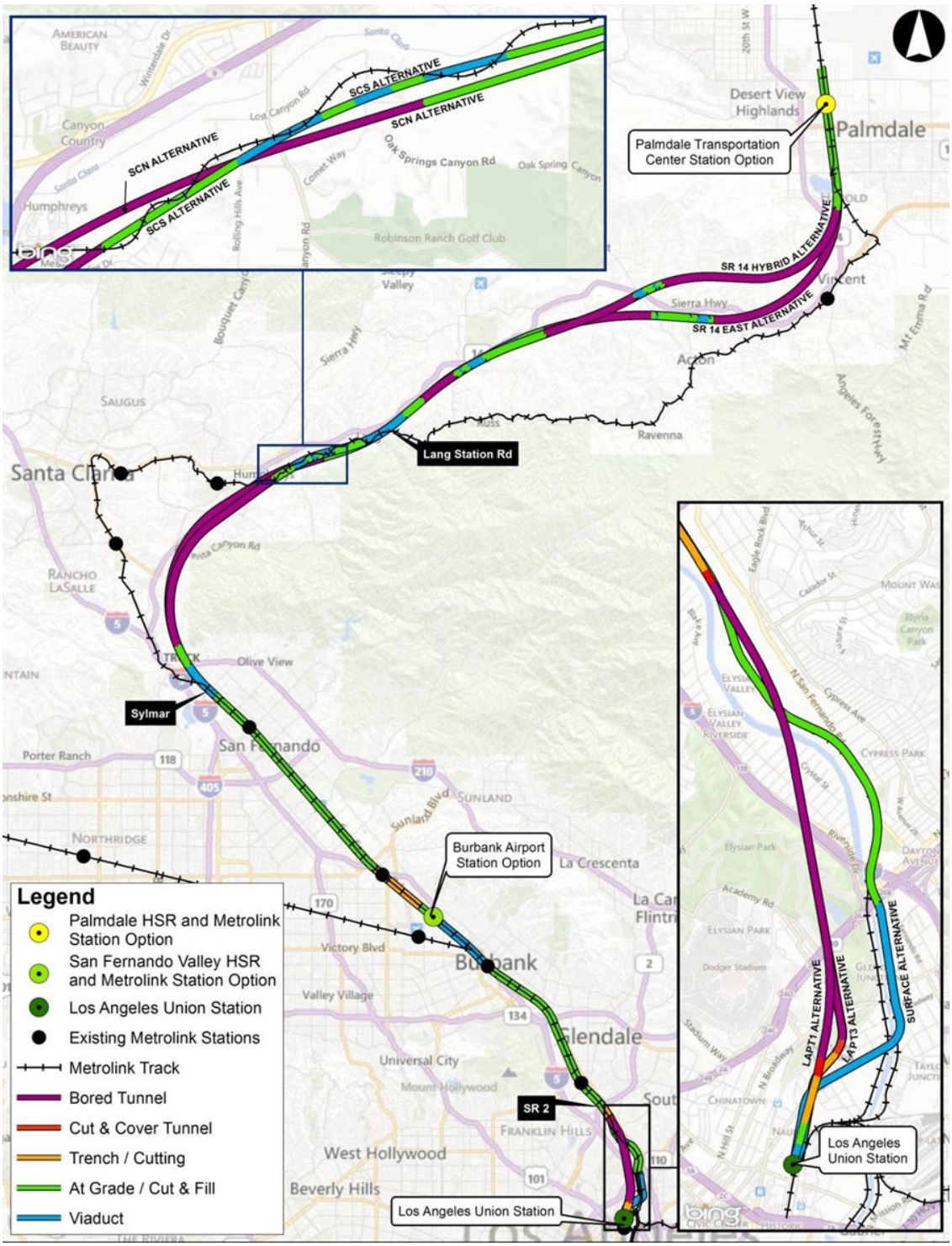

Figure 4-B-5 Alignment and Station Alternatives Carried Forward from the 2014 Supplemental Alternatives Analysis Report

On July 14, 2015, the Santa Clarita City Council adopted a position to support fully underground alignments for the Palmdale to Burbank Project Section (City of Santa Clarita 2015b). During the public scoping period (Summer 2014), the City provided a letter stating that of the two alignments through Santa Clarita Valley, "the City Council believes the tunnel extension created far less environmental and community damage than the proposed surface alignment. … [The City Council] strongly opposes the proposed surface alignment, as it has the potential of eliminating homes and devastating neighborhoods, two local schools and an approved job center in the eastern area of our community." The letter requested that the Authority "fully consider the impacts of noise and vibration of the rail alignment under homes, businesses, schools and open space area" (City of Santa Clarita 2014); however, while the letter references open space area, it should be noted that the City of Santa Clarita did not acquire the Bee Canyon property (where Lang Station Open Space is located) until 8 years later in 2022. The letter included no specific mention of Bee Canyon (Lang Station Open Space).

In advance of the November 15, 2018 Authority Board Meeting, at which Authority Board would consider staff's recommendation on the Preferred Alternative for the Palmdale to Burbank Project Section, the City sent a letter dated November 5, 2018 to the Authority's Board Chairperson that stated the City Council was opposed to all Build Alternatives for the project section, particularly the Preferred Alternative (SR14A Build Alternative). The letter stated the City Council's concern regarding the Preferred Alternative's "at-grade and bridge structures across the sensitive environmental areas of the Santa Clara River, Bee Canyon and City of Santa Clarita-owned open space. The City has been working with a wide variety of partners to establish a pathway for connecting the northern and southern section of the Angeles National Forest, thus facilitating a critical wildlife corridor interconnection." At the time of this letter (2018), the City had not acquired the Bee Canyon property. It appears the City Council's concern regarding Bee Canyon (in which Lang Station Open Space is located) relates to biological resources, rather than parks and recreational facilities. The letter restated the City Council's support for a fully underground alignment to "significantly minimiz[e] or eliminat[e] any impact to neighborhoods and communities" (City of Santa Clarita 2018).

On October 16, 2020, the Authority had a conversation with the City's Intergovernmental Relations Officer, Masis Hagobian, who clarified that the City is committed to preserving open space and has purchased land both within and outside the City boundaries, using taxpayer/City funding, to support this goal. The City's concern is impacts to open spaces and wildlife corridors from the SR14A Build Alternative (Hagobian, pers. comm. 2020).

On November 3, 2020, Authority staff met with elected officials, the City Manager, and the Intergovernmental Relations Manager from the City. During the meeting, the City expressed a desire that the HSR alignment be undergrounded entirely so that impacts to community facilities and residences in the City as well as impacts to the Lang Station Open Space would be avoided. At the time of the meeting, the City had not finalized acquisition of the open space but indicated that an at-grade alignment would bisect the open space and did not offer recommended measures to minimize impact to the open space (Authority 2020c).

On April 5, 2022, Authority staff conducted a site visit with elected officials, the City Manager, the Assistant City Manager, the Open Space Manager, and the Intergovernmental Relations Manager from the City. During the field meeting, the City Open Space Manager explained that the City acquired the open space property with a plan to utilize the flat, usable land as an open space/trail area for mountain bikers, horseback riders, and hikers. The City Open Space Manager discussed the unique flora on the property (Authority 2022b).

The Palmdale to Burbank Project Section Draft EIR/EIS was posted on the Authority's website on August 31, 2022. The public review and comment period originally ran for a 60-day public review from September 2, 2022 through November 1, 2022, pursuant to NEPA and CEQA. In response to agency and stakeholder requests, the Authority extended the public review and comment period by 30 days, to December 1, 2022, for a total of 90 days after the document was published. The City submitted five copies of the same comment letter, signed by Mayor Laurene Weste and

dated November 22, 2022. The City's comment letter on the Draft EIR/EIS reiterated the City Council's position that a fully underground alignment is supported. The letter also stated:

> Earlier this year, the City acquired 208 acres of open space, known as Bee Canyon, located east of State Route 14 (SR-14) and north of Soledad Canyon Road. As the SR-14A Build Alternative proposes to bifurcate Bee Canyon, at-grade, we respectfully request that the EIR include mitigation measures on the potential impacts the construction and operation of the [p]roject could have on recreational uses and wildlife corridors within this open space. Additionally, we respectfully request that the Authority take into serious consideration these potential impacts to Bee Canyon in its decision on an alignment within this segment.

During the Draft EIR/EIS public review and comment period, Authority staff met with elected officials, the City Manager, the Assistant City Manager, the Open Space Manager, and the Intergovernmental Relations Manager from the City. During this meeting, Mayor Weste noted the City had recently closed escrow on the Lang Station Open Space property and that the City is concerned with the SR14 alignment through the area as well as the CEMEX operations mountainside in the same area (Authority 2022c).

On September 15, 2023, the Authority sent an email to Masis Hagobian (the City's Intergovernmental Relations Officer) asking if Lang Station Open Space is publicly owned and open to the public, and if the major purpose was park or recreation (Rosenson, pers. comm. 2023).

Masis Hagobian (the City's Intergovernmental Relations Officer) responded on September 21, 2023, stating, "The City acquired Bee Canyon as protected open space in October 2022" (Hagobian, pers. comm. 2023). Mr. Hagobian also stated that Lang Station Open Space is publicly owned and open to the public. Additionally, he stated, "There are two developed trails and a third in the works. In addition to the trails in Bee Canyon, there are three additional trailheads in the surrounding area. There are no other recreational facilities, besides the aforementioned trails and associated parking areas" (Hagobian, pers. comm. 2023).

As previously stated, pursuant to the City's Open Space Acquisition Implementation Work Program for Fiscal Year 2023-24 (City of Santa Clarita 2023b):

> Funds derived from the [Open Space Preservation District] that are utilized for this Work Program shall fund the acquisition of acres of undeveloped land in the following ratio:
>
> - At least 90 percent of the acres purchased will be preserved natural open space.
> - No more than 10 percent of the acres purchased will be used for future improved active parkland.

It is noted the previous versions of the Open Space Acquisition Implementation Work Program (from previous fiscal years) also state identical percent allocations (at least 90 percent of the City's open space lands will be preserved natural open space and no more than 10 percent will be used for future improved active parkland).

2.2 Public Review and Comment

In September 2022, public notice regarding the availability and circulation of the Draft EIR/EIS was provided pursuant to NEPA and CEQA requirements, and text of the public notice was prepared in English, Spanish, Armenian, and Arabic. Notification included publication of an advertisement in newspapers with general circulation in areas potentially affected by the project. The Draft EIR/EIS public comment period was advertised in the following newspapers:

- Acton-Agua Dulce Weekly News
- Antelope Valley Press
- Asbarez News
- Asian Journal
- The Burbank Leader

- Daily News
- Korea Daily
- La Opinión
- Los Angeles Times
- Nguoi Viet-Daily
- Panorama
- San Fernando Valley Sun
- San Fernando Valley El Sol
- Santa Clarita Valley Signal
- The Signal Newspaper
- Siamtownus
- World Journal Chinese Daily News

The newspaper advertisements indicated that the Draft EIR/EIS was available on the Authority's website for review. These advertisements and the Authority's website also noted the times and locations of workshops, public hearing, and the period during which public comments would be received. A summary, fact sheet, and Notice of Availability were provided in English, Spanish, Armenian, and Arabic; these items were distributed by direct mail to members of the public who subscribed to the project mailing list, had attended project events (scoping, public meetings, etc.), or had sent comments or questions via email or on the Authority's website. In addition, notice was sent to persons who own or live on properties as follows:[3]

- Within 1,000 feet of the Build Alternatives' footprints for above ground activity
- Within 500 feet of the Build Alternatives' footprints for tunnel activity
- Within 1,000 feet of the Build Alternatives' footprints for unincorporated areas
- Within 500 feet of the Build Alternatives' footprints for incorporated areas
- Within 1,200 feet of the Burbank Airport Station footprint

A postcard in English, Spanish, and other languages was mailed to additional stakeholders who had indicated interest in the project and requested that they be kept informed. A Notice of Completion indicating the availability of the Draft EIR/EIS was filed with the State Clearinghouse, and copies were sent to state agencies. Several dozen notices were displayed at businesses, public gathering places (e.g., post offices, Amtrak stations, local libraries, community centers), and the offices of city and county elected officials in the communities surrounding the project section alternative alignments.

Printed and/or electronic copies of the Draft EIR/EIS were sent to federal, state, and local agencies; regional transportation agencies; and other organizations and persons who had expressed an interest in the project. Transportation agencies with facilities within 0.5 mile of the alignment and regional transportation agencies included the Antelope Valley Transit Authority, the Burbank Transportation Division, Santa Clarita Transit, Metrolink, the Los Angeles Public Works Department, Amtrak, and Mission City Transit. The entire Draft EIR/EIS, and appendices are available on the Authority's website (www.hsr.ca.gov). Electronic copies of these documents are available upon request at no cost at the Authority's main office (700 L Street, Suite 800, Sacramento, California 95814) and Southern California regional office (355 S. Grand Avenue, Suite 2050, Los Angeles, California 90071). Electronic copies also can be requested by mail or at: https://buildhsr.com/contact_us/. Printed and electronic copies of the Draft EIR/EIS were available at public libraries, the Authority's offices, and county clerk offices. Chapter 10, EIR/EIS Distribution, provides a full distribution list for the Draft EIR/EIS with updates for this Final EIR/EIS.

California Governor Gavin Newsom announced directives to address the need to slow the spread of novel coronavirus (COVID-19) in California (and globally) by prohibiting gatherings of any size.

[3] The boundaries of each of the Build Alternative footprints for unincorporated areas and incorporated areas differ in distance due to the variance in both population rates and parcel ownership. In unincorporated areas, parcels tend to be larger, thus a larger footprint is necessary.

In addition, Governor Newsom issued Executive Order N-33-20, which ordered all individuals living in the state of California to stay home or at their place of residence until further notice. In order to comply with the governor's directives and Executive Order N-33-20, and to protect public health, the traditional in-person format of the public hearing was changed to a "virtual" public hearing held online and via telephone.

The Palmdale to Burbank Project Section Draft EIR/EIS was posted on the Authority's website for public review on September 2, 2022, and was formally made available to California state agencies by the State Clearinghouse beginning August 31, 2022. The public comment period ran from September 2, 2022, to November 1, 2022, initially; but was extended to December 1, 2022, for a total of 90 days. A news release was posted on the Authority's website on September 7, 2022, and posted in regional and major newspapers on September 1, 2022. A news release dated September 27, 2022, was posted on the Authority's website, which notified the public that the comment period had been extended.

3 PURPOSE AND NEED

The purpose of the statewide HSR system is to provide a reliable high-speed electric-powered train system that links the major metropolitan areas of the state, and that delivers predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit, and the highway network and to relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources (Authority and FRA 2005).

The purpose of the Palmdale to Burbank Section of the California HSR system is to provide the public with electric-powered HSR service that provides predictable and consistent travel times between the Antelope Valley and the San Fernando Valley, provide connectivity to airports, mass transit systems, and the highway network in the Antelope Valley and the San Fernando Valley; and to connect the Northern and Southern portions of the Statewide HSR system.

For more information on the California HSR System objectives and the need for an HSR system in California and in the Los Angeles County region, refer to Chapter 1, Project Purpose, Need, and Objectives, of the Final EIR/EIS.

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4 PROJECT ALTERNATIVES

4.1 No Project Alternative

The No Project Alternative does not include construction of the Palmdale to Burbank Project Section or associated facilities. The No Project Alternative considers the effects of growth planned for the region, as well as existing and planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems in the Palmdale to Burbank Project Section study area through 2040. The No Project Alternative is based on a review of all city and county general plans, regional transportation plans for all modes of travel, and agency-provided lists of pending and approved projects within Los Angeles County.

4.2 Build Alternatives

4.2.1 Palmdale to Burbank Project Section Overview

The Build Alternatives for the Palmdale to Burbank Project Section include six primary end-to-end Build Alternatives. The Palmdale to Burbank Project Section is approximately 31 to 38 miles. Each end-to-end Build Alternative is composed of two subsections—Central and Burbank. The Palmdale to Burbank Project Section extends through a variety of land uses and ecoregions, including urban, rural, and mountainous terrain. Each Build Alternative would involve areas of tunneling beneath the Angeles National Forest (ANF), including portions within the San Gabriel Mountains National Monument (SGMNM).

From the north, the Palmdale to Burbank Project Section would extend south through Palmdale, southwest through the ANF, including SGMNM, and then continue into the San Fernando Valley where it would connect with the Burbank Airport Station and terminate at Burton Avenue in the south. Elevated tracks would be on retained fill (earth), embankments, or structures and would consist of cast-in-place, reinforced-concrete columns supporting the box girders and bridge deck.

The six Palmdale to Burbank Project Section Build Alternatives and the No Project Alternative are briefly described below. The alignments are described in geographical order, from north to south, for each of the subsections (Central and Burbank). Figure 4-B-6 shows the Build Alternatives and Figure 4-B-7 shows the proposed Burbank Airport Station. The Build Alternatives and No Project Alternative for the Palmdale to Burbank Project Section are described in further detail in Chapter 2, Alternatives, of the Final EIR/EIS.

4.2.2 Refined SR14 Build Alternative

4.2.2.1 Central Subsection

North of Lang Station Open Space and Bee Canyon Area

In the Central Subsection, the Refined SR14 Build Alternative alignment would begin just east of Spruce Court, then continue south at grade, crossing the current alignment of Sierra Highway near the intersection of East Avenue S. The Refined SR14 Build Alternative alignment would cross Una Lake on an embankment, requiring partial filling of the lake. The alignment would also cross the San Andreas Fault Zone in the vicinity of Una Lake. South of Una Lake, the Refined SR14 Build Alternative alignment would cross Sierra Highway and the Metrolink rail line, which would both be relocated within this subsection.

Continuing south, the Refined SR14 Build Alternative alignment would cross over East Barrel Springs Road, continuing at grade before entering twin tunnels. The tunnels would pass beneath the East Branch of the California Aqueduct (EBA), SR-14, and various residential communities. The tunnels either would be constructed with a continuous bore or may include a section of cut-and-cover tunnel. For the purposes of this analysis, it is conservatively assumed that the alignment would include a cut-and-cover tunnel in this location.

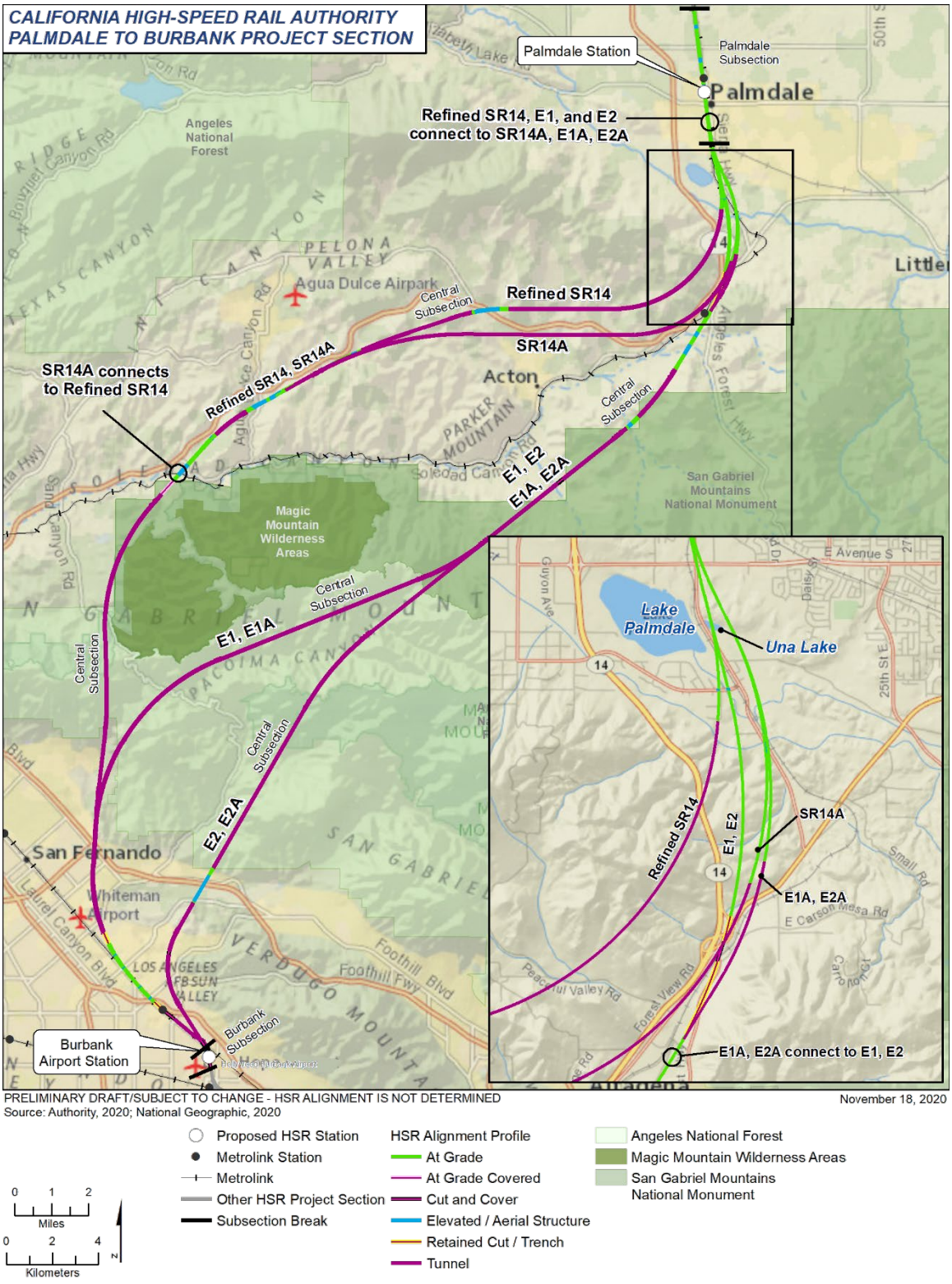

Figure 4-B-6 Palmdale to Burbank Project Section Build Alternatives and Station

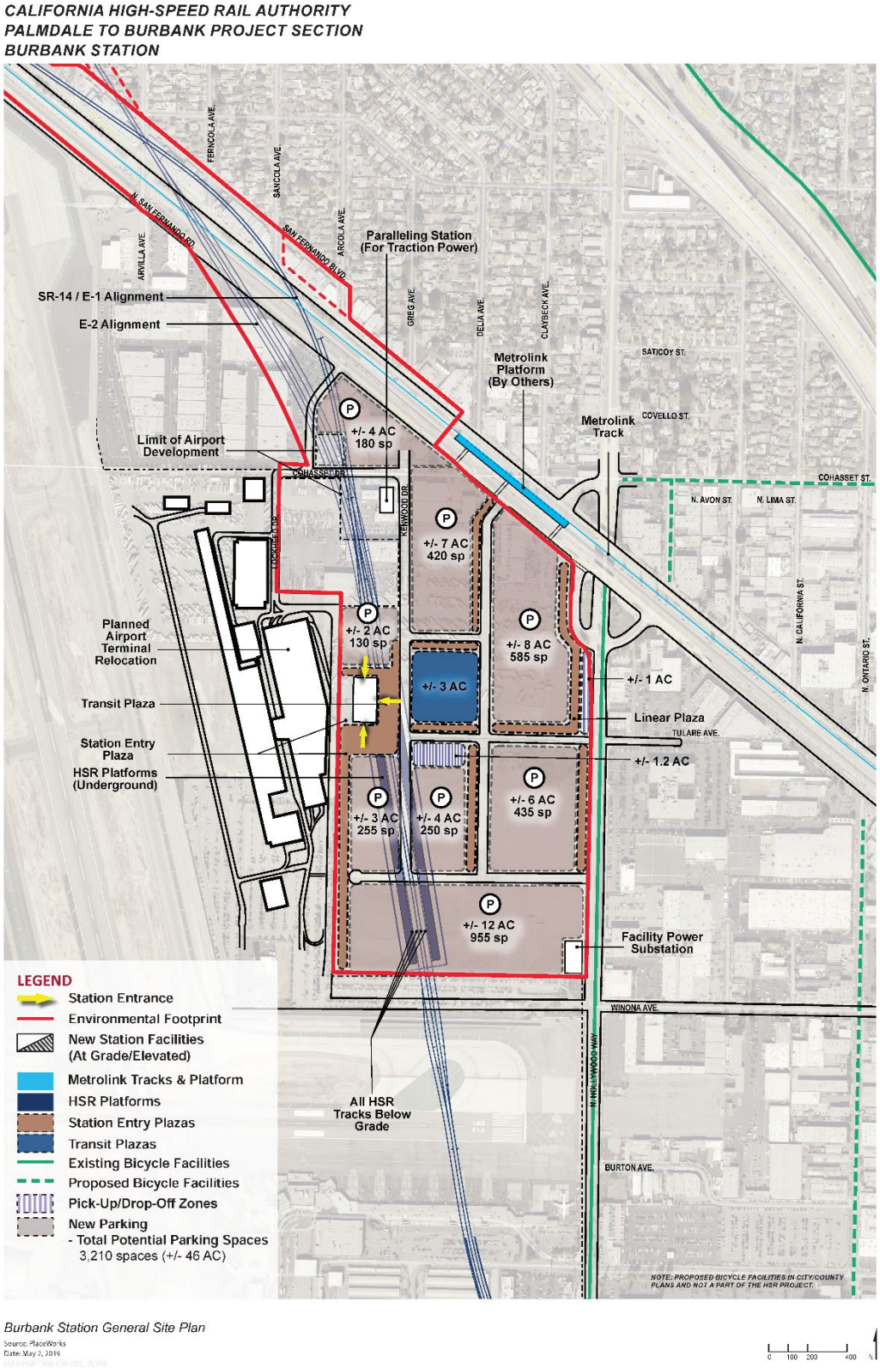

Figure 4-B-7 Proposed Burbank Airport Station

The Refined SR14 Build Alternative alignment would emerge from the tunnels east of Red Rover Mine Road. The alignment would continue west at grade and on a viaduct over Red Rover Mine Road, Sierra Highway, SR (State Route) 14, and Escondido Canyon Road. The Refined SR14 Build Alternative alignment would then enter twin-bored tunnels, continuing southwest and emerging east of Big Springs Road.

Continuing southwest from Big Springs Road, the Refined SR14 Build Alternative alignment would be either at grade or on viaduct before briefly entering a tunnel. The Refined SR14 Build Alternative alignment would emerge from the tunnel approximately 1 mile east of Agua Dulce Canyon Road. From this point, the Refined SR14 Build Alternative alignment would continue southwest at grade and on viaduct, passing over Agua Dulce Canyon Road on a viaduct structure.

From about 0.5 mile west of Agua Dulce Canyon Road, the Refined SR14 Build Alternative alignment would enter twin tunnels, moving southwest.

Lang Station Open Space and Bee Canyon Area

Upon emerging from the tunnels west of Agua Dulce Canyon Road, the Refined SR14 Build Alternative alignment would continue at grade or on viaduct, crossing the Santa Clara River, Soledad Canyon Road, and the existing Metrolink rail alignment on a viaduct.

South of Lang Station Open Space and Bee Canyon Area

Continuing from the Santa Clara River toward Lang Station Road, the Refined SR14 Build Alternative alignment would enter the ANF, including SGMNM, in an at-grade covered tunnel, moving south through the Vulcan Mine and abandoned Nike Missile Headquarters site, both of which are within the ANF, including SGMNM. Details on tunnel types and example cross-sections can be found in Chapter 2, Alternatives.

Spoils from construction of the Refined SR14 Build Alternative would be deposited at the Vulcan Mine,[4] restoring a more natural topography in the area. Additionally, spoils associated with tunneling would be disposed of at the Boulevard Mine, which is west of San Fernando Road and north of the Interstate (I)-5/SR 170 interchange.

From this point, the Refined SR14 Build Alternative alignment would enter twin bored tunnels, proceeding underneath portions of the ANF, including SGMNM, the City of Santa Clarita, and the Pacoima neighborhood in the City of Los Angeles. The twin tunnels would pass through the San Gabriel Fault Zone and the Sierra Madre Fault Zone.

The Refined SR14 Build Alternative includes three options for adits, one of which would be selected. Refer to Chapter 2, Alternatives, of the Final EIR/EIS for a detailed description of adits. The first adit option (SR14-A1) would be located within the ANF along Little Tujunga Canyon Road and is near the aforementioned fault zones. This would facilitate future remedial work that may need to occur in the event of seismic ground movement. The temporary construction staging area associated with this adit option (SR14-A1) is located on in-holdings within the ANF.[5] The second (SR14-A2) and third adit options

Adits

Adits are intermediate tunnel access shafts intended to facilitate construction of bored tunnels. An adit can serve as a tunnel boring machine entry or exit point and can enable the use of multiple tunnel boring machines to shorten construction time.

Intermediate Windows

An *intermediate window* is a vertical shaft connecting to an underground construction area. Windows would comprise an elevator and gantry cranes to provide access to water, power, ventilation, and other support during construction. After construction is complete, a small structure for permanent access, and possibly ventilation equipment, would remain at the surface.

[4] The Authority is conducting ongoing coordination with the United States Forest Service regarding spoils disposal within Vulcan Mine.

[5] An in-holding is privately owned land within the boundary of a publicly owned, protected area such as a national park or forest.

(SR14-A3) would be just south of the Pacoima Dam. SR14-A2 would surface west of the Refined SR14 Build Alternative alignment and connect to Gavina Avenue, while SR14-A3 would surface east of the Refined SR14 Build Alternative alignment and connect to Wallabi Avenue.

The Refined SR14 Build Alternative also includes two options for an intermediate window, one of which would be selected to provide construction access to tunnels. Please refer to Chapter 2, Alternatives, of the Final EIR/EIS for a detailed description of intermediate windows. Both options would be in proximity to the I-210/SR 118 interchange. The first option would be directly north of the intersection of these freeways, while the second option would be south of the intersection of these freeways.

The Refined SR14 Build Alternative alignment would emerge from the tunnel east of the existing Antelope Valley Metrolink Corridor near Montague Street in the Pacoima neighborhood in the City of Los Angeles. From Montague Street, the alignment would continue south in a retained cut/trench before transitioning to at-grade tracks until crossing the Los Angeles County Flood Control Channel on viaduct. This viaduct would also cross over a realigned Metrolink track and Sheldon Street before entering the existing Metrolink corridor south of Sheldon Street. Continuing along the Metrolink corridor, the Refined SR14 Build Alternative alignment would then continue southeast at grade from immediately south of Allegheny Street to the I-5 undercrossing. Continuing from the I-5 undercrossing, the alignment would transition to a retained-cut/trench extending to Olinda Street. Continuing from Olinda Street, the Refined SR14 Build Alternative alignment would enter a cut-and-cover tunnel, where the alignment would be located in a box adjacent to the realigned Metrolink rail alignment. From this point, the Central Subsection Refined SR14 Build Alternative would continue on to the Burbank Subsection.

The Refined SR14 Build Alternative alignment would continue in the cut-and-cover tunnel adjacent to the realigned Metrolink railway from Olinda Street until reaching the southern limit of Lockheed Drive. The end of this alignment would be the southern limit of the Central Subsection.

4.2.2.2 Burbank Subsection

The northern limit of this subsection is Lockheed Drive. From Lockheed Drive, the Refined SR14 Build Alternative alignment would continue in a cut-and-cover tunnel until entering Burbank Airport Station. The Burbank Airport Station would be an underground station, beginning near Kenwood Street.

4.2.3 SR14A Build Alternative

4.2.3.1 Central Subsection

Within the Central Subsection, the SR14A Build Alternative alignment would diverge from the Refined SR14 Build Alternative alignment south of Spruce Court curving eastward and south approximately 300 feet east of Una Lake. South of Una Lake, the SR14A Build Alternative alignment would curve westward; cross over the Metrolink Antelope Valley Line, Sierra Highway, and the Soledad Siphon; and continue southwest entering a tunnel portal approximately 0.5 mile northeast of the Sierra Highway/Pearblossom Highway intersection. The SR14A Build Alternative alignment would then continue westward, in an approximately 13-mile-long tunnel before surfacing approximately 0.75 mile east of Agua Dulce Canyon Road. The SR14A Build Alternative also includes an intermediate window south of SR 14 in Acton. The alignment would transition between at-grade and elevated profiles closely paralleling SR 14 before entering an approximately 1-mile-long tunnel. Transitioning from tunnel to at grade, the SR14A Build Alternative alignment would converge with the Refined SR14 Build Alternative alignment at the Soledad Canyon Mining Operations (Vulcan Mine) site. The remaining SR14A Build Alternative alignment (south of the Vulcan Mine site, under the ANF including the SGMNM, and into the San Fernando Valley) would be identical to the Refined SR14 Build Alternative alignment.

Within the Lang Station Open Space and Bee Canyon area, the SR14A Build Alternative alignment would be identical to the Refined SR14 Build Alternative alignment.

4.2.3.2 Burbank Subsection

Within the Burbank Subsection, the SR14A Build Alternative would be identical to the Refined SR14 Build Alternative, including alignment and ancillary features, described under the Refined SR14 Build Alternative discussion above.

4.2.4 E1 Build Alternative

4.2.4.1 Central Subsection

Within the Central Subsection, the E1 Build Alternative alignment would begin east of Spruce Court at grade, and generally follow the existing Sierra Highway alignment. The alignment would continue at grade across Una Lake, which would be partially filled. South of Una Lake, the alignment would curve west, crossing the existing Sierra Highway and Metrolink corridors, which would be realigned to the east. In the vicinity of Una Lake, the E1 Build Alternative alignment would cross the San Andreas Fault Zone.

After continuing east of the Harold neighborhood and passing over Barrels Springs Road, the E1 Build Alternative alignment would reach the California Aqueduct approximately 0.2 mile west of where the aqueduct passes beneath Sierra Highway. This Build Alternative would require the relocation of a portion of the California Aqueduct. The E1 Build Alternative alignment would cross the California Aqueduct right-of-way at grade and would continue south before entering a stretch of retained cut/trench and cut-and-cover tunnel that would be beneath the Pearblossom Highway/SR 14 interchange, Sierra Highway, Metrolink corridor, Carson Mesa Road, and an extension of Mountain Springs Road. The alignment would continue at grade in between Angeles Forest Highway and the Vincent Grade/Acton Metrolink Station in a southwesterly direction.

Immediately south of Rockyford Road, the E1 Build Alternative alignment would transition from at grade to a viaduct structure to cross an unnamed wash area northwest of the existing Vincent Substation. The alignment would return to at grade at the southern bank of the wash and pass underneath Foreston Drive. Immediately south of Foreston Drive, the alignment would continue on a viaduct, crossing another drainage area. The E1 Build Alternative alignment would return to at grade approximately 0.2 mile east of the terminus of Kentucky Springs Road. This at-grade section would continue until approximately 0.2 mile south of the Enchanted Hills Road western terminus, where the alignment would enter twin tunnels. The tunnels would pass beneath rural residences and then under the ANF, including SGMNM.

The E1 Build Alternative alignment would emerge from the tunnels outside the ANF, including SGMNM, boundaries in the Aliso Canyon Road area. The alignment would continue at grade before crossing a tributary of the Santa Clara River on a viaduct. Aliso Canyon Road would need to be re-profiled as it approaches the prospective rail alignment to achieve grade separation. The new profile of Aliso Canyon Road would lower it so the road would run beneath the E1 Build Alternative alignment. This re-profiling would extend into the ANF, including SGMNM, by approximately 0.4 mile. The tunnel portal construction would require approximately 25.2 acres of surface area disturbance within the ANF, including SGMNM. Additionally, approximately 6.5 acres would be needed for lowering the profile of Aliso Canyon Road, and 6.2 acres within the ANF, including SGMNM would be needed for an electrical utility line.

The E1 Build Alternative alignment would return to at grade after the viaduct until entering a second pair of twin tunnels immediately west of Aliso Canyon Road. The initial 16.5 miles of the tunnels would be beneath the ANF, including some 6 miles beneath the SGMNM. There are two adit options for the E1 Build Alternative, one of which would be selected. Both adit options are located on private in-holdings along Little Tujunga Canyon Road, within the ANF. The first adit option would extend east from the underground cavern to a construction staging area along Little Tujunga Canyon Road, while the second adit option would extend west from the underground cavern to a construction staging area north of Little Tujunga Canyon Road. The selected adit site may serve as a permanent mid-tunnel ventilation structure.

The E1 Build Alternative would also have three options for intermediate windows, two of which would be selected. The first intermediate window would be located north of Arrastre Canyon, just

outside the ANF, including SGMNM, boundary. The second and the third option would be in proximity to the I-210/SR 118 interchange. The second window option would be directly north of the intersection of these freeways, and the third window option would be south of the intersection of these freeways. Given the similar access provided by options two and three, one of these two options would be selected, in addition to the first option.

The E1 Build Alternative alignment would continue southwesterly, turning to a more southerly direction after crossing beneath Little Tujunga Canyon Road and the San Gabriel Fault. The alignment would continue in a tunnel passing approximately 0.3 mile east of the Pacoima Reservoir and exit the ANF (remaining underground) beneath the Sylmar neighborhood in the City of Los Angeles. The E1 Build Alternative alignment would continue underground, crossing the Sierra Madre Fault Zone, and then passing beneath the I-210/SR 118 interchange in the Pacoima neighborhood in the City of Los Angeles, where the alignment would curve from a southerly to southeasterly direction.

With implementation of the E1 Build Alternative, spoils would be deposited at the Boulevard Mine site as described above for the Refined SR14 Build Alternative. The E1 Build Alternative would emerge from the tunnel immediately after passing beneath Montague Street in the Pacoima neighborhood. From Montague Street, the alignment would follow the same routing as described for the Refined SR14 Build Alternative from its emergence at Montague Street. Similar to the Refined SR14 Build Alternative, the E1 Build Alternative would connect to the Burbank Airport Station near Olinda Street. From Olinda Street, the E1 Build Alternative would be identical to the Refined SR14 Build Alternative.

Accordingly, the E1 Build Alternative alignment is not located within the vicinity of Lang Station Open Space.

4.2.4.2 Burbank Subsection

Within the Burbank Subsection, the E1 Build Alternative would be identical to the Refined SR14 Build Alternative, including alignment and ancillary features, described under the Refined SR14 Build Alternative discussion above.

4.2.5 E1A Build Alternative

4.2.5.1 Central Subsection

In the Central Subsection, the E1A Build Alternative alignment would diverge from the E1 Build Alternative alignment south of Spruce Court following a more easterly route. In contrast to the E1 Build Alternative alignment, the E1A Build Alternative alignment would include elevated structures to cross over the California Aqueduct before entering a tunnel portal approximately 1,900 feet southwest of the Sierra Highway/Pearblossom Highway intersection. After proceeding underground for approximately 1.5 miles, the E1A Build Alternative alignment would transition to an at-grade profile approximately 350 feet north of Vincent View Road. Just south of Vincent View Road, the E1A Build Alternative alignment would converge with the E1 Build Alternative alignment. The remaining E1A Build Alternative alignment (south of Vincent View Road, under the ANF including SGMNM, into the San Fernando Valley, and to the southern terminus of the Central Subsection) would be identical to the E1 Build Alternative alignment.

Accordingly, the E1A Build Alternative alignment is not located within the vicinity of Lang Station Open Space.

4.2.5.2 Burbank Subsection

Within the Burbank Subsection, the E1A Build Alternative would be identical to the Refined SR14 and E1 Build Alternatives, including alignment and ancillary features, described under the Refined SR14 and E1 Build Alternative discussions above.

4.2.6 E2 Build Alternative

4.2.6.1 Central Subsection

Within the Central Subsection, the E2 Build Alternative alignment would be identical to the E1 Build Alternative alignment between Spruce Court and Aliso Canyon Road. This includes the area passing over Una Lake, the San Andreas Fault Zone, the California Aqueduct, the Santa Clara River tributary, and the Aliso Canyon Road crossing and re-profiling.

To the immediate west of Aliso Canyon Road, the E2 Build Alternative alignment would enter twin tunnels, initially proceeding to the southwest. A total of 7 miles of this tunnel would be beneath the ANF, including SGMNM. Similar to the E1 Build Alternative, the E2 Build Alternative would have an intermediate construction window in Arrastre Canyon as described below. The E2 Build Alternative alignment would continue southwesterly, curving to a more south-southwesterly direction as the alignment passes beneath Mendenhall Ridge Road and then through the San Gabriel Fault.

The E2 Build Alternative includes two options for adits, one of which would be selected. Both adit options for the E2 Build Alternative would connect to Little Tujunga Canyon Road on private in-holdings within the ANF. The first adit option would extend west from the underground cavern to a temporary construction staging area within a private in-holding approximately 0.4-mile north of Gold Creek Road, while the second adit option would also extend west from the underground cavern to a temporary construction staging area located within a private in-holding along Gold Creek Road.

The E2 Build Alternative also includes two intermediate window locations to provide construction access to tunnels. The first intermediate window location is just outside the ANF, north of Arrastre Canyon; the second intermediate window location is at the current site of the CalMat Mine.

The E2 Build Alternative alignment would transition from tunnel to at grade in the hills above the Lake View Terrace neighborhood in the City of Los Angeles, near the (private, unimproved) BP & L Road. This tunnel portal would require approximately 20 acres of grading and slope stabilization within ANF boundaries. After crossing the Sierra Madre Fault Zone, the E2 Build Alternative alignment would continue at grade before transitioning to an elevated viaduct structure. The viaduct would cross over Arnwood Road, Foothill Boulevard, and I-210 and then would continue to cross Big Tujunga Wash in the Hansen Dam Open Space Area, crossing below Wentworth Street in the Shadow Hills neighborhood in the City of Los Angeles.

After crossing Wentworth Street, the E2 Build Alternative alignment would have a relatively short at-grade section before transitioning to a tunnel. This portion of the alignment would continue in the same south-southwesterly direction until approximately Peoria Street in the Sun Valley neighborhood in the City of Los Angeles. Beneath Peoria Street, the E2 Build Alternative alignment would curve to the southeast. At Peoria Street, the tunnel construction method would change. North of Peoria Street, the tunnels would be bored; between Peoria Street and approximately Fleetwood Street, however, the tunnel would either be cut-and-cover via an open construction method or would extend in a continuous bored tunnel. For the purpose of this environmental review, it is assumed that the alignment would transition to a cut-and-cover tunnel in this location.

At Fleetwood Street the E2 Build Alternative alignment would pass beneath Sunland Boulevard, I-5, and San Fernando Road in a bored or mined tunnel. The tunnel would extend until just past Lockheed Drive, the southern limit of the Central Subsection.

With implementation of the E2 Build Alternative, some spoils would be deposited at the CalMat Mine, adjacent to Stonehurst Recreation Center east of Glenoaks Boulevard.

Accordingly, the E2 Build Alternative alignment is not located within the vicinity of Lang Station Open Space.

4.2.6.2 Burbank Subsection

From Lockheed Drive, the E2 Build Alternative alignment would transition into a cut-and-cover tunnel before entering the Burbank Airport Station underneath Kenwood Street.

After exiting the underground station, the E2 Build Alternative alignment would continue southeast in a cut-and-cover tunnel to reach Burton Avenue. At Burton Avenue (the southern limit of this subsection), the alignment would join with the tunnel alignment proposed within the Burbank to Los Angeles Project Section.

4.2.7 E2A Build Alternative

4.2.7.1 Central Subsection

In the Central Subsection, the E2A Build Alternative alignment would follow an identical route to the E1A Build Alternative to Vincent View Road, where it would rejoin with the E2 Build Alternative alignment. Accordingly, the E2A Build Alternative alignment is not located within the vicinity of Lang Station Open Space.

4.2.7.2 Burbank Subsection

Within the Burbank Subsection, the E2A Build Alternative would be identical to the Refined SR14 and E2 Build Alternatives, including alignment and ancillary features, described under the Refined SR14 and E2 Build Alternative discussions above.

4.3 Station Sites

The Palmdale to Burbank Project Section would be served by a station in Burbank. The Burbank Airport Station would be designed to optimize access to the California HSR System, particularly to allow for intercity travel and connections to local transit, airports, highways, and bicycle and pedestrian networks. All California HSR System stations would include the following elements:

- Passenger boarding and alighting platforms
- Station head house with ticketing, waiting areas, passenger amenities, vertical circulation, administration and employee areas, and baggage and freight-handling service
- Vehicle parking (short-term and long-term)
- Pick-up and drop-off areas
- Motorcycle/scooter parking
- Bicycle parking
- Waiting areas and queuing space for taxis and shuttle buses
- Pedestrian walkway connections

4.3.1 Burbank Airport Station

The Burbank Airport Station would be located along the Build Alternative alignments, with rail facilities underground to meet the tracks. Both underground and aboveground facilities would be constructed at the station site. Aboveground facilities would cover approximately 70 acres.

Station facilities would include train boarding platforms, a station building (that would house ticketing areas, passenger waiting areas, restrooms, and related facilities), pick up/drop off facilities for private autos, a transit center for buses and shuttles, and surface parking areas.

Underground portions of the station would be beneath Cohasset Street, which parallels the boundary between the City of Los Angeles to the north and the City of Burbank to the south.

The station site would be located west of Hollywood Way and east of the Hollywood Burbank Airport. The airport and ancillary properties occupy much of the land south of the proposed station site. Industrial and light industrial land uses are located to the east, and residential land

uses are located north of the station site. I-5 runs parallel to the station site, approximately 0.25 mile north of the proposed passenger platforms.

The Burbank Airport Station would have up to 3,210 surface parking spaces by 2040. Approximately 1,640 of these spaces would be available by the start of operations (2029). Proposed surface parking at the Burbank Airport Station would be in addition to parking spaces that might be included in the replacement terminal project if the Preferred Alternative site is ultimately selected.

4.4 Maintenance Facilities

The California HSR System includes four types of maintenance facilities: maintenance of infrastructure facilities; maintenance of infrastructure siding facilities; heavy maintenance facilities; and light maintenance facilities. One heavy maintenance facility would be required for the entire system. At this time, the Authority is anticipating the identification and selection of a heavy maintenance facility site built in the Central Valley, outside of the Palmdale to Burbank Project Section. The design and spacing of other types of maintenance facilities along the HSR alignment require the Bakersfield to Palmdale Project Section to include a Maintenance Facility in the Lancaster area at Avenue M, which is outside of the Palmdale to Burbank Project Section.

5 LANG STATION OPEN SPACE SECTION 4(f) APPLICABILITY ANALYSIS

Section 5.15.1 identifies whether Lang Station Open Space meets the criteria for protection as a Section 4(f) park, recreation, open space, or wildlife or waterfowl refuge property, and Section 5.2 identifies whether Lang Station Open Space meets the criteria for protection as a Section 4(f) cultural resource.

The evaluation of potential use of Section 4(f) resources below includes the application of IAMFs that are included in the Build Alternatives and are listed in Chapter 2, Alternatives, of the Final EIR/EIS. The Authority pledged to integrate programmatic IAMFs consistent with (1) the Final Program EIR/EIS for the Proposed California High-Speed Train System (Authority and FRA 2005); (2) the Bay Area to Central Valley High-Speed Train Program EIR/EIS (Authority and FRA 2008); and (3) the Bay Area to Central Valley High-Speed Train Partially Revised Final Program EIR (Authority 2012a). To avoid or reduce impacts, the Authority will implement these IAMFs during design and construction of the Preferred Alternative, as relevant to the Palmdale to Burbank Project Section. Use determinations examine the net effect on a resource after the application of IAMFs and project- or resource-specific avoidance, minimization, or mitigation measures.

5.1 Parks, Recreation Areas, and Wildlife and Waterfowl Refuges

Data collection to identify if Lang Station Open Space is a potential Section 4(f) park, recreation, open space, or wildlife or waterfowl refuge property consisted of a review of adopted and publicly available draft City of Santa Clarita plans and maps; correspondence with the City (the OWJ); and field reviews.

Although Lang Station Open Space is not included in any City plans or depicted on the City's trails map, as discussed in Section 3.15, Parks, Recreation, and Open Space, of the Final EIR/EIS, Lang Station Open Space includes a trailhead and several trails totaling approximately 1.15 miles, as discussed below. The publicly available recreational components of Lang Station Open Space are shown on Figure 4-B-8.

5.1.1 Lang Station Open Space

5.1.1.1 Size and Location

The approximately 208-acre Lang Station Open Space, shown on Figure 4-B-8, is located on undeveloped land southeast of SR 14, east of the intersection of Stonecrest Road and Soledad Canyon Road in Los Angeles County to the east of the city boundaries of Santa Clarita. The Refined SR14 and SR14A Build Alternatives would traverse Lang Station Open Space at grade, requiring the permanent acquisition of 85.3 acres, including 56.0 acres of permanent footprint that would be fenced off from the public, as well as 29.3 acres that would be permanently inaccessible from the remainder of the property due to the permanent footprint dividing the property. These two Build Alternatives would also result in removal of the existing trailhead and approximately 0.13 mile of existing trails within the open space. Lang Station Open Space is located more than 1,000 feet from the construction footprints for the E1, E1A, E2, and E2A Build Alternatives.

5.1.1.2 Ownership

This resource is owned and maintained by the City of Santa Clarita Open Space Preservation District (District).

Usage (Intended, Actual/Current, and Planned)

Pursuant to the Section 4(f) Policy Paper (FHWA 2012):

> Publicly owned land is considered to be a park, recreation area or wildlife and waterfowl refuge when the land has been officially designated as such by a Federal, State or local agency, and the officials with jurisdiction over the land determine that its primary purpose is as a park, recreation area, or refuge. Primary purpose is related to a property's primary

> function and how it is intended to be managed. Incidental, secondary, occasional or dispersed activities similar to park, recreational or refuge activities do not constitute a primary purpose within the context of Section 4(f). Unauthorized activities, such as ad hoc trails created by the public within a conservation area, should not be considered as part of [the federal lead agency's] determination of Section 4(f) applicability.

Regarding whether multiple-use public land holdings are subject to the requirements of Section 4(f), the Section 4(f) Policy Paper (FHWA 2012) states:

> When applying Section 4(f) to multiple-use public land holdings, [the federal lead agency] must comply with 23 CFR 774.11(d). Section 4(f) applies only to those portions of a multiple-use public property that are designated by statute or identified in an official management plan of the administering agency as being primarily for public park, recreation, or wildlife and waterfowl refuge purposes, and are determined to be significant for such purposes. … Multiple-use public land holdings are often vast in size, and by definition these properties are comprised of multiple areas that serve different purposes. Section 4(f) does not apply to those areas within a multiple-use public property that function primarily for any purpose other than significant park, recreation or refuge purposes. For example, within a National Forest, there can be areas that qualify as Section 4(f) resources (e.g., campgrounds, trails, picnic areas) while other areas of the property function primarily for purposes other than park, recreation or a refuge such as timber sales or mineral extraction. Coordination with the [OWJ] and examination of the management plan for the area will be necessary to determine if Section 4(f) should apply to an area of a multiple-use property that would be used by a transportation project.
>
> For multiple-use public land holdings which either do not have formal management plans or when the existing formal management plan is out-of-date, [the federal lead agency] will examine how the property functions and how it is being managed to determine Section 4(f) applicability for the various areas of the property. This review will include coordination with the [OWJ] over the property.

Lang Station Open Space is depicted on the City's Parks and Open Space Map (City of Santa Clarita 2024a) as "public open space." As of February 12, 2024, the City map shows no trailheads or trails within Lang Station Open Space. According to the City, "the City acquired [Lang Station Open Space] as protected open space" (Hagobian, pers. comm. 2023). Pursuant to the City's Open Space Acquisition Implementation Work Program for Fiscal Year 2023-24 (City 2023b):

> Funds derived from the [Open Space Preservation District] that are utilized for this Work Program shall fund the acquisition of acres of undeveloped land in the following ratio:
>
> - At least 90 percent of the acres purchased will be preserved natural open space.
> - No more than 10 percent of the acres purchased will be used for future improved active parkland.

It is noted the previous versions of the Open Space Acquisition Implementation Work Program (from prior fiscal years) also state identical percent allocations (at least 90 percent of the City's open space lands will be preserved natural open space and no more than 10 percent will be used for future improved active parkland or recreation).

In addition to the preserved open space lands, Lang Station Open Space includes three public trails, totaling approximately 1.15 miles, for hiking, mountain biking, and equestrian use. It is noted that pursuant to City Municipal Code Section 14.10.110, Trails, human intrusion into City open space areas is prohibited (City of Santa Clarita 2023a). Therefore, trail users at Lang Station Open Space are required to remain on the trails and keep out of the remainder of the open space area.

Bee Canyon (Lang Station Open Space) contains suitable habitat for several special-status plant and wildlife species, including slender-horned spineflower (spineflower), which is a federally endangered species, coastal California gnatcatcher (gnatcatcher), which is a federally threatened

species, and the southern California/Central Coast Evolutionary Significant Unit of mountain lion (mountain lion).

Spineflower

The Authority acquired permission to enter public and private lands within Bee Canyon and conducted a botanical floristic survey of a 60-acre area just northeast of Soledad Canyon Road in May 2023 to determine the extent of the spineflower population. The results of the survey were negative for the presence of spineflower, and no suitable habitat was observed in the construction footprint within the 60-acre survey area. While seasonal variation in conditions may affect the detectability of the species, the lack of suitable habitat in the construction footprint of the 60-acre area surveyed indicates that no direct effects to spineflower would occur in this area. However, protocol-level surveys of all modeled suitable habitat areas will be conducted prior to construction to determine whether this species is present in the plant study area (the construction footprint and 100-foot plant indirect effect area).

Gnatcatcher

Modeled suitable gnatcatcher habitat in the area, where direct and indirect effects would occur for the S14A Build Alternative, consists of 21.0 acres of moderate quality habitat and 217.5 acres of low value habitat. The coastal sage scrub habitat in Bee Canyon is considered occupied by gnatcatcher.

Mountain Lion

In March 2024, Authority biologists walked the canyon bottom of Bee Canyon from Soledad Canyon Road to the eastern most ridge above the tunnel segment with CDFW staff. The biologists observed steep escarpments and freeway road cuts to the north (north of the freeway), and to the south, there is a tall ridge where it transitions from coastal sage scrub to chaparral. The steep road cuts and natural terrain when considered in combination with the SR 14 freeway, act as a barrier to north-south wildlife crossings.

Substantial evidence developed for the WCA indicates that the approximately 1-mile stretch of the SR 14 freeway adjacent to Bee Canyon is a complete barrier to movement. The 2014 annual average daily traffic volume (AADT) for the SR 14 freeway ranged between 71,000 and 99,000 vehicles in Palmdale and Santa Clarita (Caltrans 2014), which is seven to ten times the volume that Clevenger and Huijser (2009) found to repel wildlife due to the almost constant level of disturbance and heavy traffic volume. In addition, the steep road cuts and steep terrain along the SR 14 freeway, between Stonecrest Road and Agua Dulce Canyon Road, make the freeway less likely to facilitate wildlife movement as highlighted in the UC Davis roadkill data.

The City's Open Space Acquisition Implementation Work Program for Fiscal Year 2023-24 (City of Santa Clarita 2023) defines "wildlife corridors" as "pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural factors in combination with urbanization. Corridors: 1) allow animals to move between remaining habitats, which allow depleted populations to be replenished and promotes genetic exchange; 2) provide escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events, such as fire or disease, will result in population or species extinction; 3) serve as travel paths for individual animals as they wander throughout their home ranges in search of food, water, mates, and other needs, or for dispersing juveniles in search of new home ranges." Immediately north of Bee Canyon (Lang Station Open Space), the approximately 1-mile stretch of the SR 14 freeway is a complete barrier to movement. Additionally, the Lang Station Open Space trailhead signage does not indicate the site is a wildlife refuge nor has the City published planning documents designating the Lang Station Open Space as a wildlife refuge.

Conclusion

Publicly available information does not clearly document the purpose nor the significance of Lang Station Open Space as a recreational area or wildlife refuge. The City has not made publicly

available any resource management plan or implementation work plan for Lang Station Open Space, and this property and its trails are not mentioned in the City's General Plan or Master Plan of Trails, or any other City specific plan or master plan, despite the City's acquisition of this property more than 20 months ago in June 2022.

As discussed in the 2012 FHWA Section 4(f) Policy Paper, a wildlife or waterfowl refuge qualifies for protection under Section 4(f) if: (1) is publicly owned at the time at which the use occurs; (2) is officially designated as a wildlife or waterfowl refuge by a federal, state, or local agency; (3) its primary designated purpose is consistent with its primary function and how it is intended to be managed; and (4) it is considered significant by the OWJ. The Lang Station Open Space does not satisfy criteria 2 and 3 as it is not officially designated as a wildlife or waterfowl refuge by the City nor has the City prepared planning documents declaring the site's purpose as a wildlife or waterfowl refuge.

Additionally, and as discussed above, given the steep road cuts to the north and the tall ridge to the south, wildlife movement through this area is less likely (UC Davis 2023). Further, the volume of traffic on the SR 14 freeway is a deterrent to wildlife due to the almost constant level of disturbance and heavy traffic volume.

Additionally, per the City's Open Space Acquisition Implementation Work Program for Fiscal Year 2023-24, the funding restrictions on acquisition of undeveloped lands by the City's Open Space Preservation District requires that at least 90 percent of acquired open space lands be preserved natural open space and no more than 10 percent be used for future improved active parkland or recreation (City of Santa Clarita 2023b). While the Authority has determined there is not enough evidence to support a determination that Lang Station Open Space is a Section 4(f) property since there is not sufficient documentation to support a 4(f) multiple-use of the trails within Lang Station Open Space as they remain undocumented and unplanned by the City, Lang Station Open Space, inclusive of the trails and trailhead will be evaluated as a Section 4(f) resource. In this Evaluation, the Authority will demonstrate that all possible planning has been conducted as a best practice and in the spirit of avoiding impacts to resources.

5.2 Cultural Resources

For purposes of identifying cultural resources potentially protected under Section 4(f), the RSA is the same as the APE defined in Section 3.17, Cultural Resources, of the Final EIR/EIS. Within the archaeological and historic built APEs, background research and field surveys identified no historic properties, both built and archaeological, listed or eligible for listing in the NRHP that also qualify as Section 4(f) resources within or adjacent to Lang Station Open Space. Therefore, no further discussion of Section 4(f) cultural resources is necessary related to Lang Station Open Space.

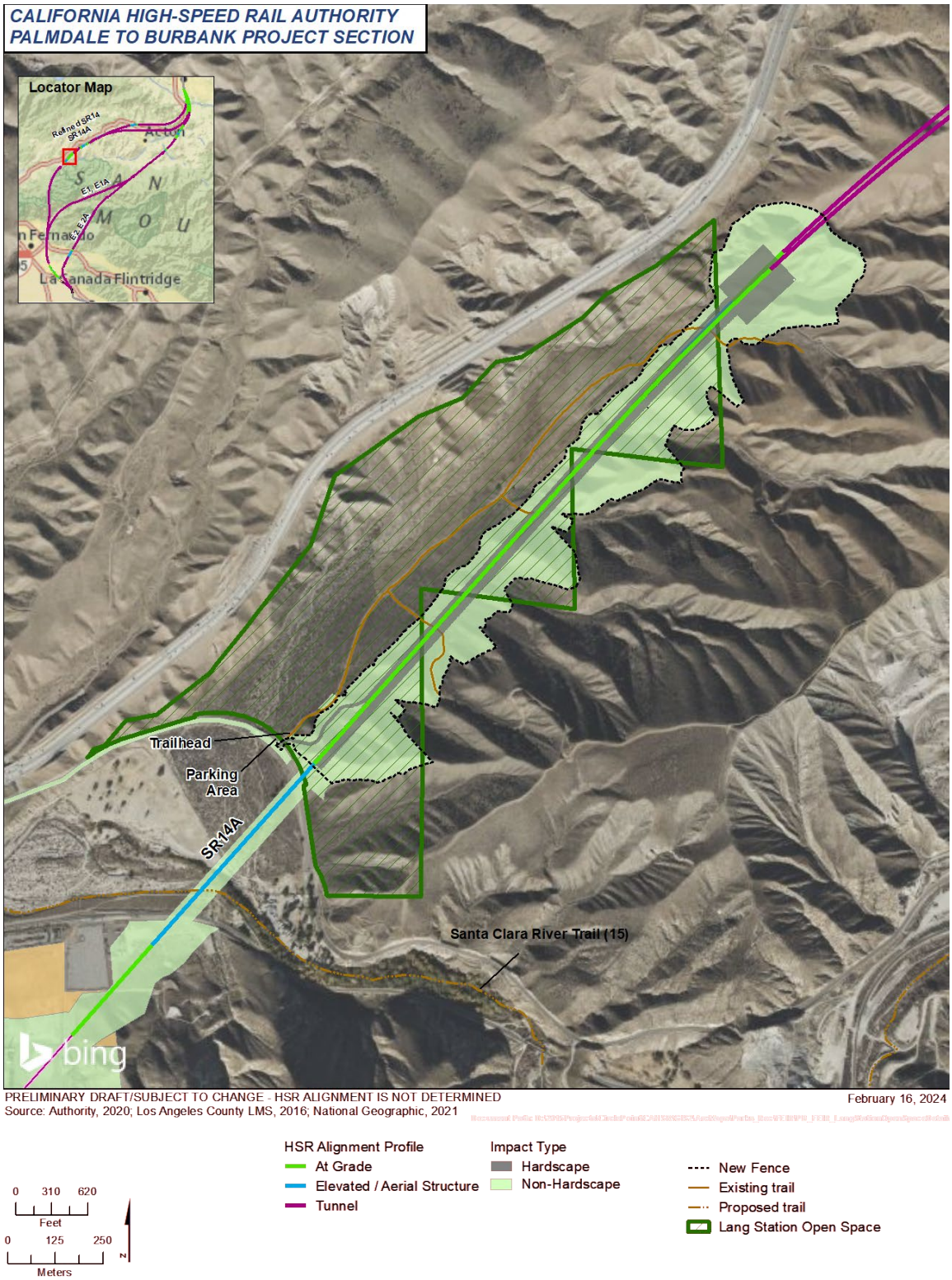

Figure 4-B-8 Lang Station Open Space

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6 LANG STATION OPEN SPACE PRELIMINARY SECTION 4(f) USE ASSESSMENT

Preliminary use assessments for the park, recreation, and wildlife and waterfowl refuge resources relative to Build Alternatives are discussed in this section. The following Section 4(f) findings are preliminary and final use determinations will be made after coordination with the OWJ and a formal public review period that begins with the publication of the Section 4(f) evaluation. Final use determinations will be published as part of the ROD. All parks and recreation Section 4(f) resources are shown in Figure through Figure ; see Chapter 4, Final Section 4(f) and Section 6(f) Evaluations, of the Final EIR/EIS for a discussion of resources other than Lang Station Open Space.

A resource is first evaluated for permanent use. If a permanent use is determined to occur, an evaluation of whether the use would be *de minimis* is completed. If no permanent use is found, an analysis is conducted to evaluate for temporary occupancy. If there is no temporary occupancy, an analysis of constructive use is completed. The analysis below takes into consideration IAMFs and mitigation measures identified in other sections of the Final EIR/EIS that would reduce Build Alternative impacts on Lang Station Open Space. Evaluation of use under Section 4(f) is based on the "net" effect remaining after the application of avoidance, minimization, and mitigation measures.

6.1 Lang Station Open Station

6.1.1 Permanent Use

Lang Station Open Space is an approximately 208-acre open space area located on undeveloped land southeast of SR 14, east of the intersection of Stonecrest Road and Soledad Canyon Road in Los Angeles County to the east of the city boundaries of Santa Clarita. The open space features a public trailhead and three public trails, totaling approximately 1.15 miles, for hiking, mountain biking, and equestrian use. A public parking area for the open space is located adjacent to Soledad Canyon Road near the Lang Station Open Space trailhead. It is noted that, as of February 19, 2024, no City documentation is available (or has been provided to the Authority by the City) that shows or discusses the existing or planned recreational trails within Lang Station Open Space. The property is owned and maintained by the City of Santa Clarita Open Space Preservation District. According to the City, Lang Station Open Space was acquired as protected open space (Hagobian, pers. comm. 2023), and pursuant to the City's Open Space Acquisition Implementation Work Program for Fiscal Year 2023-24, no more than 10 percent purchased open space will be used for future improved active parkland or recreation (City of Santa Clarita 2023b).

Two of the six Build Alternatives (Refined SR14 and SR14A) would require permanent use of 85.3 acres (41 percent of the total area of the open space). The permanent use area would include 56.0 acres of permanent footprint that would be fenced off to the public. The remaining 29.3 acres of permanent use area would be comprised of six isolated areas that would occur due to the Refined SR14 and SR14A Build Alternatives dividing the property; these isolated areas would be permanently inaccessible from the remainder of the property because of the project. No additional land beyond the 85.3 acres under permanent use would be required for temporary use. Impacts to Lang Station Open Space from the Refined SR14 and SR14A Build Alternatives are illustrated on Figure 4-B-7. For both the Refined SR14 and SR14A Build Alternatives, the permanent use of Lang Station Open Space would occur on the southeastern portion of the open space, which is the portion furthest away from SR 14, and includes the existing trailhead near Soledad Canyon Road and approximately 0.13 mile of the 1.17 miles of existing trails within the property. It should be noted that in accordance with the City Municipal Code Section 14.10.110, Trails, human intrusion into City open space areas is prohibited (City of Santa Clarita 2023a). Therefore, trail users at Lang Station Open Space are required to remain on the trails and keep out of the remainder of the open space area.

The permanent use would be required under Refined SR14 and SR14A Build Alternatives as the HSR alignment in that area would transect the property, and the majority of the proposed tracks within Lang Station Open Space would occur at grade. Elevated tracks are proposed at only the southwestern- and northeastern-most ends of the open space. In the southwestern end of the open space, the tracks would be elevated to traverse over Soledad Canyon Road and avoid the need to realign the existing roadway. The proposed tracks would be elevated on the northeastern end of the open space to cross a canyon. Of the 85.3 acres under permanent use, after project construction, approximately 14.0 acres would constitute hardscape (i.e., track, ballast, concrete) and 42.0 acres would be graded areas that would be revegetated. Although the areas to be revegetated would not include hardscape, these areas, in addition to the hardscape areas, would be fenced off to ensure no public access to the railroad right-of-way for safety purposes. The remaining 29.3 acres of permanent use would include six isolated areas of the property as previously discussed. The permanent use of portions of Lang Station Open Space would adversely affect the protected activities, features, or attributes that could qualify the open space for protection under Section 4(f).

As discussed in the 2012 FHWA Section 4(f) Policy Paper, a wildlife or waterfowl refuge qualifies for protection under Section 4(f) if: (1) is publicly owned at the time at which the use occurs; (2) is officially designated as a wildlife or waterfowl refuge by a federal, state, or local agency; (3) its primary designated purpose is consistent with its primary function and how it is intended to be managed; and (4) it is considered significant by the OWJ. While the Lang Station Open Space would be publicly owned at such time a use would occur, the Lang Station Open Space does not satisfy criteria 2 and 3 as it is not officially designated as a wildlife or waterfowl refuge by the City nor has the City prepared planning documents declaring the site's purpose as a wildlife or waterfowl refuge. Therefore, while the Authority has determined there is not enough evidence to support a determination that Lang Station Open Space is a wildlife or waterfowl refuge for protection under Section 4(f), the IAMFs and mitigation measures discussed below would minimize the Refined SR14 and SR14A Build Alternatives' effects to the Lang Station Open Space.

Project features (PK-IAMF#1) would maintain access to park and recreation facilities because the contractor will prepare and submit to the Authority a technical memorandum that identifies project design features to be implemented to minimize impacts on parks and recreation facilities, such as providing safe and attractive access for existing travel modes (e.g., motorists, bicyclists, pedestrians) to existing park and recreation facilities. Similarly, pursuant to PR-MM#3, during construction, the contractor will follow standard safety procedures to protect motorized and non-motorized traffic and maintain access to and from Lang Station Open Space. The contractor will prepare a technical memorandum to identify how connections to the unaffected trail portions and nearby roadways would be maintained during construction, and, if necessary, will provide alternative access via a temporary detour of the trail using existing roadways or other public rights-of-way (PR-MM#1). If temporary closure would restrict connectivity, the contractor will provide permanent multimodal access using existing roadways or other public rights-of-way (PR-MM#2). During final design, the Authority's project engineer will require the contractor to develop a trail facilities plan addressing the short-term project impacts on existing trails, consult with the City's Open Space Preservation District, develop detour signs, and restore impacted trail segments (PR-MM#4). The Authority's project engineer will consult with the City's Open Space Preservation District on (1) whether the property owner/operator wants those recreation uses replaced temporarily or permanently elsewhere on the property; and (2) if temporary or permanent replacement of those recreation uses is desired, on modifications that could be made to the remaining recreation area on the property to temporarily or permanently replace the recreation uses displaced by the temporary impact area (PR-MM#5). The Authority will also (1) ensure that the unaffected portions of Lang Station Open Space would not preclude future trail development, and (2) provide alternative access if temporary closure restricts connectivity or accessibility to Lang Station Open Space, in consultation with the property owner (the City) (PR-MM#8). Finally, the Authority will compensate for the loss of a portion of the open space in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act,

as amended (SOCIO-IAMF#2). In addition, potential temporary construction impacts on air quality, biological resources, geology, hazardous materials, hydrology and water quality, noise, safety and security, and access and traffic will be minimized by implementation of applicable IAMFs, including AQ-IAMF#1 through 5; BIO-IAMF#1 through 12; GEO-IAMF#1, 2, and 10; HMW-IAMF#4 and 6 through 10; HYD-IAMF#1 and 3; NV-IAMF#1; SS-IAMF#1; and TR-IAMF#1 through 8. The IAMFs would be incorporated into the design specifications and would be a pre-condition requirement. These technical memoranda would be provided to the OWJ during the advanced design or construction phase to demonstrate how access would be maintained.

While the IAMFs and mitigation measures stated above would minimize the Refined SR14 and SR14A Build Alternatives' effects on Lang Station Open Space, the permanent use would be of a severity that the protected activities, features, or attributes that qualify as the recreational portion of the open space (i.e., trails) for protection under Section 4(f) would be adversely affected.

Therefore, while the Authority has determined there is not enough evidence to support a determination that Lang Station Open Space is a Section 4(f) property, the Authority has preliminarily concluded the Refined SR14 and SR14A Build Alternatives would result in a permanent use of this resource.

The other four Build Alternatives (E1, E1A, E2, and E2A) would not affect Lang Station Open Space, as the open space is located more than 1,000 feet from the construction footprints of these Build Alternatives.

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7 LANG STATION OPEN SPACE SECTION 4(f) AVOIDANCE ALTERNATIVES

Section 4(f) prohibits the use of a Section 4(f) property if there is a feasible and prudent alternative that avoids use of a Section 4(f) property. FRA considers an alternative to be not feasible if it cannot be built as a matter of sound engineering judgment. FRA considers an alternative not prudent if:

- It compromises a project to a degree that it is unreasonable to proceed considering a project's stated need and purpose (i.e., the alternative does not address the need and purpose of a project).
- It results in unacceptable safety or operational problems.
- After reasonable mitigation, it still causes severe social, economic, or environmental impacts; severe disruption to established communities; severe or disproportionate impacts to minority or low-income populations; or severe impacts to environmental properties protected under other federal statutes.
- It results in additional construction, maintenance, or operational costs of extraordinary magnitude.
- It causes other unique problems or unusual factors.
- It involves multiple factors as outlined above that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

The Purpose and Need statement presented in Chapter 1, Purpose and Need, of the Final EIR/EIS tiers off the approved program EIR/EIS documents (Authority and FRA 2005). The project alternatives evaluation process conducted as part of the HSR project for the Palmdale to Burbank Project Section concluded that there were no feasible and prudent HSR alternatives within the Central Subsection that did not result in at least a *de minimis* impact to Section 4(f) resources (Authority 2022a).[6] Although the project alternatives analysis process considered multiple criteria, the screening emphasized the project objective to maximize the use of existing transportation corridors and available right-of-way to the extent feasible; the result of this effort was the carrying forward of the north-south alignment alternatives that follow the existing Caltrain and UPRR rail corridor and the SR 14 corridor.

The Authority solicited input from the public and agencies throughout the project-level environmental review process for the Palmdale to Burbank Project Section since commencement in 2010. The development of initial project-level alternatives in 2010 followed the process described in Alternatives Analysis Methods for Project-Level EIR/EIS (Authority 2011). The Authority evaluated potential alternatives against HSR system performance criteria. The project alternatives screening process and evaluation criteria are discussed in detail in Section 2.4, Potential Alternatives Considered during Alternatives Screening Process, of the Final EIR/EIS.

Each alternative was evaluated to isolate concerns and to screen and refine the overall project section to avoid key environmental issues or improve performance. The alternatives not carried forward for detailed analysis had greater direct and indirect environmental impacts, were impracticable, or failed to meet the project Purpose and Need.

The No Project Alternative does not include construction of the Palmdale to Burbank Project Section or associated facilities, and would thus have no impact on Section 4(f) resources; however, there would be impacts to Section 4(f) resources as a result of the existing and planned improvements that would occur under the No Project Alternative, particularly in developed areas such as Palmdale and Burbank. Due to land use restrictions in the ANF, including SGMNM, no major development would occur within the ANF, including SGMNM, under the No Project

[6] See Chapter 4, Final Section 4(f) and Section 6(f) Evaluations, of the Final EIR/EIS for a discussion of resources other than Lang Station Open Space.

Alternative. Nonetheless, the No Project Alternative would not address the Purpose and Need for the Palmdale to Burbank Project Section. This alternative is insufficient to meet existing and future travel demand; current and projected future congestion of the transportation system would continue to result in deteriorating air quality, reduced reliability, and increased travel times. Because the No Project Alternative does not meet the project's Purpose and Need, it is neither feasible nor prudent and is not discussed further as an avoidance alternative for Section 4(f) resources.

Greater detail on alternatives considered but dismissed is provided in Section 2.4 of the Palmdale to Burbank Project Section Final EIR/EIS, and in the Final Program EIR/EIS for the Proposed California High-Speed Train System (Authority and FRA 2005), Alternatives Analysis Methods for Project-Level EIR/EIS (Authority 2011), Palmdale to Los Angeles Preliminary Alternatives Analysis Report (Authority 2010), three Palmdale to Los Angeles Supplemental Alternatives Analysis reports (Authority 2012b, 2012c, 2014), and two Palmdale to Burbank Supplemental Alternative Analysis Reports (Authority 2015a, 2016) available via request on the Authority's website.

In response to comments received on the Draft EIR/EIS, the Authority considered two tunneling options, the first of which would cross in tunnel under Lang Station Open Space and the Santa Clara River (Option 1). The second option would tunnel under the northern portion of the Lang Station Open Space and emerge from tunnel to cross over the Santa Clara River on viaduct (Option 3). The Authority concluded that both tunneling options conflict with engineering design requirements such that they are not feasible. Construction of Option 1 (a tunnel in the Bee Canyon area and under the Santa Clara River) is not feasible because it would require a vertical profile for the HSR alignment that exceeds the maximum allowable grade of 2.5 percent as defined in the Authority's Technical Memorandum (TM) 2.1.2, Section 3.3.1.

In addition to considering Options 1 and 3, the Authority considered three additional options (Options 2, 4, and 5) that could reduce the Refined SR14 and SR14A Build Alternative footprints through the Lang Station Open Space. The five design options are discussed in more detail in Section 8.1, Lang Station Open Space Individual Resource Avoidance Assessment.

As described in Section 0, permanent use of Lang Station Open Space would occur under two of the six Build Alternatives (Refined SR14 and SR14A). However, the E1, E1A, E2, and E2A Build Alternatives would avoid potential effects to Lang Station Open Space, as the property is located more than 1,000 feet from the construction footprints of these Build Alternatives.

8 MEASURES TO MINIMIZE HARM AT LANG STATION OPEN SPACE

As discussed in Section 1.1.1 of this evaluation, pursuant to federal guidance, all reasonable measures to minimize harm or mitigate for adverse impacts and effects on Section 4(f) resources must be included in the project. With regard to public parks, recreation areas, and wildlife and waterfowl refuges, the measures may include (but are not limited to): design modifications or design goals; replacement of land or facilities of comparable value and function; or monetary compensation to enhance the remaining property or to mitigate the adverse impacts of the project in other ways.

8.1 Lang Station Open Space Individual Resource Avoidance Assessment

Lang Station Open Space is an approximately 208-acre open space area located on undeveloped land southeast of SR 14, east of the intersection of Stonecrest Road and Soledad Canyon Road in Los Angeles County to the east of the city boundaries of Santa Clarita. The open space features a public trailhead and three public trails, totaling approximately 1.15 miles, for hiking, mountain biking, and equestrian use. A public parking area for the open space is located adjacent to Soledad Canyon Road near the Lang Station Open Space trailhead.

Two of the six Build Alternatives (Refined SR14 and SR14A) would require permanent use of 85.3 acres (41 percent of the total area of the open space); therefore, this discussion focuses on the Refined SR14 and SR14A Build Alternatives. The permanent use area would include 56.0 acres of permanent footprint that would be fenced off to the public. The remaining 29.3 acres of permanent use area would be comprised of six isolated areas that would occur due to the Refined SR14 and SR14A Build Alternatives dividing the property; these isolated areas would be permanently inaccessible from the remainder of the property because of the project. No additional land beyond the 85.3 acres under permanent use would be required for temporary use. For both the Refined SR14 and SR14A Build Alternatives, the permanent use of Lang Station Open Space would occur on the southeastern portion of the open space, which is the portion furthest away from SR 14, and includes the existing trailhead near Soledad Canyon Road and approximately 0.13 mile of the 1.17 miles of existing trails within the property. The permanent use would be required under Refined SR14 and SR14A Build Alternatives as the HSR alignment in that area would transect the property, and the majority of the proposed tracks within Lang Station Open Space would occur at grade. Elevated tracks are proposed at only the southwestern- and northeastern-most ends of the open space. In the southwestern end of the open space, the tracks would be elevated to traverse over Soledad Canyon Road and avoid the need to realign the existing roadway. The proposed tracks would be elevated on the northeastern end of the open space to cross a canyon.

In response to comments received on the Draft EIR/EIS, the Authority conducted an assessment of the feasibility of tunneling through Bee Canyon (including the Lang Station Open Space), to potentially reduce impacts to suitable habitat for special-status species and minimize the project footprint. The Authority examined a total of five options to underground the alignment or minimize the impact of the at-grade section in Bee Canyon. The five options include:

1. Maintain the Refined SR/SR14A horizontal alignment as in the Draft EIR/EIS and PEPD Record Set Addendum SR14A/E1A/E2A but modify the vertical profile to cross in tunnel under the Santa Clara River and Bee Canyon.
2. Change the Refined SR14/SR14A horizontal and vertical alignment to avoid Bee Canyon and maintain the crossing of the Santa Clara River on viaduct.
3. Maintain the Refined SR14/SR14A horizontal alignment as in the Draft EIR/EIS and PEPD Record Set Addendum SR14A/E1A/E2A but modify the vertical profile to tunnel under Bee Canyon but maintain the crossing of the Santa Clara River on viaduct.
4. Reduce footprint of ancillary facilities in Bee Canyon. This requires changes in some current design elements for the Refined SR/SR14A alignment: change the access road design, change energy supply line to Portal 4A, optimize staging areas, and reevaluate grading.

5. Reduce footprint of earthworks in Bee Canyon. This would require changes in some design elements for the Refined SR14/SR14A alignment: reevaluate grading considering extensive use of retaining walls or retaining walls plus slope-berm pattern along the HSR alignment in Bee Canyon. This option would also include changing the access road design, changing the energy supply line to Portal 4A, and optimizing staging areas.

As noted above, the Authority considered two tunneling options, the first of which would cross in tunnel under Lang Station Open Space and the Santa Clara River (Option 1). The second option would tunnel under the northern portion of the Lang Station Open Space and emerge from tunnel to cross over the Santa Clara River on viaduct (Option 3). The Authority concluded that both tunneling options conflict with engineering design requirements such that they are not feasible. Construction of Option 1 (a tunnel in the Bee Canyon area and under the Santa Clara River) is not feasible because it would require a vertical profile for the HSR alignment that exceeds the maximum allowable grade of 2.5 percent as defined in the Authority's Technical Memorandum (TM) 2.1.2, Section 3.3.1. Constructing Option 3 (the HSR alignment in tunnel in the northern portion of the Lang Station Open Space and then emerging from tunnel to cross over the Santa Clara River on viaduct) would also not be feasible because HSR alignment requirements and the topography of the area would not allow for maintaining the minimum vertical clearance of the HSR viaduct over Soledad Canyon Road. Additionally, Option 1 would increase project costs by $230 million while Option 3 would increase project costs by $165 million.

Option 2, which would involve extending the tunnel segment approximately 2,700 feet, would result in approximately 3,200 feet of at-grade alignment through the Lang Station Open Space. As vertical profile under Option 2 would be lower in order to increase tunnel length and reduce the at-grade section, the necessary cuts would be approximately 100 feet deeper than the SR14A Build Alternative. Option 2 would reduce the permanent impact area by 29 acres but would increase project costs by $420 million.

Option 5 would involve the use of retaining walls to reduce the area of permanent impact through Lang Station Open Space. Under Option 5, the permanent impact area would be reduced by approximately 67.6 acres; however, Option 5 would increase project costs by $162 million due to construction of retaining walls despite the decrease in excavation.

Option 4, which would involve changing the design of the access road between Soledad Canyon Road and Portal 4A, moving the power supply line along the access road, optimizing the staging areas, and an overall re-design of the grading. All these measures are aimed to get a more compact design and, therefore, minimize the footprint within the Lang Station Open Space. Option 4 would reduce the permanent impact area by 37 acres. Given the reduction in permanent impact area by 37 acres and an increase in project costs by $10 million, the Authority has evaluated this design option in the Final EIR/EIS.

Also in response to comments received on the Draft EIR/EIS and through consultation with resource agencies, the Authority developed a design refinement in the vicinity of Bee Canyon and Pacoima Wash that minimized the temporary and permanent footprint of the Refined SR14 and SR14A Build Alternatives. In Bee Canyon, the temporary and permanent footprint along this 2.4-mile stretch of the alignment was reduced from 144.97 acres to 105.78 acres for the Refined SR14 Build Alternative, and from 141.92 acres to 100.87 acres for the SR14A Build Alternative.

Given the physical constraints of the area, the conflict with engineering design requirements (i.e., a grade greater than 2.5 percent), the clearance requirements at Soledad Canyon Road, the additional excavation required under some of the considered design options, and the extraordinary magnitude of the costs of an underground alternative, it would not be prudent to avoid the resource under the Refined SR14 and SR14A Build Alternatives. Therefore, there are no reasonable and prudent alternatives to the Section 4(f) permanent use under the Refined SR14 and SR14A Build Alternatives. Consistent with 23 C.F.R. 774.17, the Authority has considered all reasonable design modifications to minimize harm in the Lang Station Open Space from the Refined SR14 and SR14A Build Alternatives.

8.2 Lang Station Open Space Measures to Minimize Harm

Further, the Authority has developed measures to minimize harm to Lang Station Open Space, including IAMFs that are incorporated into the project design to avoid or minimize impacts. Mitigation and enhancement measures to compensate for unavoidable project impacts mitigate project impacts that cannot be avoided or minimized with the incorporation of IAMFs. Each applicable IAMF and mitigation measure for Lang Station Open Space is described in Table 4-B-1, as required by 49 U.S.C. 303(c)(2). Additionally, avoidance alternatives have been developed to avoid uses to Section 4(f) properties where possible, as described in Section 7 above.

The Final EIR/EIS identifies measures that would mitigate adverse effects to the Lang Station Open Space. Those measures are identified in Table 4-B-1 and include PR-MM#5 (Modifications to Recreational Uses), 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), and PR-MM#9 (Permanent Acquisition of Public Property from Land and/or Trails Planned for Public Recreational Use) as well as BIO-MM#101 (Minimize Permanent, Intermittent Noise Impacts on Special-Status Bird Habitat). PR-MM#7 through PR-MM#9 will require compensation for land permanently acquired for the impacts to the Lang Station Open Space trailhead and affected trails. Compensation typically would be financial based on the value of the affected property; however, compensation could include relocation of the trailhead and trail replacement and/or enhancements. BIO-MM#101 will require that the Authority build sound barriers to address permanent or intermittent noise impacts on the suitable special-status bird habitat in Lang Station Open Space. These sound barriers would provide noise reduction of HSR train operations not only for special-status birds and wildlife in the area, but also for open space trail users.

Additionally, the Final EIR/EIS identifies measures that would mitigate adverse effects to the potential wildlife uses at Lang Station Open Space. Those measures are also identified in Table 4-B-1. The Authority would implement measures to avoid, minimize, and mitigate for impacts to gnatcatcher. BIO-MM#14 (Conduct Pre-construction Surveys and Delineate Active Nest Exclusion Areas for Breeding Birds) and BIO-MM#79 (Conduct Surveys for Coastal California Gnatcatcher) would require nesting bird surveys and establishment of adequate buffers around gnatcatcher nests. Through BIO-MM#53 (Prepare a Compensatory Mitigation Plan for Species and Species Habitat), the Authority would offset impacts to occupied gnatcatcher habitat through the protection and long-term management of in-kind habitat. To address intermittent operational noise, BIO-MM#101 (Minimize Permanent, Intermittent Noise Impacts on Special-Status Bird Habitat) would require the Authority to build sound barriers to minimize or avoid impacts in locations where special-status bird habitat would be exposed to 65 A-weighted decibels of permanent intermittent noise impact outside the fenced right-of-way, including Bee Canyon. Additional mitigation measures would also be implemented to reduce the effects of operations, including: wildlife rescue measures (BIO-MM#76, Implement Wildlife Rescue Measures), spill prevention and containment measures (BIO-MM#87, Prepare and Implement Spill Prevention and Containment Measures), construction or maintenance activity debris prevention measures (BIO-MM#88, Implement Construction or Maintenance Activity Debris Prevention Measures), and implementation of avoidance measures during operations (BIO-MM#92, Implement Avoidance Measures During Operations and Maintenance for the Santa Clara River). The general measures include establishment of wildlife crossings (BIO-MM#64, Establish Wildlife Crossings), implementation of wildlife height requirements for enhanced security fencing (BIO-MM#77, Implement Wildlife Height Requirements for Enhanced Security Fencing), installation of wildlife jump-outs (BIO-MM#78, Install Wildlife Jump-outs), and implementation of measures to reduce, avoid and minimize effects on wildlife movement (BIO-MM#83, Measures Intended to Reduce, Avoid, and Minimize Effects on Animal Movement). The specific measures include preconstruction surveys and implementation of avoidance and minimization measures for mountain lion dens (BIO-MM#96, Conduct Pre-Construction Surveys and Implement Avoidance and Minimization Measures for Mountain Lion Dens), and compensatory mitigation for impacts to mountain lion habitat (BIO-MM#97, Provide Compensatory Mitigation for Impact on Mountain Lion Habitat).

By incorporating the measures identified in Table 4-B-1, the Authority has undertaken all possible planning to minimize harm to the Lang Station Open Space.

Table 4-B-1 Measures to Minimize Harm

Impact	Measures to Minimize Harm
Potentially Affected Recreational Area: Lang Station Open Space	
▪ Acquisition of land from recreational area	▪ Under PR-MM#7, the Authority will compensate for the loss of a portion of the open space and/or trail in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended, and the California Park Preservation Act.
▪ Removal of existing trailhead ▪ Removal of 0.13 mile of existing public trails	▪ Under PR-MM#5, the Authority's project engineer will consult with the City's Open Space Preservation District on (1) whether the property owner/operator wants those recreation uses replaced temporarily or permanently elsewhere on the property; and (2) if temporary or permanent replacement of those recreation uses is desired, on modifications that could be made to the remaining recreation area on the property to temporarily or permanently replace the recreation uses displaced by the temporary impact area. ▪ Under PR-MM#7, the Authority will consult with the City's Open Space Preservation District regarding the specific conditions of acquisition, use of, and compensation for, or replacement or enhancement of, the trailhead and trail within the easement area, consistent with any applicable requirements of the California Park Preservation Act. ▪ Under PR-MM#8, the Authority will (1) ensure that connections to the unaffected portions of Lang Station Open Space are maintained, and (2) provide alternative access if temporary closure restricts connectivity or accessibility to Lang Station Open Space. The Authority will consult with the property owner (the City) regarding the specific conditions of the changes to access and compensation for, or replacement or enhancement of, the access driveways and/or parking areas at the Lang Station Open Space. ▪ Under PR-MM#9, the Authority will continue work with the City's Open Space Preservation District on the establishment of appropriate compensation and relocation/realignment of the trailhead and/or trail to accommodate the displaced planned park and recreational uses as a result the HSR system.
▪ Temporary changes in access	▪ PK-IAMF#1 would maintain access to park and recreation facilities because the contractor will prepare and submit to the Authority a technical memorandum that identifies project design features to be implemented to minimize impacts on parks and recreation facilities, such as providing safe and attractive access for existing travel modes (e.g., motorists, bicyclists, pedestrians) to existing park and recreation facilities. ▪ Pursuant to PR-MM#3, during construction, the contractor will follow standard safety procedures to protect motorized and non-motorized traffic and maintain access to and from Lang Station Open Space. ▪ Under PR-MM#1, the contractor will prepare a technical memorandum to identify how connections to the unaffected trail portions and nearby roadways would be maintained during construction, and, if necessary, will provide alternative access via a temporary detour of the trail using existing roadways or other public rights-of-way. ▪ Under PR-MM#2, if temporary closure would restrict connectivity, the contractor will provide permanent multimodal access using existing roadways or other public rights-of-way.
▪ Temporary construction activities in the recreational area	▪ Under PR-MM#4, during final design, the Authority's project engineer will require the contractor to develop a trail facilities plan addressing the short-term project impacts on existing trails, consult with the City's Open Space Preservation District, develop detour signs, and restore impacted trail segments.

Impact	Measures to Minimize Harm
Potentially Affected Recreational Area: Lang Station Open Space	
	▪ AQ-IAMF#1 (Fugitive Dust Emissions): During construction, the contractor shall employ measures to minimize and control fugitive dust emissions. ▪ AQ-IAMF#2 (Selection of Coatings): During construction, the contractor shall use low-volatile organic compound (VOC) paint that contains less than 10 percent of VOC contents. ▪ AQ-IAMF#3 (Renewable Diesel): During construction, the contractor will use renewable diesel fuel to minimize and control exhaust emissions from all heavy-duty diesel-fueled construction diesel equipment and on-road diesel trucks. ▪ AQ-IAMF#4 (Reduce Criteria Exhaust Emissions from Construction Equipment): Prior to issuance of construction contracts, the Authority will incorporate appropriate construction equipment exhaust emissions requirements into the contract specifications, as required by the California Air Resources Board (CARB). ▪ AQ-IAMF#5 (Reduce Criteria Exhaust Emissions from On-Road Construction Equipment): Prior to issuance of construction contracts, the Authority will incorporate appropriate material-hauling truck fleet mix requirements into the contract specifications, as required by CARB. ▪ HYD-IAMF#3 (Prepare and Implement a Construction Stormwater Pollution Prevention Plan [SWPPP]): Prior to construction, the contractor shall comply with the State Water Resources Control Board Construction General Permit requiring preparation and implementation of a SWPPP. The Construction SWPPP will propose best management practices (BMPs) to minimize potential short-term increases in sediment transport caused by construction, including erosion control requirements, stormwater management, and channel dewatering for affected stream crossings. ▪ NV-IAMF#1 (Noise and Vibration): Prior to construction, the contractor shall prepare and submit to the Authority a noise and vibration technical memorandum documenting how the Federal Transit Administration and FRA guidelines for minimizing construction noise and vibration impacts will be employed when work is being conducted within 1,000 feet of sensitive receptors. ▪ SS-IAMF#1 (Construction Safety Transportation Management Plan): Prior to construction, the contractor shall prepare for submittal to the Authority a construction safety transportation management plan. The plan will describe the contractor's coordination efforts with local jurisdictions for maintaining emergency vehicle access. The plan will also specify the contractor's procedures for implementing temporary road closures, including access to residences and businesses during construction, lane closures, signage and flag persons, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, and alternative access locations. ▪ TR–IAMF#6 (Restriction on Construction Hours): The contractor shall limit construction material deliveries between 7 a.m. and 9 a.m. and between 4 p.m. and 6 p.m. on weekdays to minimize impacts to traffic on roadways. The contractor shall limit the number of construction employees arriving or departing the site between the hours of 7 a.m. and 8:30 a.m. and 4:30 p.m. and 6 p.m.
▪ Permanent noise effects	▪ The Lang Station Open Space provides habitat for special-status bird species and consistent with BIO-MM#101, it is anticipated that sound barriers would be constructed along this portion of the project alignment through the entirety of the open space property. These sound barriers would provide noise reduction of HSR train operations not only for special-status birds and wildlife in the area, but also for open space trail users.

Impact	Measures to Minimize Harm
Potentially Affected Recreational Area: Lang Station Open Space	
▪ Permanent visual effects	▪ The sound barriers noted in BIO-MM#101 would also provide some visual shielding of train operations from trail users. To reduce visual effects, sound barriers would include surface design enhancements to blend with the area's visual context. Trail users would predominately view graded cut and fill slopes rather than hardscape. ▪ AVQ-IAMF#1 (Aesthetic Options): Prior to construction, the Contractor shall document, through issue of a technical memorandum, how the Authority's aesthetic guidelines have been employed to minimize visual impacts. The Authority seeks to balance providing a consistent, project-wide aesthetic with the local context for the numerous high-speed rail non-station structures across the state. Examples of aesthetic options will be provided to local jurisdictions that can be applied to non-standard structures in the high-speed rail system. Refer to Aesthetic Options for Non-Station Structures, 2017. ▪ AVQ-IAMF#2 (Aesthetic Review Process): Prior to construction, the Contractor shall document that the Authority's aesthetic review process has been followed to guide the development of non-station area structures. Documentation shall be through issuance of a technical memorandum to the Authority. The Authority will identify key non-station structures recommended for aesthetic treatment, consult with local jurisdictions on how best to involve the community in the process, solicit input from local jurisdictions on their aesthetic preferences, and evaluate aesthetic preferences for potential cost, schedule and operational impacts. The Authority will also evaluate compatibility with project-wide aesthetic goals, include recommended aesthetic approaches in the construction procurement documents, and work with the contractor and local jurisdictions to review designs and local aesthetic preferences and incorporate them into final design and construction. Refer to Aesthetic Options for Non-Station Structures, 2017.
▪ Effects to wildlife	▪ Under BIO-MM#14, the Authority would conduct pre-construction surveys during the bird breeding season. If active bird nests are observed, no-work buffers will be delineated to establish active nest exclusion areas for breeding birds. ▪ Under BIO-MM#53, the Authority would prepare a Compensatory Mitigation Plan to establish compensatory mitigation provided to offset permanent and temporary impacts to federal and state-listed species and their habitat, fish and wildlife resources regulated under Section 1600 et seq., and certain other special-status species. ▪ Under BIO-MM#64, the Authority would incorporate features to accommodate wildlife movement into the design of bridges and culverts that are replaced or modified as part of project construction, wherever feasible. ▪ Under BIO-MM#76, the Authority would implement wildlife rescue measures during construction, maintenance, and operation if an injured or trapped wildlife species, including but not limited to birds and raptors, is observed. ▪ Under BIO-MM#77, the Authority would implement wildlife height requirements to ensure security fencing design will prevent access into the right-of-way and tracks by mountain lion. ▪ Under BIO-MM#78, the Authority would install wildlife jump-outs in areas with documented ungulate or other large mammal movement, where terrain or project design (e.g., at-grade crossings) could allow these large animals to enter the ROW, features to reduce access (e.g., taller fencing or wildlife barriers at crossings) or features to allow large animals to escape from the fenced right-of-way (e.g., wildlife jump-outs or escape ramps). ▪ Under BIO-MM#79, the Authority would conduct surveys in suitable coastal California gnatcatcher habitat within 300 feet of vegetation removal, earthmoving, or use of heavy construction equipment. ▪ Under BIO-MM#83, the Authority would implement measures intended to reduce, avoid, and minimize effects on animal movement.

Impact	Measures to Minimize Harm
Potentially Affected Recreational Area: Lang Station Open Space	
	▪ Under BIO-MM#87, the Authority would prepare and implement spill prevention and containment measures as identified by the SWPPP prepared as part of HYD-IAMF#3 and HYD-IAMF#4. ▪ Under BIO-MM#88, the Authority would implement construction or maintenance activity debris prevention measures to prevent the inadvertent discharge of equipment, chemicals, or debris into the wetted channel. ▪ Under BIO-MM#92, the Authority would implement avoidance measures during operations and maintenance for the Santa Clara River. ▪ Under BIO-MM#96, the Authority would conduct pre-construction surveys and implement avoidance and minimization measures for mountain lion dens. The Authority will conduct preconstruction surveys for known or potential mountain lion dens within suitable habitat located within the work area and within 600 meters of the work area. ▪ Under BIO-MM#97, the Authority would provide compensatory mitigation for impact to suitable mountain lion habitat through the preservation of suitable habitat that is acceptable to CDFW. Habitat will be replaced at a minimum ratio of 2:1 for permanent impacts on breeding/foraging habitat and high-priority foraging and dispersal habitat (CRC, MCH, SGB, CSC, COW, DSW, DSC, AGS, JUN, VRI, LAC), and at a ratio of 1:1 for low-priority foraging and dispersal habitat (BAR, DOR/VIN), unless a higher ratio is required by regulatory authorizations issued under CESA. ▪ The Lang Station Open Space provides habitat for special-status bird species and consistent with BIO-MM#101, it is anticipated that sound barriers would be constructed along this portion of the project alignment through the entirety of the open space property. These sound barriers would provide noise reduction of HSR train operations not only for special-status birds and wildlife in the area, but also for open space trail users.

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9 PRELIMINARY SECTION 4(f) LEAST HARM ANALYSIS

When there is no feasible and prudent avoidance alternative to using Section 4(f) resources, the Authority must approve the alternative that causes the least overall harm to Section 4(f) resources, taking into consideration the preservation purpose of the statute. To ascertain which alternative that uses Section 4(f) properties would cause the overall least harm, the Authority considers the following seven factors:

- Ability to mitigate adverse impacts on each Section 4(f) property (including any measures that result in benefits to the property)
- Relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection
- Relative significance of each Section 4(f) property
- Views of the OWJ over each Section 4(f) property
- Degree to which each alternative meets the Purpose and Need for the project
- After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f)
- Substantial differences in costs among the project alternatives

The first four factors relate to the net harm that each project alternative would cause to the Section 4(f) property, and the remaining three factors take into account concerns with the project alternatives that are not specific to Section 4(f). The following discussion demonstrates the overall least harm alternative for impacts in the project footprint that is consistent with the Preferred Alternative (see Chapter 8, Preferred Alternative and Station Sites, of the Final EIR/EIS).

9.1 Least Harm Analysis for Palmdale to Burbank Project Alternatives

The Authority has completed the following least harm analysis for the project. Table 4-B-2 shows the Section 4(f) properties that would incur a use as a result of the project alternatives and characterizes each alternative using the seven least harm analysis factors (23 C.F.R. 774.3[c]). Figure 4-B-1 through Figure 4-B-4 show an overview of the RSA and the parks and recreation resources within the RSA. Map identification numbers (map IDs) are shown on the figures parenthetically following the resource names to help identify and differentiate the resources. All resources are included in Table 4-B-2 because there is no true avoidance alternative that would avoid all Section 4(f) resources within the RSA for the Palmdale to Burbank Project Section.

9.2 Net Harm to Section 4(f) Property

Factors one through four in Table 4-B-2 consider the net harm that each Build Alternative would cause to a Section 4(f) property. Overall, the SR14A Build Alternative would affect the fewest Section 4(f) resources (6), compared to the Refined SR14 Build Alternative (7), the E1 Build Alternative (8), the E1A Build Alternative (8), the E2 Build Alternative (10), and the E2A Build Alternative (10).

The SR14A Build Alternative would result in *de minimis* impacts to the fewest park, recreation, and open-space resources (four), compared to five park, recreation, and open-space resources under the Refined SR14 Build Alternative; five park, recreation, and open-space resources under the E1 Build Alternative; five park, recreation, and open-space resources under the E1A Build Alternative; seven park, recreation, and open-space resources under the E2 Build Alternative; and seven park, recreation, and open-space resources under the E2A Build Alternative. Except for the Section 4(f) use at Lang Station Open Space (the Refined SR14 and SR14A Build Alternatives), the impacts to park, recreation and open-space resources would be *de minimis*.

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Table 4-B-2 Least Harm Analysis for the Palmdale to Burbank Project Alternatives

Least Harm Factor	Refined SR14 Build Alternative	SR14A Build Alternative	E1 Build Alternative	E1A	E2 Build Alternative	E2A Build Alternative
Section 4(f) property incurring a use	Use or *de minimis* impact finding for 7 resources: • Palmdale Hills Trail (Proposed Extension) • Littlerock Trail (Proposed Extension) • Vasquez Loop Trail (Proposed Extension) • Pacific Crest Trail • **Lang Station Open Space** • East Branch of the California Aqueduct • Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District)	Use or *de minimis* impact finding for 6 resources: • Palmdale Hills Trail (Proposed Extension) • Littlerock Trail (Proposed Extension) • Vasquez Loop Trail (Proposed Extension) • **Lang Station Open Space** • East Branch of the California Aqueduct • Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District)	Use or *de minimis* impact finding for 8 resources: • Palmdale Hills Trail (Proposed Extension) • Acton Community Trail (Proposed Extension) • Littlerock Trail (Proposed Extension) • Vasquez Loop Trail (Proposed Extension) • San Gabriel Mountains National Monument • Palmdale Ditch • East Branch of the California Aqueduct • Eagle and Last Chance Mine Road	Use or *de minimis* impact finding for 8 resources: • Palmdale Hills Trail (Proposed Extension) • Acton Community Trail (Proposed Extension) • Littlerock Trail (Proposed Extension) • Vasquez Loop Trail (Proposed Extension) • San Gabriel Mountains National Monument • Palmdale Ditch • East Branch of the California Aqueduct • Eagle and Last Chance Mine Road	Use or *de minimis* impact finding for 10 resources: • Palmdale Hills Trail (Proposed Extension) • Acton Community Trail (Proposed Extension) • Littlerock Trail (Proposed Extension) • Vasquez Loop Trail (Proposed Extension) • San Gabriel Mountains National Monument • Angeles National Forest • Hansen Dam Open Space • Palmdale Ditch • East Branch of the California Aqueduct • Eagle and Last Chance Mine Road	Use or *de minimis* impact finding for 10 resources: • Palmdale Hills Trail (Proposed Extension) • Acton Community Trail (Proposed Extension) • Littlerock Trail (Proposed Extension) • Vasquez Loop Trail (Proposed Extension) • San Gabriel Mountains National Monument • Angeles National Forest • Hansen Dam Open Space • Palmdale Ditch • East Branch of the California Aqueduct • Eagle and Last Chance Mine Road
Factor 1: The ability to mitigate adverse impacts on each Section 4(f) property (including any measures that result in benefits to the property)	Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), and Vasquez Loop Trail (Proposed Extension): A *de minimis* impact is anticipated at each of the proposed trail extensions. Pacific Crest Trail: A *de minimis* impact is anticipated; measures to minimize harm will maintain access to the trail. **Lang Station Open Space:** Project features and mitigation can reduce adverse impacts to ensure access to recreational trails within the open space is maintained and the affected trailhead and 0.13 mile of trails are relocated/replaced; however, permanent use would not be avoided. East Branch of the California Aqueduct: A *de minimis* impact is anticipated and therefore no mitigation is proposed. Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District): A *de minimis* impact is anticipated and therefore no mitigation is proposed.	The SR14A Build Alternative would affect the same resources in the same manner as described for the Refined SR 14 Alternative, except Pacific Crest Trail would not be affected under the SR14A Build Alternative.	The E1 Build Alternative would affect the Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), Vasquez Loop Trail (Proposed Extension), East Branch of the California Aqueduct, and Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District) in the same manner as the Refined SR14 Build Alternative. However, the E1 Build Alternative would also affect the following three additional resources. Acton Community Trail (Proposed Extension): A *de minimis* impact is anticipated at the proposed trail extension. San Gabriel Mountains National Monument: A *de minimis* impact is anticipated and therefore no mitigation is proposed. Palmdale Ditch: A *de minimis* impact is anticipated and therefore no mitigation is proposed.	The E1A Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative.	The E2 Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative, with the following additional two resources affected. Angeles National Forest: A *de minimis* impact is anticipated and therefore no mitigation is proposed. Hansen Dam Open Space: A *de minimis* impact is anticipated; measures to minimize harm will maintain access to the open space.	The E2A Build Alternative would affect the same resources in the same manner as described for the E2 Build Alternative.
Factor 2: The relative severity of the remaining harm, after mitigation, to the protected activities,	Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), and Vasquez Loop Trail (Proposed Extension): The relative severity of harm would be similar under the six Build Alternatives; therefore, severity is not a differentiating	The SR14A Build Alternative would affect the same resources in the same manner as described for the Refined SR 14 Build Alternative, except Pacific Crest Trail would not be affected under the SR14A Build Alternative.	The E1 Build Alternative would affect the Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), Vasquez Loop Trail (Proposed Extension), East Branch of the California Aqueduct, and Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District) in the same	The E1A Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative.	The E2 Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative, with the following additional two resources affected. Angeles National Forest: The relative severity of harm would be similar under	The E2A Build Alternative would affect the same resources in the same manner as described for the E2 Build Alternative.

Least Harm Factor	Refined SR14 Build Alternative	SR14A Build Alternative	E1 Build Alternative	E1A	E2 Build Alternative	E2A Build Alternative
attributes, or features that qualify each Section 4(f) property for protection	factor related to these proposed trail extensions. Pacific Crest Trail: Only the Refined SR14 Build Alternative would affect this resource, so severity is not a differentiating factor related to this resource. **Lang Station Open Space:** Refined SR14 and SR14A Build Alternatives would impact the trail and would interfere with the protected activities, attributes, or features of the open space, specifically the trailhead and trail, while the E1, E1A, E2, and E2A Build Alternatives would have no impact on this resource. Mitigation would not eliminate adverse effects on the protected features, attributes, or activities, after considering any avoidance, minimization, mitigation, or enhancement measures. East Branch of the California Aqueduct: A *de minimis* impact would not result in the loss of integrity that qualifies the resource for protection. Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District): A *de minimis* impact would not result in the loss of integrity that qualifies the resource for protection.		manner as the Refined SR14 Build Alternative. However, the E1 Build Alternative would also affect the following three additional resources. Acton Community Trail (Proposed Extension): The relative severity of harm would be similar under the E1, E1A, E2, and E2A Build Alternatives; therefore, severity is not a differentiating factor related to this proposed trail extension. San Gabriel Mountains National Monument: The relative severity of harm would be similar under the E1, E1A, E2, and E2A Build Alternatives; therefore, severity is not a differentiating factor related to the SGMNM. Palmdale Ditch: A *de minimis* impact would not result in the loss of integrity that qualifies the resource for protection.		the E2 and E2A Build Alternatives; therefore, severity is not a differentiating factor related to the ANF. Hansen Dam Open Space: The relative severity of harm would be similar under the E2 and E2A Build Alternatives; therefore, severity is not a differentiating factor related to the ANF.	
Factor 3: The relative significance of each Section 4(f) property	Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), and Vasquez Loop Trail (Proposed Extension): The proposed extensions to existing equestrian, hiking, and mountain biking trails would provide significant recreational resources to Los Angeles County. The proposed trail extensions are considered high-value resources for the purposes of Section 4(f). Pacific Crest Trail: The Pacific Crest Trail is a series of ridgeline trails that extend approximately 2,650 miles along the Sierra Nevada and Cascade Mountain Ranges, from Mexico through California (including Los Angeles and Kern counties), Oregon, and Washington to Canada. It is considered a high-value resource for the purposes of Section 4(f). The affected portion includes an approximately 400-foot segment of the PCT that would be affected by construction and construction staging.	The SR14A Build Alternative would affect the same resources in the same manner as described for the Refined SR14 Build Alternative, except Pacific Crest Trail would not be affected under the SR14A Build Alternative.	The E1 Build Alternative would affect the Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), Vasquez Loop Trail (Proposed Extension), East Branch of the California Aqueduct, and Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District) in the same manner as the Refined SR14 Build Alternative. However, the E1 Build Alternative would also affect the following three additional resources. Acton Community Trail (Proposed Extension): The proposed extension would provide a significant recreational resource to Los Angeles County. The proposed trail extension is considered a high-value resource for the purposes of Section 4(f). San Gabriel Mountains National Monument: The SGMNM is an approximately 342,000-acre national monument within the ANF, and also offers a variety of recreational resources. It is	The E1A Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative.	The E2 Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative, with the following two additional resources affected. Angeles National Forest: ANF includes areas designated for recreational activities. ANF offers natural environments and developed recreation areas including hiking trails, skiing trails, picnic areas, horseback riding, and campgrounds. According to the ANF Land and Resources Management Plan, 5 million visitors use the forest annually for recreation. It is considered a high-value resource for the purposes of Section 4(f). The affected portion is available for recreational uses as open space but does not have developed recreational facilities such as campgrounds, trails, or picnic areas.	The E2A Build Alternative would affect the same resources in the same manner as described for the E2 Build Alternative.

Least Harm Factor	Refined SR14 Build Alternative	SR14A Build Alternative	E1 Build Alternative	E1A	E2 Build Alternative	E2A Build Alternative
	Lang Station Open Space: The City of Santa Clarita Open Space Preservation District has preserved over 13,000 acres within and near Santa Clarita. The District's preserved lands are designed to expand the City's existing Open Space, Park, and Parkland Program to preserve natural land from development, create more parks for community usage, and protect rare biological and geological regions. In June 2022, the City acquired the 208-acre Lang Station Open Space. This open space is considered a high-value resource for the purposes of Section 4(f). East Branch of the California Aqueduct: SHPO reaffirmed its concurrence with the NRHP eligibility of the property on August 30, 2019. On December 14, 2023, the SHPO concurred with the Authority's no adverse effect under Section 106 (Authority et al. 2023). Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District): This site was listed on the NRHP in 1972. The site has been identified with phased effects. Consultation with the SHPO will continue under the MOA (Authority et al. 2023).		considered a high-value resource for the purposes of Section 4(f). The affected portion is available for recreational uses as open space but does not have developed recreational facilities such as campgrounds, trails, or picnic areas. Palmdale Ditch: The SHPO concurred with the NRHP eligibility of the property on August 30, 2019. On December 14, 2023, the SHPO concurred with the Authority's no adverse effect under Section 106 (Authority et al. 2023).		Hansen Dam Open Space: The Hansen Dam Open Space is an approximately 813-acre recreation area and includes day-use facilities such as a golf course and riding stables; an aquatic center with a lake available for swimming, fishing, and boating; and picnic areas. Little Tujunga Creek and the Tujunga Wash are adjacent to the recreation area. It is considered a high-value resource for the purposes of Section 4(f). The affected portion includes open space with hiking opportunities.	
Factor 4: The views of the OWJ over each Section 4(f) property	Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), and Vasquez Loop Trail (Proposed Extension): Coordination is ongoing with the Los Angeles County Department of Parks and Recreation. Pacific Crest Trail: Coordination is ongoing with the Pacific Crest Trail Association. **Lang Station Open Space:** Coordination is ongoing with the City of Santa Clarita. East Branch of the California Aqueduct: The SHPO reaffirmed its concurrence with the NRHP eligibility of the property on August 30, 2019. On December 14, 2023, the SHPO concurred with the Authority's no adverse effect under Section 106 (Authority et al. 2023). Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District): This site was listed on the NRHP in 1972. The site has been identified with phased effects. Consultation with the SHPO will continue under the MOA (Authority et al. 2023).	The SR14A Build Alternative would affect the same resources in the same manner as described for the Refined SR14 Build Alternative, except Pacific Crest Trail would not be affected under the SR14A Build Alternative. On February 14, 2024, the Los Angeles County Department of Parks and Recreation concurred with the Authority's *de minimis* determination for the Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), and Vasquez Loop Trail (Proposed Extension).	The E1 Build Alternative would affect the Palmdale Hills Trail (Proposed Extension), Littlerock Trail (Proposed Extension), Vasquez Loop Trail (Proposed Extension), East Branch of the California Aqueduct, and Site 19-003890 (Prehistoric Vasquez Rocks Archaeological District) in the same manner as the Refined SR14 Build Alternative. However, the E1 Build Alternative would also affect the following three additional resources. Acton Community Trail (Proposed Extension): Coordination is ongoing with the Los Angeles County Department of Parks and Recreation. San Gabriel Mountains National Monument: Coordination is ongoing with the United States Forest Service for this Build Alternative. Palmdale Ditch: The SHPO concurred with the NRHP eligibility of the property on August 30, 2019. On December 14, 2023, the SHPO concurred with the Authority's	The E1A Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative.	The E2 Build Alternative would affect the same resources in the same manner as described for the E1 Build Alternative, with the following two additional resources affected. Angeles National Forest: Coordination is ongoing with the United States Forest Service for this Build Alternative. Hansen Dam Open Space: Coordination is ongoing with the Los Angeles County Department of Parks and Recreation.	The E2A Build Alternative would affect the same resources in the same manner as described for the E2 Build Alternative.

Least Harm Factor	Refined SR14 Build Alternative	SR14A Build Alternative	E1 Build Alternative	E1A	E2 Build Alternative	E2A Build Alternative
			no adverse effect under Section 106 (Authority et al. 2023).			
Factor 5: The degree to which each alternative meets the Purpose and Need for the project	Meets the project Purpose and Need.	Meets the project Purpose and Need.	Meets the project Purpose and Need.	Meets the project Purpose and Need.	Meets the project Purpose and Need.	Meets the project Purpose and Need.
Factor 6: After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f)[1]	Moderate (129) and severe (55) operational noise impacts at residential locations.	**Moderate (99) and severe (19) operational noise impacts at residential locations.**	Moderate (143) and severe (108) operational noise impacts at residential locations.	Moderate (173) and severe (44) operational noise impacts at residential locations.	Moderate (141) and severe (164) operational noise impacts at residential locations.	Moderate (168) and severe (102) operational noise impacts at residential locations.
	Number of displacements: 51-54 residential, 161-178 commercial and industrial, and 0 agricultural property or community and public facility displacements.	Number of displacements: 39-42 residential, 160-177 commercial and industrial, and 0 agricultural property or community and public facility displacements.	Number of displacements: **24-29 residential**, 160-177 commercial and industrial, and 0 agricultural property or community and public facility displacements.	Number of displacements: 39-42 residential, 162-179 commercial and industrial, and 0 agricultural property or community and public facility displacements.	Number of displacements: 49 residential**, 68 commercial and industrial,** and 0 agricultural property or community and public facility displacements.	Number of displacements: 64 residential, 70 commercial and industrial, and 0 agricultural property or community and public facility displacements.
	7.56 acres of discharge to jurisdictional waters, wetland.	**0.87 acre of discharge to jurisdictional waters, wetland.**	7.51 acres of discharge to jurisdictional waters, wetland.	**0.87 acres of discharge to jurisdictional waters, wetland.**	15.04 acres of discharge to jurisdictional waters, wetland.	8.39 acres of discharge to jurisdictional waters, wetland.
	15.77 acres of discharge to high and medium-high quality aquatic resources.	**4.77 acres of discharge to high and medium-high quality aquatic resources.**	17.71 acres of discharge to high and medium-high quality aquatic resources.	11.37 acres of discharge to high and medium-high quality aquatic resources.	25.25 acres of discharge to high and medium-high quality aquatic resources.	18.92 acres of discharge to high and medium-high quality aquatic resources.
	Impact on jurisdictional aquatic resources (47.37 acres).	Impact on jurisdictional aquatic resources (26.78 acres).	Impact on jurisdictional aquatic resources (40.13 acres).	**Impact on jurisdictional aquatic resources (20.58 acres).**	Impact on jurisdictional aquatic resources (42.51 acres.	Impact on jurisdictional aquatic resources (22.97 acres).
	Lowest risk of secondary effects from tunnel construction.	**Lowest risk of secondary effects from tunnel construction.**	High risk of secondary effects from tunnel construction.	High risk of secondary effects from tunnel construction.	Highest risk of secondary effects from tunnel construction).	Highest risk of secondary effects from tunnel construction.
	Avoidance of visual impacts to the Blum Ranch Historic District.	**Avoidance of visual impacts to the Blum Ranch Historic District.**	Significant adverse visual effects on the Blum Ranch Historic District.	Significant adverse visual effects on the Blum Ranch Historic District.	Significant adverse visual effects on the Blum Ranch Historic District.	Significant adverse visual effects on the Blum Ranch Historic District.
Factor 7: Substantial differences in costs among the project alternatives	$22.385 billion	$24.059 billion	$22.481 billion	$23.355 billion	$22.458 billion	$23.169 billion
Summary	The Refined SR14 Build Alternative would result in *de minimis* impacts on four park resources and two cultural resources and use of one recreational resource. The permanent use (Lang Station Open Space) is considered a high-value resource. The Refined SR14 Build Alternative would have the lowest risk of secondary effects from tunnel construction, would avoid	The SR14A Build Alternative would result in *de minimis* impacts on three park resources and two cultural resources and use of one recreational resource. The permanent use (Lang Station Open Space) is considered a high-value resource. The SR14A Build Alternative would have the fewest moderate and severe operational noise impacts, would have the	The E1 Build Alternative would result in *de minimis* impacts on five park resources and three cultural resources. The E1 Build Alternative would result in the fewest number of residential displacements, would have a high risk of secondary effects from tunnel construction, would result in visual effects	The E1A Build Alternative would result in *de minimis* impacts on five park resources and three cultural resources. The E1A Build Alternative would impact the fewest number of jurisdictional aquatic resources, would have a high risk of secondary effects from tunnel construction, would result in visual effects	The E2 Build Alternative would result in *de minimis* impacts on seven park resources and three cultural resources. The E2 Build Alternative would result in the fewest number of commercial and industrial displacements, would have the highest number of acres of discharge to high and medium-high quality aquatic	The E2A Build Alternative would result in *de minimis* impacts on seven park resources and three cultural resources. The E2A Build Alternative would result in the second lowest number of residential displacements, would have the second highest number of acres of discharge to high and medium-high quality aquatic

Least Harm Factor	Refined SR14 Build Alternative	SR14A Build Alternative	E1 Build Alternative	E1A	E2 Build Alternative	E2A Build Alternative
	visual effects to the Blum Ranch Historic District, and would have the lowest capital costs.	least number of acres of discharge to high and medium-high quality aquatic resources, would have the lowest risk of secondary effects from tunnel construction, would avoid visual effects to the Blum Ranch Historic District, and would have the highest capital costs.	to the Blum Ranch Historic District, and would have the third lowest capital costs.	to the Blum Ranch Historic District, and would have the fifth lowest capital costs.	resources, and would have the second lowest capital costs.	resources, and would have the fourth highest capital costs.

[1] **Bolded text** indicates the least impactful Build Alternative(s) on resources not protected by Section 4(f).

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As discussed above in Section 7 above, there are no feasible and prudent alternatives that would avoid a Section 4(f) use in any of the project alternatives. Since the SR14A Build Alternative would result in the least impacts on Section 4(f) resources of the project alternatives, including the least impacts to park, recreation, and open-space resources and least impacts to historic property resources, the SR14A Alternative has the least overall harm.

9.3 Impacts on Environmental Resources Outside Section 4(f) Uses

Factors five through seven in Table 4-B-2 show a comparison with non-Section 4(f) considerations and are helpful in determining overall least harm where the impacts on the Section 4(f) qualifying attributes of the resources do not provide a clear distinction. As shown in Table 4-B-2, while all six Build Alternatives are consistent with the project's Purpose and Need, each would result in different comparative impacts on the other resource areas. For example, the SR14A Build Alternative would result in the least number of moderate (99) and severe (19) operational noise impacts at residential locations. Comparatively, the Refined SR14 Build Alternative would result in the second fewest moderate (129) and severe (55) operational noise impacts at residential locations, while the E1A Alternative would result in the most moderate (141) and severe (164) operational noise impacts at residential locations.

As discussed in the Palmdale to Burbank Project Section Checkpoint C Summary Report (Authority 2024), the SR14A and E1A Build Alternatives would cause the fewest direct impacts on wetlands among the alternatives. The Refined SR14, E1, E2, and E2A Build Alternatives would cause the most direct impacts on wetlands, with the E2 Build Alternative causing the most impacts on wetlands.

Although the SR14A Build Alternative would affect more acres of nonwetland aquatic resources (26.78 acres) than the E1A and E2A Build Alternatives (20.58 and 22.97 acres, respectively), approximately 68 percent of those proposed impacts under the SR14A Build Alternative would be on constructed basins or constructed watercourses that provide minimal functions and values, as compared to 34 percent and 2 percent of proposed impacts on constructed basins and watercourses for the E1A and E2A Build Alternatives, respectively.

Based on the findings presented in the Watershed Evaluation/Qualitative Aquatic Resource Assessment Report prepared for the Palmdale to Burbank Project Section, natural and modified natural streams were found to have a higher quality of condition and consequently, an inferred higher functional integrity than constructed basins and watercourses. Of the E1A and E2A Build Alternatives nonwetland waters impacts, 66 percent and 98 percent of the impacts, respectively, would be on natural and modified natural streams that have higher functions and services, resulting in a far greater impact on aquatic ecosystem functional integrity as compared to 32 percent of the impacts on nonwetland waters from the SR14A Build Alternative that would be on natural and modified natural streams. Therefore, while the SR14A Build Alternative would result in the greatest number of permanent impacts on waters of the U.S. compared to the E1A and E2A Build Alternatives, it would have the fewest impacts on High and Medium-High quality aquatic resources, affecting 4.77 acres of this quality of feature compared to 11.37 acres affected by the E1A Build Alternative and up to 18.92 acres affected by the E2A Build Alternative.

The SR14A and Refined SR14 Build Alternatives would have the lowest potential to cause secondary adverse impacts on surface water resources in the ANF from tunnel construction. The SR14A and Refined SR14 Build Alternatives would traverse areas with lower groundwater pressures and no known groundwater-dependent surface resources (e.g., springs, perennial streams). The E1, E1A, E2, and E2A Build Alternatives would all cross areas with high groundwater pressures and considerable surface aquatic resources.

In addition, the SR14A and Refined SR14 Build Alternatives would avoid impacts to the Blum Ranch Historic District, a historic property listed on the NRHP. Conversely, the E1, E1A, E2, and E2A Build Alternatives would result in significant adverse environmental consequence regarding visual effects on the Blum Ranch Historic District.

Based on this information, while each of the project alternatives would cause impacts on resources not protected by Section 4(f), the SR14A Build Alternative would cause the least amount of impacts on non-Section 4(f) resources compared to the Refined SR14, E1, E1A, E2, and E2A Build Alternatives.

10 SECTION 6(f) ANALYSIS

Based on a review of the list of LWCF Projects throughout California, Lang Station Open Space is not a Section 6(f) property. Additionally, no Section 6(f) properties occur within the Section 4(f)/Section 6(f) RSA for the Palmdale to Burbank Project Section. Therefore, no LWCF monies were used to acquire or develop recreational resources in the RSA, including within Los Angeles County. Accordingly, there are no Section 6(f) protected resources in the Section 4(f)/Section 6(f) RSA, and no further analysis of potential conversion of Section 6(f) resources is needed.

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11 REFERENCES

California Department of Parks and Recreation. 2024. *Land and Water Conservation Fund Projects*. https://www.parks.ca.gov/?page_id=21360 (accessed February 2024).

California High-Speed Rail Authority (Authority). 2011. *Alternatives Analysis Methods for Project-Level EIR/EIS, Version 3.* January 3, 2011.

_____. 2010. *Preliminary Palmdale to Los Angeles Alternatives Analysis Report.* July 2010.

_____. 2012a. *Bay Area to Central Valley High-Speed Train (HST) Partially Revised Final Program Environmental Impact Report (EIR)*. April 2012.

_____. 2012b. *Supplemental Palmdale to Los Angeles Alternatives Analysis Report, Volume 1: LAUS-Sylmar Subsection.* April 2012.

_____. 2012c. *Palmdale to Los Angeles Supplemental Alternatives Analysis Report, Volumes 1 and 2: Sylmar-Palmdale Subsection*. April 2012.

_____. 2014. *Palmdale to Los Angeles Supplemental Alternatives Analysis Report.* June 2014.

_____. 2015a. *Palmdale to Burbank: Supplemental Alternatives Analysis Report*. June 2015.

_____. 2015b. Letter from Dan Richard, Chairperson, California High-Speed Rail Authority Board of Directors, to Marsha McLean, Mayor, City of Santa Clarita. June 2, 2015.

_____. 2016. *Palmdale to Burbank: Supplemental Alternatives Analysis Report*. April 2016.

_____. 2018. Letter from Dan Richard, Chairperson, California High-Speed Rail Authority Board of Directors, to Laurene Weste, Mayor, City of Santa Clarita. December 20, 2018.

_____. 2019a. *Memorandum of Understanding for the National Environmental Policy Act Assignment*.

_____. 2019b. *Palmdale to Burbank Project Section: Historic Architectural Survey Report*.

_____. 2020a. Meeting Minutes: Project update, ongoing coordination. May 12.

_____. 2020b. Letter from Brian Kelly, Chief Executive Officer, California High-Speed Rail Authority, to Laurene Weste, Mayor, City of Santa Clarita. September 1, 2020.

_____. 2020c. Meeting Minutes: Introductions, project discussion. November 3.

_____. 2021. *Palmdale to Burbank Project Section: Draft Section 106 Finding of Effect*.

_____. 2022a. *Palmdale to Burbank Project Section Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS).*

_____. 2022b. Meeting Minutes: City of Santa Clarita Update, Site Visit. April 5.

_____. 2022c. Meeting Minutes: City of Santa Clarita Update. September 26.

_____. 2024. *Palmdale to Burbank Project Section: Checkpoint C Summary Report*. January 2024.

California High-Speed Rail Authority and Federal Railroad Administration (Authority and FRA). 2005. *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train (HST) System.* August 2005.

_____. 2008. *Bay Area to Central Valley High-Speed Train (HST) Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS).* May 2008.

California High-Speed Rail Authority, Surface Transportation Board, and California State Historic Preservation Officer (Authority et al.). 2023. *Memorandum of Agreement Among the California High-Speed Rail Authority, the Surface Transportation Board, and the California State Historic Preservation Officer Regarding the Palmdale to Burbank Project*

Section of the California High-Speed Rail Program in Los Angeles County, California. Executed December 14, 2023.

City of Santa Clarita (City). 2014. Letter from Laurene Weste, Mayor, City of Santa Clarita, to Mark McLoughlin, Director of Environmental Services, California High-Speed Rail Authority. August 4, 2014.

_____. 2015. Letter from Marsha McLean, Mayor, City of Santa Clarita, to Tom Richards, Vice Chairperson, California High-Speed Rail Authority Board of Directors. May 27, 2015.

_____. 2018. Letter from Laurene Weste, Mayor, City of Santa Clarita, to Dan Richard, Chairperson, California High-Speed Rail Authority Board of Directors. November 5, 2018.

_____. 2020. Letter from Cameron Smyth, Mayor, City of Santa Clarita, to Tom Richards, Vice Chairperson, California High-Speed Rail Authority Board of Directors. August 18, 2020.

_____. 2023a. Santa Clarita Municipal Code. Chapter 14.10, Open Space Areas. September 12, 2023. https://www.codepublishing.com/CA/SantaClarita/html/SantaClarita14/SantaClarita1410.html (accessed February 2024).

_____. 2023b. *Open Space Acquisition Implementation Work Program – Fiscal Year 2023-24*. Approved March 2, 2023. https://santaclarita.gov/open-space-preservation-district/ (accessed February 2024).

_____. 2023c. *Recharge in Our Open Space!* City of Santa Clarita Press Release. Authored by previous Mayor Pro Tem Cameron Smyth. January 23, 2023. https://santaclarita.gov/blog/2023/01/23/recharge-in-our-open-space/ (accessed February 2024).

_____. 2023d. *Get Your Steps in on the Trails!* City of Santa Clarita Press Release. Authored by City Manager Ken Striplin. October 8, 2023. https://santaclarita.gov/blog/2023/10/08/get-your-steps-in-on-the-trails/ (accessed February 2024).

_____. 2024a. City of Santa Clarita Parks and Open Space Map [interactive map]. Accessed February 16, 2024. https://hikesantaclarita.com/maps/interactive-trail-map/ (accessed February 2024).

_____. 2024b. *What is Open Space?* Accessed January 19, 2024. https://hikesantaclarita.com/faqs/what-is-open-space/#:~:text=In%20July%2C%202007%2C%20the%20City,that%20could%20otherwise%20be%20developed (accessed February 2024).

Federal Highway Administration (FHWA). 2012. *Section 4(f) Policy Paper*. July 20, 2012.

Federal Railroad Administration, Advisory Council on Historic Preservation, California State Historic Preservation Officer, and California High-Speed Rail Authority (FRA et al.). 2011. *Programmatic Agreement Among the Federal Railroad Administration, Advisory Council on Historic Preservation, California State Historic Preservation Officer, and California High-Speed Rail Authority Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the California High-Speed Train Project*. June 15, 2011.

Federal Railroad Administration (FRA) and the State of California. 2019. *Memorandum of Understanding between the Federal Railroad Administration and the State of California, Acting Through Its California State Transportation Agency and Its California High-Speed Rail Authority, for the State of California's Participation in the Surface Transposition Project Delivery Program Pursuant to 23 U.S.C. 327.* July 23, 2019.

Hagobian, Masis. 2020. Personal communication (virtual meeting) between Masis Hagobian, Intergovernmental Relations Officer, City Manager's Office, City of Santa Clarita and Elisabeth Rosenson, Deputy Project Manager, Arellano Associates. October 16, 2020.

_____. 2023. Personal communication (email) between Masis Hagobian, Intergovernmental Relations Officer, City Manager's Office, City of Santa Clarita and Elisabeth Rosenson, Deputy Project Manager, Arellano Associates. September 21, 2023.

Rosenson, Elisabeth. 2023. Personal communication between Elisabeth Rosenson, Deputy Project Manager, Arellano Associates, and Masis Hagobian, Intergovernmental Relations Officer, City Manager's Office, City of Santa Clarita. September 15, 2023.

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