

California High-Speed Rail Authority

Burbank to Los Angeles Project Section

Staff Report: State's Preferred Alternative

November 2018



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Acronyms and Abbreviations

AA	Alternatives Analysis
Amtrak	National Passenger Railroad Corporation
Authority	California High-Speed Rail Authority
Board	California High-Speed Rail Authority Board
CEQA	California Environmental Quality Act
CMF	Metrolink Central Maintenance Facility
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FRA	Federal Railroad Administration
HSR	High-Speed Rail
I-	Interstate
LAUS	Los Angeles Union Station
LAX	Los Angeles International Airport
LEDPA	Least Environmentally Damaging Preferred Alternative
LinkUS	Link Union Station (Metro Project)
LOS	Level of service
LOSSAN	Los Angeles – San Diego – San Luis Obispo Rail Corridor
Metro	Los Angeles County Metropolitan Transportation Authority
Metrolink	Southern California Regional Railroad Authority
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
PAA	Preliminary Alternatives Analysis
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SAA	Supplemental Alternatives Analysis
SCAG	Southern California Association of Governments
SCRRA	Southern California Regional Railroad Authority (Metrolink)
SR	State Route
UPRR	Union Pacific Railroad

1 INTRODUCTION

1.1 Report Purpose

The purpose of this report is to provide the evaluation framework for a staff report that presents the High-Speed Rail (HSR) Project Alternative as the staff-recommended State's Preferred Alternative that the Burbank to Los Angeles Project Section Draft EIR/EIS will identify. The EIR/EIS is being prepared pursuant to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

This staff report refers to the staff-recommended Preferred Alternative because it has not yet received California High-Speed Rail Authority (Authority) Board of Directors (Board) or Federal Railroad Administration (FRA) concurrence. Authority staff will present this report to the Board at the November 15, 2018 Board meeting and provide an opportunity for the Board members to offer input and direction to staff. If the Board concurs with the staff report and recommendation, then the Draft EIR/EIS will identify the HSR Project Alternative as the State's Preferred Alternative. If the FRA concurs, then the Draft EIR/EIS will identify the HSR Project Alternative also as the FRA NEPA Preferred Alternative.

The staff report and Board concurrence do not in any way represent a final decision by the Authority or the FRA on selection of the HSR Project Alternative. At the conclusion of the EIR/EIS public comment period, the Authority will determine whether to certify the Final EIR, adopt necessary CEQA findings, and take action to approve the Preferred Alternative or another alternative for the Burbank to Los Angeles Project Section. The Authority anticipates that the FRA would issue a Record of Decision (ROD) on the Final EIS.

1.2 Preliminary Preferred Alternative Approach

The Authority and the FRA believe identifying the Preferred Alternative in the Draft EIR/EIS facilitates a more effective public comment period. This approach allows the public, stakeholders, and relevant public agencies to have more time to focus their attention and comments, if they so choose, on the Preferred Alternative that will be identified in the Draft EIR/EIS rather than the Final EIR/EIS. This approach also aligns with recent federal laws which encourage the federal transportation modal administrations to name a Preferred Alternative in the Draft EIS rather than the Final EIS. This approach also more closely follows CEQA¹, under which a Draft EIR identifies and defines the proposed project (which is conceptually equivalent to the Preferred Alternative).

¹ Public Resources Code (21000-21189).

2 ALTERNATIVES

2.1 Alternatives Development

This chapter describes the background and development of the HSR system and its individual components. This chapter also describes the background, development, and details of the alternatives preliminarily considered for the Burbank to Los Angeles Project Section (Project Section) of the HSR system and the reasons for selecting the alternatives to be studied in detail in the EIR/EIS. The HSR Project Alternative discussed in this chapter is based on the corridor alternative selected by the Authority and FRA at the conclusion of the Tier 1 EIR/ EIS processes for the HSR system.

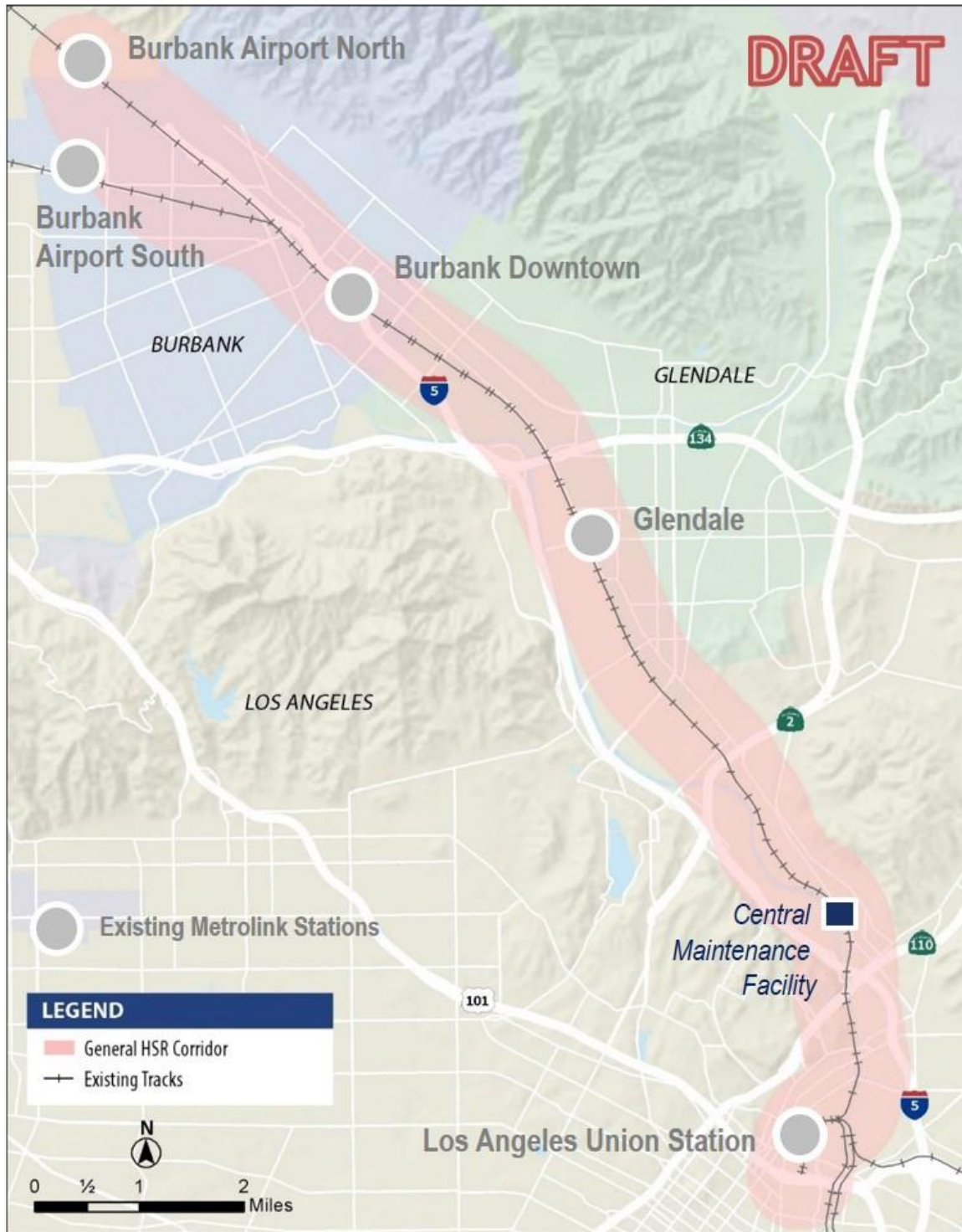
The Burbank to Los Angeles Project Section begins at the Burbank Airport Station (at Hollywood Burbank Airport) and crosses the cities of Burbank, Glendale, and Los Angeles before terminating at Los Angeles Union Station (LAUS) in Downtown Los Angeles, primarily within an existing, active railroad right-of-way. The existing railroad right-of-way along the 14-mile corridor is currently owned by the Los Angeles County Metropolitan Transportation Authority (Metro), while the National Railroad Passenger Corporation (Amtrak), Metrolink (governed by the Southern California Regional Rail Authority), and the Union Pacific Railroad (UPRR) operate passenger and freight service along the corridor. The project section is shown on Figure 1.

The Burbank to Los Angeles Project Section was originally part of the larger Palmdale to Los Angeles Project Section. Various corridor alternatives for the Palmdale to Los Angeles Project Section were evaluated in the 2005 *Final Program EIR/EIS for the Proposed California High-Speed Train System* (Statewide Program EIR/EIS) (Authority and FRA 2005). Of the various corridor alternatives considered, the existing Metro/Metrolink rail corridor was ultimately selected as the preferred corridor for the Los Angeles Basin portion of the Palmdale to Los Angeles Project Section. In the subsequent 2010 *Preliminary Alternatives Analysis* (PAA) and 2011 *Palmdale to Los Angeles Supplemental Alternatives Analysis* (SAA), specific alignment alternatives within or in the vicinity of the existing Metro/Metrolink Corridor were introduced, evaluated, and either withdrawn or carried forward. The 2010 PAA recommended alignment alternatives and station options in the Los Angeles Basin based on refinements to the program-level corridor selected in 2005. The SAA focused specifically on the subsections from the community of Sylmar to LAUS.

In 2014, the Palmdale to Los Angeles Project Section was separated into two project sections: Palmdale to Burbank and Burbank to Los Angeles. The Authority and FRA determined that separate environmental documents would be more beneficial to address environmental impacts and conduct stakeholder outreach. On July 24, 2014, the Authority released a CEQA Notice of Preparation, and the FRA published a NEPA Notice of Intent to prepare separate EIR/EIS documents for the Palmdale to Burbank and Burbank to Los Angeles Project Sections.

The Authority conducted further planning studies to continue to analyze potential alignments between Burbank and Los Angeles, which were presented in the 2016 *Burbank to Los Angeles SAA*. The 2016 SAA, which refined the alignments for the subsection between Alameda Avenue in the City of Burbank and LAUS, recommended one Project Alternative. The subsection between the Burbank Airport Station and Alameda Avenue was studied in the 2016 *Palmdale to Burbank SAA*, which proposed two station options near the Hollywood Burbank Airport and two alignment options for the subsection.

The Alternative Analysis documents were prepared with extensive public engagement, including engagement of environmental justice populations. Starting in 2017, after stakeholder input and based on concerns about community impacts, further refinement of the station options at Hollywood Burbank Airport was completed. The refinement has included withdrawing one at-grade station option that would have significant community effects, and revising alignments and the depth of the below-ground station option such that the intensity of construction is reduced. The refined below-ground station would be adjacent to the relocated Hollywood Burbank Airport terminal, which would allow for the opportunity to directly link these two important transportation hubs.



Source: California High-Speed Rail Authority and Federal Railroad Administration (2018)

Figure 1 Burbank to Los Angeles Project Section Corridor

2.1.1 Corridor Selection

Unlike some of the HSR Project Sections that are located in rural areas of California, the Los Angeles Basin portion of the Palmdale to Los Angeles Project Section is substantially constrained by dense urban development and restricted linear rights-of-way. The 2005 Statewide Program EIR/EIS evaluated corridors that could potentially accommodate the engineering needs of the HSR system and utilize, to the feasible extent, an existing transportation corridor. Due to the required speeds of the HSR system mandated by the requirements of Prop 1A, the geometry (or physical shape) of these corridors needed to be considered. The corridors evaluated were the following (Figure 2):

- Interstate (I-) 405 corridor with a Los Angeles International Airport (LAX) terminus station (not Los Angeles Union Station[LAUS])
- I-5 corridor with LAUS terminus station
- Metro-MetroLink Rail Corridor with LAUS terminus station
- Combined I-5 & Metro-MetroLink Rail Corridor with LAUS terminus station



Figure 2 Corridors Considered in 2005 Program EIR/EIS

Ultimately, even though similar population density would exist either along the I-405 or I-5 corridor, there was substantial existing multi-modal connectivity at LAUS that was not planned for the LAX area. Therefore, the I-405 corridor with an LAX terminus station was withdrawn from further consideration.

At the end of the 2005 Statewide Program EIR/EIS process, a decision was made to only carry forward one rail corridor in the subsequent Tier 2 documents for the Los Angeles Basin portion of the Palmdale to Los Angeles Project Section (the other portion being the Antelope Valley). In the same document, various station options in the San Fernando Valley were identified for further study, including two in the City of Burbank (Sun Valley and Downtown Burbank). For the approach to LAUS, there were several routes studied and three were ultimately chosen for further study in the Tier 2 process (Figure 3).



Figure 3 LA Basin Alignment and Station Options Carried Forward From 2005 Program EIR/EIS

2.1.2 Development of Alignment Alternatives and Station Options

The Tier 2 process began with the 2007 CEQA Notice of Preparation and NEPA Notice of Intent for the Palmdale to Los Angeles Project Section EIR/EIS. Due to the complexity of the urban development along the existing railroad right-of-way, the Authority and FRA began developing several alternatives within and adjacent to the corridor. Starting in 2009, there have been several studies, including the Alternatives Analyses (AAs) discussed above, that have been prepared as part of the planning process, as well as a corresponding community outreach processes. Various components of the current Burbank to Los Angeles Project Section have been developed over time as part of AAs for Palmdale to Los Angeles, Los Angeles to Anaheim, and Palmdale to Burbank Project Sections, as well as for Burbank to Los Angeles.

In order to provide the history of the Burbank to Los Angeles Project Section planning process, the development of the alignment alternatives will be discussed first, followed by the development of the Burbank Airport Station options, and finally, by the development of the LAUS options.

2.1.2.1 Development of Alignment Alternatives

The Burbank to Los Angeles Project Section is located within an entirely urban corridor and over the course of alternatives development and refinement, efforts have been focused on refining the in-corridor concept and optimizing the design to minimize impacts. The Authority and the FRA selected the existing railroad right-of-way as the corridor for the Preferred Alternative between Sylmar and LAUS in the 2005 *Statewide Program EIR/EIS* (Authority and FRA 2005). Therefore, the Burbank to Los Angeles Project Section EIR/EIS focuses on alignment alternatives along the existing railroad corridor. The development of the alignment alternative in the Burbank to Los Angeles Project Section began with the 2010 Palmdale to Los Angeles PAA which explored various alternatives and station locations, and concluded with the 2016 Burbank to Los Angeles SAA that identified station options and described ongoing design refinements to minimize impacts.

2010 Palmdale to Los Angeles Preliminary Alternatives Analysis

The 2010 Palmdale to Los Angeles PAA established the alternatives in the area covered in the Burbank to Los Angeles Project Section. In addition, alternatives were evaluated related to operational and design parameters that would affect how the alignments would operate in this corridor. Generally, the 2010 Palmdale to Los Angeles PAA:

- Established design speeds in the corridor:
 - 140 mph between Burbank and SR-2
 - ≤ 140 mph between SR-2 and LAUS
- Introduced tunnel alternatives on southern portion of corridor
- Considered various San Fernando Valley station locations and design options for each
- Evaluated a mixture of in-corridor and out-of-corridor alignments, primarily at-grade

From LAUS north to the existing Metrolink Central Maintenance Facility, the 2010 Palmdale to Los Angeles PAA introduced three surface and/or elevated alignment alternatives and three below-ground alignment alternatives. Even though this PAA established speeds of less than 140 mph for this area, the design would still need to be above 125 mph. The geometry of the existing corridor, particularly as it approaches LAUS (roughly paralleling the Los Angeles River), does not allow for the entire alignment to be located within the existing railroad right-of-way. At this time, the primary option for LAUS was an elevated station option, which, given the constraints of the urban development in downtown Los Angeles, led to the proposal of various alternatives. To the north of the Metrolink Central Maintenance Facility, this PAA evaluated two alignment alternatives: one within the existing rail corridor, and one along San Fernando Road in a trench, similar to the existing Alameda Corridor freight train trench.

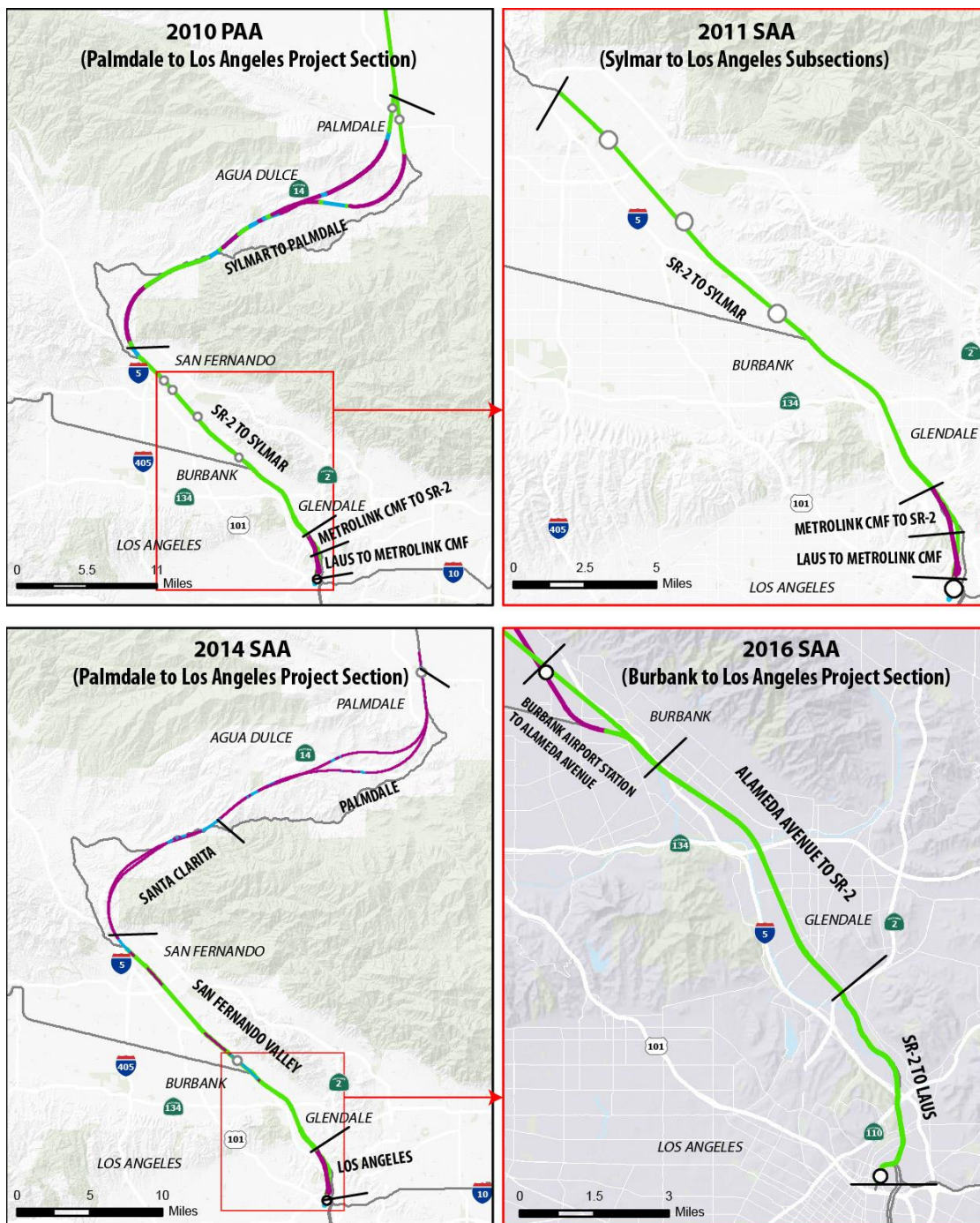


Figure 4 Evolution of the Burbank to Los Angeles Project Section Alignment Alternatives

2011 Palmdale to Los Angeles Supplemental Alternatives Analysis

The 2011 Palmdale to Los Angeles SAA evaluated the alternatives carried forward in the 2010 PAA, taking into consideration refinements made based on stakeholder input, as well as decisions on the LAUS options from the 2010 Los Angeles to Anaheim SAA. Based on these factors, two surface alternatives and one tunnel alternative were withdrawn. In addition, the option to have the alignment trenched along San Fernando Road was withdrawn due to constructability concerns and potential traffic and community impacts, given the regional importance of San Fernando Road. At the end of this SAA, one surface alignment and two tunnel alignments were carried forward.

2016 Burbank to Los Angeles Supplemental Alternatives Analysis

The 2016 refinement work incorporated new technical information, and the 2016 Burbank to Los Angeles SAA recommended carrying forward one at-grade alignment from Alameda Avenue to LAUS, with two design options from State Route (SR) 2 to LAUS (Project Alternative). This SAA also recommended withdrawing any tunnel alternative in the LAUS area as the allowable operational speed facilitated staying within the existing rail corridor geometry. The preferred LAUS option was at grade with the existing yard, given the reduced speed variance that allows HSR to utilize the existing rail corridor.

Ongoing refinements since the 2016 Burbank to Los Angeles SAA have focused on grade separation designs and coordination with concurrent projects. With these design refinements, the design options were withdrawn and an at-grade alignment was carried forward as part of the HSR Project Alternative.

2.1.2.2 Development of Station Options

Along with the alignment development, both stations for the Burbank to Los Angeles Project Section have evolved between 2005 and 2018, including Burbank Airport Station on the northern terminus, and Los Angeles Union Station on the southern terminus. Both stations are located within entirely urban communities in which Burbank Airport Station would be a newly constructed station and LAUS is an existing station which would be modified to accommodate HSR operations.

Burbank Airport Station

The 2005 Statewide Program EIR/EIS selected three possible locations for the one originally identified as the San Fernando Valley Station: Sylmar, Burbank Airport (Sun Valley) and Burbank Metrolink/Media City. Following the 2005 Statewide Program EIR/EIS, the 2010 Palmdale to Los Angeles PAA presented various station options throughout the San Fernando Valley. Among those recommended to move forward were one in the vicinity of the Hollywood Burbank Airport, as well as ones in the northern San Fernando Valley. The options that were withdrawn were those primarily with less multi-modal connectivity and/or substantial right-of-way needs.

Following the 2010 PAA, there have been continued iterative and refined station options under development. The 2014 Palmdale to Los Angeles SAA withdrew the Sylmar/San Fernando and Branford Station options due to the introduction of the East Corridor in the Palmdale to Burbank Project Section and instead advanced Burbank/Buena Vista. Upon further analysis of the East Corridor alignments in 2015, the 2016 Palmdale to Burbank SAA introduced three new station options (Figure 5):

- Option A – mostly at-grade and above grade facilities within the City of Burbank and the Sun Valley community (associated with Palmdale to Burbank alignments SR14 and E1)
- Option B – consists of both at-grade and underground facilities entirely within the City of Burbank (associated with Palmdale to Burbank alignments SR14, E1, and E2)
- Option C – consists of both at-grade and underground facilities aligned in a north/south orientation parallel to North Hollywood Way, entirely within the City of Burbank (associated only with Palmdale to Burbank alignment E3)

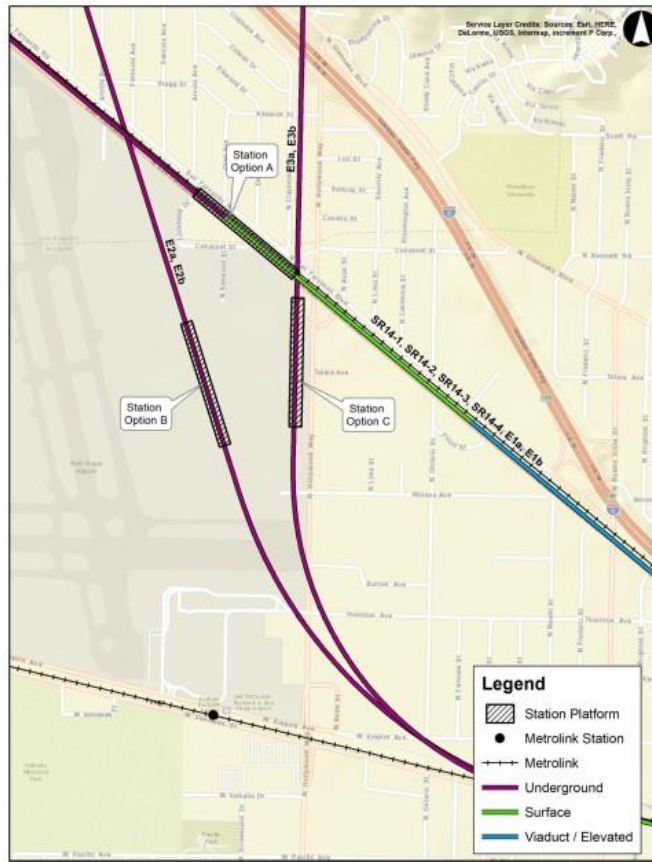


Figure 5 Burbank Airport Station Options Carried Forward in 2015 SAA

Upon further evaluation of the three Burbank Airport Station options, the 2016 Palmdale to Burbank SAA carried forward Option A and Option B due to corresponding Palmdale to Burbank alignment alternatives carried forward, while Option C was withdrawn, as the associated Palmdale to Burbank alignment alternative was also withdrawn in this SAA.

Since the 2016 SAA, the Burbank Airport Station was further developed to refine and minimize impacts of Station Options A and B. In 2018, the Burbank Airport Station Option Screening Report withdrew Option A primarily due to community and potential environmental justice concerns. Station Option B was refined to minimize impacts and carried forward as part of the HSR Project Alternative (Figure 6). Option B Refined was designed to locate the platforms closer to the relocated Hollywood Burbank Airport terminal, reduce the station depth, improve constructability, reduce commercial and industrial property takes, and eliminate the tunnel length underneath residential neighborhoods to the south.

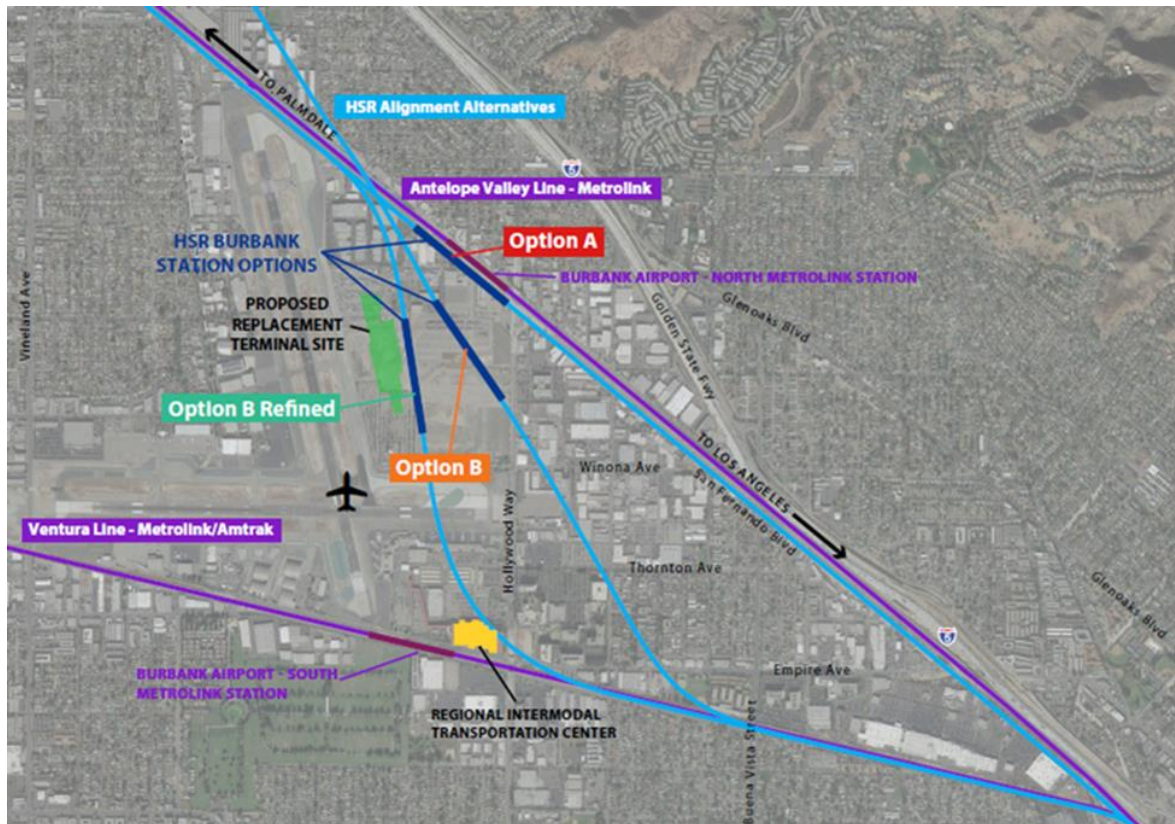


Figure 6 Evaluation of Station Options Since 2016

Los Angeles Union Station

For the southern terminus of the Burbank to Los Angeles Project Section, LAUS has also developed similarly to the Burbank Airport Station in the same time frame. The 2005 Statewide Program EIR/EIS initially selected three possible locations:

- Existing LAUS – Station would be integrated into the existing LAUS campus.
- LAUS South – Station would be located just south of the US-101 freeway.
- LA River East – Station would be located on the east side of the Los Angeles River, approximately within the existing railyard.

Since 2005, there have been ongoing project refinements and potential options for connection to LAUS and surrounding areas. Most recently, the 2016 Burbank to Los Angeles SAA withdrew an elevated station option primarily due to cost/constructability, visual impacts, and cultural resource impacts while the at-grade LAUS option was carried forward for further analysis. The preferred LAUS option was determined to be at grade with the existing yard, with the reduced speed variance that allows HSR to utilize the existing rail corridor (Figure 7). To date in 2018, the Authority has had ongoing coordination with Metro in regards to LAUS as part of Link US which will be further addressed in the Project Section EIR/EIS.



Figure 7 LAUS Configuration for HSR

2.2 Alternatives Considered for Evaluation in Draft EIR/EIS

This section provides an overview of the alternatives being considered for the Burbank to Los Angeles Project Section Draft EIR/EIS.

2.2.1 No Project Alternative Description

NEPA requires the evaluation of a No Action Alternative in an EIS (Council on Environmental Quality Regulations § 1502.14(d)). Similarly, CEQA requires that an EIR include the evaluation of a No Project Alternative (CEQA Guidelines § 15126.6(e)). The No Project Alternative (synonymous with the No Action Alternative) represents the conditions that would occur in the forecast year (in this case, 2040) if the proposed project (in this case, the Burbank to Los Angeles Project Section) is not implemented. The No Project Alternative reflects the impacts of growth planned for the region as well as existing and planned improvements to the highway, aviation, conventional passenger rail, local rail and bus transit, intercity bus, and freight rail systems in the Burbank to Los Angeles Project Section area. Under the No Project Alternative, the California HSR System would not be built.

The No Project Alternative assumes that all currently known programmed and funded improvements to the intercity transportation system (highway, Amtrak, and regional rail) and reasonably foreseeable local land development projects (with funding sources identified) would be developed by 2040. The No Project Alternative is based on a review of the following: regional transportation plans for all modes of travel (e.g., the Southern California Association of Governments' [SCAG] 2012 Regional Transportation Plan/Sustainable Communities Strategy [RTP/SCS]); the California Department of Transportation's 2014 State Transportation Improvement Program; SCAG's 2014 Federal Transportation Improvement Program; the Southern California Regional Rail Authority (Metrolink) strategic plans (Southern California

Regional Rail Authority 2016); transportation plans and programs for Los Angeles County; airport master plans; and city and county general plans.

Planned and other reasonably foreseeable projects under the No Project Alternative would also include commercial and industrial land developments and utility construction projects. In addition, large residential housing developments consisting of single-family and multifamily units, condominiums, and apartments are planned in the area.

2.2.2 High-Speed Rail Project Alternative

2.2.2.1 Overview

The HSR Project Alternative would include HSR stations near Hollywood Burbank Airport and at LAUS. The alignment would be entirely grade-separated at crossings, meaning that roads, railroads, and other transportation facilities would be located at different heights so that the HSR system would not interrupt nor interface with other modes of transport, including vehicle, bicycle, and pedestrian. The alignment would also be fenced to prohibit public or unauthorized vehicle access. The HSR Project Alternative would be primarily located within the existing railroad right-of-way, which is typically 70 to 100 feet wide, and would include both northbound and southbound electrified tracks for high-speed trains. The Project Alternative would include new and upgraded track, systems facilities, grade separations, drainage, communication towers, security fencing, and other necessary facilities to introduce HSR service.

The alignment would be below-grade traveling south from the Burbank Airport Station and would transition to a surface alignment heading south to the surface station at LAUS. The surface portion of the alignment would be designed with structural flexibility to accommodate shared operations with other passenger rail operators. Throughout most of the Project Section (between Alameda Avenue and State Route 110), two new electrified tracks would be placed along the west side of the existing railroad right-of-way, which would be useable for HSR and other passenger rail operators. The existing tracks would be replaced with non-electrified tracks placed further east within the railroad right-of-way, which would be usable for freight and other passenger rail operators but not for HSR.

2.2.2.2 Burbank to Alameda Avenue

The HSR Project Alternative alignment would begin at the underground Burbank Airport Station and would consist of two new electrified tracks. The Burbank Airport Station would be located adjacent to the relocated Hollywood Burbank Airport terminal, off Hollywood Way in the City of Burbank. The alignment would then travel south in a cut-and-cover tunnel beneath existing airport land uses paralleling Hollywood Way, before curving eastward at the intersection of Hollywood Way and Empire Street. The alignment would travel below ground beneath the southern edge of the existing railroad corridor until daylighting in a trench west of Buena Vista Street. The alignment would be in a trench as it crosses Buena Vista Street. The existing tracks in this corridor would be relocated northward and maintained in the existing configuration and grade (Figure 8).

South of Beachwood Drive, the HSR tracks would curve south out of the existing railroad right-of-way and cross Victory Place on a new railroad bridge, which would be located directly south of the existing Victory Place bridge. South of Burbank Boulevard, the HSR tracks would re-enter the railroad right-of-way and run parallel to the Metrolink Antelope Valley Subdivision tracks. Between Burbank Boulevard and Magnolia Boulevard, several UPRR industry tracks to the west of the right-of-way would be removed.



Figure 8 B-LA Alignment: Burbank to Alameda Street

Continuing south, the HSR Project Alternative alignment would pass the Downtown Burbank Metrolink station, which would be modified. HSR tracks would be placed within the existing parking lot west of the southbound platforms, and new pedestrian connections and relocated parking would be provided.

South of Olive Avenue, the existing non-electrified tracks would be shifted east within the right-of-way to accommodate the addition of the electrified HSR tracks within the right-of-way. South of I-5, both sets of tracks would rise on retained fill to cross over Alameda Avenue on a modified railroad bridge.

2.2.2.3 Alameda Avenue to LAUS

The four sets of tracks (two new electrified and two non-electrified) would continue south within the existing railroad right-of-way. Figures 9 and 10 show the alignment throughout this subsection, along with the roadway over- and undercrossings and realigned non-electrified track. South of Alameda Avenue, the alignment would return to at-grade at Western Avenue. Just south of Western Avenue, the alignment would transition to retained fill and then back to at-grade at SR 134.

Continuing south, the alignment would cross Verdugo Wash, where an existing railroad bridge would be rebuilt as a new clear-span structure to accommodate the additional set of electrified tracks. The alignment would continue south within the existing railroad right-of-way, which follows the Glendale and Los Angeles city borders. Between SR 134 and Chevy Chase Drive, a UPRR siding track would be placed to the east of the non-electrified tracks, for a total of five tracks within the right-of-way in this area. This siding track is currently located at the Metrolink Central Maintenance Facility (CMF), but it would need to be relocated to accommodate HSR operations at the CMF.

The alignment would pass by the Glendale Metrolink Station, which is a known historical resource located north of Glendale Boulevard. No modifications would be necessary for the Glendale Metrolink Station. At Tyburn Street, the alignment would enter the City of Los Angeles. Continuing south, the two sets of tracks would diverge at the north end of the Metrolink CMF. The electrified tracks would travel along the west side of the CMF, and the non-electrified, mainline tracks would travel along the east side of the facility.

At the south end of the CMF, the two electrified and two non-electrified tracks would converge briefly within the right-of-way and then diverge again south of Figueroa Street. The electrified tracks would cross the west bank of the Los Angeles River on the existing Metrolink Downey Bridge. The existing tracks on the Downey Bridge would be electrified, which would allow for both HSR and passenger rail operations. The non-electrified tracks would remain on the east bank of the Los Angeles River and cross the Arroyo Seco on an existing railroad bridge, which would not require modifications. The non-electrified tracks would connect with the existing tracks on the east bank, which currently serve UPRR and nonrevenue trains.

South of Main Street, on the east bank of the Los Angeles River, the existing tracks would be modified at Mission Junction to be usable by freight and passenger rail. They would cross the river on the existing Mission Tower bridge to join the electrified tracks within the railroad right-of-way. The existing Mission Tower bridge has room for two tracks, but Metrolink currently only uses one track. The HSR Project Alternative would reinstall the second track on the existing bridge, which may require a retrofit to the bridge. The two sets of tracks would continue south to terminate at LAUS, with the electrified tracks and HSR station platforms located on the west side of the station, while the non-electrified tracks would merge with the Metrolink and Amtrak tracks. The configuration at LAUS is described in further detail in Section 2.5.2.4.

At LAUS, several non-HSR improvements would be needed to maintain capacity at the station and to allow other rail operators to stay intact after the introduction of HSR service. The Project Alternative would construct a new Metrolink bridge over the Los Angeles River just north of Cesar Chavez Avenue. This bridge would not be used by the HSR system, but it would be required for Metrolink's San Bernardino Line operations.



Figure 9 B-LA Alignment: Alameda Street to SR 2



Figure 10 B-LA Alignment: SR 2 to LAUS

2.2.2.4 Operations of the Burbank to Los Angeles Project Section

The Metrolink Ventura and Antelope Valley Lines, Amtrak's Pacific Surfliner and Coast Starlight, and UPRR freight trains currently operate within the Burbank to Los Angeles Project Section. As the proposed HSR Project Alternative is within the active Los Angeles-San Luis Obispo-San Diego (LOSSAN) passenger and freight rail corridor, all existing operators would have to modify their operational patterns. New and realigned tracks would change the track configurations which the various users operate, with passenger rail and freight trains shifted closer to the east side of the right-of-way. Table 1 presents proposed HSR train volumes, along with current and anticipated future traffic volumes of existing operators.

Table 1 Existing and Future Trains per Day in the LOSSAN Corridor Between Burbank and Los Angeles

Operator	2016 Existing Conditions	2029 Opening Day	2040 Horizon Year
California HSR ¹	N/A	196	196
Metrolink ²	61	99	99
Amtrak ³	12	16	18
UPRR ⁴	11	18	23

¹ 2029 Opening Day and 2040 Horizon Year projections from the California High Speed Rail Authority's "Year 2029 and Year 2040 Concept Timetable for EIR/EIS Analysis"

² Existing Conditions from the 2016 Metrolink Schedule (effective October 3, 2016); 2029 Opening Day projections extrapolated from the 2016 Metrolink 10-Year Strategic Plan, "Growth Scenario 1: Enhancement of Existing Network" (increase of ~1 train every year for the Ventura County Line and the Antelope Valley Line)

³ Existing Conditions from the 2016 LOSSAN Corridor Schedule; 2029 Opening Day projections extrapolated from the 2012 LOSSAN Corridor-wide Strategic Implementation Plan "Long-Term Operations Analysis" (increase of ~1 train every 4 years for the Amtrak Pacific Surfliner and no growth for the Amtrak Coast Starlight between Hollywood Burbank Airport and LAUS)

⁴ Existing Conditions from the 2012 LOSSAN Corridor-wide Strategic Implementation Plan "Long-Term Operations Analysis"; 2029 Opening Day projections extrapolated from the 2012 LOSSAN Corridor-wide Strategic Implementation Plan "Long-Term Operations Analysis" (increase of ~1 train every 2 years for UPRR between Hollywood Burbank Airport and LAUS)

HSR = high-speed rail

LAUS = Los Angeles Union Station

LOSSAN = Los Angeles-San Luis Obispo-San Diego

UPRR = Union Pacific Railroad

2.3 Summary of Public Input on HSR Project Alternative

The extensive public engagement that took place during the preparation of the alternatives analyses and the SAAs is documented in those reports. This section summarizes the outreach that has occurred after the 2016 Burbank to Los Angeles SAA and prior to the release of the Draft EIR/EIS.

2.3.1 Outreach Conducted for the HSR Project Alternative

Since the last SAA document, detailed information displays about the alternatives analysis process, as well as updates to the alignment, were provided at public meetings. In addition to the public information meetings, one-on-one briefings and small group meetings were held throughout the process. Another element of the outreach was to provide updates and presentations to clubs, organizations, and business owners, as well as the County of Los Angeles and the cities of Burbank, Glendale, and Los Angeles, to facilitate an inclusive and transparent process. Outreach to several federal and state agencies that work in conjunction with the Authority was also performed to identify and protect resources of concern.

Throughout development of the Project Alternative, project staff addressed questions related to stations and connectivity, noise and vibration, right-of-way impacts, traffic and circulation, safety, and opportunities for the public to comment on the project.

The Authority and FRA have been coordinating extensively with the other owners and operators within the project corridor (LA Metro, Metrolink, Union Pacific, and Amtrak) since the inception of the project. The intent is to plan for the corridor to accommodate the existing and future needs of all operators. To date, all operators have at least an initial, informal level of comfort Los Angeles the conceptual project definition – along the entirety of the corridor from Burbank to Anaheim, as well as at Los Angeles Union Station and LA Metro’s “Link US” project. Formal concurrence will occur in the future, and be based on more refined project definitions for both infrastructure improvements and operational characteristics.

The Authority and FRA submitted a letter to the Environmental Protection Agency and U.S. Army Corps of Engineers, dated October 26, 2017, indicating the following, “Pursuant to our Memorandum of Understanding (MOU) concerning the Integration Process for the California High-Speed Train Program dated November 2010, the FRA and Authority are providing this joint written notice. Based on current project section information, the MOU's Checkpoint B, "Range of Alternatives," and Checkpoint C, "Preliminary Least Environmentally Damaging Preferred Alternative (LEDPA)" processes do not apply to the Burbank to Los Angeles project section. As a result, we will not be utilizing those steps as part of the Integration MOU.”

2.3.2 Summary of Public Input on the HSR Project Alternative

Based on public scoping and the receipt of public and agency comments, key issues considered during alternatives development and development of the Draft EIR/EIS included the following: (1) potential environmental impacts, (2) alignment and station alternatives, (3) connectivity and coordination with/impacts on other transportation facilities, (4) train technologies, and (5) project funding/cost.

3 EVALUATION OF ALTERNATIVES

This staff report provides a summary evaluation of the No Project Alternative and the HSR Project Alternative carried forward in the *Burbank to Los Angeles Project Section Draft EIR/EIS*. The Authority weighed environmental factors, as well as the NEPA Purpose and Need and CEQA Objectives, to determine which alternative would best balance the potential impacts and benefits. In general, although the Project Alternative would have more impacts on the environment and community, it achieves the project goals and objectives while providing numerous benefits to the transportation network and regional community. Therefore, the staff-recommended alternative was chosen based on the preliminary assessment of environmental factors to be evaluated in the Draft EIR/EIS for the No Project Alternative and the HSR Project Alternative.

- **NEPA Purpose and Need:** The HSR Project Alternative would meet the Program and Project Section Purpose and Need, as stated in the 2005 Statewide Program EIR/EIS and Chapter 1 of the *Burbank to Los Angeles Project Section EIR/EIS*:
 - The program-wide purpose of the 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 Burbank to Los Angeles Project Section is “to provide the public with electric-powered high-speed rail service that provides predictable and consistent travel times between major urban centers, and connectivity to airports, mass transit systems, and the highway network in the San Fernando Valley and the Los Angeles Basin; and to connect the Northern and Southern portions of the Statewide HSR system” (Authority and FRA 2017).
- **CEQA Project Objectives:** The Project Alternative would meet the Program and Project Section CEQA Objectives, described in Chapter 1 of the *Burbank to Los Angeles Project Section EIR/EIS*. These objectives are to:
 - Provide intercity travel capacity to supplement critically overused interstate highways and commercial airports
 - Meet future intercity travel demand that would be unmet by current transportation systems and increase capacity for intercity mobility
 - Maximize intermodal transportation opportunities by locating stations to connect with local transit systems, airports, and highways
 - Improve the intercity travel experience for Californians by providing comfortable, safe, frequent, and reliable high-speed travel
 - Provide a sustainable reduction in travel time between major urban centers
 - Increase the efficiency of the intercity transportation system
 - Maximize the use of existing transportation or utility corridors to the extent feasible
 - Develop a practical and economically viable transportation system that can be implemented in phases and would generate revenues in excess of operations and maintenance costs
 - Provide intercity travel in a manner sensitive to and protective of the region’s natural resources, and reduce emissions and vehicle miles traveled for intercity trips

Additional objectives that the Authority is pursuing for the Burbank to Los Angeles Project Section include:

- Incorporate HSR into the intermodal transportation hubs in Burbank and Los Angeles, thereby providing interfaces with airports (Hollywood Burbank Airport), mass transit (Metro, Metrolink, and Amtrak), and highways, resulting in local and regional transit and transportation hubs
- Capture a large base of riders in the densely populated San Fernando Valley and the Los Angeles Basin
- Provide station locations with existing and planned transit-oriented development potential
- **Environmental Factors:** The Draft EIR/EIS will describe the impacts that the No Project Alternative and HSR Project Alternative would have on environmental resources. The sections below present a few of the key findings.

3.1 Environmental Criteria Analysis

This section below, in general, is intended to summarize key differentiators between two or more build alternatives. Typically, this summary does not include a comparison to the No Project Alternative. In the Burbank to Los Angeles Project Section, there is only one build alternative proposed, the HSR Project Alternative. Summarizing impacts between one build alternative and the No Project Alternative will likely be weighted towards significant adverse impacts for the build alternative. In general, the construction of a complex and innovative project, such as HSR, would always alter the physical landscape and character, even in an urbanized area or within an existing rail corridor. An explanation of the relative benefits and challenges that the HSR Project Alternative would have, relative to not constructing it at all, can be considered by decision-makers. The information below is based on preliminary analysis still in development and subject to change. These benefits and challenges are summarized below and detailed in Appendix A. They include:

- Air Quality - Construction emissions will be substantial under the Project Alternative, given the complexity and magnitude of this project. However, improvements in regional air quality and GHG emissions are expected, as the HSR system will be electric and highway vehicle travel is anticipated to decrease due to the availability of the HSR system.
- Noise/Vibration – Generally, HSR trains would be quieter than existing diesel trains that utilize this corridor. However, an indirect noise impact would be generated due to moving existing tracks (which carry the diesel trains) closer to sensitive receptors along the corridor, in order to make room for HSR tracks.
- Hazardous Materials and Wastes- Potential impacts from hazardous emissions or the handling of hazardous materials during construction of the Project Alternative could occur, particularly at Burbank Airport Station. On the reverse side, the project would remove and remediate a large amount of contaminated soils in this corridor.
- Safety and Security – Beneficial effect to public safety due to reduced public service response times, less accidents, and less idling (thereby improving air quality) because of grade-separated railroad crossings.
- Socioeconomics and Communities – Impacts under the Project Alternative from displacements to local businesses and residences; beneficial effect due to creation of additional direct, indirect, and induced jobs

3.2 Key Performance Criteria

Key performance, operations and cost information about the build alternative are summarized as follows:

Table 2 HSR Project Alternative Performance, Operations, and Cost

Performance Criteria	Value
Alignment Length	14 miles
Speed Capacity (mph)	110 miles per hour
Estimated Annual Operations and Maintenance Costs ¹	\$19-21 Million

¹Operating/maintenance costs are from the Authority's 2016 Business Plan, 2029 medium to high estimates

3.3 Capital Costs

The following table shows the construction costs of the Project Alternative from the Burbank Airport Station to Los Angeles Union Station in 2018 dollars. The cost estimate includes the total effort and materials necessary to construct the Burbank to Los Angeles Project Section, including stations, maintenance facilities, and modifications to roadways required to accommodate grade-separated guideways. The HSR Project Alternative is the same alternative evaluated in the 2018 Business Plan, but with refined design since the 2018 Business Plan. However, the capital costs outlined reflect a conservative scope and sufficient project footprint to accommodate project refinement through final design for construction documents. This allows the Authority to evaluate maximum impacts in the EIR/EIS and reduces the risk that environmental clearance does not cover all potential impacts. It is important to note that these cost estimates include duplications with adjacent project sections and are not additive (i.e., Burbank station and track transition is included in Palmdale to Burbank and Burbank to LA environmental documents). Further, the Authority has not yet applied value engineering and other optimization measures to reduce these costs, including the Early Train Operator benchmarking review, footprint refinement and constructability mitigations.

Table 3 HSR Project Alternative Capital Costs

Performance Criteria	Value
Estimated Capital Costs ¹	\$3.55 Billion

4 RECOMMENDATION

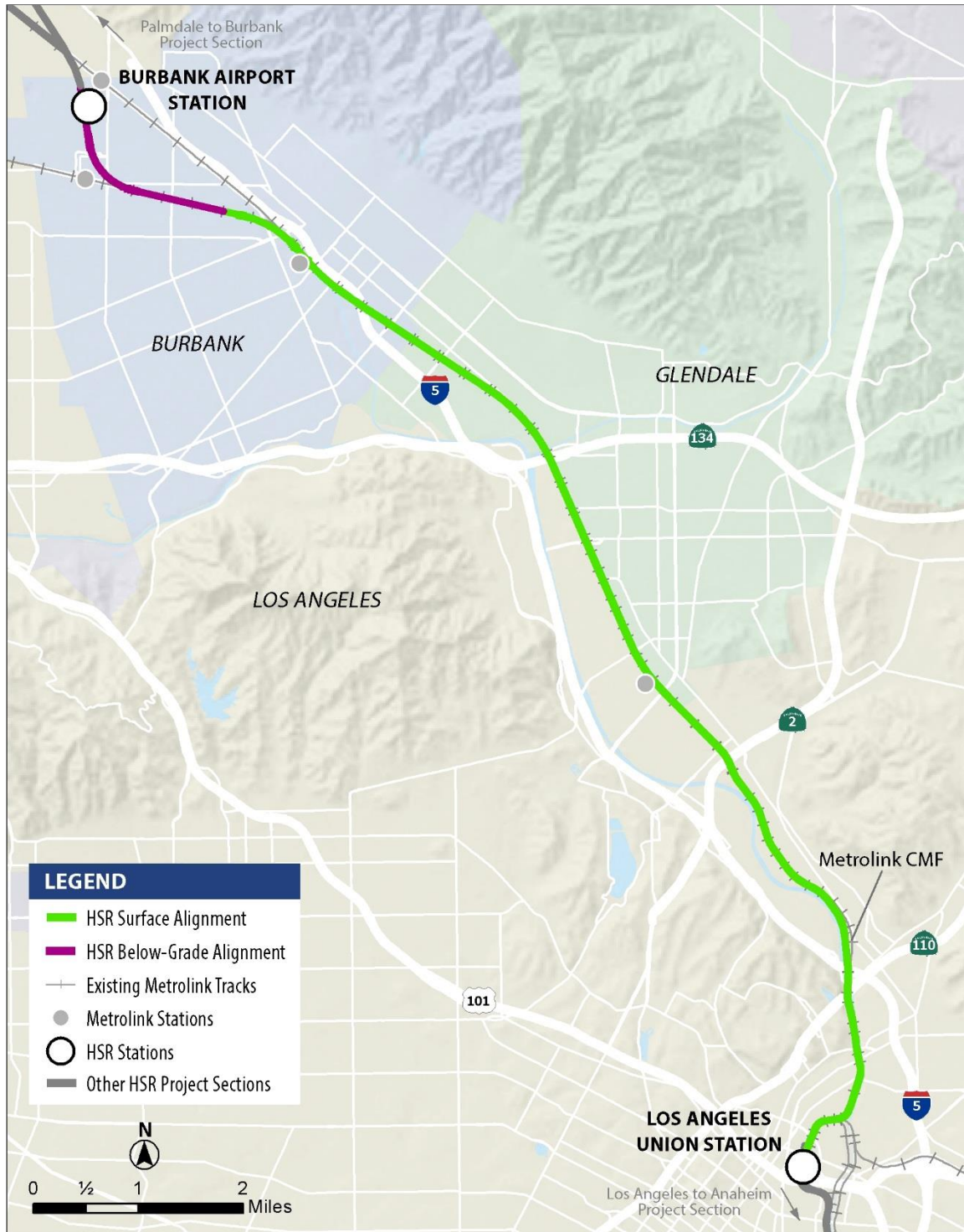
Authority staff recommends that the Board identify the HSR Project Alternative as the Preferred Alternative for the purpose of preparing the Burbank to Los Angeles Project Section EIR/EIS.

The HSR Project Alternative would achieve the NEPA Purpose and Need as well as the CEQA Project Objectives of providing a fast, reliable intercity travel mode that meets future travel demand. The HSR Project Alternative could have significant impacts under NEPA and CEQA (more so during construction; less so during operations), but would also provide during operations multiple regional and local benefits that support the recommendation for the HSR Project Alternative to be selected as the Preferred Alternative.

Upon Board direction on staff recommendations, the Draft EIR/EIS may identify the HSR Project Alternative as the Preferred Alternative. The Authority will release the Draft EIR/EIS for public and agency review and comment and will consider those comments in developing the final environmental document.

At this time, the Board is neither adopting nor approving a Preferred Alternative. There will be no approval of the alternative until completion of the Final EIR/EIS. Staff will return to the Board at a future date to consider approving the HSR Project Alternative, as informed by the final environmental document.

Figure 11 presents the Staff-Recommended Preferred Alternative.



Source: California High-Speed Rail Authority and Federal Railroad Administration (2018)

Figure 11 Staff-Recommended Preferred Alternative

APPENDIX A – CHALLENGES AND BENEFITS OF THE PREFERRED ALTERNATIVE

Error! Reference source not found. Table 4 provides an overview of the potential benefits and impacts of the No Project Alternative and the HSR Project Alternative of the Burbank to Los Angeles Project Section. Environmental effects were assessed after implementation of impact avoidance and minimization features, but before mitigation. The table also summarizes the performance measures and estimated costs. Development of the Draft EIR/EIS is ongoing; therefore, the tables do not provide statistical detail at this time. However, relative impacts are anticipated to remain consistent with those presented below. All results are preliminary and subject to refinement as the Draft EIR/EIS is developed.

Table 4 Challenges and Benefits of the Preferred Alternative

TOPIC	CHALLENGES	BENEFITS
Air Quality & Global Climate Change	<ul style="list-style-type: none"> ▪ Exceedances related to NOx, PM10, & PM2.5 emissions during construction 	<ul style="list-style-type: none"> ▪ Regional air quality improvements during operation, as a result of reductions in vehicle miles traveled
Biological & Aquatic Resources	<ul style="list-style-type: none"> ▪ Temporary direct & indirect impacts to nesting birds ▪ Temporary & permanent impacts to aquatic resources 	
Cultural Resources	<ul style="list-style-type: none"> ▪ Potential to encounter & damage unknown archaeological sites 	
Environmental Justice		<ul style="list-style-type: none"> ▪ Improved access to jobs & community amenities & new employment opportunities ▪ Improved community cohesion, access & safety, as a result of grade separations & improved bicycle & pedestrian facilities
Hydrology & Water Quality	<ul style="list-style-type: none"> ▪ Increase in floodplain elevation ▪ Hydraulic drainage impacts ▪ Changes in drainage patterns ▪ Increase in stormwater runoff 	

TOPIC	CHALLENGES	BENEFITS
Noise & Vibration	<ul style="list-style-type: none"> ▪ Potential for noise & vibration exceedances ▪ Potential noise impacts related to nighttime construction 	
Public Utilities & Energy	<ul style="list-style-type: none"> ▪ Temporary increase in energy consumption, temporary interruption of utility service, accidental disruption of services, increased water use & increased stormwater & waste generation 	<ul style="list-style-type: none"> ▪ HSR adopted Sustainability Guidelines
Regional Growth		<ul style="list-style-type: none"> ▪ Short- & long-term employment benefits during construction & operation
Safety & Security		<ul style="list-style-type: none"> ▪ Reduced emergency response times & enhanced roadway safety, as a result of grade separating existing crossings
Section 4(f) Resources	Potential use of Section 4(f) resources	<ul style="list-style-type: none"> ▪
Socioeconomics & Communities	<ul style="list-style-type: none"> ▪ Relocation of approximately 100 businesses ▪ Temporary impacts on children's health & safety from construction due to proximity of schools to existing rail corridor 	<ul style="list-style-type: none"> ▪ Beneficial effect due to creation of an estimated 1,072 additional direct, indirect & induced jobs by 2040
Station Planning & Land Use Development		<ul style="list-style-type: none"> ▪ Attracts growth & investment in station areas by increasing statewide accessibility & reducing travel time
Transportation	<ul style="list-style-type: none"> ▪ Temporary, short-term impacts on traffic flow, circulation & access 	<ul style="list-style-type: none"> ▪ Improvements in transit, bicycle & pedestrian safety ▪ Provides an additional mode of intercity transportation

NOX = nitrogen oxides
HSR = High-Speed Rail

PM2.5 = particulate matter smaller than or equal to 2.5 microns in diameter
PM10 = particulate matter smaller than or equal to 10 microns in diameter