

California High-Speed Rail Authority

Burbank to Los Angeles Project Section

Supplemental Alternatives Analysis

April 2016



California High-Speed Rail Project



Burbank to Los Angeles Project Section

**SUPPLEMENTAL ALTERNATIVES
ANALYSIS REPORT**

APRIL 2016

Statewide Program

The California High-Speed Rail Authority (Authority) is responsible for planning, designing, building and operating the first high-speed rail in the nation. California high-speed rail will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs, and preserve agricultural and protected lands. When it is completed, it will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of exceeding 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations. In addition, we are working with regional partners to implement a statewide rail modernization plan that will invest billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs.

The California High-Speed Rail program is already delivering benefits to California, years before rail operations actually will begin. It has employed over 260 certified small businesses to work on planning, design and construction activities throughout the state, and is creating new jobs and training opportunities. Ultimately, High-Speed Rail will create 3,500 permanent jobs, in addition to tens of thousands of temporary jobs designing and building the system. Once operational, the system will operate on 100% renewable energy, providing a clean alternative to the current transportation options that degrade air quality across the state.

As part of the program, the California High-Speed Rail Authority is working with regional partners to implement a statewide rail modernization plan that will invest billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs. The proposed projects would add capacity to allow for more rail service, construct new overcrossings to reduce local traffic delays and improve safety, and implement technologies to increase safety for all users. These improvements will provide immediate benefits to existing rail services and local communities, while also setting the stage for future California High-Speed Rail service.

Burbank to Los Angeles Section

The Burbank to Los Angeles Section will connect two key multi-modal transportation hubs, the Burbank Airport area, and Los Angeles Union Station, providing a critical link to the regional and statewide transportation networks. The approximately 12-mile alignment generally follows the existing railroad right-of-way through the cities of Burbank, Glendale, and Los Angeles, adjacent to the Los Angeles River. It will provide new opportunities for economic development and revitalization near Burbank Bob Hope Airport. In preparation for high-speed rail, the corridor receive safety and efficiency benefits from new separated crossings at most railroad intersections, as well as many upgrades to existing infrastructure.

The stations in Burbank and Los Angeles will provide connections to many destinations and transportation options. Burbank serves as a gateway to the San Fernando Valley and key employment and tourism centers. The planned station in Burbank is adjacent to Bob Hope Airport, which provides commercial airline service to destinations nationwide. Additionally, existing and planned Metrolink stations and the recently opened Regional Intermodal Transportation Center at the Airport provide connections across the region. An extension of the Metro Red Line to Burbank Bob Hope Airport is under consideration that would link the site to Hollywood and Downtown Los Angeles. Los Angeles Union Station is the region's central transportation hub, providing access to Amtrak intercity rail, six Metrolink commuter rail lines, three local rail lines (with several more planned) and bus services from multiple transit agencies. It is adjacent to downtown Los Angeles, a massive employment and entertainment hub providing more than 300,000 jobs.

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Appendices

Appendix A	Detailed Evaluation Table
Appendix B	Outreach Summary Table

ABBREVIATIONS AND ACRONYMS

AA	Alternatives Analysis
Amtrak	National Railroad Passenger Corporation
Authority	California High-Speed Rail Authority
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CMF	Central Maintenance Facility
CWA	Clean Water Act
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FRA	Federal Railroad Administration
GIS	Geographic Information Systems
HSR	High-Speed Rail
IOS	Initial Operating Segment
LADOT	City of Los Angeles Department of Transportation
LAP	Los Angeles to Palmdale (Former Extent of the Burbank to Los Angeles Section)
LAUS	Los Angeles Union Station
LOS	level-of-service
Metro	Los Angeles County Metropolitan Transportation Authority
Metrolink	Southern California Regional Rail Authority
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NOP	Notice of Preparation
PAA	Preliminary Alternatives Analysis
SAA	Supplemental Alternatives Analysis
SCRIP	Southern California Regional Interconnector Project
SCRRA	Southern California Regional Rail Authority
SHPO	California State Historic Preservation Office
SR	State Route
STB	Surface Transportation Board
SWG	Stakeholder Working Group
TOD	Transit-Oriented Development
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

ES 1 Executive Summary

The California High-Speed Rail Authority (Authority) is responsible for planning, designing, building, and operation of the first high-speed rail system in the nation. The California High-Speed Rail System will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs, and preserve agricultural and protected lands. By 2029, the system will run from San Francisco to the Los Angeles basin in under three hours at speeds of over 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations.

The system is being developed in sections; this report presents the Supplemental Alternatives Analysis (SAA) for the Burbank to Los Angeles Project Section.

The purpose of the SAA process is to describe the range of alternatives considered for the Burbank to Los Angeles Project Section, and to do the following: (1) evaluate whether the alternatives meet the High-Speed Rail Project objectives and the purpose and need; (2) evaluate and disclose the potential impacts of the alternatives based on a screening level of information, (3) evaluate whether the alternatives are potentially feasible and reasonable; and (4) either recommend alternatives for further study in the environmental clearance process or withdraw them from further evaluation. Figure ES-1 illustrates this process as a part of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) evaluation processes.

This SAA informs the project description in the project-level environmental documents that will comply with CEQA and NEPA requirements. It also sets parameters for the environmental analysis and design.

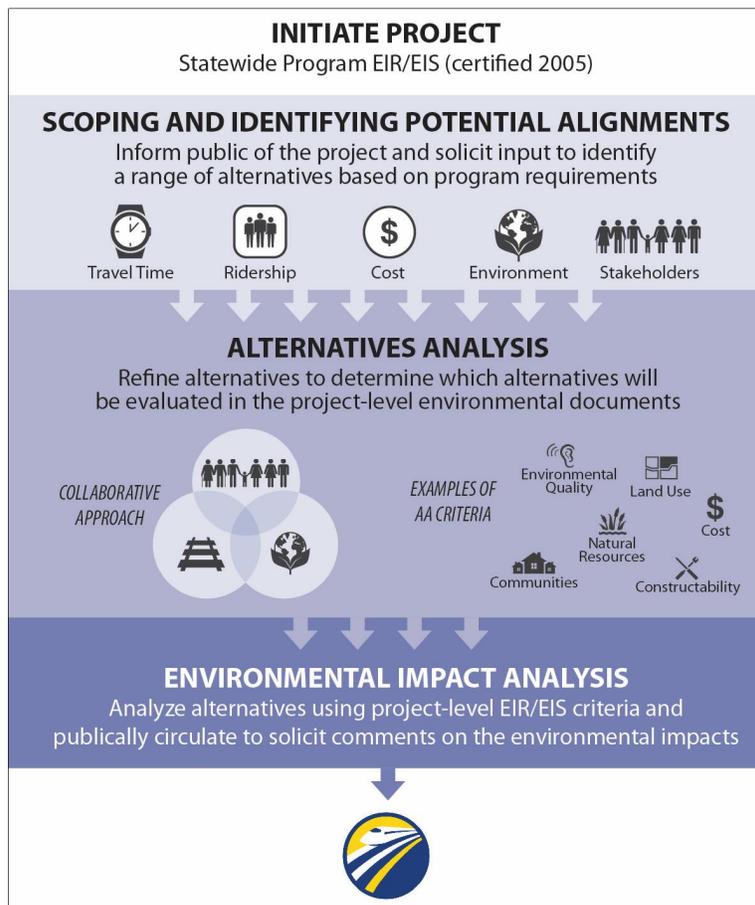


Figure ES- 1 Environmental and Alternatives Analysis Processes

ES 1.1 Burbank to Los Angeles Project Section Background

The Burbank to Los Angeles Project Section of the California High-Speed Rail system is approximately 12 miles long, starting from the proposed Burbank Airport Station in the City of Burbank and ending at Los Angeles Union Station (LAUS) in the City of Los Angeles. This corridor runs through a narrow and constrained urban environment along an existing rail corridor. Within the existing rail corridor, the Los Angeles County Metropolitan Transportation Authority (Metro) owns the rail right-of-way, the Southern California Regional Rail Authority owns the track and operates the Metrolink commuter rail service, Amtrak provides intercity passenger service, and the Union Pacific Railroad (UPRR) holds track access rights and operates freight trains.

In 2014, the Authority published a Palmdale to Los Angeles SAA Report and held scoping meetings to separate Burbank to Los Angeles into a distinct project section for study. One of the main reasons for the project section split was the Initial Operating Section (IOS) concept and its interim terminus in the San Fernando Valley, which was discussed in the Authority's 2012 and 2014 Business Plans. Additionally, the Authority and Federal Railroad Administration (FRA) determined that separate environmental documents would be more beneficial to address environmental impacts and conduct stakeholder outreach, because key environmental resources likely to be impacted were different between the two areas, and separate environmental documents better supported project phasing and sequencing. Since then, the Authority and FRA have completed additional analysis on this project section and have prepared this SAA to describe the updates.

Figure ES- 2 illustrates the potential range of alternatives for the Burbank to Los Angeles Project Section, which have been refined based on feedback from communities and resource agencies and on new technical information. A single build alternative with options is recommended to be carried forward, along with the No-Project Alternative, as the reasonable range of alternatives for the Project to be analyzed in depth in project-level environmental documents, which will be subsequently circulated for public review and comment.



Refined alignments reflect feedback from communities, resource agencies, and additional technical information obtained.

March 30, 2016

Figure ES- 2 Burbank to Los Angeles Project Section Overview

ES 1.2 Collaborative Planning Approach

The Authority evaluates project alternatives using system performance criteria that address design differences and qualities, and correspond to the project's Purpose and Need and objectives. The Authority considers input from stakeholders through a collaborative approach to alternatives evaluation shown in Figure ES-3. This approach seeks to avoid or minimize potential impacts by balancing the project objectives, environmental resources, and community concerns for any given alternative.

As part of this collaborative approach, the Authority has held several meetings to engage with stakeholders and solicit feedback. The 2010 Preliminary Alternatives Analysis (PAA), 2011 SAA, and 2014 SAA include descriptions of the outreach meetings the Authority conducted to inform the reports. This SAA provides a list of meetings held since the California High-Speed Rail Authority Board of Directors (Authority Board) was briefed on the 2014 SAA on June 3, 2014; the list is found in Appendix B.



The alternative development process seeks to balance project objectives, natural resources, and the protection of community character.

Figure ES- 3 Collaborative Approach

In addition, the Authority released a Notice of Preparation (NOP), and the FRA published a Notice of Intent (NOI) for the Palmdale to Burbank and Burbank to Los Angeles Project Sections on July 24, 2014. The concept of splitting the Palmdale to Los Angeles Project Section into two sections was introduced in the 2014 SAA and was implemented with the release of the NOPs/NOIs. In relation to these NOPs/NOIs, the Authority hosted seven scoping meetings in August 2014 throughout the project area between the Cities of Palmdale and Los Angeles. These meetings were held to allow public agencies and the members of the general public to provide comments on the types of analyses to be included in the Palmdale to Burbank and Burbank to Los Angeles environmental documents.

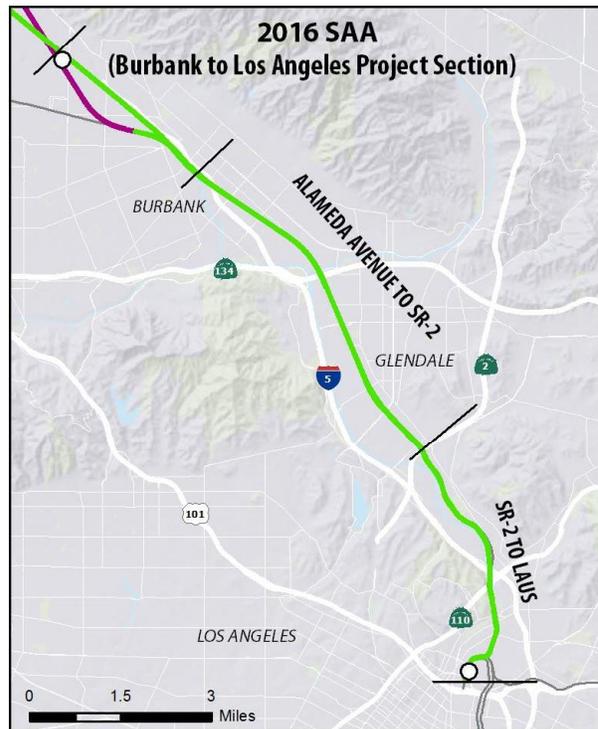
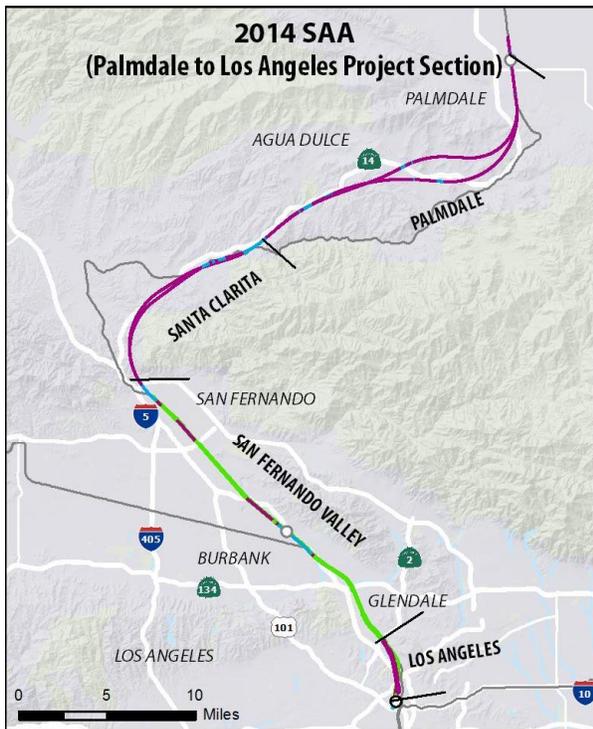
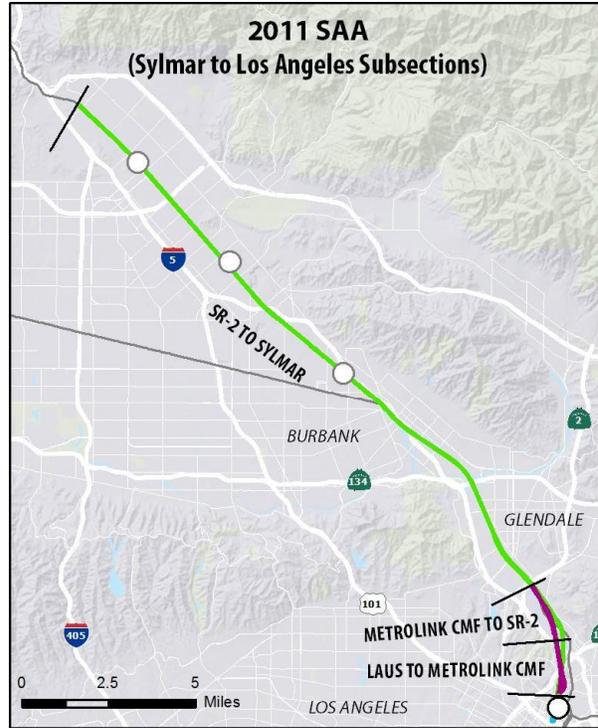
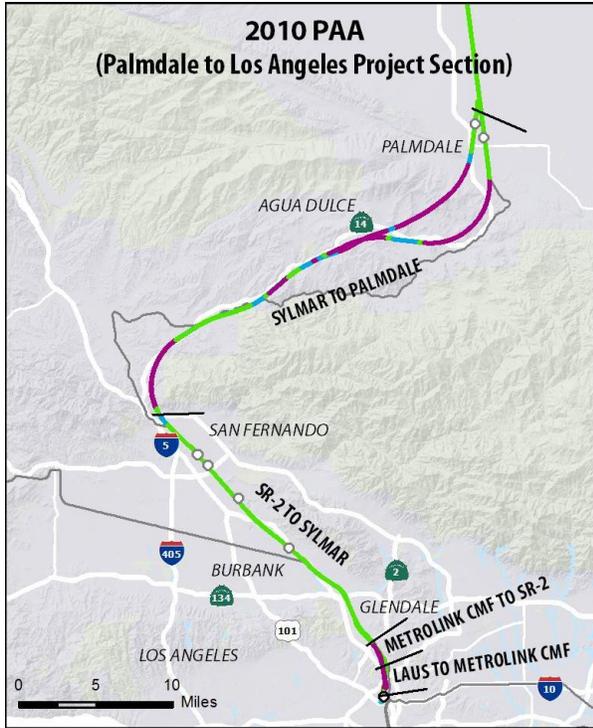
The feedback from these public meetings was used to develop the alternatives and design refinements, which were shared with the public after the scoping period in Fall 2014. These efforts are described in more detail Section 1.4. A summary of the meetings include the following:

- Five open house meetings held between May and June 2014
- Seven public scoping meetings held in August 2014
- Three open house meetings held in November 2015
- One Stakeholder Working Group meeting held in November 2015

Feedback from the public has included concerns over the following:

- Potential noise and vibration
- Potential visual impacts
- Potential impacts to community character
- Potential impacts to the Los Angeles River
- Project cost and funding
- Potential right-of-way impacts
- Consistency with local planning
- Other potential impacts as documented in this report

Figure ES- 4 shows the results of the collaborative planning process; the route concepts and the geographic boundaries have evolved over the years, with this SAA consolidating and redefining subsections for analysis.



LEGEND ○ Proposed HSR Station — At-Grade — Elevated — Tunnel — Subsection

The collaborative planning process is reflected in the evolution of route concepts since 2010. The changes in the geographic boundaries have also changed over the years, with this SAA consolidating and redefining old subsections for analysis.

March 28, 2016

Figure ES- 4 Evolution of Alternatives

ES 1.3 Summary of Recommendations in the Supplemental Alternatives Analysis

Based on the additional design work, outreach, and analysis conducted after the 2014 SAA, this 2016 SAA recommends eliminating the following 2014 SAA alignment alternatives and station options:

- Eliminate the option of high-speed rail along the eastern limits of the existing railroad right-of-way from further consideration.
- Eliminate tunnel alternatives (LAPT1 and LAPT3) from further consideration.
- Eliminate the elevated station platform option at LAUS from further consideration.

The 2016 refinement work incorporated new technical information, and this SAA recommends carrying forward the following build alternatives and options:

- Carry forward two station options at Burbank Airport Station and two alternatives from Burbank Airport Station to Alameda Avenue (further detail is provided in the 2016 Palmdale to Burbank SAA).
- Carry forward one at-grade alternative from Alameda Avenue to LAUS, with two design options from SR-2 to LAUS.
- Carry forward at-grade station platforms at LAUS.

These recommendations above may be subject to concurrence by the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (USEPA) as well as to further evaluation in the CEQA/NEPA environmental review process.

ES 1.4 Next Steps

The previously completed SAA Reports and this document establish that the alignments being carried forward for detailed study in the project-level environmental document sufficiently meet project objectives and purpose and need, are potentially feasible and reasonable, and have varying levels of environmental and community impacts. Authority staff will continue engaging with local government and the public; the ongoing community engagement process is illustrated in Figure ES- 5. Additionally, Authority and FRA staff will work with the USACE and the USEPA to finalize alternatives to be evaluated in the project-level environmental document.

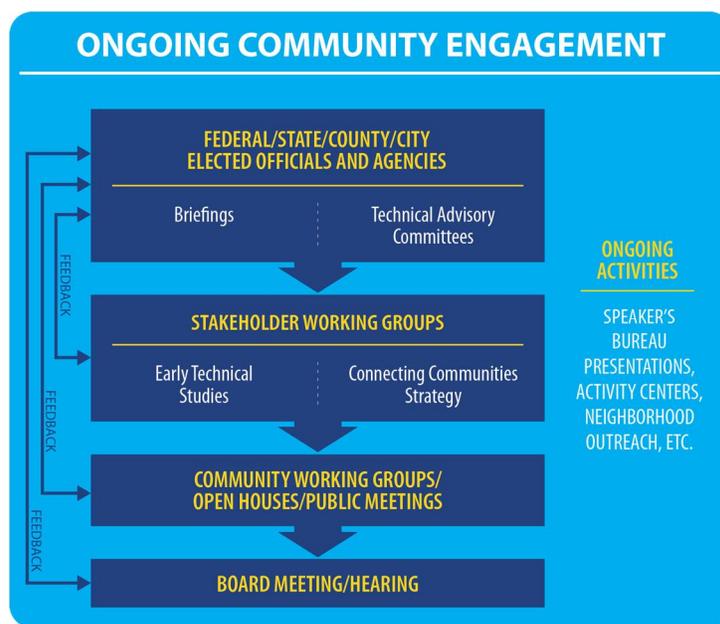


Figure ES- 5 On-Going Community Engagement

1 Introduction

The California High-Speed Rail Authority (Authority) is assessing alternatives for the California High-Speed Rail project section between Burbank and Los Angeles to determine reasonable alternatives that merit detailed study in a project-level environmental document. This report builds upon the Alternatives Analysis (AA) reports completed previously, and presents the changes that have been made in response to stakeholder input and new technical information. These new technical developments include the emphasis on phased implementation of the High-Speed Rail system and implementation of a blended system that meets the goals of providing a one-seat ride from San Francisco to Los Angeles and Anaheim.

Section 1 at a Glance—In this section you will find the following information:

- ▶ Burbank to Los Angeles Project Section Background
- ▶ Alternatives Development Approach
- ▶ Collaborative Approach to Evaluation of Alternatives
- ▶ Agency and Community Outreach and Input

While this 2016 Supplemental Alternative Analysis (SAA) Report considers alternatives within a small section of the entire high-speed rail network, these alternatives are evaluated in the context of the High-Speed Rail system as a whole to meet the High-Speed Rail Project goals. For example, alternatives in individual project sections that may increase travel time and/or disproportionately increase implementation cost could cumulatively influence how the High-Speed Rail system can meet its program-wide goals.

The purposes of this SAA are as follows:

- Provide screening environmental and preliminary engineering information on a range of alternatives considered for the Burbank to Los Angeles Project Section (referred to as the Project Section throughout this document)
- Report how the range of alternatives considered either meet or do not meet the High-Speed Rail objectives and project purpose and need
- Identify potential broad impacts associated with each alternative to environmental resources
- Recommend alternatives for additional analysis in the environmental clearance process or their withdrawal from further evaluation

1.1 Burbank to Los Angeles Project Section Background

The Burbank to Los Angeles Project Section of the High-Speed Rail system is approximately 12 miles long, starting from the proposed Burbank Airport Station in the City of Burbank, traveling through the City of Glendale, and ending at Los Angeles Union Station (LAUS) in the City of Los Angeles. This Project Section runs through a narrow and constrained urban environment, and generally travels along the existing rail corridor and adjacent to the Los Angeles River. Within the existing rail corridor, the Los Angeles County Metropolitan Transportation Authority (Metro) owns the railroad right-of-way, the Southern California Regional Rail Authority owns the track and operates the Metrolink commuter rail service, Amtrak provides intercity passenger service, and the Union Pacific Railroad (UPRR) holds track access rights and operates freight trains.

The Burbank to Los Angeles Project Section is an essential part of the statewide High-Speed Rail System. It would provide a new transportation option contributing to increased mobility and improved access to major urban areas throughout California. The High-Speed Rail plans for this area have evolved throughout the years, not only in response to stakeholder input, but also because of changes to the overall High-Speed Rail program and to the adjoining project sections.

Previously, the 2010 Palmdale to Los Angeles Preliminary Alternative Analysis (PAA) recommended alignment alternatives and station options for the Palmdale to Los Angeles Project Section based on the program-level corridor selected in 2005. The 2011 Palmdale to Los Angeles SAA focused specifically on the subsections from the community of Sylmar to LAUS, and reevaluated the alternatives and station

options. The 2014 Palmdale to Los Angeles SAA reevaluated the entire project section, incorporating the conclusions from the previous AA reports, and recommended the following:

- Divide the Palmdale to Los Angeles Project Section into two separate High-Speed Rail project sections: Palmdale to Burbank and Burbank to Los Angeles
- Reintroduce a high-speed rail alignment along the west side of the railroad right-of-way, with Metrolink tracks along the east side, throughout the San Fernando Valley
- Withdraw both the Branford Street and San Fernando Station Options in the San Fernando Valley, and carry forward the Burbank Airport Station Option
- Slightly shift the tunnel approach alternative alignment east to accommodate an at-grade or elevated connection to LAUS

This 2016 SAA Report is consistent with the 2014 Notice of Preparation (NOP)/Notice of Intent (NOI) and has been informed by the subsequent scoping process and the 2014 and Draft 2016 Business Plans. These developments led to an update of the geographic boundaries used for analysis in this SAA. The Burbank to Los Angeles Project Section originates at Burbank Airport Station and terminates at LAUS, and will be analyzed as such in future environmental documents. Previously, the areas between Burbank and Los Angeles had been analyzed within three subsections: from the community of Sylmar to State Route 2 (SR-2), from SR-2 to the Metrolink Central Maintenance Facility (CMF), and from the Metrolink CMF to LAUS. This SAA Report consolidates these previously considered subsections. The alignment options for the portion of the Burbank to Los Angeles Section from Burbank Airport Station south to Alameda Avenue are dependent on the alignment alternatives for the Palmdale to Burbank Section. Consequently, the SAA analysis of the portion of the Burbank to Los Angeles Section from Burbank Airport Station south to Alameda Avenue is provided in the 2016 Palmdale to Burbank SAA, and is provided here only by reference. In addition, this SAA does not alter the alternatives proposed from north of Alameda Avenue to the proposed Burbank Airport Station as recommended in the 2016 Palmdale to Burbank SAA, which includes three refined alignment alternatives and two station options.

Since the 2014 Palmdale to Los Angeles SAA, the Authority has continued to refine the alternatives by responding to community feedback and by performing additional engineering and environmental analysis. This SAA Report documents the additional analysis and refinement work performed for the alignment and station configuration options, and provides recommendations for withdrawal or further consideration in the Burbank to Los Angeles Project Section environmental process.

1.2 Alternatives Development Approach

Through the alternatives screening process, the Authority and the FRA seek to identify a reasonable range of alternatives for detailed study by defining station and alignment configurations that would meet the project's purpose and need and the agencies' goals and objectives, and that would be potentially feasible. Additionally, in the alternatives screening process, the Authority and FRA identify areas of potential environmental impacts, and conduct a comparative evaluation of the alternatives. Every conceivable alternative to a project need not be evaluated. Rather, when multiple potentially feasible options exist, a reasonable range of alternatives is considered. Alternatives that are not potentially feasible or that do not meet the basic purpose and need are not required to be considered.

The following sections summarize the Authority's goals and objectives found within its purpose and need and the 2014 and Draft 2016 Business Plans. Section 2 provides detailed descriptions of the environmental and engineering criteria that are used to determine an alternative's feasibility.

1.2.1 Meeting Project Purpose and Need/Project Objectives

The Authority is responsible for planning, designing, building, and operation of the High-Speed Rail System and ensuring coordination with California's existing transportation network. This SAA compares the proposed alternatives against the High-Speed Rail System purpose and need as described in the 2005 Statewide Program Environmental Impact Report (EIR)/Environmental Impact Statement (EIS):

The purpose of the statewide [High-Speed Train] HST 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 Burbank to Los Angeles Project Section purpose and need, as described in the 2014 Burbank to Los Angeles Scoping Report, is:

The purpose of the Project is to implement the Burbank to Los Angeles High-Speed Rail Project Section of the California High-Speed Rail System; 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 North and Southern portions of the Statewide High-Speed Rail System, also allowing direct connectivity with existing regional rail networks in the Los Angeles area. (Authority and FRA, 2014).

If a project would discharge dredged or fill material into waters of the United States, Section 404 of the Clean Water Act (CWA) requires a permit from the United States Army Corps of Engineers (USACE). If a CWA Section 404 individual permit is required, the preparation of a Section 404(b)(1) Alternatives Analysis is required. For CWA Section 404(b)(1) compliance, the USACE must take into consideration the applicant's needs in the context of the geographic area of the proposed action and the type of project being proposed. Both the USACE and U.S. Environmental Protection Agency (USEPA) have agreed to participate as cooperating agencies under NEPA, and they have concurred on the High-Speed Rail Project purpose and need. The USACE has determined that the overall project purpose (as stated above) allows for a reasonable range of practicable alternatives to be analyzed and is acceptable as the basis for the USACE 404(b)(1) AA.

The Authority has adopted the following objectives for the proposed High-Speed Rail Project, which are included in the 2005 Statewide Program EIR/ EIS:

- Provide intercity travel capacity to supplement critically overused interstate highways and commercial airports.
- Meet future intercity travel demand that will be unmet by present transportation systems and increase capacity for intercity mobility.
- Maximize intermodal transportation opportunities by locating stations in areas with good access to local mass transit or other modes of transportation.
- 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.
- Reduce potential impacts on communities and the environment by having the alignment follow existing transportation or utility corridors to the extent feasible.
- Develop a practical and economically viable transportation system that can be implemented in phases and generate revenues in excess of operations and maintenance costs.
- Provide intercity travel in a manner that minimizes urban sprawl, is sensitive to and protective of the region's natural resources, and reduces emissions and vehicle miles traveled for intercity trips.

- Preserve wildlife corridors and mitigate potential impacts to wildlife movement where feasible in order to limit the extent to which the system may present an additional barrier to wildlife's natural movement.

1.2.2 Consistency with Business Plan Objectives

1.2.2.1 Business Plan

The Authority publishes a business plan according to statute every two years that serves as the foundational document for implementing the state's high-speed rail system. The plan includes progress to date, updates information and forecasts and identifies key milestones and decisions. It includes a description of the proposed service, expected patronage, operating and maintenance costs, anticipated costs and funding, environmental and construction schedules for the Phase 1 segments and program risks.

1.2.2.2 Previous Business Plans

In 2012, the Authority adopted its 2012 Business Plan that laid out a new framework for implementing the California High-Speed Rail system in concert with other state, regional and local rail investments, as part of a broader statewide rail modernization program. In that same year, the Legislature approved – and Governor Brown signed into law – Senate Bill 1029 (Budget Act of 2012) approving almost \$8 billion in federal and state funds for the construction of the first high-speed rail investment in the Central Valley and 15 bookend and connectivity projects throughout the state. In 2014, the Authority adopted its 2014 Business Plan that built on and updated the 2012 Business Plan, implementing the requirements of Senate Bill 1029.

The Authority issued a Draft 2014 Business Plan on February 7, 2014, received and considered public comments, and published the 2014 Business Plan on April 30, 2014. The 2014 Business Plan:

- Updated forecasts and estimates informed by rigorous external scrutiny
- Introduced a risk-based breakeven analysis that continued to show financial viability
- Confirmed that the system will be an attractive private sector investment opportunity

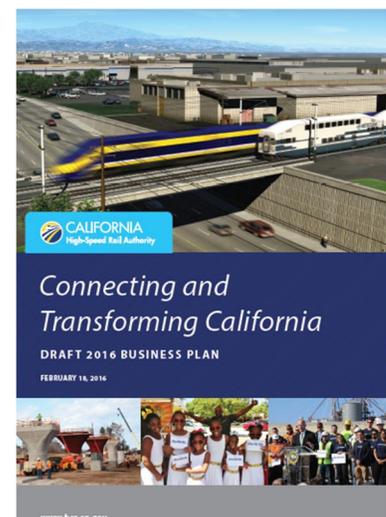


1.2.2.3 Draft 2016 Business Plan

On February 18, 2016, the Authority released its Draft 2016 Business Plan for a 60-day public comment period. At this time, the comment period is open and the Authority Board is anticipated to take up adoption of the Draft 2016 Business Plan at its April 21, 2016 meeting.

The Draft 2016 Business Plan has three fundamental objectives:

- First, initiate high-speed rail passenger service as soon as possible, which will demonstrate the benefits of the project and begin generating revenues to then attract private sector participation and help fund extending the system beyond an initial line.
- Second, make strategic, concurrent investments throughout the system that will be linked together over time. By making discrete investments that connect state, regional, and local rail systems, the project can provide immediate mobility, environmental, economic and



community benefits. Together these prepare a solid foundation for high-speed rail and provide for early implementation of projects that will be required for High-Speed Rail construction. The Authority will enter into partnering agreements with other transportation providers, aggregate federal, state, and local funding sources, and advance regional planning and coordination. This approach will yield the best and fastest results.

- Third, position the Authority to construct additional segments as funding becomes available. This requires completing the required environmental analyses for every mile of the program and securing environmental approvals as soon as possible. Additionally, environmental clearance positions concurrent investments in blended corridors for funding ahead of full segment implementation.

1.2.2.4 Difference between 2014 and Draft 2016 Business Plan

Following are the differences between the 2014 and Draft 2016 Business Plans:

- **Funding**—The funding authorized by the Governor and Legislature, by the federal government and the people of California is sufficient to deliver a high-speed rail line connecting the Silicon Valley to the Central Valley.
- **Schedule**—The Authority now projects starting passenger service on the Silicon Valley to the Central Valley line in 2025 instead of on a line between Merced and the San Fernando Valley in 2022.
- **Cost Estimates**—The capital cost estimates for building the Phase 1 system between San Francisco/Merced and Los Angeles/Anaheim are lower than prior estimates.

1.2.2.5 SAA consistency with the Business Plan

The alternatives considered in this SAA are consistent with the goals and objectives laid out in the Draft 2016 Business Plan and previously iterated in the 2014 Business Plan. Advancing the environmental clearance of the program allows the program to be construction-ready which will maximize flexibility to capture new funding opportunities. Additionally, it will provide greater certainty about route and station locations to help local communities and transport partners with their planning decisions.

The Burbank to Los Angeles Project Section alternatives will utilize a blended service approach to connect two key multi-modal transportation hubs, connecting the San Fernando Valley and Downtown Los Angeles. Benefits will be multiplied by investing in core capacity for passenger rail service in the urban core that improves safety and efficiency of existing passenger and freight rail service while paving the way for High-Speed Rail.

1.3 Collaborative Approach to Alternatives Evaluation

This SAA documents how each of the alternatives meets the purpose and need for the project. This SAA also describes how evaluation measures applied through a collaborative process helped the Authority determine recommendations for alternatives to be carried forward for environmental analysis and which did not meet the evaluation measures and will not be carried forward for further analysis.

The SAA process is intended to provide the Authority and the FRA with sufficient information and documentation on how evaluation measures and criteria have been applied to potential alternatives to optimize project objectives, minimize potential environmental impacts, and identify project information from the communities along the corridor. Figure 1-1 shows the collaborative approach to the alternatives evaluation. The three key areas of the collaborative approach are summarized below.



The collaborative approach balances project objectives, natural resources, and community concerns.

Figure 1-1 Collaborative Approach

1.3.1 Project Objectives

The project objectives that will lead to the selection of a preferred alternative are driven by safety, travel time, reliability, cost, environmental impacts, and operation of the High-Speed Rail system. At each stage of development, the Authority performs extensive technical evaluation on proposed alternatives to make sure that they meet the objectives of the future operation of high-speed rail service. Several of the key considerations that will ultimately drive the success of the project are also some of the most difficult to achieve, and they include:

- **Connecting major population areas**—Place stations in the major urban centers to bring the train to the greatest number of people and maximize ridership of the system.
- **Network integration with existing systems**—Place stations next to existing and planned transportation centers to provide seamless multimodal transfers and system-wide transportation improvements.
- **Cost effectiveness**—Accomplish these goals cost-effectively, and to the extent possible, multiply the benefits of each dollar invested across the wider multimodal network and the broader community.

1.3.2 Community

The Authority has developed and is implementing an intensive stakeholder engagement program, which supports the development of alternatives during the environmental process, and ultimately informs the selection of a preferred alternative. To date, more than 90 meetings, briefings, and conversations have been held to gather, confirm, and understand key community concerns so they can be incorporated into the balancing process defined in Section 1.3.

1.3.3 Environmental Resources

Environmental resource considerations are guided by federal laws, state laws, and local considerations, which protect natural resources and inform decision makers and the public about potential environmental effects of project alternatives. Feedback from community members and stakeholders also helps focus attention on environmental resources of concern. Environmental resources are largely protected by laws and regulations administered by government agencies, which are listed in Section 1.4.

Some of the major environmental concerns heard throughout the collaborative stakeholder engagement process.

- ▶ Noise and vibration
 - ▶ Traffic
 - ▶ Air quality
 - ▶ Aesthetics
 - ▶ Safety and security
 - ▶ Los Angeles River
-

1.3.4 Collaborative Approach Results

The collaborative approach has led to an evolution of the alternatives considered for this Project Section since 2010. This collaborative approach will continue to inform the process through selection of a preferred alternative and decisions by the Authority and FRA under CEQA/ NEPA.

Figure ES- 4 shows an overview of major changes resulting from the collaborative approach, including the changes in geographic boundaries used for analysis. The AA process for this Project Section can be briefly summarized as follows:

- In 2010, the PAA built upon the 2005 Programmatic EIR/EIS and recommended several alignments and seven station options for further environmental analysis.
- The 2011 SAA evaluated the Sylmar to LAUS subsections (while the Palmdale to Sylmar subsections were evaluated in a separate SAA in 2012.)
- The 2014 SAA reevaluated the alternatives from Palmdale to Los Angeles. In fall of 2014, through the environmental scoping process, the Palmdale to Los Angeles Project Section was split into the Palmdale to Burbank and Burbank to Los Angeles Project Sections.
- Additional analysis for the Burbank to Los Angeles Project Section began in early 2015, and the alternatives were refined.

This 2016 SAA continues the evaluation process and makes recommendations that are summarized in Section 4.

1.4 Agency and Community Outreach

Agency and community input is a critical component to the alternatives analysis process. Input is necessary to gather specific and detailed information on how the proposed alignments can perform within each community and resource area, and how alternatives can avoid or minimize potential impacts. To gather this input, the Authority undertook a rigorous and robust outreach approach at the federal, state, regional, local, and community levels.

Several federal and state agencies are engaged in the alternatives development process and work in conjunction with the Authority to identify and protect resources of concern. These agencies have consultation, oversight, and authority over many of the key environmental resources that are included in the Authority AA evaluation measures and that will be studied further during the environmental process. Some of these agencies include, but are not limited to:

- USACE
- USEPA
- Surface Transportation Board (STB)
- U.S. Fish and Wildlife Service (USFWS)
- California State Historic Preservation Office (SHPO)

- California Department of Transportation (Caltrans)
- California State Water Resources Control Board
- California Air Resources Board (CARB)
- California Department of Toxic Substances Control (DTSC)
- California Department of Fish and Wildlife (CDFW)

In addition to working with agencies, the Authority recognizes that the individuals most knowledgeable about any given community are the residents, business owners, and workforce within that community. The Authority's comprehensive community engagement program includes at-large public meetings and a stakeholder working group (SWG). Throughout this discussion with stakeholders, the Burbank to Los Angeles team gathered feedback regarding the technical aspects of the proposed alternatives and station options along with general questions as to the statewide and section-specific process. The comments received at these meetings were collected and considered during the development of this document. Additionally, these comments will be used during the environmental review and/or design refinement processes moving forward. This list is representative of the community concerns submitted as comments to the Authority. The Authority keeps a comprehensive database containing all comments received during the project development process, which is used regularly to balance community needs with project objectives and natural resource impacts through the alternatives development process.

Table 1-1 summarizes the community meetings that have taken place for this Project Section. The following sections summarize the Authority's agency and community engagement efforts. Appendix B contains a full list of outreach activities.

Stakeholder comments covered a wide range of topics, including, but not limited to:

- ▶ Bicycle/pedestrian
- ▶ Business resources
- ▶ Connectivity
- ▶ Consistency with other plans
- ▶ Construction issues
- ▶ Earthquakes
- ▶ Eminent domain
- ▶ Engineering design
- ▶ Environmental process
- ▶ Funding
- ▶ Future development plans
- ▶ Grade crossings
- ▶ Health
- ▶ Historic architectural resources
- ▶ Impacts to the Los Angeles River
- ▶ Land acquisition
- ▶ Legal/litigation
- ▶ Mitigation
- ▶ Noise/vibration
- ▶ Operational issues
- ▶ Property values
- ▶ Ridership
- ▶ Right-of-way
- ▶ Schools and houses of worship
- ▶ Station design
- ▶ Technology
- ▶ Traffic
- ▶ Visual resources

Table 1-1 Community Meetings since August 2014

Date	Meeting Format	Number of Meetings
2014		
August	Public Scoping	7
2015		
August	Public Information Meeting	2
November	SWG	1
	Open House	3

1.4.1 Summary of Public Scoping and Agency Meetings

The Authority released an NOP, and the FRA published an NOI for the Palmdale to Burbank and Burbank to Los Angeles Project Sections on July 24, 2014. The NOI listed STB, USACE, and BLM as cooperating federal agencies.

After the NOI/NOP, the Authority hosted seven public scoping meetings for the Palmdale to Burbank and Burbank to Los Angeles Project Sections' environmental documents between August 5, 2014, and August 19, 2014. Over 900 participants attended the scoping meetings, and 140 comment forms were submitted—107 for the Palmdale to Burbank Project Section and 33 for the Burbank to Los Angeles

Project Section. In addition, one federal agency scoping meeting was tailored for resource agencies and held on August 8, 2014. The attending federal agencies included FRA, STB, USACE, USEPA, USFWS, U.S. Bureau of Reclamation, and National Marine Fisheries Service.

Scoping comments and questions collected at the meetings, sent via mail, and submitted through the Authority’s website comment form are included in the 2014 Burbank to Los Angeles Scoping Report, which is available for public review on the Authority’s website at the following location under the “2014 Scoping Report” dropdown heading: http://www.hsr.ca.gov/Programs/Statewide_Rail_Modernization/Project_Sections/burbank_losangeles.html. Comments received during the Burbank to Los Angeles Project Section scoping process identified potential environmental impacts, mitigation measures, and alternatives. This information will inform the analysis that the Authority and FRA will present in the draft environmental document. Additional public scoping details for the Burbank to Los Angeles Project Section are provided in the scoping report described above.

Since the 2014 scoping meetings, the Authority has held detailed working sessions with local agency staff to discuss the nuances of track alignments and possible design modifications with the goal of avoiding or minimizing impacts. The project team has been coordinating with local jurisdictional staff on current and future projects in the area to deepen the understanding of key issues and community concerns.

Consultation meetings with the USACE and USEPA have also been ongoing, for the Section 404 process. Checkpoint A has been completed for the Burbank to Los Angeles Project Section, and concurrence is not required for a nation-wide permit.

1.4.2 Summary of Community Open House Meetings

To update the public on the project and collect additional feedback, the Authority held three open house meetings for the Burbank to Los Angeles Project Section in November 2015. The Authority used a variety of noticing methods to encourage public participation, and they included mailing of notices, flyer distribution, electronic distribution, display advertisements, media coverage, social media, and stakeholder coordination and briefings. All forms of noticing provided meeting details (dates, times, locations, and language services) as well as contact information for accessing additional Project Section details.

The Authority continues to use the feedback received during these meetings to develop the alternatives further. A summary of these meetings follows:

Meeting Title: 2015 SAA Update

Number of Meetings: 3

Total Attendees: Over 160

Meeting Locations

- ▶ November 10, 5:30-7:30PM: Los Angeles Union Station, 800 N. Alameda Street, Los Angeles, CA 90012
- ▶ November 16, 5:30-7:30PM: Glendale Adult Recreation Center, 201 E. Colorado Street, Glendale, CA 91205
- ▶ November 19, 5:30-7:30PM: Los Angeles River Center & Gardens, 570 W. Avenue 26, Los Angeles CA 90065

Meeting Format: Open House and Presentation

- ▶ Information provided through staffed topic specific stations and presentation
- ▶ One-on-one dialogue between the community members and technical staff
- ▶ Discussed latest project updates and answered stakeholder questions
- ▶ Language interpreters were made available at all meetings based on language needs identified through U.S. Census data
- ▶ One of the meetings was conducted in Spanish and English
- ▶ One of the meetings offered a live webcast

Meeting Recap

- ▶ Attendees requested information about station design and encouraged connectivity with regional transit providers to maximize access by transit.
- ▶ Concerns were raised on construction and operations noise and vibration impacts on residences, communities, and other sensitive receptors along the corridor.
- ▶ Commenters wanted to ensure effective grade and rail line separation. Concerns were raised over the impacts of construction on traffic and circulation, but the long-term traffic benefits were also acknowledged.
- ▶ Several comments expressed relief over the proposed alignments along the existing rail corridor, allowing the majority of tracks to remain with the right-of-way.
- ▶ Concerns were raised over the Los Angeles River, with suggestions for the Authority to work closely with the Los Angeles River revitalization community.
- ▶ Concerns were raised over rail crossing safety and passenger safety

1.4.3 Summary of Stakeholder Working Group Meetings

The Authority developed the SWG to engage communities on an ongoing basis to discuss issues that are of concern. The SWG is an informal, voluntary group of community stakeholders who represent a broad range of regional and local interests. The group is comprised of leaders from various community constituencies in proximity to the Project Section, including those involved in land use, transportation, environmental sustainability, and social issues in the region.

The Authority hosted a SWG meeting on November 3, 2015 to discuss the Project Section in a smaller setting with key stakeholders and representatives of the corridor communities. Twenty-eight community members attended. Authority staff gave an informative presentation, and participants directly addressed staff during a question-and-answer period. The following list reflects some of the key issues and concerns raised by SWG members:

- **Grade separations**—Support and concern related to impacts (construction, traffic/circulation, property, and community connectivity). Specific concerns were expressed for the grade separation improvements proposed for Doran Street (one of the few access points into Atwater Village) which is already an island divided by the Los Angeles River, local freeways, and the rail corridor.
- **Tunnel alignment**—Support for this alignment to reduce community impacts, but some voiced concerns over impacts to the transecting communities.
- **Noise and vibration**—Request for the Authority to discuss soundwalls with neighborhoods along the corridor as many communities may oppose soundwalls.
- **Air quality**—Concern over increased rail traffic through this corridor and the resulting air pollution emitted by diesel engines.
- **Los Angeles River**—Strong support for the Authority to work hand-in-hand with Los Angeles River advocates to ensure that the proposed alignments do not raise any issues with the Los Angeles River Master Plan.
- **Community benefits**—Support for additional improvements to local communities that extend beyond the rail right-of-way.

1.4.4 Summary of Regional Agency Activities

The Authority has continued to work closely with the Metro and Metrolink staff throughout the AA process, and often partners with Metro in various stakeholder discussions. Since the 2014 SAA, the Authority has continued to meet regularly with these agencies to coordinate on the High-Speed Rail Project and other regional transportation projects, such as Southern California Regional Interconnection Project (SCRIP), Metro Regional Connector, the LAUS Master Plan Update, and Metro's Doran Street and Broadway/ Brazil grade separations.

A key issue that has emerged through these meetings is Metro’s preference for locating the high-speed rail tracks along the western limits of the Metro-owned right-of-way. Its main concern with locating High-Speed Rail on the eastern side of the right-of-way is that it would cut off existing and potential rail freight customers for UPRR, which has rights to operate on the Metro-owned right-of-way.

1.4.5 Summary of Corridor Community Activities

The Authority has held recurring meetings with stakeholders, communities, and community organizations across the Project Section. These meetings varied from one-on-one discussions to group settings and presentations. All meetings provided information about the project and collected information about existing conditions and current and future area projects to further the understanding of key issues of concern in each location. Key themes, concerns, and related projects identified during these meetings are presented in Table 1-2.

Table 1-2 Key Community Themes, Concerns, and Project Coordination

Community Issues	
City of Burbank	
Themes	Unique history, intersection of aerospace, media center, and strong hometown character
Concerns	Station connectivity, traffic and circulation, noise/vibration, and business and job opportunities
Key Stakeholders	Airport stakeholders, adjacent residents, adjacent property owners and businesses, local chambers of commerce, local service clubs, local homeowner associations, schools, local service clubs, religious organizations
Project Coordination	Effective coordination with local projects, including LinkBurbank, the relocated Bob Hope Airport Terminal, and the Hollywood Way Metrolink Station, EcoDistrict
City of Glendale	
Themes	Strong city identity, established business community, historic Metrolink Station
Concerns	Impacts from grade separations, preserving adjacent properties along right-of-way especially businesses, construction impacts, Metrolink station, noise/vibration, and traffic and circulation
Key Stakeholders	Adjacent residents, adjacent property owners and businesses, local chambers of commerce, local service clubs, local homeowner associations, schools, local service clubs, religious organizations
Project Coordination	Planning for grade separations; accommodation of the Glendale Metrolink Station
City of Los Angeles (Community of South of SR-2)	
Themes	Focus on multi-modal connectivity, revitalization of the Los Angeles River
Concerns	Alignment alternatives and entrance into LAUS, traffic and circulation, noise/vibration (particularly related to schools and other sensitive receptors) and interface with the Los Angeles River
Key Stakeholders	Neighborhood Councils, Los Angeles River groups, Chinatown stakeholders, local businesses, equestrian community, downtown stakeholders, local chambers, local service clubs, local homeowner associations, schools, religious organizations
Project Coordination	Coordination with other major projects, including the Los Angeles River and LAUS Master Plan

The information in this table is not exhaustive in nature, but rather provides a representative snapshot of each location.

1.4.6 Summary of Environmental Justice Outreach Efforts

A priority for the Authority is to conduct a robust environmental justice outreach effort. The Authority's policy is to duly emphasize the fair and meaningful involvement of all stakeholders regardless of race, color, national origin, or income with respect to the High-Speed Rail Project planning, development, operations, and maintenance.

For the SWG, the Authority sent invitations to various organizations, with a focused effort to recruit attendees that represented communities of minority or low-income populations. For the recent open houses, each meeting provided language interpreters based on the language needs, which were identified using 2010 US Census data and a threshold of 4% limited-English proficiency per census tract. The languages at these meetings included Arabic, Armenian, Chinese, Japanese, Korean, Russian, Spanish, Tagalog, and Vietnamese. The Authority also ensure facilities were accessible for persons with disabilities. Additionally, the Authority placed ads publicizing the open houses in 22 publications, many of which serve a readership representative of environmental justice communities. These included Korean Times, Rafu Shimpo, Eastsider online, Azbarez Armenian News, Beirut Times, World Journal Chinese Daily News, Asian Journal, La Opinion, and Vien Dong.

To support the release of this SAA, the Authority is continuing to prioritize its efforts to reach environmental justice communities and adjacent neighborhoods along the corridor. As it is critical to meet stakeholders in their local gathering places, the Authority will conduct presentations at local community groups, such as neighborhood councils, and set up information tables at community festivals and popular activity centers (shopping centers, parks, etc.), with the goal of increasing the convenience for environmental justice stakeholders and their likelihood of engaging with the project team. The Authority will also continue to be responsive to the language needs of each community, to ensure the information is meaningfully shared with a diverse range of stakeholders along the corridor.

1.4.7 Record of Outreach Briefings

The Authority has continued to brief city staff, regional agency staff, and elected officials on the project's status. Appendix B includes the detailed list of outreach briefings for the Project Section since May 2014.

2 Methodology

2.1 Alternatives Analysis Methods

Section 2 at a Glance—In this section you will find the following information:

- ▶ Alternatives Analysis Methods
 - ▶ Alternatives Analysis Criteria
-

This SAA Report follows the defined AA methods that the Authority and FRA developed in 2011 (Technical Memorandum, Alternatives Analysis Methods for Project EIR/EIS, Version 3). The 2011 guidance uses both qualitative and quantitative measures that reflect a mixture of applicable policy, environmental, and technical considerations. Specifically, it directs that the AA process shall,

Identify reasonable and feasible project alternatives that would meet the Purpose and Need for the project and are consistent with the Basis of Design Report, identify those alternatives where environmental issues (severe conflicts or constraints) or engineering challenges may justify dropping them from further analysis, and provide comparative information and data that highlight and compare similarities and differences between alternatives by using project design criteria. (Authority and FRA, 2011)

Through the AA process, the Authority and FRA seek to identify reasonable alternatives by defining a range of station and alignment configurations that would fulfill the project's purpose and need; meet the agencies' goals and objectives; avoid and minimize negative impacts to key resource areas, and in doing so, identify preliminary areas of potential environmental impacts; and allow for a comparative evaluation of the alternatives. Alternatives that are not potentially feasible or that do not meet basic purpose and need can be eliminated from further analysis with documentation of the reason for their withdrawal.

The Authority seeks input on conceptual alternatives with community and agency stakeholders, and based on feedback, the project team makes modifications to avoid or minimize impacts to the communities and environment, while balancing the design objectives. The project team uses multiple techniques to gather information and develop and compare alternatives, which include the following:

- **Field inspections of corridors**—The potential alignment, right-of-way, and station locations are the subject of field inspection by qualified planners, engineers, and environmental scientists with experience in tunneling, railroad operations, and construction of linear transportation projects to identify conditions and factors not visible in aerial photos or on maps. Over the course of the study, field inspections become progressively more detailed as the alternatives are refined by the planning, environmental, and engineering work.
- **Environmental analysis utilizing geographic information system (GIS) technology**—The bulk of the assessment is performed using GIS data, which enables depictions of the project's interactions with a variety of measurable geographic features, both natural and built. GIS data are used to assess impacts on farmland, water resources, floodplains, wetlands, threatened and endangered species, cultural resources, current urban development, infrastructure, oil and gas exploration, and production and other resources.
- **Engineering assessment**—Engineering assessments are provided for a number of measures that can be readily quantified at this stage of project development. The engineering assessments can provide information on project length, travel time, and configuration of key features of the alignment such as the presence of existing infrastructure and geology.
- **Qualitative assessment**—A number of the qualitative measures used to describe the alternative alignments are developed by professionals with experience in the construction and operation of high-speed rail and other transportation systems. These measures include constructability, accessibility, operability, maintainability, right-of-way, public infrastructure impacts, railway infrastructure impacts, and environmental impacts.

- **Conceptual footprint analysis**—Quantitative and qualitative evaluation of the alternatives is based on conceptual project footprints for each of the alternatives. These conceptual project footprints are based on the track area, and exclude potential station areas, potential traction power substation locations, potential radio tower locations, right-of-way requirements for new/modified grade separations, right-of-way requirements for affected third parties, potential temporary construction easement locations, and other ancillary facilities for each of the alternatives.
- **Operational constraints analysis**—The alternatives have been modeled to assess their operational feasibility. Some of the operational constraints include track configuration, existing and train operations, and non-revenue train moves.
- **Community/stakeholder outreach**—The project team conducts outreach meetings with stakeholders and the general public to discuss and receive feedback on the project alternatives. Input from the outreach process provides insight regarding local issues and concerns, and can be used to supplement the information provided by the other information-gathering techniques cited above.
- **Agency coordination**—The project team meets periodically with local, regional, and federal agency staff to identify resources of concern, coordinate on consultation and permitting processes, and occasionally partner on stakeholder engagement.

The Authority has developed assessment and analysis measures for each of the techniques outlined above. The evaluation measures, as applied, are progressively more technical and quantitative as alternatives evolve.

The environmental analysis in this SAA Report uses a planning footprint approach. In contrast to a centerline approach, which is often used to screen a large number of alternatives, the planning footprint approach is appropriate for this SAA analysis, as the alternatives are few and analytically similar. As with all such review under applicable federal and state laws, a more detailed analysis based on the engineered project footprint will occur in future environmental documents.

2.2 Alternatives Analysis Criteria

In addition to considering the objectives of the project purpose and need and the 2014 and 2016 Business Plans, the Authority evaluates project alternatives using system performance criteria that address design differences and qualities. These design objectives are shown indicated in Table 2-1, while Table 2-2 lists the performance criteria related to environmental and community impacts. The project team provides estimates where it is possible to quantify impacts and qualitative evaluation where it is not possible to quantify impacts.

Table 2-1 Design Objectives

Objective	Criteria
Maximize ridership/revenue potential	Travel time/route length
Maximize connectivity and accessibility	Intermodal connections
Minimize operating and capital costs	Operations and maintenance issues and costs

Source: Technical Memorandum, Alternatives Analysis Methods for Project EIR/EIS, Version 3, 2011

Table 2-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method	Source
A. Land use supports transit use and is consistent with existing, adopted local, regional, state, and federal plans, and is supported by existing or future growth areas as measured by:		
Development potential for transit-oriented development (TOD) within walking distance of station	Identify existing and proposed land uses within one-half mile of station locations. Identify if there are TOD districts, TOD overlay zones, mixed-use designations, or if local jurisdictions have identified station areas for redevelopment or economic development	Regional and local planning documents and land use analysis and input from local planning agencies
Consistency with other planning efforts and adopted plans	Qualitative—General analysis of applicable planning and policy documents	Land use analysis and input from planning agencies
B. Construction of the alternative is feasible in terms of engineering challenges and right-of-way constraints as measured by:		
Constructability, access for construction; within existing transportation right-of-way	Extent of feasible access to alignment for construction	Conceptual design plans and maps
Disruption to existing railroads	Right-of-way constraints and impacts on existing railroads	Conceptual design plans and maps
Disruption to and relocation of utilities	Number of utilities crossed	Conceptual design plans and maps
C. Minimizes disruption to neighborhoods and communities (including Environmental Justice communities)—Extent to which an alternative minimizes right-of-way acquisitions, minimizes dividing an established community, and minimizes conflicts with community resources		
Displacements	If possible, estimate number of properties by land use type that would be displaced, or acres of land within the right-of-way/station footprint, by type of land use: single-family, multifamily, retail/commercial, industrial, etc.	Identified by comparing the alignment conceptual design drawings with aerial photographs, zoning maps, GIS layers, and regional and local General Plan maps
Property with access affected	Estimate number of potential locations along the alignments or at station locations where, and the extent to which, access would be affected	Conceptual design plans and aerial photographs
Proximity to schools	Consistent with, and exceeding Public Resources Code Section 21151.4, identify the location of schools within 1,500 feet on each side of the construction footprint	Conceptual design plans, aerial photographs, GIS layers, and regional and local General Plan maps
Proximity to landfills	Consistent with Title 27 of the California Code of Regulations, identify the location of landfills within 0.25 mile of each side of the construction footprint	Conceptual design plans and aerial photographs
Proximity to Section 4(f) resources	Identify protected parks, wildlife refuges, or historical sites to determine if a permanent, temporary, or constructive use would likely occur	Conceptual design plans, historic/archival and current aerial imagery, GIS layers, regional and local General Plan maps, and federal, state, and local cultural resources registries

Table 2-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method	Source
Local traffic effects around stations	Identify potential locations where increases in traffic congestion or level-of-service (LOS) are expected to occur	Existing traffic LOS from local jurisdictions
Local traffic effects at grade separations	Identify potential locations for at-grade separations where increase in traffic congestion or LOS are expected to occur	Existing traffic LOS from local jurisdictions
D. Minimizes impacts to environmental resources—Extent to which an alternative minimizes impacts on natural resources are measured by:		
Waterways and wetlands and natural preserves or biologically sensitive habitat areas affected	Identify new rail and roadway bridge crossings, tunnels, portals required; rough estimate of acres of wetlands, width of waterways crossed; acres and species of threatened and endangered habitat affected; acres of natural areas/critical habitat affected	Conceptual design plans and GIS layers; National Wetlands Inventory and National Hydrography Dataset
Cultural resources	Identify locations of National Register of Historic Places or California Historical Resources Information System listed properties. For archaeological resources, identify areas of high or moderate sensitivity based on previous studies conducted in the study area	Conceptual design plans and GIS layers; historic/archival and current aerial imagery, regional and local General Plan maps, and federal, state, and local cultural resources registries and cultural resource records search and surveys
Parklands	Estimate number and acres of parks that could be directly and/or indirectly affected. This would also include major trails that would be crossed	Conceptual design plans, local General Plans, aerial photographs, and GIS layers
Agricultural lands	Estimate acres of prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance within preliminary limits of disturbance	Conceptual design plans and GIS layers
E. Enhances environmental quality—Extent to which an alternative minimizes impacts on the natural environment as measured by:		
Noise and vibration effects on sensitive receivers	Identify types of land use activities that would be affected by high-speed rail pass-by noise and ground vibration	Results of screening-level assessment; inventory of potential receivers from site survey and aerial maps
Change in visual/scenic resources	Identify number of local and scenic corridors crossed and scenic/visual resources that would be affected by high-speed rail elevated structures in scenic areas and shadows on sensitive resources (parks). Identify locations where residential development is in close proximity to elevated high-speed rail structures	Results of general assessment; survey of alignment corridors, and planning documents from local and regional agencies

Table 2-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method	Source
Maximize avoidance of areas with geological and soils constraints	Identify number of crossings of known seismic faults, estimate acres of encroachment into areas with highly erodible soils, acres of encroachment into areas with high landslide susceptibility; evaluate groundwater impacts	United States Geological Survey maps and available GIS data; California Department of Conservation's California Geologic Survey, Regional Geologic Hazards and Mapping Program; check Map Index to identify maps appropriate for High-Speed Rail sections
Maximize avoidance of areas with potential hazardous materials	Identify hazardous materials/waste areas to avoid constraints	Data from previous records search conducted for other projects within the study area

Source: Technical Memorandum, Alternatives Analysis Methods for Project EIR/EIS, Version 3, 2011

Since the 2011 guidance, new criteria have been added for this analysis (proximity to schools, landfills, and Section 4(f) resources).

Section 4(f) of the U.S. Department of Transportation Act (49 U.S.C. Section 303) is a federal law that limits the use of certain parks, recreation areas, refuges and historic properties for transportation projects. Section 4(f) applies to transportation projects that require funding or other approvals by any US Department of Transportation agency, including FRA.

Section 4(f) states that land from a publicly owned park, recreation area, wildlife or waterfowl refuge, or a significant historic site can be used for a transportation project only if (1) there is no feasible and prudent alternatives to the use of these resources and all possible planning has been taken to minimize harm to the resource, or (2) the use would result in a *de minimis* impact on the Section 4(f) property. A finding of *de minimis* impact requires concurrence of the official with jurisdiction over the Section 4(f) property.

For purposes of this AA, FRA and the Authority have sought to identify potential Section 4(f) uses for each of the alternatives considered, based on the information available at this stage of the study. This analysis includes the use of GIS that incorporates existing data regarding locations of known parks, recreation areas, refuges, and historic sites. Fieldwork to identify and evaluate potential Section 4(f) resources has not yet been completed. In addition, engineering at this stage is not advanced sufficiently to determine the extent of potential impacts on these resources from a Section 4(f) perspective.

The potential 4(f) impacts have been pointed out in this document to advance the project design and work to avoid and/or minimize impacts to these resources going forward. This also allows the Authority to begin planning with resource owners to minimize harm to these resources, if needed.

After FRA and the Authority select a range of alternatives for detailed study, a full and complete Section 4(f) analysis will be completed for this project. As part of that analysis, determinations may change regarding the Section 4(f) status of properties considered in this report and additional Section 4(f) properties may be identified. In addition, more detailed information will be developed regarding the alternatives' effects on Section 4(f) resources. Where necessary, alternatives to avoid, minimize, and mitigate impacts on Section 4(f) resources will be considered. This analysis will be included in the draft environmental document.

3 Description of Alternatives

This SAA Report focuses on the range of alternatives for the Burbank to Los Angeles Project Section. It also provides a narrative description of previously considered alternatives to provide context, covering the work that has been completed since the 2014 scoping meetings and descriptions of the currently proposed alternatives.

Section 3 at a Glance—In this section you will find the following information:

- ▶ Previously Identified Alternatives
 - ▶ 2016 Analysis and Refinements
 - ▶ Description of 2016 SAA Alternatives
-

3.1 Previously Identified Alternatives

The 2010 PAA began the NEPA/CEQA alternatives screening process for the Palmdale to Los Angeles Project Section, and it analyzed potential alignment alternatives, station locations, and design options from the City of Palmdale to Los Angeles Union Station. The 2011 SAA reevaluated the Palmdale to Los Angeles Project Section, focusing on the subsections from Sylmar to LAUS. Finally, the 2014 SAA reevaluated all alignment alternatives, and it recommended splitting the Palmdale to Los Angeles Project Section into two separate sections: Palmdale to Burbank and Burbank to Los Angeles. The reasons for splitting the project section included the IOS concept and allowing for more effective planning and public outreach in a highly populated area. The 2014 SAA also identified the Burbank Airport Station as the logical station location in the San Fernando Valley.

The 2014 Palmdale to Los Angeles SAA described the range of alternatives from Burbank Airport Station to LAUS. Table 3-1 provides an all-inclusive list of the alternatives previously identified through the AA process, along with the recommendations of this SAA (labeled as “2016 SAA”). Since the geographic boundaries have changed over the years, the table summarizes the previous AA Reports together and the 2016 SAA separately. Figure 3-1 shows the alternatives that were recommended in the 2014 SAA to be carried forward for analysis in future environmental documents. The 2014 alternatives are the starting point for the 2016 SAA analysis, and are described in more detail in the following sections.

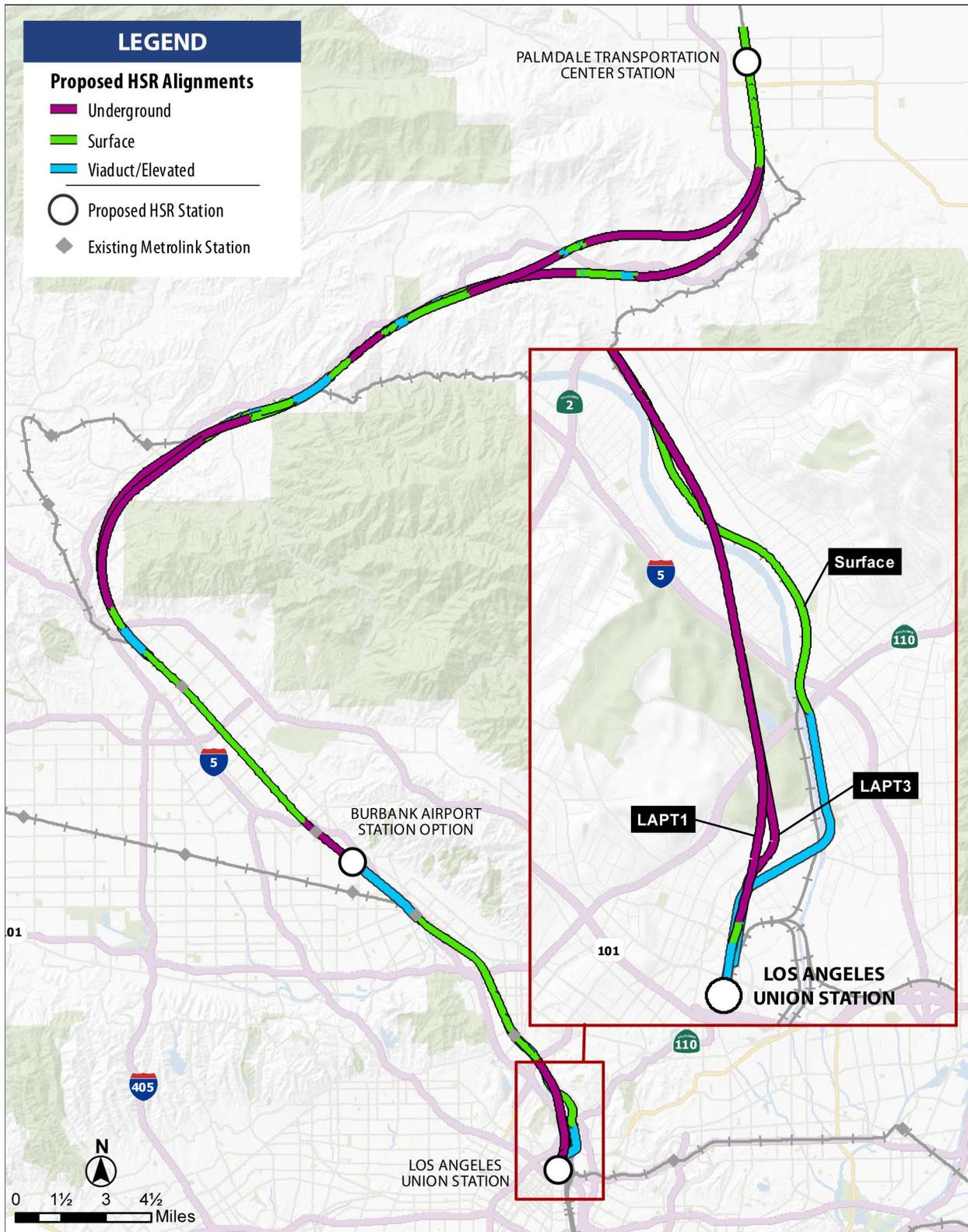
Table 3-1 Burbank to Los Angeles Alignment Alternatives and Station Options

Subsections and Stations	Alternatives and Station Options	Carried Forward	Withdrawn
2010 PAA, 2011 SAA, and 2014 SAA for Palmdale to Los Angeles Project Section			
LAUS to Metrolink CMF	LAPT1 (tunnel)	All AAs	
	LAPT2 (tunnel)		2011 SAA
	LAPT3 (tunnel)	All AAs	
	LAP1A (surface)		2010 PAA
	LAP1B (surface)		2010 PAA
	LAP1C (surface)	All AAs (renamed Surface in 2014 SAA)	
Metrolink CMF to SR-2	Metrolink at-grade	2011 and 2014 SAAs (withdrawn in 2010 PAA, but reintroduced in 2011)	
	Metrolink in trench		2011 SAA
	San Fernando Road in trench		2011 SAA
SR-2 to Sylmar	HSR on east side of right-of-way	All AAs	
	HSR on west side of right-of-way	2014 SAA (withdrawn in 2010 PAA, but reintroduced in 2014)	
LAUS Platform	Elevated	All AAs	
	At-Grade	All AAs	
2016 SAA for Burbank to Los Angeles Project Section			
Burbank Airport Station Platform Options*	At-Grade	X	
	Tunnel	X	
Burbank Airport Station to Alameda Avenue*	At-grade alignment	X	
	Tunnel alignment	X	
Alameda Avenue to SR-2	HSR on east side of right-of-way		X
	HSR on west side of right-of-way	X	
SR-2 to LAUS	LAPT1		X
	LAPT3		X
	Surface (refined to include two at-grade options)	X	
LAUS Platform Options	Elevated		X
	At-Grade	X	

LAP = Los Angeles-Palmdale; SR = State Route

*Detailed analysis provided in the 2016 Palmdale to Burbank SAA

Sources: Palmdale to Los Angeles Preliminary Alternative Analysis, 2010; Palmdale to Los Angeles Supplemental Alternative Analyses, 2011 and 2014, Palmdale to Burbank Supplemental Alternative Analysis, 2016.



These alternatives were recommended for further evaluation in 2014, and were used as a starting point for the 2016 SAA work.

March 4, 2016

Figure 3-1 Alignment Alternatives and Station Locations Carried Forward in the 2014 SAA

3.1.1 Burbank Airport Station to SR-2

The 2010 Palmdale to Los Angeles PAA first proposed at-grade high-speed rail tracks along the eastern limits of the Metro-owned right-of-way from Sylmar to SR-2, with the Metrolink tracks on the west side. This was carried forward in the 2011 SAA. The 2014 SAA reintroduced the option of high-speed rail tracks along the west side of the right-of-way (an option that had been previously withdrawn in the 2010 PAA). The east-side and west-side alternatives in this subsection were both carried forward, and are described below:

- **HSR on east side of right-of-way**—The dedicated high-speed rail tracks would be placed within the eastern limits of the existing right-of-way, with Metrolink tracks along the western limits, as recommended in the 2011 SAA. The 2015 Palmdale to Burbank SAA recommended withdrawing this option due to continued coordination with Metro and Metrolink that confirmed that their double track project design works best on the east side of the right-of-way, with the high-speed rail alignment on the west side of the existing right-of-way. Furthermore, UPRR has submitted written comments stating their preference for a high-speed rail alignment on the west side of the existing right-of-way. This configuration would avoid the need to sever existing UPRR connections to industrial facilities on the east side of the right-of-way.
- **HSR on west side of right-of-way**—The 2014 SAA reintroduced the option of placing the dedicated high-speed rail tracks within the western limits of the existing right-of-way, with Metrolink tracks along the eastern limits.

The 2015 Palmdale to Burbank SAA proposed new alignment alternatives that required consideration of an underground Burbank Airport Station as well as alignment alternatives in tunnel from Burbank Airport Station south to the Burbank Junction near the intersection of Victory Boulevard and Burbank Boulevard. That SAA moved forward eight alternatives, four which would utilize the at-grade station alternative and at-grade tracks south of Burbank Airport Station and four that would utilize the underground Burbank Airport Station and an underground alignment south of Burbank Airport Station to Burbank Junction before merging with the at-grade tracks. For further details, refer to the 2016 Palmdale to Burbank SAA.

3.1.2 SR-2 to LAUS

For this subsection, the 2010 PAA proposed that the alignment could either be at-grade or in a trench along the eastern side of the right-of-way. From the Metrolink CMF to LAUS, the alignment would rise up onto a viaduct on the east bank of the Los Angeles River, and approach LAUS at either an elevated or an at-grade platform. The subsequent 2011 P-LA SAA carried this alternative forward, but recommended the SR-2 to Metrolink CMF segment to be placed at-grade. The 2014 SAA carried forward the three options recommended in the 2011 SAA, with some refinements to one of the tunnel alternatives. The alternatives are shown in Figure 3-1, and include:

- **Surface Alternative** (known as LAP1C in previous AAs)—Starting at SR-2 and traveling south, the dedicated high-speed rail tracks were at-grade on the east side of the right-of-way. South of I-5, the tracks rose up onto a viaduct structure on the east bank of the Los Angeles River. The alternative crossed the River between Main Street and Spring Street. The viaduct structure continued along Main Street, and entered LAUS at either an elevated or an at-grade station platform.
- **LAPT1**—Starting at SR-2 and traveling south along the eastern side of the existing right-of-way, the LAPT1 Alternative was a bored tunnel, passing underneath Elysian Park, homes along Solano Avenue, and Los Angeles State Historic Park. The bored tunnel transitioned to cut-and-cover beneath Spring Street, and emerged above grade immediately north of LAUS near Main Street. LAPT1 was refined in the 2014 SAA to allow for either an elevated or at-grade station platform.
- **LAPT3**—This tunnel alternative shared the same alignment as LAPT1, from SR-2 to around Casanova Street. From Casanova Street, the LAPT3 Alternative curved east, and emerged to above grade at Spring Street, farther north than LAPT1. This alignment alternative allowed for either an at-grade or aerial station platform option.

3.2 2016 Analysis and Refinements

Since the 2014 P-LA SAA, the Authority has continued to refine the alignment alternatives by responding to community feedback and by performing additional engineering and environmental review in a continued effort to find ways to avoid or minimize the anticipated community and natural resource impacts.

For purposes of the refinement work, the previously considered subsections were consolidated into the following two subsections: Burbank Airport Station to the vicinity of SR-2, and SR-2 to LAUS. This SAA Report includes solely by reference the two alternatives between Burbank Airport Station and Alameda Avenue and the two station platform options at Burbank Airport Station. Please refer to the 2016 Palmdale to Burbank Supplemental Alternatives Analysis for more details.

The following sections describe the design refinements. One of the main goals was to keep the high-speed rail alignments within the existing railroad right-of-way to the maximum extent possible to minimize adjacent right-of-way and environmental impacts. Additionally, the design refinements took into account the physical and operational constraints around Metrolink CMF.

3.2.1 Burbank Airport Station to Alameda Avenue

The 2016 Palmdale to Burbank SAA provides details on the refinements to the alignment alternatives that are associated with both station options and the track grade options (at-grade or tunnel) for the portion of the Burbank to Los Angeles Section from Burbank Airport Station and Alameda Avenue. The 2016 Palmdale to Burbank SAA refined the eight alignment alternatives from the 2015 Palmdale to Burbank SAA as follows:

- Refined from four to two alignment alternatives that would be compatible with an at-grade station and an at-grade track alignment from Burbank Airport Station to Alameda Avenue
- Refined from four to one alignment alternative that would be compatible with an underground station and an underground track alignment from Burbank Airport Station to Alameda Avenue
- Recommended two station options at Burbank Airport Station: At-Grade and Underground

3.2.2 Alameda Avenue to SR-2 — Refine At-Grade Alignment

The analysis completed in 2015 drew two primary conclusions. First was to withdraw the option of placing the high-speed rail tracks on the east side of the right-of-way, while recommending the option of high-speed rail tracks on the west side of the right-of-way. This refinement eliminates the need for complicated crossovers further south along the route, the construction of which would have had potential right-of-way and environmental impacts. It also maintains consistency with the project section to the north, as the 2015 Palmdale to Burbank SAA also recommended west-side high-speed rail tracks. Secondly, design refinements allowed for a smaller trackwork footprint, which reduced potential right-of-way impacts and addressed community concerns.

3.2.3 SR-2 to LAUS — Refine At-Grade Alignment

The 2014 Surface Alternative was refined to stay at-grade primarily within the existing right-of-way approaching LAUS from the north. Previously, a major stakeholder concern was impacts to adjacent land and to the Los Angeles River, as the proposed viaduct structure traveled down Main Street to enter LAUS. The elevated structure had been designed to provide for dedicated high-speed rail infrastructure, but it would have increased the potential for noise impacts, visual impacts, and residential and commercial displacements. The 2016 refinement work took into account the stakeholders' concerns, and the refined at-grade alignment would allow the track footprint to be reduced, minimizing the potential residential and commercial displacements in Downtown Los Angeles.

Additionally, in this subsection, previous AAs recommended two dedicated high-speed rail tracks on the east side of the Metrolink tracks. In order to avoid and minimize environmental impacts, the recent

refinement work incorporated the Authority principle of a blended system, described in Section 1.2.2. This resulted in two design options for this subsection, one shared and one dedicated, both of which would continue south from the Alameda Avenue to SR-2 subsection, with high-speed rail tracks within the western limits of the existing right-of-way and Metrolink tracks along the east side.

Both design options are constrained, operationally and physically, by the Metrolink CMF. The CMF is the major daily servicing location and maintenance facility for the Metrolink system in the region, and between 50 and 60 non-revenue trains operate between LAUS and the CMF each weekday. The southern yard entrance, existing track configuration, surrounding road network, and the Los Angeles River all create physical constraints in this area, which have been taken into account in the design refinements. The design options in this subsection are shown in Figure 3-2 along with the previously considered alternatives.

3.2.4 SR-2 to LAUS — Withdraw Tunnel Alignments

The project team took into account several factors during the refinement process, including the key goals and vision of both the 2014 and Draft 2016 Business Plans for Phase 1 of the High-Speed Rail System. First, the high costs of constructing a dedicated tunnel alignment conflicted with the Authority's goal of using existing infrastructure to maximize benefits while minimizing cost. Tunnel construction costs generally range from \$200 to \$260 million per mile¹, and preliminary capital cost estimates for the tunnel in this subsection were about four times higher than the cost of constructing an at-grade alternative.

Secondly, the project team analyzed the portal locations of the two 2014 SAA tunnel alternatives, with a goal of avoiding or minimizing the portals' environmental impacts. LAPT1 and LAPT3 shared a northern tunnel portal, which would have had potential impacts on several sensitive land uses, including park land (Rio de Los Angeles State Park) and two schools (Los Feliz Charter School for the Arts and Sotomayor Learning Academies). The southern portals of both 2014 tunnel alternatives would have been adjacent to the Los Angeles State Historic Park. The most recent refinement work examined alternate locations for the northern tunnel portal, but the project team found that the area near SR-2 is extremely constrained. All other northern portal locations could also have affected at least one sensitive land use or environmental resource. Similarly, on the southern end of the tunnel alternatives, there could have been considerable property access impacts during construction, even with a refined design.

In addition to the tunnel portal right-of-way impacts, there would have been considerable right-of-way impacts once the tunnel surfaced to above-grade; the tunnel alignments approaching LAUS would have potentially displaced a large number of commercial properties just north of the station, as they were outside of the existing railroad right-of-way.

Finally, many of the stakeholders' concerns in the past stemmed from concerns with the previously proposed Surface Alternative, which had the potential for right-of-way, visual, noise, and other impacts along the Los Angeles River and on surrounding areas. The tunnel alternatives had been designed to avoid the impacts associated with the Surface Alternative by bypassing many sensitive land uses in this area. However, as the refined at-grade alternative addresses many of the stakeholder concerns, the need for a tunnel as an avoidance alternative has diminished.

For these reasons, the tunnel alignments have been withdrawn.

¹ Rostami, J., Sepehrmanesh, M., Gharahbaghm E.A., Mojtabai, N. (2012). Planning level tunnel cost estimation based on statistical analysis of historical data. *Tunnelling and Underground Space Technology*, 33, 22-33.



LAPT1 and LAPT3 were withdrawn. Surface Alternative was refined to stay at-grade.

April 6, 2016

The Shared Design option merges high-speed rail operations with Metrolink onto a shared track along the west side of right-of-way. The Dedicated Option has dedicated high-speed rail tracks along the west side of the right-of-way and shifts Metrolink trains to run on the existing conventional rail tracks along the east side of the right-of-way.

* High-speed rail tracks for both options located within the existing rail corridor.

Figure 3-2 2016 Design Refinements in the SR-2 to LAUS Subsection

3.2.5 Los Angeles Union Station — Withdraw Elevated Platform Option

The 2010 PAA for the Palmdale to Los Angeles Project Section presented both elevated and at-grade platform options at LAUS, and both options were carried forward in subsequent SAAs. However, since the 2014 scoping meetings, the Authority Board and the Metro Board have taken action to advance an at-grade station platform within LAUS, making the elevated station platform option infeasible. In October 2015, the Metro Board moved to implement the LAUS Master Plan, which solidified the at-grade station platform plans. Additionally, the Metro Board and the Authority Board made additional actions in October 2015 and February 2016, respectively, to integrate the High-Speed Rail Project with the LAUS Master Plan and SCRIP.

For these reasons, the aerial LAUS configuration has been withdrawn from consideration.

3.3 Description of 2016 SAA Alternative

Previous AA reports analyzed alternatives based on subsections, with SR-2 being the key limit. This SAA report consolidates previous geographic boundaries into the following three subsections: Burbank Airport to Alameda Avenue, Alameda Avenue to SR-2, and SR-2 to LAUS. The alignment options for the portion of the Burbank to Los Angeles Section from Burbank Airport Station south to Alameda Avenue are dependent on the alignment alternatives for the Palmdale to Burbank Section presented in the 2016 Palmdale to Burbank SAA. Consequently, the segment between the proposed Burbank Airport Station and Alameda Avenue is only described briefly in the following section, and is addressed in detail in the 2016 Palmdale to Burbank SAA.

Based on the 2016 refinements, this SAA proposes one at-grade alternative with two at-grade design options south of SR-2. The alternative and two design options evaluated in this section have been developed and refined based on public comments and feedback, as well as engineering feasibility considerations. Figure 3-3 shows the proposed alternative for the Project Section, with the two design options south of SR-2.

3.3.1 Burbank Airport Station to Alameda Avenue

The 2014 NOI/NOP identified the possibility of additional alignments between the City of Palmdale and the City of Burbank. Through the scoping process and further design refinements, the Authority developed several new recommendations. The 2016 Palmdale to Burbank SAA recommends the following Burbank Airport station options and alignments to the south of the station:

- One at-grade station platform option (compatible with two of the three proposed Palmdale to Burbank alignment alternatives)
- One underground station platform option (compatible with one of the three proposed Palmdale to Burbank alignment alternatives)
- One at-grade alignment from Burbank Airport Station south to Alameda Avenue (compatible with two of the three proposed Palmdale to Burbank alignment alternatives)
- One underground alignment from Burbank Airport Station south to Alameda Avenue (compatible with one of the three proposed Palmdale to Burbank alignment alternatives)

The proposed at-grade station option would be located along the existing railroad right-of-way just west of Hollywood Way. The proposed at-grade alignment would travel south from this station option along the railroad right-of-way to Alameda Avenue, where it would join with the proposed at-grade alignment within this SAA. The proposed underground station option would be located south of San Fernando Road and partially under Hollywood Way. The alignment south of the station would travel underground and emerge to at-grade at Pacific Avenue and Reese Place, and then join with the proposed at-grade alignment at Burbank Boulevard to travel along the existing railroad right-of-way.



At-grade alternative, with two design options from SR-2 to LAUS

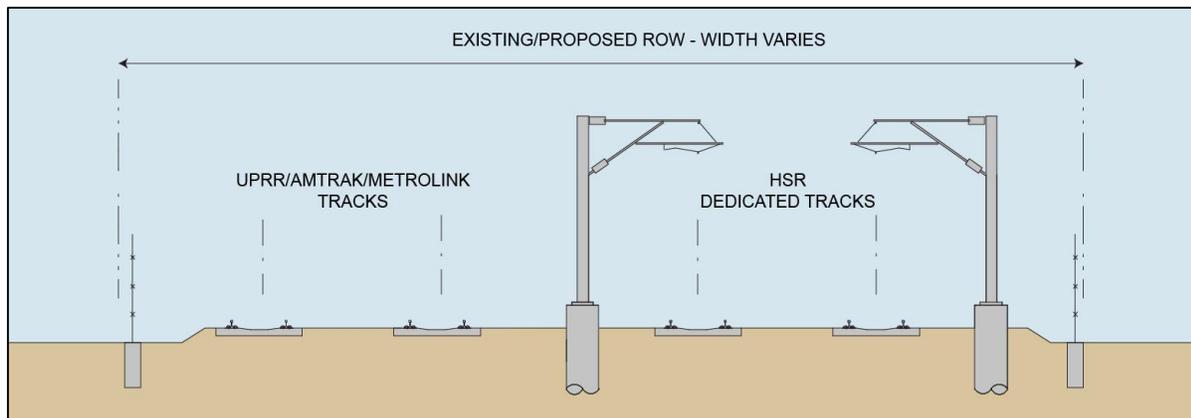
March 30, 2016

Figure 3-3 2016 SAA Alternative and Design Options

3.3.2 Alameda Avenue to SR-2

The proposed alternative would continue off the southern limit of the alternatives evaluated in the 2016 Palmdale to Burbank SAA, just south of Alameda Avenue in Burbank. The alternative would run within the existing railroad right-of-way, west of the existing Metrolink tracks (which would continue to be shared with UPRR freight and Amtrak in this subsection). The Metrolink tracks would be shifted slightly east, to accommodate the addition of two additional high-speed rail tracks within the existing railroad corridor. About 0.25 miles south of Alameda Avenue, the alternative enters the City of Glendale and would cross several arterials that would need to be grade-separated or closed: Sonora Avenue, Grandview Avenue, and Flower Street. The grade separations or closures would apply to all four tracks within the corridor. The alternative would cross Verdugo Wash, where an existing Metrolink bridge is currently located, on a new structure to accommodate the additional tracks. It would continue south along existing railroad right-of-way, which follows the Glendale and Los Angeles city borders. The alternative would cross Doran Street and Brazil/Broadway, which are at-grade; Metro is currently planning the grade separations for these streets. Continuing south, the alternative would cross Colorado Street on an existing Metrolink bridge, cross Chevy Chase Drive, which would need to be grade separated, and cross existing bridges over Los Feliz Boulevard and Glendale Boulevard. The existing bridges at Colorado Street, Los Feliz Boulevard, and Glendale Boulevard would require some modifications to accommodate additional tracks. The Glendale Metrolink Station is located just north of Glendale Boulevard, but will not be served by high-speed rail service.

Figure 3-4 illustrates the placement of the tracks within the right-of-way, with the dedicated high-speed rail tracks placed along the western limits.



Source: STV/JLP, 2016 (figure not to scale)

The refined alternative in this subsection is more within the existing railroad right-of-way, with the high-speed rail tracks on the west side.

Figure 3-4 Alameda Avenue to SR-2 – Dedicated Alignment Cross-Section

3.3.3 SR-2 to LAUS

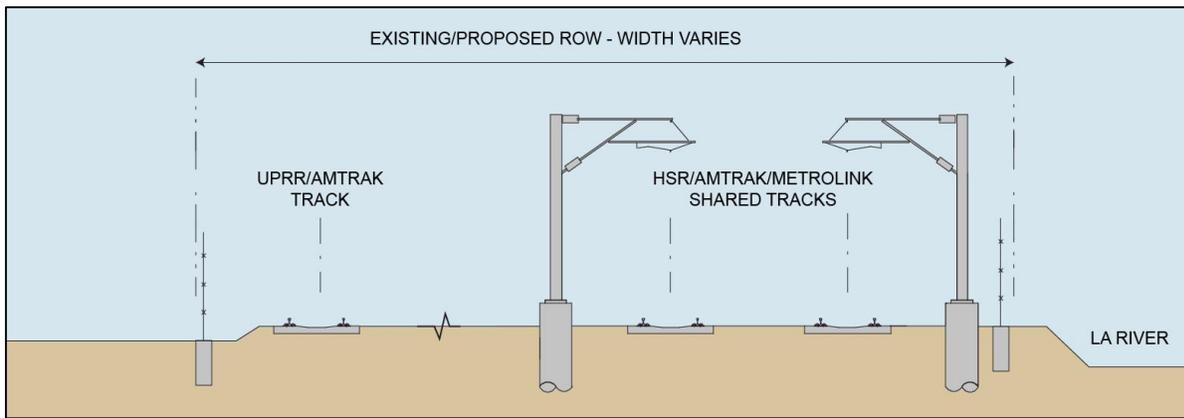
3.3.3.1 Shared Option

For the Shared Option, just south of Glendale Boulevard, the alignment would begin to transition into a shared-track configuration; the Metrolink tracks would merge with the high-speed rail tracks on the western side of the existing railroad right-of-way, with freight trains running on the eastern side. A flyover would be required to merge high-speed rail and Metrolink operations; this would be needed to avoid conflicts between northbound high-speed trains and southbound Metrolink trains, and to provide for adequate capacity for passenger rail operations. This grade-separated flyover structure would be located roughly between Glendale Boulevard and Fletcher Drive.

The shared-track alignment would travel south and run along the west side of the Metrolink CMF. One UPRR/Amtrak track and a realigned siding would run along the east side of the CMF. Figure 3-5 shows a typical cross-section of this area, with the shared High-Speed Rail/Metrolink tracks to the west.

The shared tracks would cross the Los Angeles River just north of SR-110 on an existing Metrolink bridge, which would be electrified and would require modifications to the bridge deck to accommodate high-speed rail service. After the bridge, the alignment would continue within the existing right-of-way along the west bank of the Los Angeles River. By shifting High-Speed Rail and Metrolink trains to the west bank, it would clear conflicting moves at the southern end of the CMF, and would allow UPRR, Amtrak, and non-revenue Metrolink trains to operate along the east bank between the CMF and LAUS. This track configuration is illustrated in Figure 3-6.

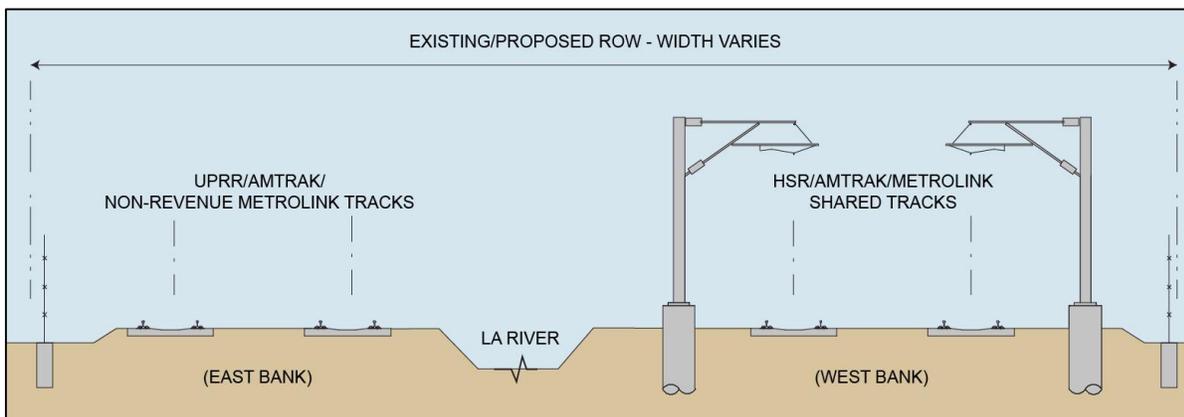
Continuing south, the shared tracks would cross Main Street, which is currently at-grade and would likely require a grade separation, and continue along the existing right-of-way to terminate at LAUS.



Source: STV/JLP, 2016 (figure not to scale)

From SR-2 to SR-110, High-Speed Rail and Metrolink would share tracks along the west side of the right-of-way. UPRR and Amtrak would operate on one track the east side of the right-of-way, which is made operationally feasible by the flyover structure near Glendale Boulevard.

Figure 3-5 SR-2 to SR-110 – Shared Option Cross-Section



Source: STV/JLP, 2016 (figure not to scale)

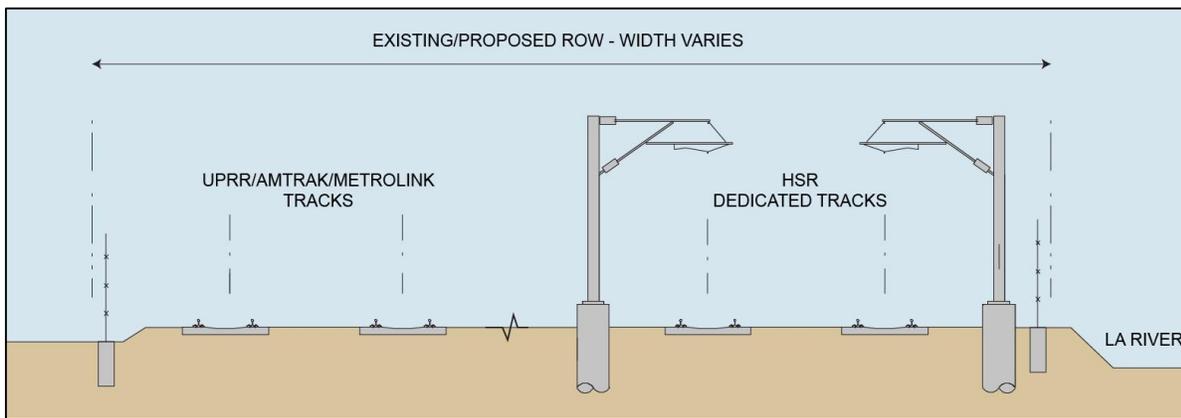
The shared tracks would cross the Los Angeles River just north of SR-110 and run along the west bank. UPRR, Amtrak, and non-revenue Metrolink trains would operate on the east bank of the River.

Figure 3-6 SR-110 to Mission Junction – Shared Option Cross-Section

3.3.3.2 Dedicated Option

The Dedicated Option would generally follow the same route as the Shared Option within the existing rail corridor. The key feature that distinguishes the two design options is the Dedicated Option would provide dedicated high-speed rail infrastructure along the entire length of the Project Section. To allow for high-speed trains to run on dedicated tracks on the west side of the right-of-way, Metrolink trains would be shifted to the east side of the right-of-way. The cross-section for this area is shown in Figure 3-7. About 0.75 miles south of SR-2, a realigned siding/storage track would be added, bringing the total number of tracks in the corridor to five. The set of three tracks would curve around the eastern edge of the Metrolink CMF, and additional track relocations and shifts would be needed within the CMF. The realigned siding would end at the southern end of the CMF.

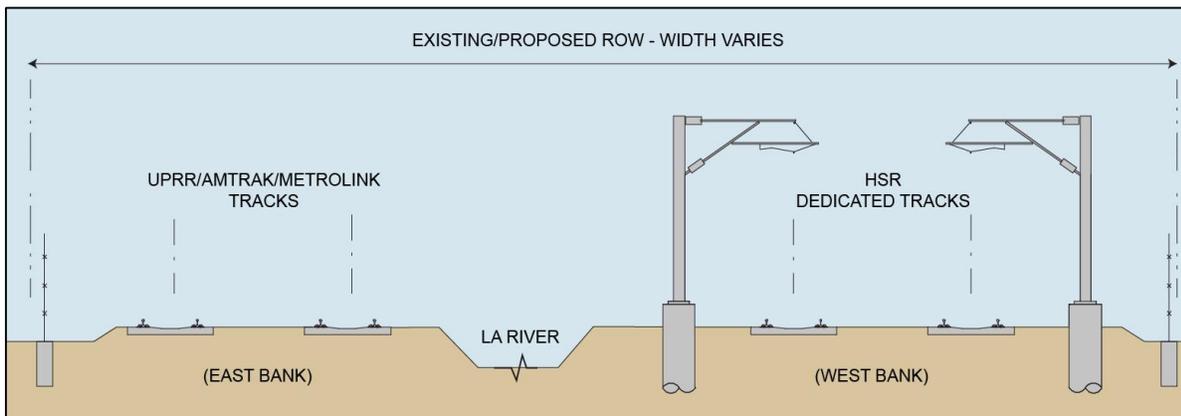
South of I-5, the configuration of dedicated high-speed rail tracks would be the same as those in the shared option: the dedicated high-speed rail tracks would cross the Los Angeles River on the Metrolink bridge north of SR-110, and travel along the west bank of the River. Two UPRR/Amtrak/Metrolink tracks would run along the east bank of the Los Angeles River, and then cross the River on the existing Mission Tower bridge just south of Main Street, which would need to be double-tracked. This track configuration is shown in Figure 3-8.



Source: STV/JLP, 2016 (figure not to scale)

From SR-2 to SR-110, dedicated high-speed rail tracks travel along the west side of the right-of-way. Metrolink service would be shifted to the UPRR/Amtrak tracks on the east side of the right-of-way.

Figure 3-7 SR-2 to SR-110 – Dedicated Option Cross-Section



Source: STV/JLP, 2016 (figure not to scale)

The dedicated high-speed rail tracks would cross the Los Angeles River just north of SR-110 and run along the west bank. UPRR, Amtrak, and Metrolink trains would operate on the east bank of the River.

Figure 3-8 SR-110 to Mission Junction – Dedicated Option Cross-Section

4 Alternatives Evaluation

This SAA evaluates the alternative and the two design options using the Authority measurement criteria, listed in full in Table 2-2. However, the Burbank to Los Angeles corridor is highly urbanized, and there are limited options to feasibly introduce high-speed rail infrastructure; therefore, the potential impacts are primarily related to the built environment, rather than natural resources.

Section 4 at a Glance—In this section you will find the following information:

- ▶ Key Differences Between Design Options
- ▶ Areas of No Difference

As discussed previously, the alignment options for the portion of the Burbank to Los Angeles Section from Burbank Airport Station south to Alameda Avenue are dependent on the alignment alternatives for the Palmdale to Burbank Section presented in the 2016 Palmdale to Burbank SAA. Consequently, the AA analysis for that portion is presented in the 2016 Palmdale to Burbank SAA and that document should be referenced for detailed analysis. The evaluation presented below is from Alameda Avenue to LAUS only, as these portions are independent of the Palmdale to Burbank alignment alternatives.

The following sections focus on the distinguishing criteria, which are summarized in Table 4-1. These criteria, along with other environmental resources areas, will be evaluated in full in the project-level environmental document.

Table 4-1 Summary of Distinguishing Evaluation Measurement Criteria

Measurement	At-Grade with Shared Option	At-Grade with Dedicated Option
Constructability		
Maximize constructability	Would require a flyover in order to accommodate shared high-speed rail and Metrolink tracks.	Would require the construction of a third track for Metrolink/Amtrak/UPRR near the Metrolink CMF.
Communities		
Displacements	<p>Would potentially impact more properties, because of the flyover structure.</p> <ul style="list-style-type: none"> • Residential: 7 parcels • Industrial/Commercial: 42 parcels • Government: 1 parcel 	<p>Would potentially impact fewer properties.</p> <ul style="list-style-type: none"> • Residential: 6 parcels • Industrial/Commercial: 16 parcels • Government: 1 parcel
Proximity to Section 4(f)/6(f) Resources	Would be adjacent to Taylor Yard parcel/G2 site, where Los Angeles City is planning a park, and also adjacent to the Rio de Los Angeles State Park	Could be slightly inside of the Taylor Yard Parcel/G2 site, where Los Angeles City is planning a park. It is also adjacent to the Rio de Los Angeles State Park. Engineering refinements are currently underway to minimize or avoid impacts.
Natural Resources		
Parklands	See discussion about Section 4(f)	See discussion about Section 4(f)
Environmental Quality		
Noise and vibration	May have some noise effects due to high-speed rail train trips and the flyover structure, and could potentially be higher than existing railroad noise levels in that area.	May have some noise effects due to high-speed rail train trips, and could potentially be higher than existing railroad noise levels resulting from shifting Metrolink service to the east bank of the Los Angeles River.

Table 4-1 Summary of Distinguishing Evaluation Measurement Criteria

Measurement	At-Grade with Shared Option	At-Grade with Dedicated Option
Visual/scenic resources	The flyover structure near Glendale Boulevard would likely alter the visual setting, but visual impacts along the rest of the alternative would not be not anticipated to be substantial.	Would not be altered substantially.

4.1 Key Differences Between Options

As this SAA proposes one build alternative with two design options south of SR-2, the following comparisons focus only on the potential impacts of the two design options.

Constructability

The Shared Option would require flyover structure, which would potentially be more complex, as the option would be built while the railroad corridor is still active and in operation. The Dedicated Option would require relocating the siding on the east side of the Metrolink CMF, but there would be a more straightforward construction and interim operating condition than the Shared Option.

Right-of-Way Impacts

Based on the trackwork footprint analysis approach, as described in Section 2.1, the alternative with the Shared Option would affect a total of 42 industrial/commercial parcels, 7 residential parcels, and 1 government parcel. A large number of these potential property displacements would be a result of the flyover structure needed to merge Metrolink and high-speed rail operations south of SR-2. Additionally, sharing tracks with Metrolink would require changes in Metrolink operations along the corridor and through the CMF. Preliminary discussions with Metrolink staff indicated that the agency would be open to relocating certain maintenance functions performed at the CMF to a facility in Orange County or the Inland Empire. Metrolink would be able to continue many maintenance functions such as storage, heavy repair, sanding, fueling, and car washing at the current CMF location. The relocation of any Metrolink maintenance functions associated with the High-Speed Rail Project would be subject to further refinement and evaluation in the environmental document.

The alternative with the Dedicated Option would affect a total 16 industrial/commercial parcels, 6 residential parcels, and 1 government parcel. The primary difference between the two options is the Dedicated Option would not require a flyover structure. The impacts to the Metrolink CMF would be similar as for the Shared Option.

Section 4(f) Resources

Both the Shared and Dedicated design options would be adjacent to Rio de Los Angeles State Park. The Shared Option would be adjacent to and the Dedicated Option would be within the Taylor Yard/G2 site, where the City of Los Angeles is currently planning a park as part of the Los Angeles River revitalization efforts. However, there is currently ambiguity around the G2 parcel, in regards to ownership, future use, and the proposed site plan describing the ultimate build-out and use of the site as a park. Multiple agencies that are currently coordinating on the land in that area, including the City of Los Angeles, Metrolink, Metro, and UPRR. The alternative recommended in this SAA would be designed and, if necessary, refined to not preclude the other future park plans on the parcel to the extent possible, and to avoid or minimize a Section 4(f) impact. It should be noted that the potential Section 4(f) resources require additional analysis to determine whether they would be protected under Section 4(f) or would result in a *de minimis* finding.

Noise and Vibration

Some increase in noise levels would be expected for both design options, as a result of the addition of high-speed trains operating in the corridor. For the Shared Option, the flyover structure would elevate

trains in an area with some residences, and potentially increase noise levels. The Dedicated Option shifts Metrolink trains to the east bank of the Los Angeles River from SR-110 to south of Main Street, and there would potentially be some increase in noise levels for the east bank of the River within that segment.

Visual Setting

The Shared Option flyover structure near Glendale Boulevard would likely alter the visual setting. The Dedicated Option is not anticipated to alter the visual setting substantially.

4.2 Areas of No Difference

At the current level of design and analysis, both design options measure similarly under several criteria. Table 4-2 lists the evaluation criteria where the two design options have no differences.

Table 4-2 Evaluation Criteria with No Difference Between Design Options

Category	Measurement
Performance Objectives	Ridership/revenue potential Connectivity and accessibility Operating and capital costs
Constructability	Disruption to existing railroads Disruption to and relocation of utilities
Land Use	TOD development potential Consistency with other planning efforts and adopted plans
Communities	Property with access affected Proximity to schools Proximity to landfills Station area traffic Grade separations traffic
Natural Resources	Waterways Cultural resources Agricultural lands
Environmental Quality	Geology and soils Hazardous materials

5 Recommendation

Based on the 2010 PAA, 2011 SAA, 2014 SAA, and the most recently completed refinement work, this 2016 SAA recommends the at-grade alternative with two design options south of SR-2 to LAUS to be carried forward for further evaluation in the Burbank to Los Angeles project-level environmental clearance process, subject to the requirements of CEQA and NEPA. Table 5-1 contains a summary of the refinement work and alternatives evaluation. Figure 3.1-1 shows the recommended alternative. In addition to the “No Project” alternative, the alternative and station option would include.

Alternatives and Potential Options to be Carried Forward

No Project Alternative

At-Grade Alternative with Shared Option

At-Grade Alternative with Dedicated Option

At-Grade LAUS Station Option

As discussed previously, the alignment options for the portion of the Burbank to Los Angeles Section from Burbank Airport Station south to Alameda Avenue are dependent on the alignment alternatives for the Palmdale to Burbank Section presented in the 2016 Palmdale to Burbank SAA. Consequently, the SAA recommendation for that portion is presented in the 2016 Palmdale to Burbank SAA and that document should be referenced for details. The recommendation presented above is from Alameda Avenue to LAUS only, as this portion is independent of the Palmdale to Burbank alignment alternatives.

Table 5-1 Alternatives Refinement and Evaluation Summary

Alternatives and Station Options	AA Decision		Reasons for Elimination					Additional Observations/Comments
	Carry Forward	Not Carried Forward	Goals & Objectives ¹	Construction ²	Right-of-Way ³	Community Impact ⁴	Environment ⁵	
HSR on east side of right-of-way		X	X					Not consistent with decision made in 2015 Palmdale to Burbank SAA regarding track placement. Would conflict with future Metro/Metrolink double tracking projects. UPRR has expressed opposition and concern about affecting operations if high-speed rail tracks on east side of right-of-way. Lastly, a flyover would be required near the join to the Palmdale to Burbank Section (in which high-speed rail tracks are proposed along the west), resulting in additional right-of-way impacts.
HSR on west side of right-of-way	X							
Surface (refined)								Alternative refined, because of right-of-way, community, and environmental impacts associated with viaduct structure
<i>At-Grade with Shared Option</i>	X							
<i>At-Grade with Dedicated Option</i>	X							
LAPT1		X	X		X	X	X	Portal locations would have had potential impacts on parks and schools, as well as commercial and residential displacements. Construction would be costly and does not integrate the Blended System approach.
LAPT3		X	X		X	X	X	Portal locations would have had potential impacts on parks and schools, as well as commercial and residential displacements. Construction would be costly and does not integrate the Blended System approach.
LAUS Elevated Station		X	X					Would not be consistent with Authority Board and Metro Board direction to integrate the High-Speed Rail Project with LAUS plans
LAUS At-Grade Station	X							

¹ Goals & Objectives: The alternative does not meet the Authority's goals and objectives as laid out in the Purpose and Need and the 2014 and Draft 2016 Business Plans, described in Sections 1.2 and 2.2.

² Construction: The alternative's constructability is undesirable in terms of engineering challenges, assessed using the methodology described in Section 2.

³ Right-of-way: The alternative does not minimize right-of-way acquisitions, or construction of the alternative is undesirable in terms of right-of-way constraints, assessed using the methodology described in Section 2.

⁴ Community Impact: The alternative does not minimize disruption to neighborhoods and communities, divides an existing community, or does not minimize conflicts with community resources, assessed using the methodology described in Section 2.

⁵ Environment: The alternative does not minimize impacts on environmental resources or environmental quality, assessed using the methodology described in Section 2.

Appendix A Detailed Evaluation Table

Table A- 1 Evaluation of Burbank to Los Angeles Project Section Design Options

Measurement	Method	Source
Design Objectives		
Maximize connectivity and accessibility	Common to both design options Both design options would connect to other modes of transit at stations at LAUS and Burbank Airport Station.	
Maximize ridership/revenue potential	Common to both design options Both design options would fulfill the ridership needs. Revenue potential would be the same for both design options.	
Minimize capital and operating costs	Common to both alternatives Both design options would have similar capital and operating costs.	
Land Use		
TOD development potential	Common to both design options Under both design options, the stations would be in the same location, and therefore the TOD potential would be similar.	
Consistency with other planning efforts and adopted plans	Common to both design options Both design options would be similar in their consistency with other planning efforts and adopted plans.	
Constructability		
Constructability, access for construction; within existing transportation right-of-way	Would require a flyover in order to accommodate shared high-speed rail and Metrolink tracks.	Would require the construction of a third track for Metrolink/Amtrak/UPRR near the Metrolink CMF.
Disruption to existing railroads	Common to both design options Both design options would require revisions to Metrolink tracks and operations. The Shared Option would require Metrolink to share tracks with the High-Speed Rail Project, while the Dedicated Option would require Metrolink operations to be shifted to the east bank of the Los Angeles River.	

Table A- 1 Evaluation of Burbank to Los Angeles Project Section Design Options

Measurement	Method	Source
Disruption to and relocation of utilities	Common to both design options Both design options would have similar impacts on utilities.	
Communities		
Displacements	Would potentially impact more properties, due to the flyover structure. <ul style="list-style-type: none"> Residential: 7 parcels Industrial/Commercial: 42 parcels Government: 1 parcel 	Would potentially impact fewer properties. <ul style="list-style-type: none"> Residential: 6 parcels Industrial/Commercial: 16 parcels Government: 1 parcel
Property with access affected	Common to both design options Both design options would have similar property access impacts.	
Proximity to schools	Common to both design options Both design options would not have direct impacts on schools. Potential indirect impacts to schools will be analyzed in the project-level environmental document.	
Proximity to landfills	Common to both design options The closest landfill is approximated 5 miles east from both design options.	
Proximity to Section 4(f) resources	Would be adjacent to Taylor Yard parcel/G2 site, where LA City is planning a park, and also to the Rio de Los Angeles State Park	Would be slightly outside of existing right-of-way near the Taylor Yard Parcel/G2 site, where LA City is planning a park, and also to the Rio de Los Angeles State Park
Local traffic effects around stations	Common to both design options Both design options have the same station locations.	
Local traffic effects at grade separations	Common to both design options Both design options would require the same grade separations.	

Table A- 1 Evaluation of Burbank to Los Angeles Project Section Design Options

Measurement	Method	Source
Environmental Resources		
Waterways, wetlands, sensitive natural habitats	Common to both design options Both design options would cross the Los Angeles River once and have similar impacts.	
Cultural resources	Common to both design options Both design options would be adjacent to the following: <ul style="list-style-type: none"> • Glendale Metrolink Station (APN 5640-042-902) which is listed in the California Register (Status Code 1S). • Department of Water and Power building (APN 540-901-3913), which may be determined eligible as a district through Section 106 and is listed in the California Register (Status Code 2S2). • Los Angeles Post Office Terminal Annex (APN 5409-015-016), which was listed in the National Register in 1985. 	
Parklands	Refer to Section 4(f) above	Refer to Section 4(f) above
Agricultural lands	Common to both design options Not applicable. There are no agricultural lands within the project area that would be affected by the alternative and design options.	
Environmental Quality		
Noise and vibration	May have some noise effects due to high-speed rail train trips and the flyover structure, and could potentially be higher than existing railroad noise levels in that area.	May have some noise effects due to high-speed rail train trips, and could potentially be higher than existing railroad noise levels resulting from shifting Metrolink service to the east bank of the Los Angeles River.
Visual/scenic resources	The flyover structure near Glendale Boulevard would likely alter the visual setting, but visual impacts along the rest of the alternative would not be not anticipated to be substantial.	Would not be altered substantially.
Geology and soils	Common to both design options Both design options would similarly avoid areas with geological and soil constraints. Additionally, neither design option would require tunnel boring.	
Hazardous materials	Common to both design options Both design options would similarly avoid areas with potential hazardous materials.	

Source: *Technical Memorandum, Alternatives Analysis Methods for Project EIR/EIS, Version 3, 2011*
 Since the 2011 guidance, new criteria have been added for this analysis (proximity to schools, landfills, and Section 4(f) resources).

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Appendix B Outreach Summary Table

Table B-1 Outreach Summary Table

No.	Date	Meeting	Category ¹	Jurisdiction
1	May 6, 2014	Burbank City Council	B	Burbank
2	May 13, 2014	Office of LA City Councilmember Felipe Fuentes	B	Los Angeles
3	May 21, 2014	SAA Community Open House Meeting – Downtown LA	P	Los Angeles
4	May 28, 2014	SAA Community Open House Meeting – Burbank	P	Burbank
5	May 13, 2014	Office of LA City Councilmember Felipe Fuentes	B	Los Angeles
6	June 25, 2014	USACE and USEPA	AS	Federal
7	July 21, 2014	City of Burbank Transportation Committee	STO	Burbank
8	July 23, 2014	Walt Disney Studios	STO	Burbank
9	August 5, 2014	LADOT and Planning Department	AS	Los Angeles
10	August 6, 2014	Scoping Meeting - Burbank	P	Burbank
11	August 8, 2014	Scoping Meeting – FRA, STB, USACE, USEPA, USFWS, USBoR, NMFS	P	Federal
12	August 12, 2014	City of Los Angeles Planning Staff	AS	Los Angeles
13	August 12, 2014	Los Angeles River/Natural Resources Defense Council Working Group	STO	Los Angeles
14	August 19, 2014	Scoping Meeting - LA Union Station	P	Los Angeles
15	August 27, 2014	Little Tokyo Leadership	GIO	Los Angeles
16	September 2, 2014	Office of LA City Councilmember Mitch O'Farrell	B	Los Angeles
17	September 4, 2014	Office of LA City Councilmember Gilbert Cedillo	B	Los Angeles
18	September 8, 2014	Office of U.S. Congressman Xavier Becerra's	B	Los Angeles
19	September 9, 2014	Joint City of Burbank Council and Transportation Commission meeting	STO	Burbank
20	September 9, 2014	Burbank Area Legislative Briefing	B	Burbank
21	September 25, 2014	Tribal Information Meeting	STO	Los Angeles County
22	October 6, 2014	Los Angeles River Cooperation Committee	STO	Los Angeles
23	October 16, 2014	Burbank Chamber of Commerce	GIO	Burbank
24	October 27, 2014	USACE, USEPA, USFWS, and USFS	AS	Federal
25	November 4, 2014	Burbank & Glendale Transportation Management Organizations	STO	Burbank
26	December 5, 2014	Walt Disney Studios	STO	Burbank
27	December 9, 2014	Office of Congressman Adam Schiff	B	Los Angeles County

Table B-1 Outreach Summary Table

No.	Date	Meeting	Category ¹	Jurisdiction
28	January 21, 2015	Los Angeles Business Council Institute – Legislative Committee	GIO	Los Angeles County
29	January 21, 2015	Office of LA County Supervisor Hilda Solis	B	Los Angeles County
30	January 28, 2015	City of Glendale	AS	Glendale
31	February 3, 2015	Burbank City Council	B	Burbank
32	February 7, 2015	Los Angeles Neighborhood Council Coalition	STO	Los Angeles
33	February 17, 2015	USACE	AS	Federal
34	February 17, 2015	USFS	AS	Federal
35	February 19, 2015	Legislative Briefing	B / AS	Los Angeles County
36	March 3, 2015	Office of LA City Mayor Eric Garcetti	B	Los Angeles
37	March 10, 2015	USEPA	AS	Federal
38	March 18, 2015	Office of Assemblyman Miguel Santiago	B	Los Angeles County
39	April 8, 2015	Independent Cities Association – Board of Directors Member, Robert Gonzales	B	Los Angeles
40	April 8, 2015	Legislative Briefing	B	Los Angeles County
41	April 9, 2015	Legislative Briefing	B	Los Angeles County
42	April 15, 2015	Metro Monthly Outreach Call	AS	Los Angeles County
43	April 21, 2015	USACE, USEPA, and USFWS	AS	Federal
44	April 28, 2015	USFS	AS	Federal
45	May 1, 2015	Office of LA County Supervisor Sheila Kuehl	B	Los Angeles County
46	May 15, 2015	Legislative Briefing	B	Los Angeles County
47	May 19, 2015	USFS	AS	Federal
48	May 20, 2015	USACE, USEPA, USFWS, and USFS	AS	Federal
49	May 20, 2015	Metro/HSR Monthly Outreach Call	AS	Los Angeles County
50	May 22, 2015	Office of Congressman Adam Schiff	B	Los Angeles County
51	June 17, 2015	Metro/HSR Monthly Outreach Call	AS	Los Angeles County
52	July 15, 2015	Metro/HSR Monthly Outreach Call	AS	Los Angeles County
53	July 23, 2015	City of Burbank Staff Briefing	AS	Burbank
54	July 29, 2015	City of Los Angeles Planning Staff	AS	Los Angeles

Table B-1 Outreach Summary Table

No.	Date	Meeting	Category ¹	Jurisdiction
55	August 3, 2015	Glendale Concert in the Park	P	Glendale
56	August 20, 2015	Grand Ave (Los Angeles) Farmers Market	P	Los Angeles
57	September 8, 2015	Office of Los Angeles City Mayor Eric Garcetti	B	Los Angeles
58	September 25, 2015	Office of Congresswoman Judy Chu	B	Los Angeles County
59	September 25, 2015	Office of Congressman Adam Schiff	B	Los Angeles County
60	October 5, 2015	Office of Senator Carol Liu	B	Los Angeles County
61	October 21, 2015	Office of LA City Mayor Eric Garcetti	B	Los Angeles
62	October 21, 2015	Metro/HSR Monthly Outreach Call	AS	Los Angeles County
63	October 27, 2015	Glendale City Council Briefing	B	Glendale
64	October 29, 2015	Legislative Staff Briefing	B	Los Angeles County
65	November 3, 2015	Stakeholder Working Group Meeting	SWG	Los Angeles County
66	November 6, 2015	USACE/ EPA Briefing	AS	Federal
67	November 10, 2015	Office of Congressman Xavier Becerra	AS	Los Angeles County
68	November 10, 2015	Community Open House (Downtown LA)	P	Los Angeles
69	November 16, 2015	Glendale City Staff Briefing	AS	Glendale
70	November 16, 2015	Community Open House (Glendale)	P	Glendale
71	November 17, 2015	The California Endowment Briefing	GIO/AS	Los Angeles
72	November 19, 2015	USACE Briefing	AS	Federal
73	November 19, 2015	Community Open House Meeting (Cypress Park/LA)	P	Los Angeles
74	December 2-4, 2015	California Transportation Planning Conference	GIO	Los Angeles
75	December 8, 2015	Reimbursable Agreement with City of LA	AS	Los Angeles
76	December 8, 2015	Briefing - Office of Councilman O'Farrell	B	Los Angeles
77	December 8, 2015	Briefing - Office of Councilman Huizar	B	Los Angeles
78	December 8, 2015	Briefing - with Office of Senator DeLeon	B	Los Angeles
79	December 9, 2015	LADOT	AS	Los Angeles
80	December 10, 2015	The Transit Coalition Event	GIO	Los Angeles
81	December 16, 2015	Chinatown Business Improvement District	STO	Los Angeles
82	December 16, 2015	Metro/HSR Monthly Outreach Call	AS	Los Angeles
83	January 7, 2016	LOSSAN TAC Monthly Coordination	AS	Southern California
84	January 20, 2016	Metro/HSR Monthly Outreach Call	AS	Los Angeles

Table B-1 Outreach Summary Table

No.	Date	Meeting	Category ¹	Jurisdiction
85	January 21, 2016	Small Business Workshop - LA River/Glendale	AS	Glendale/Los Angeles
86	January 28, 2016	Chinatown Business Improvement District Board – Presentation	STO	Los Angeles
87	February 9, 2016	NRDC Working Group	STO	Los Angeles
88	February 17, 2016	Metro/HSR Monthly Outreach Call	AS	Los Angeles
89	February 19, 2016	USC APA and ITE Student Chapters Presentation	GIO	Los Angeles
90	February 19, 2016	Office of Councilmember Cedillo	AS	Los Angeles
91	February 19, 2016	Office of Councilman O'Farrell	AS	Los Angeles
92	February 23, 2016	Metro Meet the Primes - Exhibit Booth	GIO	Los Angeles
93	March 8, 2016	Cypress Park Neighborhood Council	STO	Los Angeles
94	March 16, 2016	City of Los Angeles Staff	AS	Los Angeles
95	March 16, 2016	City of Glendale Staff	AS	Glendale
96	March 26, 2016	Cesar Chavez celebration	AS	Glendale
97	April 2, 2016	Stakeholder Working Group Meeting	SWG	Los Angeles

FRA = Federal Railroad Administration; NMFS = National Marine Fisheries Service; NRDC = Natural Resources Defense Council; STB = Surface Transportation Board; USACE = United States Army Corps of Engineers; USBoR = United States Bureau of Reclamation; USEPA = United States Environmental Protection Agency; USFS = United States Forest Service; USFWS = United States Fish and Wildlife Service

¹ Category Key: AS = Agency Staff; B = Briefing; GIO = General Interest Organization; PIM = Public Information Meeting; STO = Stakeholder Organization; SWG = Stakeholder Working Group