

FINAL MARCH 2020



Burbank to Los Angeles and Los Angeles to Anaheim Usable Segments

Incremental Capital Investment (#2)

Link Union Station (Link US) Project Proposition 1A
Funding Plan

March 2020

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Table of Contents

TABLE OF CONTENTS	I
ACRONYMS AND ABBREVIATIONS	II
GLOSSARY OF KEY DEFINED TERMS	III
INTRODUCTION	4
A. THE USABLE SEGMENT	13
B. SOURCES OF FUNDS AND ANTICIPATED TIME OF RECEIPT	25
C. PROJECTED RIDERSHIP AND OPERATING REVENUE	27
D. PROJECTED CONSTRUCTION COST	33
E. MATERIAL CHANGES	36
F. TERMS AND CONDITIONS OF AGREEMENTS	38
APPENDIX A: REFERENCE DOCUMENTS	42
APPENDIX B: LINK US NOTICE OF DETERMINATION	43

Acronyms and Abbreviations

Term	Definition
Authority / CHSRA	California High-Speed Rail Authority
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FRA	Federal Railroad Administration
FY	Fiscal Year
JPA	Joint Powers Authority
LAUS	Los Angeles Union Station
Link US	Link Union Station
LOSSAN	Los Angeles – San Diego – San Luis Obispo Rail Corridor Agency
Metro	Los Angeles County Metropolitan Transportation Authority
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
PA&ED	Project Approval & Environmental Documentation
PMFA	Project Management and Funding Agreement
Prop 1A	Proposition 1A, also known as the “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century”
PS&E	Plans, Specifications, and Estimates
ROW	Right-of-Way
SB	Senate Bill
SCC	Standard Cost Categories
SCRRA	Southern California Regional Rail Authority
S&H Code	Streets and Highways Code
TIRCP	Transit and Intercity Rail Capital Program
YOE	Year of Expenditure

Glossary of Key Defined Terms

<u>Term</u>	<u>Definition</u>
California High Speed Rail Program Phase 1 (“Phase 1”)	The corridor of the high-speed rail system from Los Angeles and Anaheim to San Francisco, including the blended system in Northern California between San Francisco and San Jose and in Southern California between Burbank, Los Angeles and Anaheim.
Funding Plan	The plan prepared by the Authority herewith to meet the requirements of Streets and Highways Code (S&H Code) section 2704.08, subdivision (d), specifically part (1) for the Usable Segment that is the subject of this Funding Plan.
Proposition 1A (Prop 1A) or the Bond Act	The “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century,” approved by voters in November 2008. The Bond Act authorizes \$9.95 billion in general obligation bonds to pay for the capital costs of the high-speed rail system and improvements to regional services which will connect to the system. The Bond Act is codified in S&H Code section 2704 et seq.
SB 1029	Senate Bill (SB) 1029, passed by the California State Legislature and signed by Governor Brown in July 2012, appropriates Prop 1A funding, including for projects in Southern California. The appropriation includes the Prop 1A funds that are the subject of this Funding Plan.
Southern California Memorandum of Understanding (“SoCal MOU”)	Memorandum of Understanding (MOU) signed in April 2012 between the Authority and Southern California partner agencies to advance statewide rail modernization by investing in local rail systems that relate to the statewide high-speed rail system. SB 1029 explicitly cites the SoCal MOU as the basis for its appropriations to the projects in Southern California that the MOU lists.
Link US Memorandum of Understanding (“Link US MOU”)	Memorandum of Understanding (MOU) between the Authority, CalSTA and Metro for Proposition 1A commitment (\$423.3 million) to the Link Union Station Project dated September 13, 2019.

Introduction

Proposition 1A, the “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century” (the Bond Act) was approved by voters in November 2008. The Bond Act authorizes \$9.95 billion in general obligation (GO) bonds to pay for the planning, administrative and capital costs of the high-speed rail system and improvements to regional services which will connect to the system. The Bond Act is codified in Streets and Highways Code Section (S&H) 2704 et seq. Prior to committing any proceeds of bonds described in paragraph (1) of subdivision (b) of Section 2704.04 for expenditure for construction and real property and equipment acquisition on each corridor, or usable segment thereof, other than for costs described in subdivision (g), S&H 2704.08, subdivision (d) requires that the authority shall have approved and concurrently submitted to the Director of Finance and the Chairperson of the Joint Legislative Budget Committee the following: (1) a detailed funding plan for that corridor or usable segment thereof...(as further described herein); and (2) a report or reports prepared by one or more financial services firms, financial consulting firms, or other consultants, independent of any parties, other than the authority, involved in funding or constructing the high-speed train system, making certain indications.

Introduction

The California High-Speed Rail Authority (Authority) has prepared this Funding Plan pursuant to S&H Code section 2704.08, subdivision (d) (Funding Plan) for the Link Union Station (Link US) Project, a major capital investment in the Burbank to Los Angeles Usable Segment and the Los Angeles to Anaheim Usable Segment. **Exhibit 1** shows these Usable Segments in the context of the planned statewide system.

Following programmatic environmental clearance in 2005, the Authority and its federal partner, the Federal Railroad Administration (FRA), selected the existing rail corridor between Burbank, Los Angeles and Anaheim as the preferred program alignment. That clearance is for shared operations in the corridor – i.e., existing passenger and freight trains sharing the corridor with high-speed trains. The corridor is one of the busiest rail corridors in the country, with projections of significant growth in freight and passenger train volumes, even without the addition of high-speed trains.

The Link US Project, in addition to the Rosecrans Marquardt Grade Separation project, is explicitly included as one of the highest priority project contained in the Southern California Memorandum of Understanding (SoCal MOU). In 2012, Senate Bill 1029 (SB 1029) appropriated \$500 million in Proposition 1A (Prop 1A) funds for projects listed in the SoCal MOU. Additionally, in September 2019, the Authority, Metro and CalSTA signed the Link US MOU that sets out an agreement to work cooperatively to access Prop 1A funding for the project. Accordingly, this Funding Plan relates to the commitment of Proposition 1A bond proceeds in the amount of \$423.3 million (out of the total \$950.4 million cost) for the Link US Project (Phase A) to complete final design, right-of-way acquisition, and construction activities.

Exhibit 1: The Burbank to Los Angeles and Los Angeles to-Anaheim Segments in the Context of the California High-Speed Rail System



Source: 2018 Business Plan, Exhibit 2.0, page 16; California High-Speed Rail Authority, June 2018.

The investments directed by the Legislature in SB 1029 are an essential aspect of the Authority's 2018 Business Plan (Business Plan), as part of the necessary foundations for future high-speed rail service. At the same time, these funds will provide a significant benefit in the near term by strengthening and improving existing rail networks. The Business Plan incorporates a blended system approach that will provide high-speed rail service and modernized commuter/regional rail service in shared corridors and on shared tracks, both in Northern California (between San Francisco and San Jose) and in Southern California (between Burbank, Los Angeles, and Anaheim). This blended system approach minimizes impacts on surrounding communities, reduces project costs, and expedites implementation. In short, investments such as the Link US Project are necessary for high-speed rail service, and completing them early reduces project costs and provides significant benefits to local and regional services.

The Authority is working closely with partner agencies in Southern California to accelerate these early investment projects, which will be completed incrementally and provide significant near-term improvements. These projects will initiate phased implementation for high-speed rail service, consistent with the building block approach outlined in the 2019 Project Update Report. The Link US Project is the second of these Southern California projects to be ready for implementation. The Authority's plans follow the Legislature's direction in beginning the process of developing the necessary elements of the high-speed rail system in Southern California, in conjunction with local projects and other state funded projects. The Link US Project will provide immediate benefits for existing passenger rail services. Following completion of additional planned investments, high-speed trains will operate in the shared corridor between Burbank, Los Angeles, and Anaheim.

Detail Regarding the Link US Project

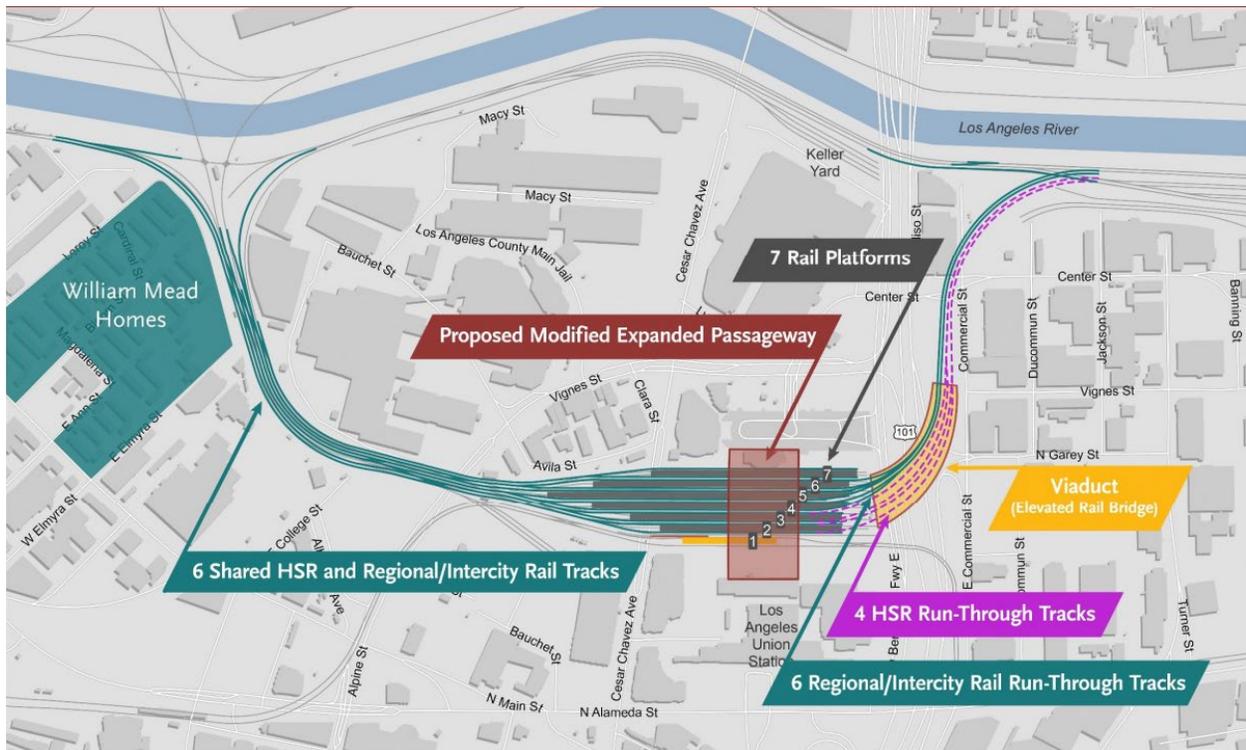
Los Angeles Union Station (LAUS) is located in downtown Los Angeles, just north of the Arts District and the US 101 freeway. LAUS is a major regional transportation gateway, currently served by numerous transportation services including Metrolink commuter rail service, Amtrak regional rail service, Metro Rail services (heavy and light rail), Metro Bus service, municipal bus operators, shuttles, and taxis.

LAUS originally was designed as a stub rail facility with tracks only entering and leaving the station from the north with no through-train operational capability. With the Link US Project, tracks in the LAUS property will be extended to allow train service to "run through" LAUS. The Link US Project will provide the increased rail and transit capacity that is necessary to accommodate future growth in regional travel demand, and is a required step to bring high-speed rail service to Southern California.

The Link US Project is an extremely important investment for Southern California that will transform LAUS into a world-class transit facility, increase rail service capacity and reliability, reduce train idling times, improve transit connectivity, enhance the passenger experience, and support the introduction of high-speed rail service. The Link US Project will also preserve the character of the historic station, maintain existing rail and transit operations during construction, and help revitalize and link the diverse cultures and neighborhoods of downtown Los Angeles.

The major components of the Link US Project is identified graphically are shown in **Exhibit 2**.

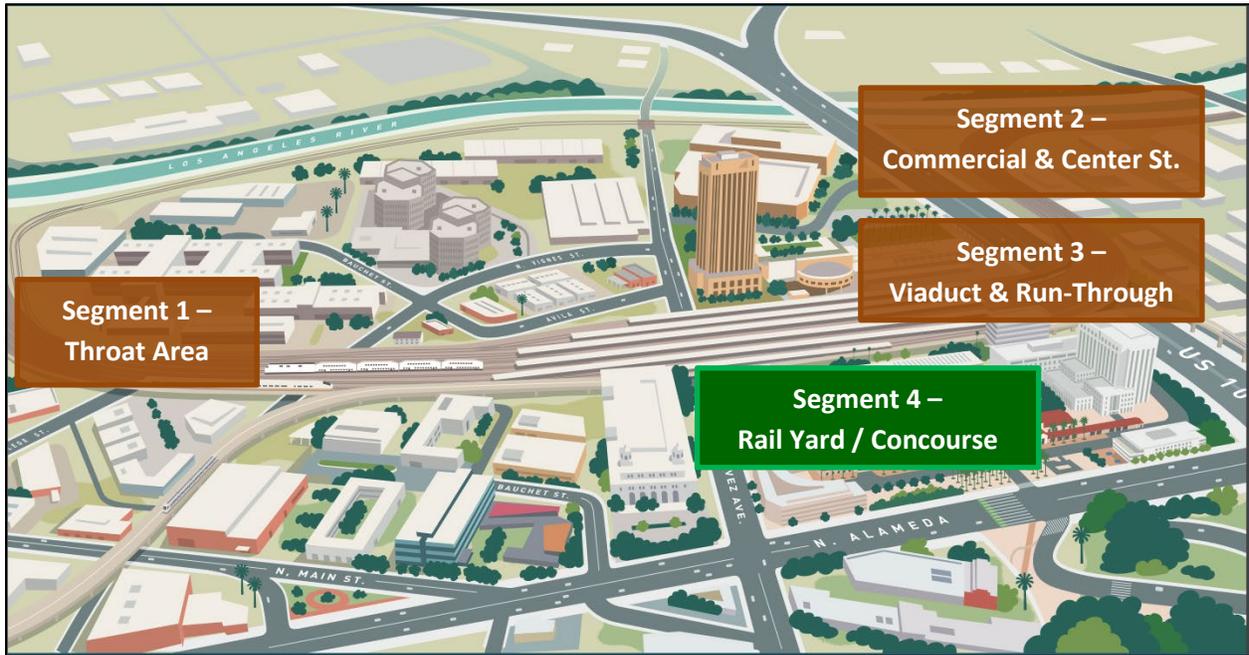
Exhibit 2: Link US Project Components



Source: Link US Project Overview, Funding Plan Milestones and Issues for Resolution; Metro; August 2019

The Link US project will be constructed in two phases, as shown in **Exhibit 3**.

Exhibit 3: Link US Phased Construction



Phase A			Phase B
Segment 1 – Throat Area	Segment 2 – Commercial & Center St.	Segment 3 – Viaduct & Run-Through	Segment 4 – Rail Yard / Concourse
<ol style="list-style-type: none"> 1. Rail Signal, Communications and Track Work 2. Utility Relocation 	<ol style="list-style-type: none"> 1. Property acquisition 2. Utility relocation 3. Commercial & Center St. Improvements 	<ol style="list-style-type: none"> 1. Viaduct Structure over US 101 (full width) 2. Two run-through tracks from Union Station Platform 4 to mainline tracks 3. Signal and communication 	<ol style="list-style-type: none"> 1. Raising the rail yard, including new platforms and tracks as well as new stairs escalators and elevators 2. New passenger concourse, including a new open plaza (West Plaza) 3. Adding remaining run-through tracks (up to eight) and up to two new lead tracks in Segment 1

Source: Link US Project Overview, Funding Plan Milestones and Issues for Resolution; Metro; August 2019

Work for the first phase (Phase A) of the Link US Project is the project scope covered in this Funding Plan. Phase A will be conducted within three segments:

Link Project Segment 1 – Throat Area: *The tracks leading to LAUS from the north are referred to as the throat. The project work in this segment includes rail signal, communication and track work as well as utility relocation.*

Link Project Segment 2 – Commercial & Center Streets: *The work in this segment includes property acquisition, utility relocation, and improvements to Commercial Street and Center Street to accommodate a new viaduct structure.*

Link Project Segment 3 – Viaduct & Run-Through: *A new viaduct structure will be constructed, south of LAUS across the US 101 freeway. In Phase A, two run-through tracks running from the LAUS rail yard will be constructed on the viaduct and will connect with mainline tracks along the west bank of the Los Angeles River.*

A future phase of the project (**Phase B – Link Project Segment 4**) will include: raising the LAUS rail yard (with new platforms, tracks, and vertical circulation); constructing a new expanded passenger concourse and open plaza; adding a new lead track in the throat; and adding up to eight additional run-through tracks on the viaduct structure over US 101.

Project Stakeholders

Several partners are coordinating on a regular basis to implement the Link US Project. The principal agencies are summarized below.

California High Speed Rail Authority (Authority): *The Authority is planning, designing, and building a new high-speed rail system in California. The Authority has started construction of the system in the Central Valley and is currently working with partner agencies, corridor cities, stakeholders, and community members to environmentally clear all remaining project sections of the Phase 1 high-speed rail system, which includes four segments in Southern California.*

The Link US Project is located at the southern endpoint of the Burbank to Los Angeles project segment and the northern endpoint of the Los Angeles to Anaheim project segment. The Link US Project is needed to accommodate high-speed rail service at LAUS, with provision of up to two platforms and up to four run-through tracks for future high-speed rail trains.

Los Angeles County Metropolitan Transportation Authority (Metro): *Metro plans, designs, and constructs multimodal transportation projects in Los Angeles County, and also operates the county's largest transit system. Metro implements regional rail projects throughout the county, and is leading delivery of the Link US Project through the planning, environmental, design, and construction phases.*

California State Transportation Agency (CalSTA): *CalSTA develops and coordinates the policies and programs of the state's transportation entities to achieve the state's mobility, safety and air quality objectives, in coordination with regional and local partners. CalSTA is managing the Transit and Intercity Rail Capital Program (TIRCP), which funds projects that will modernize California's transit and*

rail systems and significantly reduce greenhouse gas emissions, vehicle miles traveled, and congestion. A portion of a year 2018 TIRCP grant award is going towards the Link US Project.

Southern California Regional Rail Authority (SCRRA): SCRRA is a joint powers authority (JPA) with a Board of Directors that represents the transportation commissions of Los Angeles, Orange, Riverside, San Bernardino and Ventura counties. The SCRRA member agencies are the respective transportation commissions from each of these five counties. SCRRA provides Metrolink regional rail service throughout Southern California, on seven lines across a 540 route-mile network. Metrolink serves 62 passenger rail stations in the region, including LAUS.

Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor Agency: The LOSSAN Rail Corridor Agency is a joint powers authority (JPA) governed by an 11-member Board of Directors composed of elected officials representing rail owners, operators and planning agencies along the rail corridor. As of July 2015, LOSSAN has been responsible for the day to day operations of the Pacific Surfliner service, which travels throughout six counties from San Luis Obispo to San Diego including service at LAUS.

National Passenger Railroad Corporation (Amtrak): Amtrak operates high-frequency State supported Pacific Surfliner trains in the LOSSAN rail corridor between Los Angeles, San Diego, and San Luis Obispo including service at LAUS. Amtrak also operates long-haul trains between LAUS and locations throughout the country including Seattle, Chicago, and New Orleans.

California Department of Transportation (Caltrans): Caltrans provides oversight for three state-supported intercity passenger rail services in California, which includes the Pacific Surfliner service (as well as the Capital Corridor and the San Joaquins service). Caltrans provides funding for engineering, construction, and capitalized maintenance of rail infrastructure improvements, and procures rolling stock in support of the three corridors.

Federal Railroad Administration (FRA): FRA provides federal oversight and approval of rail transportation projects, including federal approval of the Link US environmental document. FRA activities include safety and compliance, grant oversight and development, research and technology, regulatory functions, and evaluation of program performance.

Capital Cost and Funding Requirements

The cost estimate for the Link US Project (Phase A) is \$950.4 million in year of expenditure dollars (YOES). In addition to the Prop 1A bond proceeds of \$423.3 million, other funding sources include an additional \$18.7 million from the Authority for planning, \$398.4 million from the Transit and Intercity Rail Capital Program (TIRCP), \$13.3 million from Los Angeles County Measure M funds, \$51.7 million from SCRRA – Metro funds, \$40.0 million from SCRRA – non-Metro funds, and \$5.0 million from CalSTA and Caltrans.

Metro’s Board of Directors approved the CM/GC delivery approach for the Link Union Station Project on December 5, 2019. With the 35% preliminary engineering design bridging documents, Metro will engage

a CMGC under one contract to perform both pre-construction services during the final design and construction services of the Phase A project at a Not-to-Exceed (NTE) price.

Organization of the Funding Plan

This Funding Plan is organized consistent with the requirements of S&H Code section 2704.08, subdivision (d).

Section A: The Usable Segment – This section of the Funding Plan defines the Burbank to Los Angeles and the Los Angeles to Anaheim Segments, on which the Link US Project is located, as the Usable Segments for this Funding Plan.

Section B: Sources of Funds and Anticipated Time of Receipt – This section describes the sources of funds to be used for the construction and acquisition activities of the Link US Project.

Section C: Projected Ridership and Operating Revenue – This section describes current and projected passenger ridership over the Usable Segments for the existing rail services and provides the Authority's ridership forecasts for the corridor once its service begins.

Section D: Projected Construction Cost – This section describes the construction and acquisition cost estimates, including cost escalation and reserves for contingencies, for the Link US Project.

Section E: Material Changes – Because the Legislature made the appropriation for projects in Southern California without a separate Funding Plan pursuant to S&H Code section 2704.8, subdivision (c), there are no material changes to report.

Section F: Terms and Conditions of Agreements – This section describes the terms and conditions of the agreements that the Authority has entered or plans to enter into with regards to the completion of the Link US Project as well as other key agreements to which the Authority is not a party.

Appendix A: Funding Sources Overview, Process and Timeline – This appendix provides an overview, process and timeline related to the funding sources for the Link US Project.

Appendix B: Reference Documents – This appendix provides links to relevant reference documents for this Funding Plan.

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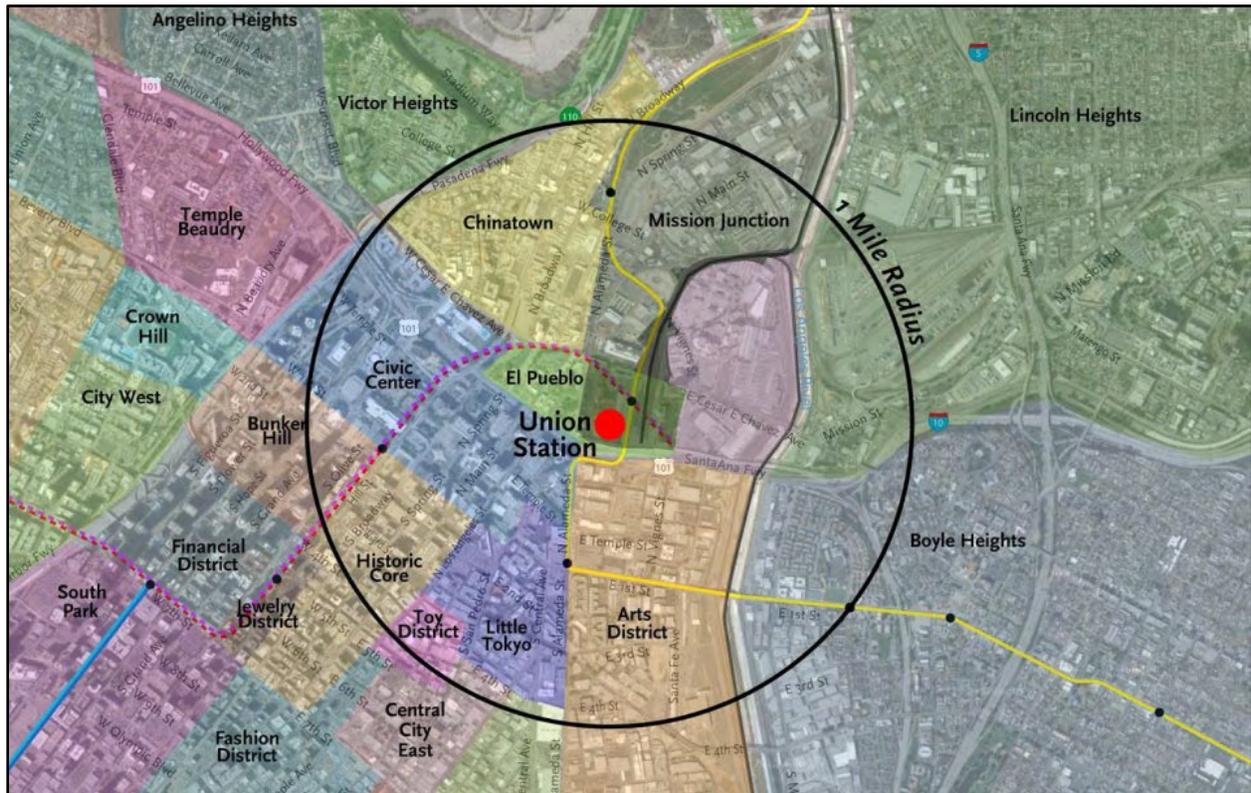
A. The Usable Segment

Streets and Highways Code section 2704.08, subdivision (d)(1)(A) requires identification of the corridor, or usable segment thereof, and the estimated full cost of constructing the corridor or usable segment thereof. A usable segment is defined as a portion of corridor that includes at least two stations.

Overview

The Board of Directors has identified and selected the Burbank to Los Angeles and the Los Angeles to Anaheim Segments (as described below) as Usable Segments by its adoption of this Funding Plan. As part of the selection process, the Board considered the criteria for prioritization set forth in Section 2704.08, Subdivision (f) of the S&H Code. The Link US Project, which is the focus of this Funding Plan, is the first investment leading to implementation of the Burbank to Los Angeles Usable Segment and the second investment (following the Rosecrans/Marquardt grade separation project) leading to implementation of the Los Angeles to Anaheim Usable Segment. **Exhibit A-1** shows the Link US Project location, which is at Los Angeles Union Station in downtown Los Angeles.

Exhibit A-1: Link US Project Location



Source: Presentation slides for LAUS Industry Forum; Metro, October 2017.

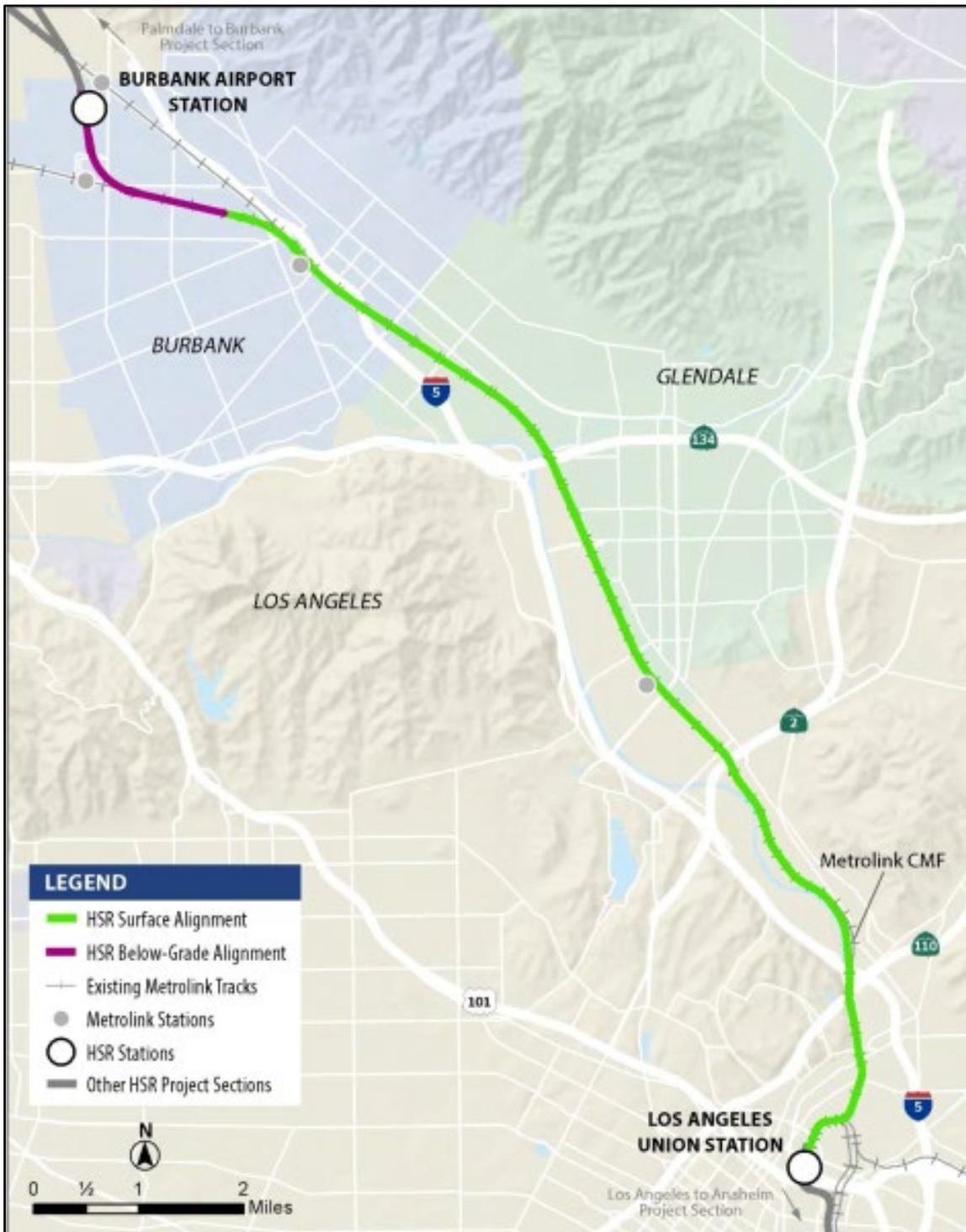
The Usable Segments

Pursuant to S&H Code section 2704.01, subdivision (g), a Usable Segment is defined as “a portion of a corridor that includes at least two stations.” A “corridor” means a portion of the high-speed train system described in S&H Code section 2704.04. As adopted by the Authority in May 2007, Phase 1 of the high-speed train project is the corridor of the high-speed train system between San Francisco Transbay Terminal and Los Angeles Union Station and Anaheim.

The two Usable Segments that are being selected with this Funding Plan consist of the portion of the Phase 1 corridor between and including the Burbank Airport Station and the Los Angeles Union Station (Burbank to Los Angeles Segment), and the portion of the Phase 1 corridor between and including the Los Angeles Union Station and the Anaheim Regional Transportation Intermodal Center (ARTIC) Station (Los Angeles to Anaheim Segment).

The Burbank to Los Angeles Segment, as shown in **Exhibit A-2**, is approximately 15 miles long, crossing the cities of Burbank, Glendale, and Los Angeles in Los Angeles County on an existing railroad corridor. High-speed rail service will operate primarily within the existing LOSSAN rail corridor, one of the most heavily utilized passenger and freight rail corridors in the country, and will include both northbound and southbound electrified tracks for high-speed trains. The portion of the Link US Project on this segment will include new and upgraded track, systems facilities, grade separations, drainage, communication towers, security fencing, and other necessary facilities to introduce high-speed rail service.

Exhibit A-2: Link US Project – Portion on Burbank to Los Angeles Segment



Source: California High-Speed Rail Authority, November 2018 (draft alignments, elements not to scale).

Based on the Authority’s 2018 Business Plan (Capital Cost Basis of Estimate Report, Table 21, page 31), the total expenditure for completion of the Burbank to Los Angeles Segment is estimated to be \$1.3 billion in year 2017 dollars. The Authority’s 2020 Business Plan will reflect an update to preferred alignments and costs. This cost estimate includes items that will enable the Authority to test and run high-speed trains on this segment, including civil works, track, other railroad infrastructure, overhead catenary, train control, signaling, communications, and station improvements, as well as professional services and contingencies. High-speed trains and maintenance facilities, including a facility south of Los Angeles Union Station, are not included in this cost estimate; these items are included as part of the development of the rest of the Phase 1 system but are not assigned to specific segments for cost estimating purposes.

The Los Angeles to Anaheim Segment, as shown in **Exhibit A-3**, is approximately 31 miles and will connect Los Angeles and Orange counties, with stations in downtown Los Angeles and Anaheim and optional stations in Norwalk/Santa Fe Springs and Fullerton. The tracks needed for high-speed rail will share the existing LOSSAN rail corridor. Existing passenger and freight rail services in the Los Angeles to Anaheim Segment will benefit from numerous capacity and safety improvements, including added track capacity and new grade separations at roadway intersections.

Exhibit A-3: Link US Project – Portion on Los Angeles to Anaheim Segment



Source: California High-Speed Rail Authority, November 2018 (draft alignments, elements not to scale).

Based on the Authority's 2018 Business Plan (Capital Cost Basis of Estimate Report, Table 22, page 32), the total expenditure for completion of the Los Angeles to Anaheim Segment is estimated to be \$3.0 billion in year 2017 dollars. As with the Burbank to Los Angeles Segment, this cost estimate includes items that will enable the Authority to test and run high-speed trains on the segment. High-speed trains and maintenance facilities, including a facility south of Los Angeles Union Station, are not included in this cost estimate.

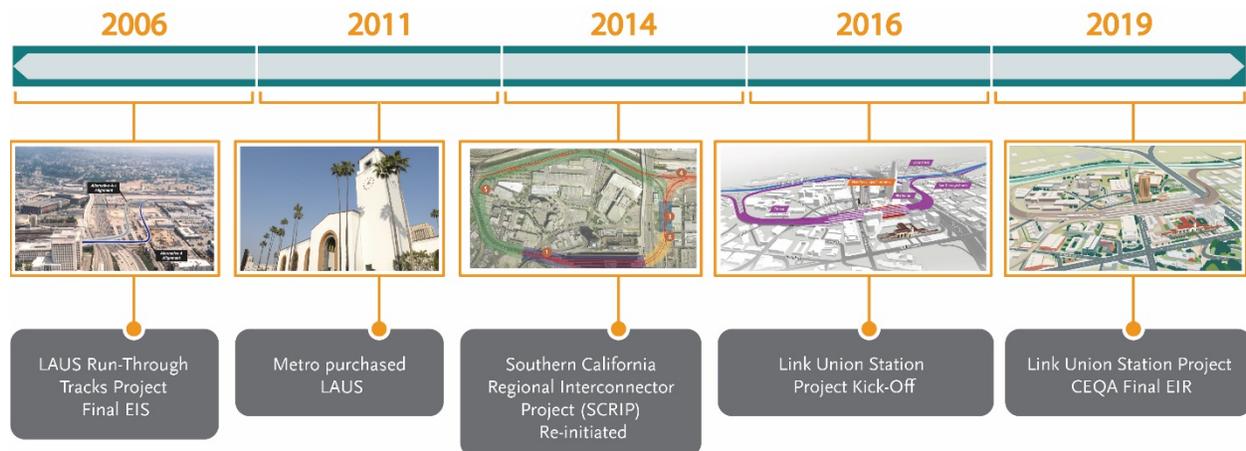
The Link US Project

LAUS opened to service in 1939 and is nearing 80 years of operation as the central hub for regional transit services in Southern California. Today, LAUS is the busiest rail terminal west of Chicago and is among the top five busiest passenger terminals in the United States, serving over 110,000 passenger trips a day and an estimated 26,000 daily transfers between multiple transportation modes. LAUS is an essential component of California's transportation network, providing direct linkages to Metro's bus and rail systems (e.g., Red, Purple, and Gold Lines), Metrolink commuter trains, Amtrak regional and intercity trains, and Amtrak's long-distance trains.

The role of LAUS in the regional transportation network will become increasingly critical as population and employment growth dictates a growing need for regional system capacity and connectivity. LAUS is a key component of the high-speed rail system and a vital regional transit hub that patrons will use to access key venues for the 2028 Olympics. Passenger throughput at LAUS is projected to more than double from current volumes to over 225,000 passenger trips daily by the year 2040.

LAUS, which is currently served by over 170 revenue passenger trains daily, is an aging and capacity-constrained facility that is rapidly approaching operational capacity. Recognizing the need to accommodate future growth, Metro currently is cooperating with its regional partners to implement dramatic improvements to LAUS through a comprehensive set of track, platform, and concourse improvements that now is named the Link US Project. **Exhibit A-4** provides a summary of the Link US Project history.

Exhibit A-4: Link US Project History



Source: LA Metro.

In 2005, Metro originally completed the Final Environmental Impact Statement (EIS) for the LAUS Run-Through Tracks project. In 2011, Metro purchased the LAUS property, which included 38 acres of land and 5.9 million square-foot of entitlements. This purchase provided Metro the right to build on the LAUS property and draw lease revenues from transit operators and businesses.

In April 2012, the Authority adopted the 2012 Business Plan, which specified its approach for sequentially implementing the Phase 1 high-speed rail system that will connect the Los Angeles Basin with the San Francisco Bay Area. The 2012 Business Plan described the Authority’s intent to work closely with partner agencies in Southern California to advance and accelerate early investment projects as elements of the high-speed rail system in the existing Burbank to Anaheim rail corridor, of which the Link US Project is one. The Authority’s 2014, 2016, and 2018 Business Plans maintained the sequential implementation approach identified in the 2012 Business Plan. Metro is the key partner in charge of developing and implementing the Link US Project.

In April 2014, Metro re-initiated the project as the Southern California Regional Interconnector Project (SCRIP). The purpose of SCRIP is to recertify the environmental work and further evaluate alignment alternatives. Some of the project changes since 2006 include: a new passenger concourse, reconfiguration of the throat and elevation of the rail yard, and accommodation of high-speed rail.

The Metro Board and the Authority Board took actions in October 2015 and February 2016, respectively, to integrate the high-speed rail project with SCRIP. In April 2016, the Authority adopted its 2016 Business Plan, which re-affirms the intent for LAUS to serve as a major station of the future Phase 1 high-speed rail system.

In 2016, Metro renamed the project as Link Union Station (Link US). In June 2016, Metro held a Link US Project scoping meeting, which officially started the Link US environmental clearance process. In November 2016, Metro held a Link US community meeting to provide the public with an update regarding on-going project activities, including the alternatives being evaluated, the screening criteria being used, and the timeline for the environmental process.

In March 2017, the Metro Board approved an alternative with six (6) regional rail run-through tracks and two (2) high-speed rail run-through tracks over US 101 as the recommended alternative for the Link US Project to be carried forward for further evaluation in the environmental process. Metro staff continued to evaluate three (3) additional alternatives as reasonable alternatives.

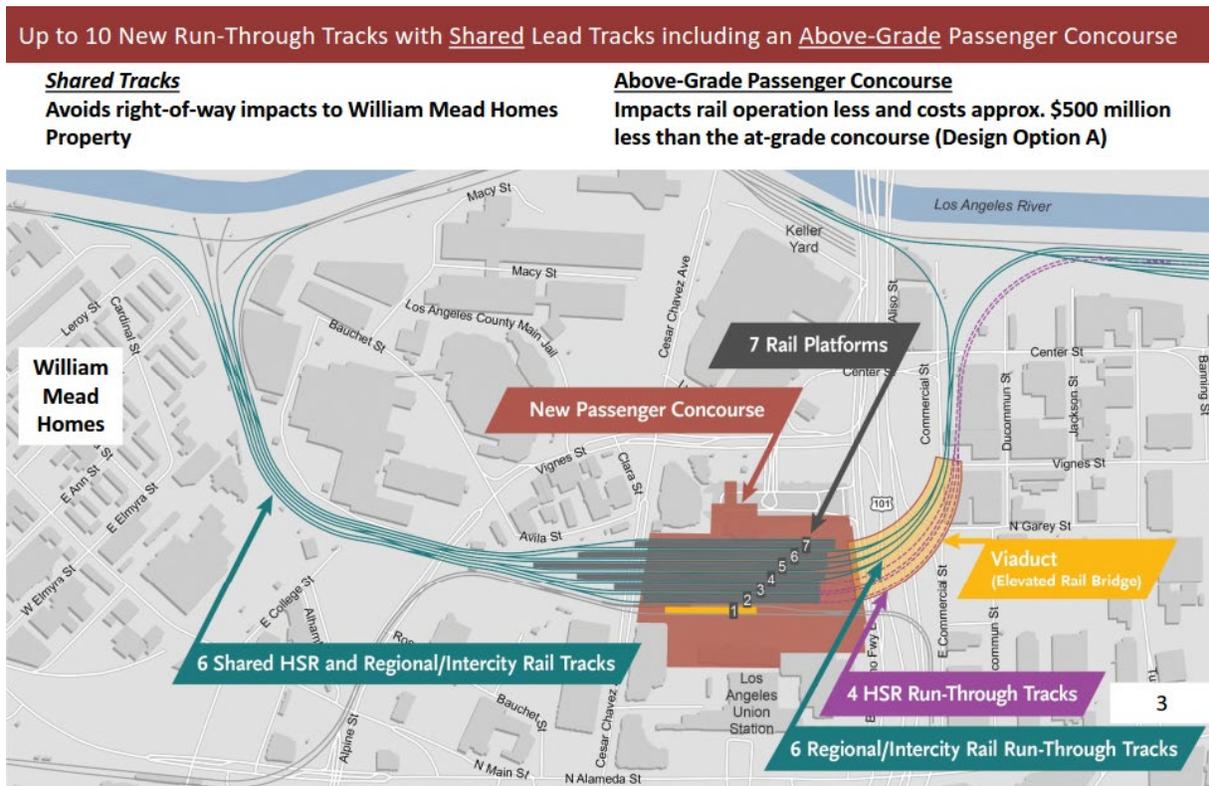
In May 2018, the Authority adopted the 2018 Business Plan, which specified the Authority's commitment to direct to the Link US Project the remaining \$423.3 million in Proposition 1A funding for Southern California MOU projects.

In December 2018, the Metro Board approved the designation of Alternative 1 of the Link US Project as the "Proposed Project" pursuant to the California Environmental Quality Act (CEQA). Alternative 1 provides up to 10 run-through (4 for HSR) tracks over US 101, shared lead tracks north of LAUS, an above-grade passenger concourse, and an expanded at-grade pedestrian passage-way.

In January 2019, Metro released the Draft Environmental Impact Report (EIR) for the Link US Project for public review, to meet CEQA requirements.

Exhibit A-5 provides an illustration of Alternative 1.

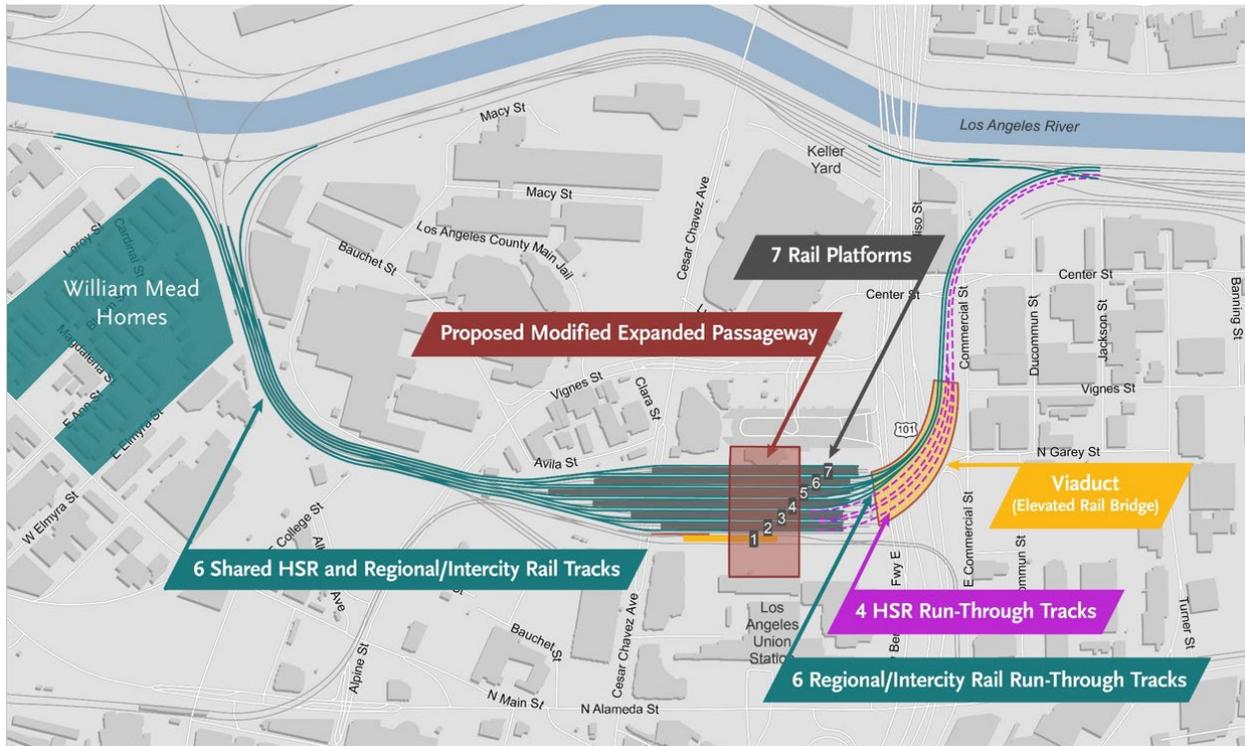
Exhibit A-5: Link US Proposed Project in Draft EIR – CEQA Alternative 1



Source: Link US Presentation provided to the Metro Board of Directors, slide 3; Metro, December 2018.

In response to public comments received on the Draft EIR, staff recommended that the Final EIR project includes a modified expanded passageway without the above-grade concourse and a revised up to 10 run-through track alignment without a loop track. Exhibit A-6 provides an illustration of Link US Final EIR project. The Metro Board voted to certify the Final EIR in June 2019. The associated Notice of Determination signed and filed by Metro is attached to this Funding Plan as Appendix B.

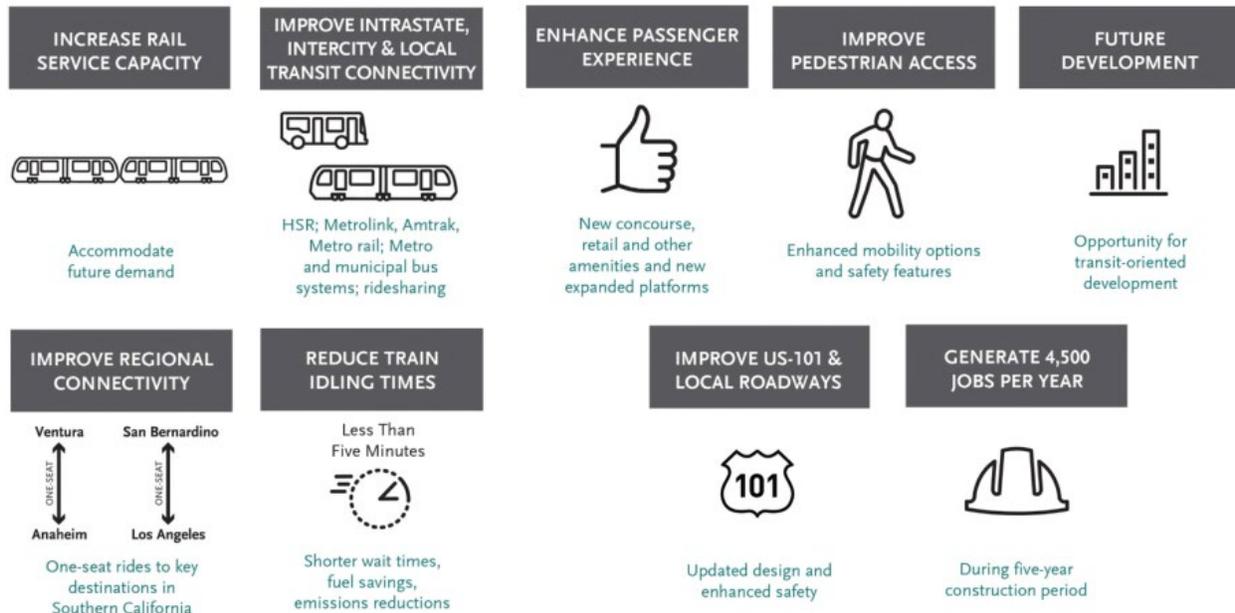
Exhibit A-6: Link US Final EIR Project



Project Benefits

The overall purpose of the Link US Project is to improve the functionality and operational capacity of LAUS in a cost-effective manner that will provide a world-class passenger experience at LAUS, enhance passenger mobility and operational flexibility, meet the growing demands of the regional and statewide transit system, and accommodate high-speed rail service. **Exhibit A-6** provides a summary of project benefits for the Link US Project.

Exhibit A-6: Link US Project Benefits



Source: Link US Presentation provided to the Metro Board of Directors, slide 2; Metro, December 2018.

The project benefits include:

- **Increase Rail Service Capacity:** *The Link US Project is essential to provide the capacity necessary for all future rail services at LAUS to operate, including high-speed rail, intercity rail, and regional rail services.*
- **Improve Intrastate, Intercity & Local Transit Connectivity:** *Link US will facilitate transfers between multiple transportation modes including California high-speed rail, Metrolink regional rail, Amtrak intercity rail and long-distance services, and connecting heavy rail, light rail, and bus services operated by Metro and municipal bus operators.*
- **Improve Regional Connectivity:** *Link US will enable travelers to make one-seat rides on high-speed rail trains and Metrolink trains between stations north of LAUS and stations south of LAUS, such as between the Antelope Valley and Orange County.*
- **Reduce Train Idling Times:** *Link US will reduce train idling times at LAUS from about 20 to 30 minutes to less than five minutes on run-through tracks.*

Furthermore, the Link US Project will transform LAUS into a world-class transit station. The new passenger concourse will enhance the passenger experience with significantly expanded retail, food service, and hospitality establishments for visitors, tourists, and residents. The passenger concourse will improve pedestrian access to the rail platforms, with new vertical circulation elements (stairs, escalators, and elevators). The Link US Project will also improve US 101 and local roadways with updated design and safety features, generate transit-oriented development opportunities in the LAUS area, and provide an estimated 4,500 jobs per year during construction.

Exhibit A-7 shows existing and projected future daily train movements at the LAUS rail yard. These train movements include Metrolink regional rail service, Amtrak/LOSSAN intercity and long-distance rail service, and California high-speed rail service. The additional rail yard capacity to be provided by the Link US Project will be necessary to accommodate the projected significant increases in train service at LAUS.

Exhibit A-7: LAUS Existing and Future Daily Train Movements

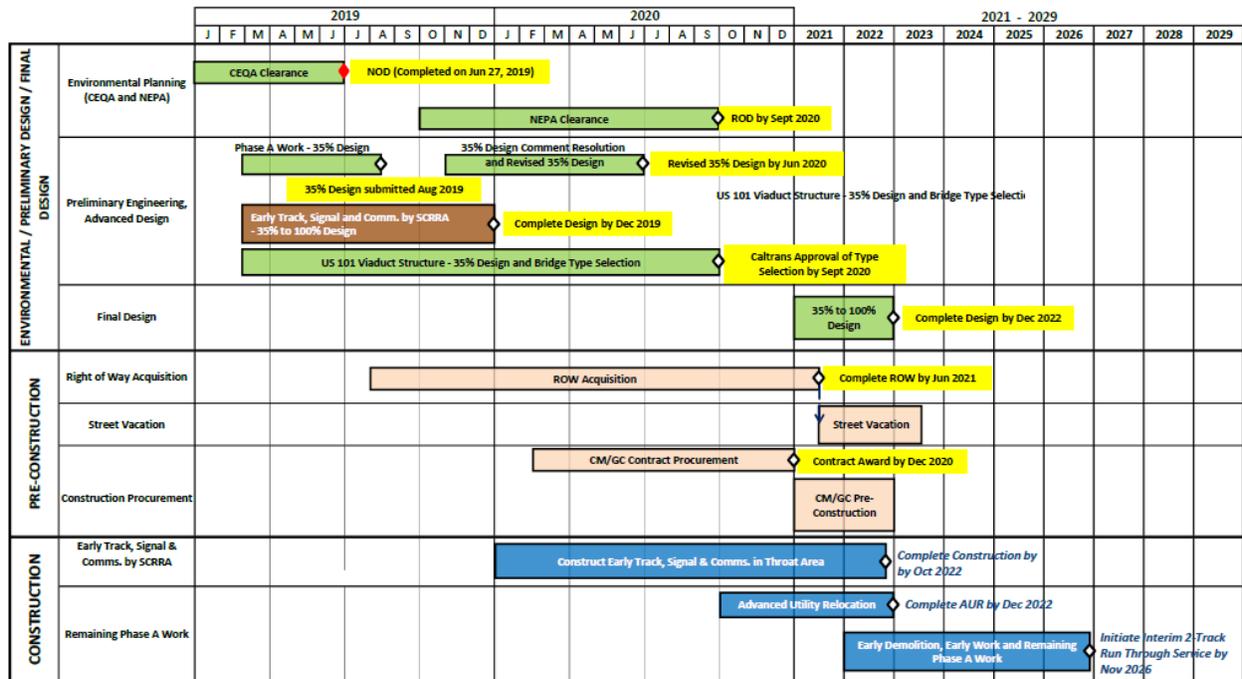
Transit Operator	Frequency	2016	2026	2031	2040
Metrolink (Regional Rail)	Total Daily	185	410	690	690
	<i>Revenue Trains</i>	139	370	678	678
	<i>Non-Revenue Trains</i>	46	40	12	12
	6-hour peak	80	144	250	250
Amtrak / LOSSAN	Total Daily	48	68	80	140
	<i>Pacific Surfliner</i>	32	48	56	112
	<i>Long-Distance Trains</i>	5	5	5	5
	<i>Non-Revenue Trains</i>	11	15	19	23
	6-hour peak	13	21	21	39
CHSRA	Total Daily	—	—	—	272
	<i>Non-Revenue Trains</i>	—	—	—	50
	6-hour peak	—	—	—	132

Source: Link Union Station Final Environmental Impact Report, Appendix B: Rail Planning Technical Memorandum, Table 5-1, page 25; Metro, June 2019.

Project Schedule

Exhibit A-8 shows the overall schedule for the Link US Project (Phase A), leading to the initiation of LAUS run-through service by 2026.

Exhibit A-8: Link US Project Schedule (Phase A)



Source: Metro, December 2019.

Environmental clearance to meet National Environmental Policy Act (NEPA) requirements, and to accommodate under CEQA any project changes since June 2019, are scheduled for completion in early 2020¹. Final design is scheduled for completion in December 2020. Metro plans to initiate right-of-way acquisition in July 2019 and project construction in July 2020. Construction is anticipated to proceed for a five-year period concluding in June 2025. Metro and its partner agencies plan to initiate LAUS run-through service in 2026, in advance of the 2028 Summer Olympics.

¹To assist with constructability of the project, Metro is considering adding to the existing BNSF Malabar yard in the City of Vernon to reduce business disruption to BNSF while Link US construction disrupts part of BNSF’s existing 1st Street yard. If that is the process Metro follows, the Malabar yard addition would be added to the project to be evaluated under NEPA, and associated additional CEQA evaluation would be performed regarding this Malabar change.

B. Sources of Funds and Anticipated Time of Receipt

Streets and Highways Code section 2704.08, subdivision (d)(1)(B) requires identification of the sources of all funds to be used and anticipated time of receipt thereof based on offered commitments by private parties, and authorizations, allocations, or other assurances received from governmental agencies.

This section describes the sources of funds for the Link US Project (Phase A). In addition to \$423.3 million from Proposition 1A bond proceeds, other funding sources include an additional \$18.7 million from CHSRA for planning, \$398.4 million from the Transit and Intercity Rail Capital Program (TIRCP), \$13.3 million from Los Angeles County Measure M funds, \$51.7 million from SCRRRA Joint Powers Authority (JPA) – Metro funds, \$40.0 million from SCRRRA JPA – non-Metro funds, and \$5.0 million from CalSTA and Caltrans.

Exhibit B-1 summarizes the funding sources and amounts for the Link US Project, including the anticipated annual cash flows (which specifies when the funds are expected to be received and used). A summary of each funding source is then provided. A high-level overview, process and timeline for each funding source is provided in Appendix A.

Exhibit B-1: Sources of Funds and Anticipated Time of Receipt for Link US Project, Phase A (year of expenditure dollars in millions)

Source of Funds	Prior to FY18-19	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	TOTAL
Proposition 1A				\$60.8	\$60.0	\$60.0	\$100.0	\$90.0	\$52.5	\$423.3
Other CHSRA Funds	\$14.8		\$3.1	\$0.8						\$18.7
TIRCP			\$69.8	\$96.8	\$40.0	\$40.0	\$50.0	\$60.0	\$41.8	\$398.4
Measure M, Metro									\$13.3	\$13.3
SCRRRA JPA, Metro	\$34.5	\$16.0	\$1.2							\$51.7
SCRRRA JPA, non-Metro				\$40.0						\$40.0
CalSTA & Caltrans									\$5.0	\$5.0
Total Funding	\$49.3	\$16.0	\$74.1	\$198.4	\$100.0	\$100.0	\$150.0	\$150.0	\$112.6	\$950.4

Source: Metro

Proposition 1A Bond Proceeds: The Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, approved by California voters as Proposition 1A (Prop 1A) in November 2008, authorized the sale of over \$9.0 billion in bond funding for construction of a high-speed rail system in California. SB 1029, approved in July 2012, appropriated \$500.0 million in Prop 1A funds to early investment projects in Southern California. The Authority will fund \$423.3 million from Prop 1A funds.

Other CHSRA Funds: In addition to Prop 1A, the Authority has provided \$18.7 million in funding to share in the cost of the Link US project approval and environmental documentation phase.

Transit and Intercity Rail Capital Program (TIRCP): The TIRCP Program, administered by CalSTA, funds transformative capital improvements to modernize California's rail systems, increase ridership and reduce

greenhouse gas emissions. In April 2018, CalSTA awarded SCRRRA a TIRCP grant for its Southern California Optimized Rail Expansion (SCORE) Program, which will fund regional rail service improvements throughout Southern California. CalSTA is providing \$398.4 million in funding from the TIRCP grant for the SCORE Program towards the Link US Project.

Measure M, Metro: Measure M is a half-cent transportation sales tax in Los Angeles County that was approved by voters in November 2016 to improve transportation and ease traffic congestion throughout the county, including transit capital, highway capital, operations, and local return projects. The Link US Project is eligible for Measure M funding under the category of Transit Connectivity, which is 2 percent of the entire Measure M program. Metro has committed \$13.3 million in Measure M Transit Connectivity funding towards the Link US Project.

SCRRRA Joint Powers Authority (JPA): Each of the five SCRRRA member agencies will benefit from the additional regional rail service that is enabled by the Link US Project. Reflecting these shared benefits, Metro is providing \$51.7 million in regional rail capital funding towards the Link US Project through Measure R. The four other SCRRRA member agencies are collectively providing \$40.0 million in capital funds for Link US.

CalSTA and Caltrans: CalSTA and Caltrans, which provide oversight and funding for the LOSSAN Rail Corridor Agency, are providing \$5.0 million in funding for the Link US Project. This reflects the benefits that the Link US Project will provide with respect to increased levels of Pacific Surfliner intercity rail service.

C. Projected Ridership and Operating Revenue

Streets and Highways Code section 2704.08, subdivision (d)(1)(C) specifies inclusion of a projected ridership and operating revenue report.

The Burbank to Los Angeles and Los Angeles to Anaheim Usable Segments, on which the Link US Project is located, are currently served by the following passenger rail services:

- **Metrolink Regional Rail:** SCRRRA provides Metrolink regional rail service within the shared urban corridor between Burbank, Los Angeles, and Anaheim. Four of Metrolink’s seven lines operate in this corridor, which include:
 - Antelope Valley Line, between LAUS and Lancaster in Los Angeles County (via Burbank).
 - Orange County Line, between LAUS and Oceanside in San Diego County (via Anaheim in Orange County).
 - Ventura County Line, between LAUS and the City of Ventura in Ventura County (via Burbank).
 - 91/Perris Valley Line, between LAUS and Perris in Riverside County (via Fullerton in Orange County).
- **Amtrak Intercity and Long-Distance Rail:** Amtrak operates Pacific Surfliner intercity rail service between the City of San Luis Obispo in San Luis Obispo County, Burbank, LAUS, Anaheim, and the City of San Diego in San Diego County. The LOSSAN Rail Corridor Agency manages the Pacific Surfliner service.

In addition, two Amtrak long-distance services also operate in the Burbank to Anaheim shared urban corridor. These services are the Coast Starlight between Seattle, WA and Los Angeles, CA, and the Southwest Chief between Chicago, IL and Los Angeles, CA.

High-Speed Rail Ridership Forecasts

The Authority will run service on the Burbank to Los Angeles, and Los Angeles to Anaheim Segments once both are connected to a larger part of the state-wide high-speed rail system in Phase 1; the Authority's forecasts for that service are available in the 2018 Business Plan, as noted below and incorporated into this Funding Plan by reference.²

Adding the Burbank to Los Angeles and Los Angeles to Anaheim Usable Segments, of which the Link US Project is a part of, produces a significant increase (close to 25%) in high-speed rail ridership. The medium case ridership forecast for the Phase 1 high-speed rail system connecting San Francisco and Anaheim in the year 2040 is 42.8 million riders. This is 8.3 million higher than the year 2040 ridership if the system did not include the Los Angeles to Anaheim Segments (i.e., a system that connects San Francisco and downtown Los Angeles, without service to Anaheim).

Metrolink Forecasts

LAUS is the focal point of passenger rail travel in Southern California, serving Metrolink commuter trains; Amtrak Pacific Surfliner intercity and long-distance trains; and Metro Red, Purple, and Gold Line trains. In addition to revenue trains, there are numerous non-revenue train movements at the LAUS terminal to service passenger train equipment and position equipment at the station platforms for revenue service. For Metrolink, non-revenue train movements occur between LAUS and the Central Maintenance Facility. For Amtrak, through trains and non-revenue train movements occur for Pacific Surfliner and Amtrak Long-Distance trains (Southwest Chief, Sunset Limited/Texas Eagle, Coast Starlight) between LAUS and Amtrak's Los Angeles Maintenance Facility.

Metrolink operates 139 revenue trains per weekday into and out of LAUS on several train lines, including the Ventura County Line (31 trains per weekday), Antelope Valley Line (30), San Bernardino Line (38), Riverside Line (12), 91/Perris Valley Line (9), and Orange County Line (19). Metrolink operates weekend service and holiday service on selected lines. Metrolink also operates 46 non-revenue trains between LAUS and the Central Maintenance Facility. During the 3-hour AM and PM peak operating periods (AM and PM combined), 80 Metrolink trains (39 in the AM and 41 in the PM) pass through LAUS.

² The ridership forecasts for the Authority's service that will use the Burbank to Los Angeles and the Los Angeles to Anaheim segments are provided in the 2018 Business Plan in Chapter 7: Ridership/Revenue. An associated Ridership and Revenue Forecasting technical document is available on the Authority's website at http://hsr.ca.gov/About/Business_Plans/2016_Business_Plan.html.

Additionally, further technical information on the Authority's ridership and revenue forecasts is available on the Authority website here: http://hsr.ca.gov/About/ridership_and_revenue.html

Exhibit C-1: Metrolink Ridership by Line (FY19)

Line	Average Weekday Ridership	Annual Ridership
Ventura County	4,416	1,097,325
Antelope Valley	6,588	1,864,362
San Bernardino	10,411	2,938,644
Riverside	3,868	961,553
Orange County	10,600	2,864,775
Inland Empire – Orange County	4,656	1,315,620
91 Line	3,293	893,079
Total	43,832	11,935,358

Source: Metrolink 2018 Transit and Intercity Rail Capital Program Grant Application

Metrolink Ridership Forecast – SCORE Program

Metrolink has embarked on a significant expansion of its operating stance intending for 30- and 15-minute headways with clock facing timetables. The State has endorsed the underlying principle of Metrolink’s Southern California Optimized Rail Enhancement (SCORE) program through the funding allocation made by CalSTA via the TIRCP program. This funding was awarded concurrently with a separate tranche specifically designated for the Link US Project. The following represents Metrolink’s projected annual ridership based on the SCORE program implementation and continued TIRCP funding:

Exhibit C-2: Forecasted Ridership Growth as part of the Metrolink SCORE Program

SCORE Packages	2017	2023	2028	2040	2078
	Baseline				
Early Action (a)	-	16,448,765	19,464,468	24,092,352	29,776,236
High-Frequency Local Lines (b)	-	-	10,097,550	12,498,350	15,446,969
Total SCORE Net New Ridership (a) + (b) = (c)	-	16,448,765	29,562,018	36,590,702	45,223,205
Baseline Ridership (d)	11,410,235	12,693,689	13,873,513	17,172,089	21,223,239
Total Ridership (c) + (d) = (e)	11,410,235	29,142,454	43,435,531	53,762,791	66,446,444

Source: Metrolink 2018 Transit and Intercity Rail Capital Program Grant Application

Amtrak Forecasts

Amtrak operates 28 revenue trains per weekday into and out of LAUS, which includes 14 Pacific Surfliner trains originating or terminating at LAUS; 9 Pacific Surfliner “through trains” that travel the entire extent of the Pacific Surfliner route (Los Angeles – San Diego – San Luis Obispo, or LOSSAN corridor) north and south of LAUS (counted as 18 total trains); and an average of 5 long-distance trains including the Coast Starlight (2 trains daily), the Southwest Chief (2 trains daily), and the Texas Eagle/Sunset Limited, which is a combined train that operates 3 times per week. Amtrak/LOSSAN also operate 11 non-revenue trains between LAUS and Amtrak’s Los Angeles Maintenance Facility (6 Pacific Surfliner and 5 Amtrak long-distance trains).

During the two 3-hour AM and PM peak operating periods (AM and PM combined), 13 (6 in the AM and 7 in the PM) Amtrak/LOSSAN revenue and non-revenue train movements pass through LAUS. LAUS is the fifth busiest station in the national Amtrak system, accommodating more than 1.7 million passenger boardings and alightings in 2017. LAUS is the main stop on the Amtrak Pacific Surfliner route, which is the second busiest Amtrak intercity route in the country, with nearly 3 million riders in 2017. Amtrak’s operations are focused on Tracks 11 through 14 and Platforms 6 and 7.

Exhibit C-3: Amtrak Ridership by Line, Serving LAUS (FY 18)

Line	Annual Ridership
Pacific Surfliner	2,946,239
Southwest Chief	331,239
Coast Starlight	417,819
Sunset Limited	97,078
Total	3,792,375

Source: Amtrak

Annual ridership decreased between 1.5% and 8.8% on the four lines serving LAUS compared to FY 17. Future year forecasts are not available.

Metro Rail

Metro operates the Red and Purple Line subway system, which is located approximately 40 feet below ground level at the station, directly below the existing passenger tunnel floor. Currently, there are approximately 400 scheduled Metro Red and Purple Line movements daily at LAUS.

Metro operates the Gold Line light rail system, which provides service from East Los Angeles, through LAUS, to Azusa, passing through the communities of East Los Angeles, Boyle Heights, Little Tokyo, Chinatown, Highland Park, South Pasadena, Pasadena, Arcadia, Monrovia, Duarte, Irwindale, and Azusa. At LAUS, the existing Gold Line track alignment connects to the US 101 eastside overpass to the south and the Chinatown aerial guideway to the north. LAUS Tracks 1 and 2 currently service Gold Line Platform 1.

Exhibit C-4: Metro Ridership

Line	Average Weekday Ridership	Annual Ridership
Red and Purple (Subway)	137,277	16,211,065
Gold Line (Light Rail)	51,364	10,639,138
Total	188,641	26,850,203

Source: Metro

With the Gold Line extension Phase 2B to Montclair, daily ridership on the Gold Line is forecasted to increase by 17,770 by 2035. The project is currently under construction and expected to complete by 2026.

With the Westside Purple Line extension to Westwood/VA Hospital, daily ridership on the Purple Line is forecasted to increase by 49,341 by 2035. The project is currently under construction and expected to complete by 2028.

Note that Table C-4 refers to system-wide ridership.

Metro Bus, Other Bus and Shuttle

LAUS serves a variety of local, regional, and interstate bus routes operated by Metro, Antelope Valley Transit Authority, BoltBus, City of Los Angeles Department of Transportation (LADOT), Foothill Transit, Los Angeles International Airport Flyaway, Megabus, Orange County Transportation Authority, Santa Clarita Transit, Santa Monica Municipal Bus Lines, and the University of Southern California Tram. In addition, the Foothill Transit Silver Streak, Metro Silver Line, and Metro Express have bus stops on the El Monte Busway southwest of LAUS along Arcadia Street and surrounding the station property. Amtrak Thruway bus service, which is Amtrak’s system of intercity motorcoaches that offers connecting service to unserved rail areas, also operates from LAUS and provides linkages to the Amtrak line to Bakersfield, Santa Barbara, San Diego, and other major cities.

In 2012, in support of the Los Angeles Union Station Master Plan, Metro compiled average weekday bus boardings and alightings at LAUS for Metro Local (7,808 trips) and Metro Rapid (5,826 trips) commuter services, including: LADOT Commuter Express 534 and Santa Monica Big Blue Bus 10 (485 trips), DASH routes B, D, Chinatown/Lincoln Heights Shuttle, Bunker Hill Shuttle (3,038 trips), LAX Flyaway (1,124 trips), and Amtrak Buses (698 trips). On weekdays, thousands of buses are dispatched from the Patsaouras Transit Plaza, the intersection of Cesar Chavez Avenue and Vignes Street and the El Monte Busway, all within a 5-minute walk from LAUS.

Exhibit C-5: Current and Forecasted 2040 Ridership at LAUS

Transit Options at LAUS	Current Daily Passengers	Forecasted Daily Passengers (2040)
Metro Red Line	25,904	45,501
Metro Purple Line	16,486	29,321
Metro Gold Line	21,623	38,146
Total Metrolink	13,439	49,957
Total Amtrak/LOSSAN	4,640	7,941
Total Bus	18,979	33,604
Future HSR	-	20,500
Total Daily Ridership at LAUS	101,071	224,970

Source: Metro

Note: Table C-5 refers only to ridership specifically at Los Angeles Union Station

D. Projected Construction Cost

Streets and Highways Code section 2704.08, subdivision (d)(1)(D) requires inclusion of a construction cost projection including Hs of cost escalation during construction and appropriate reserves for contingencies.

The capital cost for the Link US Project (Phase A) is estimated at \$950.4 million in year-of-expenditure dollars. **Exhibit D-1** provides the breakdown by project phase, including the anticipated annual cash flow requirements. Costs are based on a 35 percent level of conceptual design and include contingencies and soft costs. As with any construction project, the cost estimate will be updated as the project progresses.

Approach and Methodology

A comprehensive Phase A cost estimate has been prepared for the Link Union Station (Link US) project. The project estimate encompasses the advanced construction of the station throat area, which is being administered by SCRRA as a separate construction contract, and the interim run-through track viaduct improvements administered by Metro. The advanced throat work and run-through track viaduct improvements are separated as standalone projects in the cost estimate under Sections A and B, respectively.

A. Advanced Construction Station Throat Area

The advanced construction of the station throat area is currently at 100 percent level of design, and is scheduled to start construction in 2020. Based on the level of design, an allocated contingency of 10 percent has been applied to construction contract cost items. In addition, a 10 percent unallocated contingency (i.e., project reserve) has been applied to allow for unforeseen cost increases. SCRRA project soft costs have been applied, as applicable.

B. Interim Run-Through Track Viaduct Improvements

The interim run-through track viaduct improvements are currently at 35 percent level of design. The cost estimate for the run-through track viaduct improvements was developed through consultation with Metro's Cost Estimating, Risk Management, and Right-of-Way branches, as well as Metro's Project Management/Development Team and Consultant Team, as appropriate, including Structures, Right-of-Way, Traffic Operations, Civil, Utilities, Drainage, Architecture, Hazardous Waste, Environmental, Landscape Architecture, etc.

Consideration of project scope, schedule, and level of design details have been taken into consideration to develop accurate cost estimates, including project field reviews to minimize the possibility of overlooking significant design features and to ensure that the project is adequately scoped. Cost estimates are reviewed periodically and updated, as appropriate, to keep them current.

Unit prices are determined using the "Previous Bid Prices Method" as the basis for cost estimating in addition to published sources such as Caltrans' Contract Cost Database and Metro's databases for similar

projects, and engineering judgment. Unit prices are further adjusted to account for complexity of work, access and time restrictions, and constructability. Unit prices are further adjusted to account for similarly sized projects, variation in quantities for individual work items, and averages from various bidders, if available. Historic bid prices are adjusted to the current base year (2019). Unforeseen items of work are accounted for through both allocated and unallocated contingencies. As indicated in Table 1, varying allocated contingency factors are applied by work element commensurate with the level of design, complexity, site restrictions, etc., resulting in an aggregate 20 percent allocated construction contingency. In addition, unallocated contingencies totaling 10 percent are applied to construction contract cost items and project soft costs, where applicable, to allow for unforeseen increases. A 35 percent allocated contingency and 10 percent unallocated contingency is applied to right-of-way acquisition costs. Contingency percentages will be adjusted in subsequent project phases/updates as the project scope becomes more defined and there are fewer unknowns.

The current estimate is also escalated forward to the date of anticipated mid-point of construction using Metro’s forecasted indices for construction cost escalation and/or inflation. Based on the current anticipated schedule for the interim run-through track viaduct improvements, an escalation factor of 4 percent is utilized to forecast construction costs to 2024 (mid-point of construction). Similarly, right-of-way acquisition costs are escalated at 4 percent per year to the anticipated year of acquisition (2022).

The interim run-through track viaduct improvements project is planned to utilize the CMGC method of project delivery. In addition to applicable Metro soft costs, an allowance is included to implement an integrated project management team for this method of delivery.

Exhibit D-1, below, provides a summary of the Capital Cost estimate split out by its major project components:

Exhibit D-1: Link US Capital Cost Estimate (*dollars in millions*)

Source of Funds	Prior to FY18-19	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	TOTAL
PA&ED	\$49.3	\$16.0	\$19.1							\$84.4
PS&E			\$5.0	\$71.3						\$76.3
Right-of-Way (ROW)			\$50.0	\$87.1						\$137.1
Construction				\$40.0	\$100.0	\$100.0	\$150.0	\$150.0	\$112.6	\$652.6
Total Uses	\$49.3	\$16.0	\$74.1	\$198.4	\$100.0	\$100.0	\$150.0	\$150.0	\$112.6	\$950.4

Source: Metro, 2019. PA&ED is project approval & environmental documentation. PS&E is plans, specifications, and estimates.

Exhibit D-2, below, provides the Link US Capital Cost Estimate in Standard Cost Categories, and provides individual categories for Allocated Contingencies and Escalation.

Exhibit D-2: Link US Capital Cost Estimate by Standard Cost Category (dollars in millions)

Standard Cost Category	Cost in 2019\$, Without Allocated Contingencies	Allocated Contingencies in 2019\$	Total Cost in 2019\$	Escalation to YOES	Total Cost in YOES
	(a)	(b)	(a + b)	(c)	(a + b + c)
10 - Guideways & Track Elements	\$185,633,516	\$34,982,940	\$220,616,456	\$44,716,376	\$265,332,832
20 - Stations, Stops, Terminals, Intermodal	\$16,790,300	\$3,189,500	\$19,979,800	\$4,328,682	\$24,308,482
30 - Support Facilities: Yards, Shops, Admin Buildings	\$-	\$-	\$-	\$-	\$-
40 - Sitework & Special Conditions	\$97,003,946	\$20,377,331	\$117,381,276	\$25,430,994	\$142,812,271
50 - Systems	\$29,187,914	\$3,862,552	\$33,050,466	\$2,357,200	\$35,407,666
60 - ROW, Land, Existing Improvements	\$91,044,982	\$31,865,744	\$122,910,726	\$20,877,439	\$143,788,165
70 - Vehicles	\$-	\$-	\$-	\$-	\$-
80 - Professional Services	\$222,888,541	\$21,131,516	\$244,020,057	\$21,705,552	\$265,725,609
90 - Unallocated Contingency	\$61,081,634	\$-	\$61,081,634	\$11,941,624	\$73,023,258
100 - Finance Charges	\$-	\$-	\$-	\$-	\$-
Total Project Cost	\$703,630,833	\$115,409,582	\$819,040,415	\$131,357,867	\$950,398,282

Source: Metro

Exhibit D-2, above, also provides a break-out of Contingencies and Escalation, as required by statute.

- Total escalation is \$131,357,867
- Total contingencies are \$115,409,582

E. Material Changes

Streets and Highways Code section 2704.08, subdivision (d)(1)(E) requires inclusion of a report describing any material changes from the plan submitted pursuant to subdivision (c) for this corridor or usable segment thereof.

In 2012, the Legislature passed and the Governor signed SB 1029 appropriating \$500 million of Prop 1A proceeds for projects in Southern California without a Funding Plan pursuant to S&H Code section 2704.8, subdivision (c). As there was no Funding Plan developed under subdivision (c) prior to the Legislature's appropriation, there are no material changes to report.

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F. Terms and Conditions of Agreements

Streets and Highways Code section 2704.08, subdivision (d)(1)(F) requires a description of the terms and conditions associated with any agreement proposed to be entered into by the authority and any other party for the construction or operation of passenger train service along the corridor or usable segment thereof.

This section summarizes the agreements that the Authority has entered into or plans to enter into with other agencies in order to fund and implement the Link US Project, along with key agreements amongst other project partners to which the Authority is not a party but nonetheless will work with the other partners to ensure that those other agreements work in concert with agreements to which the Authority will be a partner.

2012 Southern California MOU: The Authority and several partner agencies (City of Anaheim, Los Angeles County Metropolitan Transportation Authority, Riverside County Transportation Commission, San Diego Association of Governments, Southern California Association of Governments, and Southern California Regional Rail Authority) signed the 2012 Southern California MOU to advance statewide rail modernization by starting to invest in local rail systems that will eventually be part of or connect with the statewide high-speed rail system. Through this MOU, the Authority and its partners are leveraging resources, working together to secure new funding, identifying and prioritizing early investment projects, and implementing project improvements in an expedited manner. The MOU specifies a list of early investment projects in Southern California identified by the signatory agencies based on a documented project selection process. The Link US Project is the consensus highest priority project listed in the MOU, which reflects the project's regional importance.

The Southern California MOU does not, by itself, allocate funds or assign roles and responsibilities to individual projects. The MOU indicates that subsequent project-level MOUs or other agreements will be developed to specify this information.

2019 Link US MOU: The Link US Memorandum of Understanding dated as of September 13, 2019 is an agreement by and among the California High-Speed Rail Authority, the California State Transportation Agency, and the Los Angeles County Metropolitan Transportation Authority. The purpose of this MOU is: (i) to establish the parties' commitment to work cooperatively and collaboratively to allow CHSRA to secure approval and release of \$423,335,000 of Proposition 1A funds for the Link US Project, appropriated by the California Legislature pursuant to Chapter 152 of the Budget Act of 2012 (Senate Bill No. 1029) which includes requirements for a subdivision (d) Funding Plan and a Project Management and Funding Agreement, (ii) to describe the commitment of Metro to work with CHSRA and other stakeholder agencies to fully fund the Link US Project, including pursuit of a variety of funding and financing options from federal, state, local and private sources, and (iii) to describe certain core principles essential to construction of the Link US Project and future operation thereof, to enable use of such facilities by CHSRA, Metro, state-supported intercity and certain other passenger and freight rail providers.

LINK US Project Management and Funding Agreement (PMFA): The Authority and Metro will enter into a PMFA, as required by SB 1029, to define their primary roles and responsibilities with regard to the LINK US Project. The requirements of the PMFA as described in SB1029 are as follows:

The High-Speed Rail Authority shall enter into a project management and funding agreement with the local sponsor (Metro) of the funded project, and the agreement shall require the local agencies to report to the authority on a quarterly basis to ensure that all bond funded activities are within the scope and cost outlined in the agreement. Prior to the authority entering into a project management and funding agreement pursuant to this provision, the agreement shall be approved by Department of Finance.

Per agreement with Metro, the PMFA will grant certain operating rights to the Authority in exchange for the State Phase A contribution detailed in this funding plan. This will include grant of certain operating rights to the Authority in LA Union Station, and along the shared rail corridor owned by Metro.

Link US Project Development Agreement with CHSRA: The Authority and Metro entered into an agreement in May 2016 to pay for up to \$15.000 million of the project development costs for the Link US Project, as the project includes the tracks, platforms and concourse facilities for future high-speed rail operations at Union Station. The funding amount represents the proportional share of the Link US preliminary planning, design and environmental clearance costs needed to accommodate high-speed rail. Metro is responsible for completing the scope of work specified in the agreement, which includes the following:

- *Perform initial engineering studies for Link US, as well as additional studies and investigation work required to account for the inclusion of the passenger concourse and accommodation of high-speed rail.*
- *Prepare new Link US environmental technical studies, a new Link US EIR, and a new Link US EIS that address a minimum of five alternatives (one no-build and four build alternatives).*
- *Prepare Link US preliminary engineering design work up to 35% design, to include a construction phasing approach for components within LAUS.*

In August 2017, the contract was amended to increase the Authority's share to \$18.726 million, based on a revised level of effort for project development that pertains directly to incorporating high-speed rail. Additional deliverables that were added to the agreement included: advancing plans for the combined viaduct structure over US-101 from 35% design to 100% design, and updating the technical studies to incorporate shorter high-speed rail platforms.

Existing LAUS Agreements: Metro currently has various agreements in place with SCRRRA, LOSSAN, Amtrak, and host freight railroads, which govern access, capacity, and cost sharing on all Metro-owned railroad right-of-way including at LAUS. These agreements are intended to continue without interruption and be amended as necessary based on the SCORE Program and Link US needs. Metro

also uses agreements with SCRRA related to maintenance-of-way and capital rehabilitation work. These agreements are also expected to continue without interruption.

Other Link US Agreements: Given that the Link US Phase A project includes multiple funding sources and the requirement to implement environmental mitigation measures, a number of future agreements are needed among the project funding partners that include Metro, CHSRA, CalSTA and SCRRA to define the roles and responsibilities of each agency in the implementation of the Phase A of Link US. The funding partners are in the process of developing those agreements. These agreements are anticipated to be complete by end of 2019.

- In March 2017, Metro entered into an agreement with SCRRA specifically for Link US. This agreement intends that SCRRA perform review and oversight with respect to the various project elements of Link US, including environmental documentation, project planning, project design, and project engineering.
- An Engineering and Project Development Agreement and a Construction and Maintenance Agreement is required between Metro and BNSF regarding work within the BNSF properties on the west bank of the Los Angeles River and in City of Vernon.
- A Programmatic Agreement or Memorandum of Agreement with Native American Tribes and the State Historic Preservation Office (SHPO) is required as part of the NEPA process to define how construction monitoring and mitigation measures during construction will be carried out.

Project Delivery Structure: Metro's Board of Directors approved the CM/GC delivery approach for the Link Union Station Project on December 5, 2019. With the 35% preliminary engineering design bridging documents, Metro will engage a CMGC under one contract to perform both pre-construction services during the final design and construction services of the Phase A project at a Not-to-Exceed (NTE) price.

Since the CMGC's NTE contract price is based on a 35% PE design plans, the CMGC will collaborate and work with the Engineer and Metro to perform constructability and value engineering analysis as the final design progresses. The goal is to provide an opportunity for the CMGC to negotiate a lower lump sum fee at the 90% design (equivalent to Caltrans 100% design) than the NTE price especially since the risks will be more well defined and will be shared by all parties. Metro is considering incentivizing the CMGC and Engineer to design and construct to budget where any cost savings realized at substantial completion of construction below the NTE price will be shared.

In the event that Metro and the Contractor are not able to reach agreement for the main construction work, Metro will implement provisions to terminate the Contractor's CMGC contract, and may negotiate a contract with the Backup Contractor to perform the construction services or proceed with a different delivery approach such as a design bid build depending on the level of project design at the time. Metro estimates that a delay of up to three months to re-procure the construction work if a different project delivery approach is selected.

Appendix A: Reference Documents

Document	Location
California High-Speed Rail Authority, 2018 Business Plan (June 2018)	Link
California High-Speed Rail Authority, 2018 Business Plan, Ridership and Revenue Forecasting Technical Supporting Document (June 2018)	Link
California High-Speed Rail Authority, 2016 Business Plan (May 2016)	Link
California High-Speed Rail Authority, 2014 Business Plan (April 2014)	Link
California High-Speed Rail Authority, 2012 Business Plan (April 2012)	Link
California Proposition 1A, 2008 High-Speed Rail Act (November 2008)	Link
California Public Utilities Code, Section 1202.5	Link
California State Legislature, Senate Bill 1029 (July 2012)	Link
California Streets and Highways Code, Section 2704.08	Link
Los Angeles Metro, Link US Draft Environmental Impact Report (January 2019)	Link
Los Angeles Metro, Link US Draft Environmental Impact Report - Appendices (January 2019)	Link
Los Angeles Metro, Link US Project Fact Sheet (January 2019)	Link
Los Angeles Metro, Link US Frequently Asked Questions (January 2019)	Link
Southern California Memorandum of Understanding (2012)	Link
Los Angeles Metro, Link US Final Environmental Impact Report (June 2019)	Link
Link US, Memorandum of Understanding (September 2019)	Link

