



# MONTEBELLO BOULEVARD GRADE SEPARATION PROJECT

FY 2019 BUILD Grant Application

## Project Narrative



*Submitted by:*  
San Gabriel Valley Council of Governments

4900 Rivergrade Road, Suite A120, Irwindale, CA 91706  
(626) 962-9292

<https://www.theaceproject.org/build>



## TABLE OF CONTENTS

- I. PROJECT DESCRIPTION ..... 1**
  - A. Project History ..... 2
  - B. Addressing Transportation Challenges ..... 3
- II. PROJECT LOCATION ..... 8**
- III. GRANT FUNDS, SOURCES AND USE OF PROJECT FUNDS ..... 9**
- IV. SELECTION CRITERIA ..... 10**
  - a. Promotes Economic Development in Opportunity Zones ..... 11
  - B. Primary Selection Criteria ..... 11
    - i. Safety ..... 11
    - ii. State of Good Repair ..... 12
    - iii. Economic Competitiveness ..... 12
      - a. Vehicle Operating Cost Savings ..... 12
      - b. Travel Time Savings ..... 12
      - c. Operations and Maintenance Costs ..... 13
    - iv. Environmental Sustainability ..... 14
    - v. Noise Reduction Benefits ..... 14
  - C. Secondary Selection Criteria ..... 15
    - i. Innovation ..... 15
      - a. Innovative Technologies ..... 15
      - b. Innovative Project Delivery ..... 16
      - c. Innovative Financing ..... 16
    - ii. Partnership ..... 17
- V. PROJECT READINESS ..... 19**
  - A. Technical Feasibility ..... 19
    - a. Project Schedule ..... 19
  - B. Required Approvals ..... 20
    - i. Environmental Permits & Reviews ..... 20
      - a. NEPA Status ..... 20
      - b. Other Reviews, Approvals, and Permits ..... 20
      - c. Environmental Studies ..... 20
      - d. Public Engagement ..... 20
    - ii. State and Local Approvals ..... 22
  - C. Assessment of Project Risks and Mitigation Strategies ..... 22



## TABLE OF FIGURES

Figure 1: Montebello Boulevard Grade Separation Project rendering ..... 1

Figure 2: Overall ACE Program ..... 2

Figure 3: Completed projects in the ACE Program ..... 3

Figure 4: The Project will eliminate wait times at the Montebello Boulevard grade crossing ..... 4

Figure 5: The Montebello Boulevard grade crossing is currently ranked as one of the most crash-prone grade crossing of the UPRR transcontinental mainline in Los Angeles County. .... 5

Figure 6: The Project's connection to the National Freight System ..... 6

Figure 7: Origins and destinations of motorists crossing through Montebello Boulevard..... 7

Figure 8: Project location ..... 8

Figure 9: Properties within one mile of Project site ..... 15

Figure 10: A traffic sign installed by ACE directing motorists to open businesses adjacent to an ACE project site ..... 21

## LIST OF TABLES

Table 1: Crossing collisions at Montebello Boulevard ..... 5

Table 2: Profile of daily trips going through Montebello Boulevard crossing ..... 7

Table 3: Project costs and funding sources ..... 9

Table 4: Previously expended and total Project costs (as of June 27, 2019) ..... 10

Table 5: BCA summary results (7% discount) ..... 10

Table 6: AM and PM peak hour traffic summary – 2024 vs 2045 ..... 13

Table 7: Toxic emission savings due to fewer idling vehicles ..... 14

Table 8: Project stakeholders ..... 17

Table 9: Project schedule ..... 19

Table 10: Risk and mitigation strategies ..... 23

## I. PROJECT DESCRIPTION

The San Gabriel Valley Council of Governments (SGVCOG) is requesting a \$20 million BUILD grant for **the Montebello Boulevard Grade Separation Project (“Project”)**, which will improve the safety of one of the most crash-prone crossings of the Union Pacific Railroad (UPRR) in Los Angeles County, located in the City of Montebello, California<sup>1</sup>.

The Project consists of the construction of a roadway underpass, with Montebello Boulevard lowered beneath the UPRR right-of-way, and a rail bridge structure for UPRR’s Los Angeles Subdivision tracks. The existing intersection of Montebello Boulevard and Olympic Boulevard will also be grade separated, with a new roadway bridge structure constructed for Olympic Boulevard to span the lowered Montebello Boulevard. The Project also includes retaining walls, relocated utilities, and new traffic signals.

The Project will improve safety by eliminating collisions at the crossing and will improve traffic flows by reducing vehicle queuing and congestion, in turn reducing vehicle emissions. This will save commuters time and money and result in improved quality of life for the community and region. The Project will also decrease transportation costs and improve access for residents and businesses located in nearby Federal Opportunity Zones by providing reliable and timely access to employment centers.

The requested \$20 million in BUILD funds represents 15% of the estimated total Project cost of \$133.3 million, and the Project has a **Benefit-Cost Ratio of 1.1, at a 7% discount rate**. The Project is supported by \$113.3 million in State, regional and private funds — a leverage of more than \$5 for every \$1 in requested BUILD funds.



*Figure 1: Montebello Boulevard Grade Separation Project rendering*

<sup>1</sup>See Federal Railroad Administration (FRA) Web Accident Prediction System Report, posted to <https://www.theaceproject.org/build>.

## A. PROJECT HISTORY

The **Montebello Boulevard Grade Separation Project** is one component of the Alameda Corridor-East (ACE) Program, a \$1.7 billion comprehensive program established in 1998 by SGVCOG and Los Angeles County to improve safety and mitigate the effects of increasing freight rail traffic along the ACE Trade Corridor to and from the Ports of Los Angeles and Long Beach. The ACE Program (Figure 2) consists of constructing grade separations, where the road goes over or under the railroad, at 19 crossings (eliminating 23 at-grade crossings) and safety and mobility upgrades at 53 crossings. Construction has been completed on 14 rail-roadway grade separations. Three grade separations are under construction with another two grade separations and eight crossing safety projects in the design phase. Safety improvements are complete at 40 at-grade crossings. Note that of the FRA Web Accident Prediction Report for Public at-Grade Highway-Rail Crossings on the UPRR in Los Angeles County, the Fairway Drive (ranked no. 1), Temple Avenue (ranked no. 2) and Fullerton Road (ranked no. 4) crossings have been closed for ACE Program grade separation or train diversion projects that are either under construction or completed. A grade separation at Montebello Boulevard (ranked no. 5) is the next priority project in the ACE Program.

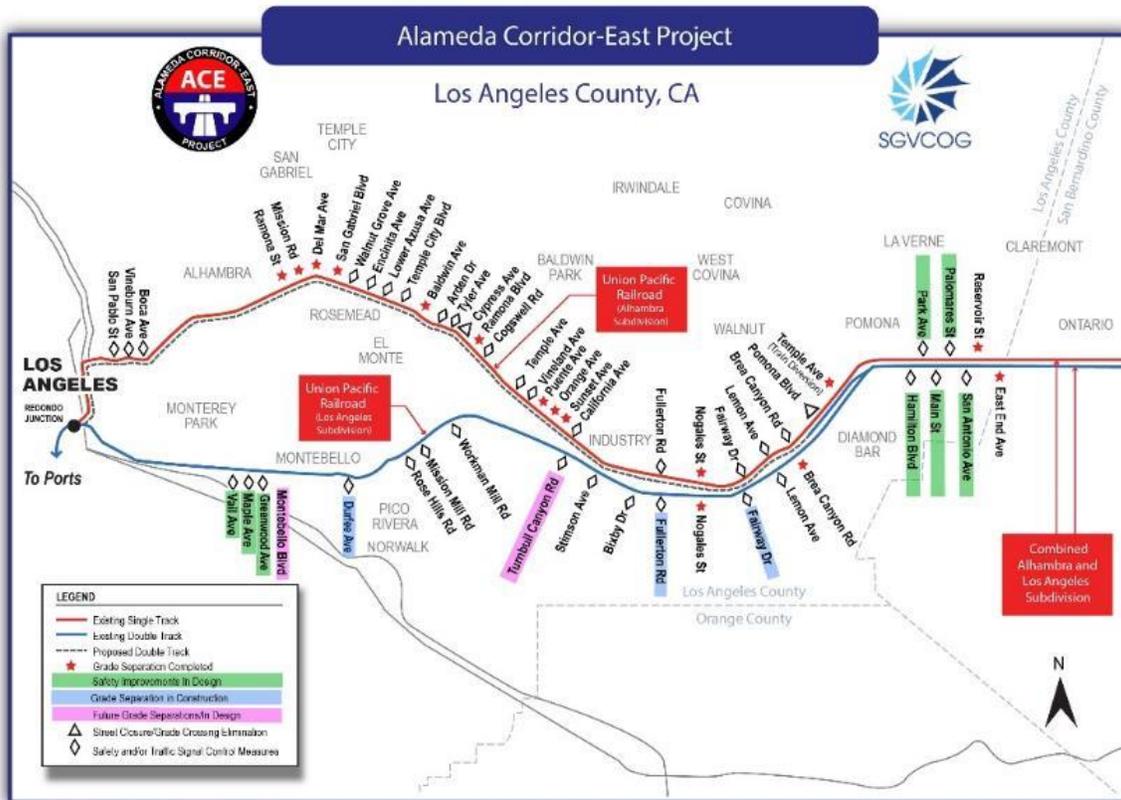


Figure 2: Overall ACE Program

The ACE Trade Corridor rail line connects the north end of the Alameda Corridor consolidated rail trench expressway and the Ports of Los Angeles and Long Beach to the transcontinental rail network and points across the country. The Program has significantly eased traffic congestion in the San Gabriel Valley caused by longer and more frequent train traffic going to and from the nation’s two busiest seaports. Nearly 60% of the containers — both imports and exports — moving through the Southern California ports travel along this rail line to and from destinations across the country. The ACE Trade Corridor rail mainlines through Southern California carry 16% of all oceangoing containers in the U.S. and the ACE rail-roadway improvements have been designated by Congress as a Project of National and Regional Significance.

## B. ADDRESSING TRANSPORTATION CHALLENGES

Southern California’s freight transportation system is among the most congested in the nation, and with growing train volumes and longer train lengths projected on the ACE Trade Corridor, communities along the freight rail mainlines will continue to experience increased traffic congestion and collisions at rail crossings. The Montebello Boulevard grade crossing is currently ranked by the FRA as one of the most crash-prone active grade crossings of the UPRR transcontinental mainline in Los Angeles County.

The traffic congestion caused by the busy freight transportation not only causes safety challenges, it also reduces the efficiency of freight movement and the competitiveness of American commerce in global markets. The ACE grade separation projects (Figure 3) are essential to maintaining and sustaining a longstanding regional consensus of support for the growth of the ports and related warehouse, logistic and regional and national industries accompanied by positive initiatives to minimize the impacts of increased goods movement through Southern California communities.



Figure 3: Completed projects in the ACE Program

The Montebello Boulevard Grade Separation Project will resolve critical transportation challenges by **improving the flow of traffic** at the crossing and at nearby intersections and **reducing transportation network system delays**. The Project will **improve safety** by eliminating the possibility of collisions at the crossing and **improve community quality of life** by reducing toxic air emissions and facilitating City application seeking authorization of a rail “Quiet Zone” to

reduce train horn noise. It will also **support regional and national economic vitality** by making freight movement more efficient. In addition, the Project will provide **safe and efficient transportation for commuters who travel through the Project to reach businesses and residences located in nearby Economic Opportunity Zones.**

### Improves Traffic Flow and Reduces Transportation Network Delays

The Project will reduce traffic congestion and create travel time savings throughout the region's highly congested highways. The City of Montebello is bisected by the UPRR Los Angeles Subdivision transcontinental mainline, with a daily average of 36 freight trains and 12 Metrolink regional commuter trains<sup>2</sup>. These trains block four north-south city streets, including Montebello Boulevard. During the 22,395 average daily trips that drivers take on Montebello Boulevard, 3,155 hours are wasted each day on system delays<sup>3</sup>. By 2024, rail traffic through the City is projected to increase from 44 trains to 52 trains per day, and grow 2.7% annually afterwards<sup>4</sup>, due in part to the increasing use of mega-ships to call on Southern California ports, with resulting increased landside cargo movement. The increasing volume and frequency of these freight trains will increase the amount of daily blockage time, traffic congestion and pollution due to vehicle idling at inland crossings. When complete, the Project will improve the flow of traffic at the crossing and at nearby intersections, and reduce transportation network system delays, reducing the time wasted on system delays by an estimated 1,328 daily hours by 2024.



Figure 4: The Project will eliminate wait times at the Montebello Boulevard grade crossing.

<sup>2</sup> For train counts, see p. 2 of *Memorandum: Maple Ave. Pedestrian Overhead Alternative Structures*, by Moffatt & Nichol, November 28, 2017, posted to <https://www.theaceproject.org/build>.

<sup>3</sup> For traffic analysis, see *SimTraffic Simulation Report*, LIN Consulting, Inc., Dec. 21, 2017, <https://www.theaceproject.org/build>.

<sup>4</sup> For freight train forecasting results, see p. 17-19 of the *Alameda Corridor-East Phase II Grade Separation Final Report* by KOA Corporation posted to: <https://www.theaceproject.org/build>. For freight train forecasting methodology, see *Inland Empire Railroad Mainline Study* prepared for the Southern California Association of Governments by Robert Leachman and Associates: <http://www.freightworks.org/Documents/Inland%20Empire%20Railroad%20Mainline%20Study.pdf>

### Improves Rail Crossing Safety

The Project will substantially improve safety by eliminating collisions between regional Metrolink commuter or UPRR freight trains and vehicles and pedestrians at Montebello Boulevard, where five crossing collisions have occurred at the at-grade crossing over the past 20 years, with three pedestrians killed and injuries to one pedestrian and one motorist. These instances are detailed in the chart below and noted in FRA reports posted to <https://www.theaceproject.org/build>.

Table 1: Crossing collisions at Montebello Boulevard

DATE	MOTORIST/PEDESTRIAN	DEATHS/INJURIES
09/09/2016	Pedestrian	1 killed
10/19/2013	Motorist	1 injured
09/28/1994	Pedestrian	1 killed
03/11/1978	Motorist	None
05/20/1977	Pedestrian	1 killed

The Project will also increase safety for the 4,400 commuters who travel on board the Metrolink Riverside inter-county rail service each weekday, making a stop at the commuter rail station located in Montebello<sup>5</sup>.



Figure 5: The Montebello Boulevard grade crossing is currently ranked as one of the most crash-prone grade crossings of the UPRR transcontinental mainline in Los Angeles County.

Emergency services will also benefit from the Project. With the only hospital in the City located to the north of the tracks and only one grade separation on the eastern edge of the City, frequent and slow freight trains cause delays for ambulances, police cars and fire trucks crossing the tracks, endangering lives while they wait for trains to pass. Due to the presence of the railroad bisecting the City, emergency responder stations are located north and south of the tracks, but on occasion when emergency responder resources are stretched, responses to incidents on the opposite side of the tracks are delayed due to passing trains.

<sup>5</sup> See <https://www.metrolinktrains.com/globalassets/about/agency/facts-and-numbers/fact-sheet-for-website-q1-fy-19.pdf>

### Improves Quality of Life by Reducing Air Emissions and Reducing Train Noise

The Project will improve the quality of life for residents in the City of Montebello and the San Gabriel Valley by reducing the hours that motorists are delayed due to crossing trains, which will lead to reductions in toxic emissions from idling vehicles and improve air quality in the region.

With daily freight trains in the region projected to increase, communities along the rail corridor will encounter negative noise impacts at at-grade railroad crossings if the grade separation is not constructed. By grade-separating the Montebello Boulevard crossing, train noise will be eliminated, since grade separated crossings do not require train horns or crossing gates. Separately funded grade crossing safety improvements at the adjacent crossings immediately to the west at Greenwood and Maple Avenues may allow the establishment of a rail Quiet Zone in the City of Montebello, subject to approval by the FRA. This Quiet Zone will improve the quality of life for nearby residents and businesses.

### Support Regional and National Economic Vitality by Making Freight Movement More Efficient

The ACE Trade Corridor provides connectivity between the Ports of Los Angeles and Long Beach and the inland U.S. (as shown in Figure 6), and mainly carries containerized imports and exports, which are generally high-value commodities sensitive to delays that could result from at-grade crossing crashes. The Project, as a component of the ACE Program, will eliminate the possibility of a vehicular crash at the crossing, improving the reliability of freight movement to and from the ports and reducing the costs associated with freight delays for businesses and consumers.

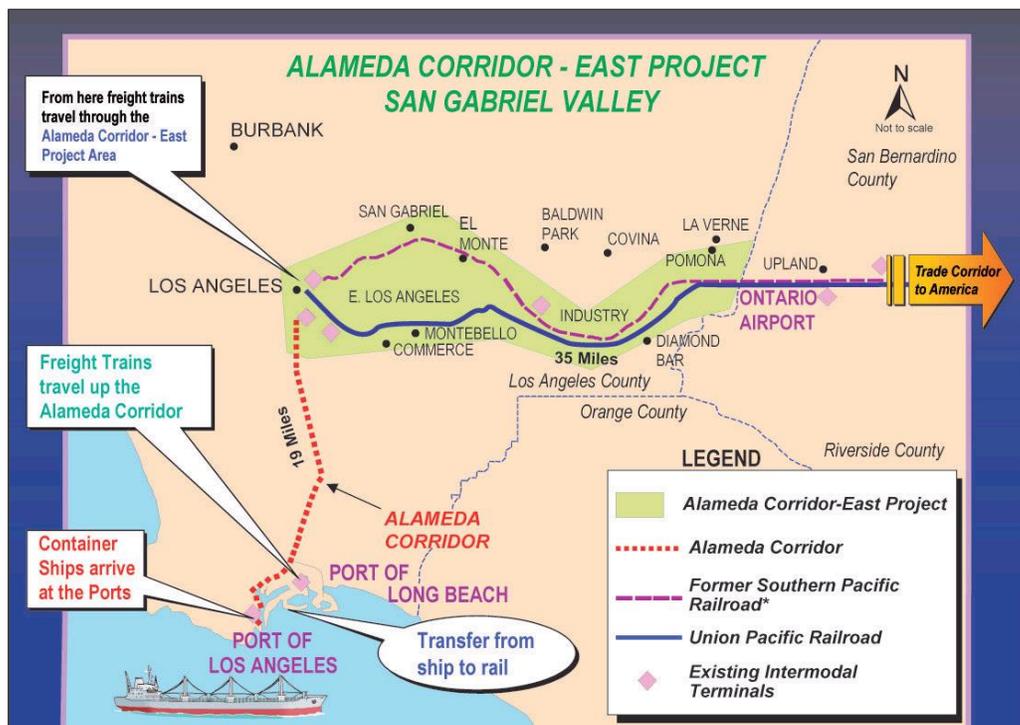


Figure 6: The Project's connection to the National Freight System

### Benefits Economic Opportunity Zones

The Project will decrease transportation costs and improve access for the movement of people and goods by providing reliable and timely access to nearby Qualified Opportunity Zones, authorized in the Tax Cuts and Jobs Act of 2017 and intended to spur economic development and job creation in distressed communities. Approximately 9% of weekday motorists driving through the Montebello Boulevard crossing are coming from or going to Opportunity Zones in Los Angeles, Orange and Ventura counties, as designated by localities and certified by the Internal Revenue Service.

Table 2: Profile of daily trips going through Montebello Boulevard crossing

ORIGIN	DESTINATION	SHARE
Non-Opportunity Zone	Non-Opportunity Zone	91.0%
Non-Opportunity Zone	Opportunity Zone	4.8%
Opportunity Zone	Non-Opportunity Zone	4.0%
Opportunity Zone	Opportunity Zone	0.1%

An estimated \$9.5 million of total Project benefits — including those calculated for Safety, Operating Costs, Travel Time Savings and Emissions reductions — will accrue to Opportunity Zones (Figure 7), supporting this significant policy initiative for incentivizing private investment into designated low-income areas.

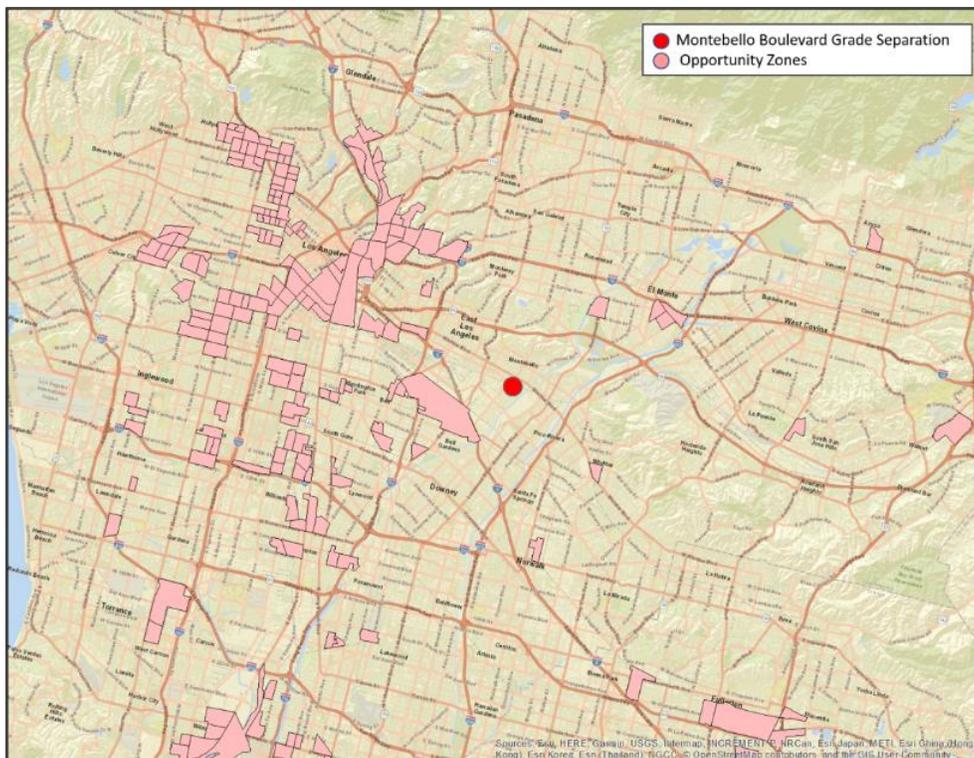


Figure 7: Origins and destinations of motorists crossing through Montebello Boulevard

## II. PROJECT LOCATION

The Project is located in the City of Montebello in the Los Angeles-Long Beach-Anaheim Census-Designated Urbanized Area, which has a population of 12,150,996 (2010 census). Montebello is surrounded by a growing and vital transportation network consisting of connections to highways (Interstate 5 and State Route 60) and the UPRR railroad line.

The Project is within a railway right-of-way at Montebello Boulevard. The Project location is in an urbanized area that is mainly industrial, but also contains commercial, retail, educational, and, increasingly, residential land uses seeking commuter rail access.

The Montebello Metrolink Station, a stop for 12 commuter trains a day which operate on a 60-mile route between Los Angeles Union Station and Riverside County, is located directly west of Montebello Boulevard, as shown in Figure 8.

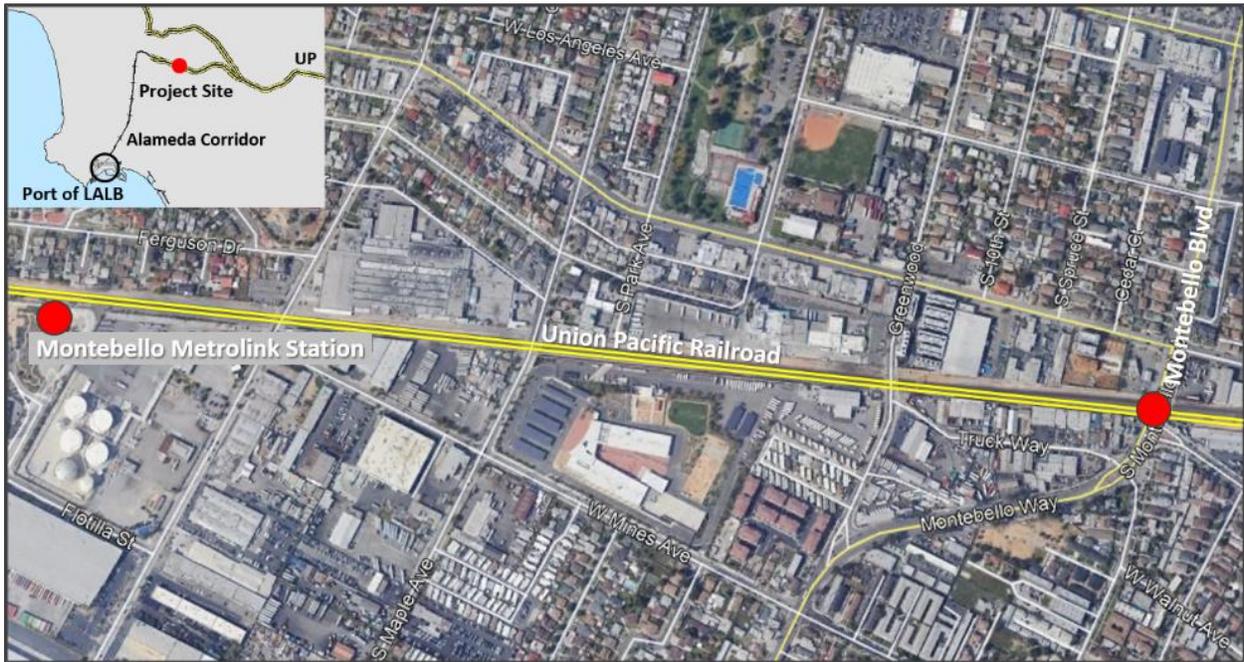


Figure 8: Project location

### III. GRANT FUNDS, SOURCES AND USE OF PROJECT FUNDS

The total cost of the Montebello Boulevard Grade Separation Project is estimated at \$133,295,000 (Table 3). The majority of Project funding is secured from state and regional programs, with \$20,000,000 (15%) still needed for Project construction.

Los Angeles County Prop C and Measure R sales tax revenues and the California Trade Corridor Enhancement Program (TCEP), derived from State diesel fuel tax revenues, have been programmed for the Project and are subject to executed agreements. An estimated private UPRR railroad contribution will be negotiated, consistent with federal statute setting the contribution at no more than 5% of the theoretical cost of the grade separation. UPRR contributions have averaged about \$2 million to \$3 million per ACE grade separation project. If awarded BUILD grant funding, the Project will be able to proceed to construction.

If federal BUILD grant funds are not awarded, construction of the Project will be delayed indefinitely as the implementing agency seeks alternate sources of grant funding. The delay will result in additional project costs, with construction costs in Southern California having risen 4.7% on average each year over the past three years.

Table 3: Project costs and funding sources

FUNDING SOURCE	TYPE	DESIGN	ROW/UTILITY RELOCATION	CONSTRUCTION	TOTAL	% SHARE
<b>MTA Prop C/ Measure R</b>	Non-Federal	\$20,161,000	\$33,500,000	\$7,934,000	\$61,595,000	46%
<b>CA Trade Corridor Grant (TCEP)</b>	Non-Federal	-	-	\$49,000,000	\$49,000,000	37%
<b>UPRR Contribution</b>	Non-Federal			\$2,700,000	\$2,700,000	2%
<b>BUILD Grant</b>	Federal			\$20,000,000	\$20,000,000	15%
<b>TOTAL</b>	-	<b>\$20,161,000</b>	<b>\$33,500,000</b>	<b>\$79,634,000</b>	<b>\$133,295,000</b>	<b>100%</b>
<b>% Cost</b>	-	15%	25%	60%	100%	-



Table 4 shows the Project’s previously expended costs, which indicate the significant progress that has been made on the Project’s design and right-of-way efforts.

Table 4: Previously expended and total Project costs (as of June 27, 2019)

STAGE	NON-FEDERAL FUNDS	FEDERAL FUNDS	TOTAL INCURRED	TOTAL BUDGET
Engineering Design	\$9,530,149	-	\$9,530,149	\$20,161,000
Right of Way/Utility Relocation	\$8,569,348	-	\$8,569,348	\$33,500,000
Construction	-	-	-	\$79,634,000
<b>TOTAL</b>	<b>\$18,099,497</b>	<b>-</b>	<b>\$18,099,497</b>	<b>\$133,295,000</b>

#### IV. SELECTION CRITERIA

A Benefit-Cost Analysis (BCA) was conducted for the Project. The BCA provides a monetization and discounting of Project costs over a 20-year horizon, in a common unit of measurement in present day dollars. This BCA is comprehensive and objective in identifying and quantifying project benefits and costs and complying with the guidelines for the BCA as outlined in the FY 19 Notice of Funding Opportunity.

The benefits that have been estimated have been categorized by four long-term outcomes of Safety, Economic Competitiveness, Environmental Sustainability, and Noise Reduction. A conservative approach has been taken in all cases where judgment was used in estimating the extent of benefits. **The Project has a Benefit-Cost Ratio of 1.1 at a 7% discount rate.** A summary of the BCA is shown in Table 5.

Table 5: BCA summary results (7% discount)

CATEGORY / OUTCOME	NET PRESENT VALUE (2017, 7% DISCOUNT)
Safety	\$9,178,984
Economic Competitiveness	\$72,839,721
Environmental Sustainability	\$268,081
Noise Reduction	\$18,734,139
<b>Total Benefits (a)</b>	<b>\$101,020,925</b>
<b>Project Cost (b)</b>	<b>\$105,155,062</b>
<b>Residual Value (c)</b>	<b>\$13,357,159</b>
<b>Discount Rate</b>	<b>7%</b>
<b>Net Present Value (a-b+c)</b>	<b>9,223,022.3</b>
<b>Benefit Cost Ratio ( (a+c)/b )</b>	<b>1.1</b>



Additional Project benefits have been identified, but were not directly monetized for the BCA, including:

- Improving access for emergency vehicles and other city services between the north and the south side of the City.
- Short-term project benefits such as construction jobs and spending are excluded from the BCA, in accordance with USDOT guidance.

*a. Promotes Economic Development in Opportunity Zones*

The Project will decrease transportation costs and improve access for the movement of people and goods by providing reliable and timely access to nearby Opportunity Zones. An Origin-Destination analysis<sup>6</sup> of trips through the Montebello Boulevard crossing by motorists from Ventura, Los Angeles and Orange Counties shows that approximately 9% of weekday trips originated or terminated in nearby Opportunity Zones. **An estimated \$9.5 million of total Project benefits — including those calculated for Safety, Operating Costs, Travel Time Savings and Emissions reductions — will accrue to Opportunity Zones, supporting this significant policy initiative for incentivizing private investment into designated low-income areas.**

**B. PRIMARY SELECTION CRITERIA**

A full BCA report and model are provided separately from this narrative. The primary benefits that were quantified to determine the Benefit-Cost Ratio, as shown in Table 5, are summarized as follows:

**i. Safety**

The Montebello Boulevard crossing is located in an area with multiple land uses, including residential, school, commercial and industrial land uses. Such conditions and proximity to an active railroad corridor result in safety issues, as evidenced by the five crossing collision incidents in the past 30 years. Today, the Montebello Boulevard crossing has one of the highest crash probability rating of an active UPRR crossing in Los Angeles County.

SAFETY	
✓	<b>Eliminates the possibility of a train vs. vehicle or train vs. pedestrian crash</b>
✓	<b>\$9.2 million in total safety benefits</b>

The Project will improve the safety of the crossing by eliminating the possibility of crossing collisions at Montebello Boulevard, and will serve cross-town vehicular traffic in addition to trucks accessing industrial companies near the tracks. Without the Project, the expected cost of

<sup>6</sup> Data was obtained from Streetlight Data: <https://www.streetlightdata.com/>. The analysis files are posted to <https://www.theaceproject.org/build>.

crashes at the crossing is projected to remain around \$1.3 million. **The grade separation at Montebello Boulevard will foster a safe transportation system for the movement of goods and people by creating \$9.2 million in total safety benefits at a 7% discount rate.**

## ii. State of Good Repair

The Project reduces congestion on local and regional highway networks, resulting in less roadway wear and tear, and will replace an aging rail-roadway crossing with new infrastructure including new bridges for the railroad and roadway, pavement and retaining walls and pump station and storm drain facility.

## iii. Economic Competitiveness

The Project will decrease transportation costs and improve access in Opportunity Zones, will reduce vehicle operating costs for commuters and businesses, and will increase economic productivity through travel time savings by facilitating efficient traffic flows in an extremely congested transportation network.

### a. Vehicle Operating Cost Savings

The Project will save a total of 15 million hours of wait time for autos, buses and trucks over a 20-year period. The savings in auto, bus and truck wait time will lead to reduced vehicle operating costs, providing economic benefits to users. Reductions in operating costs were estimated based on USDOT's Benefit-Cost Analysis Guidance for Discretionary Grant Programs recommended monetized values of \$0.39 and \$0.90 for operating costs per mile for cars and trucks, respectively. **Over the BCA horizon, the total NPV of these savings was determined to be \$8.9 million.**

VEHICLE OPERATING COST SAVINGS	
✓	<b>15 million hours of reduced auto and truck travel time</b>
✓	<b>\$8.9 million saved in auto, bus and truck operating costs</b>

### b. Travel Time Savings

The Project will address the transportation system's current and projected vulnerabilities by improving traffic flows in the area around the Montebello Boulevard crossing. Under the "without project" scenario, the local traffic network will be highly congested and inefficient by 2024, with morning peak period travel speeds estimated at 8.7 mph and with the crossing gates down an estimated eight minutes per peak hour. As has been demonstrated in other highly urbanized areas, a single rail grade separation can have significant travel benefits throughout the local network and improve the mobility and accessibility of goods and people<sup>7</sup>.

<sup>7</sup><https://www.seattle.gov/Documents/Departments/SDOT/BridgeStairsProgram/bridges/Lander/16->

The current traffic network surrounding Montebello Boulevard is burdened by more than 18,000 vehicles during both the AM and PM peak periods. Given these volumes, even modest improvements in travel speeds in the local network will yield significant public benefits. To measure the extent of these improvements, an independent network-level traffic analysis was conducted for the 30-minute driving radius area from the Montebello crossing<sup>8</sup>. The analysis was performed for AM and PM peak hours only. Even when limited to only AM and PM peak hours, the “with project” scenario showed significant travel time savings throughout the local Montebello network for current users, despite also attracting new users to the network. The system shows reductions in both travel and delay times for no-project distance traveled. Table 6 summarizes findings from the network-level traffic analysis.

Table 6: AM and PM peak hour traffic summary – 2024 vs 2045

	2024 NO PROJECT	2024 WITH PROJECT	2045 NO PROJECT	2045 WITH PROJECT
Total travel time (hr) – AM	2,400	1,807	5,033	1,964
Total delay (hr) – AM	1,704	1,022	4,423	1,155
Total travel time (hr) – PM	3,540	2,503	7,486	2,590
Total delay (hr) – PM	2,779	1,725	6,879	1,806

During the peak hours, crossing gates are down for an average of eight minutes. Eliminating “surges” in peak hour vehicle traffic held back by frequent and long passing freight trains will reduce congestion and queuing impacts on intersections within a 30-minute drive of the crossing. The savings in vehicle and truck wait time will lead to savings in truck drivers’ time, resulting in reduced congestion costs from delayed cargo movement. **In total, the Project will result in \$76 million in total benefits associated with travel time savings.**

Highway-rail collisions can also lead to vehicle delay time. The potential costs are broken down by delay and diversion time of vehicles and delayed highway and rail cargo, both fatal and non-fatal crashes. Rail operator time costs are also included. These congestion costs and delayed cargo movements from highway-rail crashes result in \$494,158 savings over the BCA horizon. **Over the BCA horizon, the total NPV of these avoided delays was determined to be \$76.5 million in Economic benefits.**

*c. Operations and Maintenance Costs*

In addition to capital costs associated with the Project, the BCA includes annual operations and maintenance costs once the Project is completed. Based on a share of the total Project cost, operation and maintenance activities are assumed to have an annual cost of \$1.75 million (about

[006 REP SLanderSt TransDiscReport FINAL 082916.pdf](#)

<sup>8</sup> For traffic analysis, see *SimTraffic Simulation Report*, LIN Consulting, Inc., Dec. 21, 2017, posted to <https://www.theaceproject.org/build>.

2.2% of construction costs) over the 20-year project horizon. **The present value of operating and maintenance costs over the lifetime of the project is estimated to be \$12.5 million.**

**iv. Environmental Sustainability**

Constructing a grade separation at the rail crossing will reduce wait times for vehicles, which will lead to a reduction in fuel consumption and toxic emissions (Table 7) caused by idling vehicles. Based on Caltrans Guidelines, over the BCA horizon, the **Project will create NPV environmental benefits of \$268,081** at a 7% discount rate. Detailed environmental cost saving calculations can be found in the provided BCA and model posted to <https://www.theaceproject.org/build>.

Table 7: Toxic emission savings due to fewer idling vehicles

	PASSENGER (\$)	TRUCK (\$)	TOTAL VALUE (\$)
<b>Carbon</b>	\$43,109	\$33	\$43,075
<b>NOx</b>	\$76,204	\$7,639	\$68,565
<b>PM10</b>	\$111,037	\$251	\$110,786
<b>SOx</b>	\$21,160	\$6,937	\$14,223
<b>VOC</b>	\$16,572	\$427	\$16,145
<b>Total</b>	<b>\$268,081</b>	<b>\$15,288</b>	<b>\$252,794</b>

**v. Noise Reduction Benefits**

Converting the Montebello Boulevard at-grade crossing to a grade-separated roadway underpass spanned by a railroad bridge will eliminate the noise pollution caused by train horns at the crossing, since grade separated crossings do not require train horns, crossing gates, speed restrictions or other safety measures. **Grade separation noise levels are substantially and quantifiably lower than at-grade crossing noise levels, and this lower level translates directly to community impacts.**

In *The Economic Valuation of Train Horn Noise: A U.S. Case Study*<sup>9</sup>, it was demonstrated that there is a relationship between train horn noise levels and households' willingness to pay to eliminate them — households were willing to pay about \$4,800 for every 10 db of noise exposure above the background noise level in 2004 dollars (\$6,109 inflation adjusted). This estimate, combined with FRA's guidelines on noise decay calculations for train horns,<sup>10</sup> was used to estimate the potential impact of train horn noise and other community impacts on residential property values. This approach was mutually agreed upon with USDOT through a debriefing call and email follow-ups. The phone meeting was held on 9/18/2018 with Darren Timothy and Paul Baumer from USDOT participating in the call.

<sup>9</sup> Bellinger, William. The Economic Valuation of Train Horn Noise: A U.S. Case Study. *Transportation Research Part D: Transport and Environment*, 2006, Volume 11, Issue 4, p 310-314: <http://www.sciencedirect.com/science/article/pii/S1361920906000320>

<sup>10</sup> <https://www.fra.dot.gov/Page/P0599>

Willingness to pay is applied only to residential properties around Montebello, as shown in Figure 9. Limiting the noise reduction benefits to this area also ensured that there was no overlap with other grade separation projects in the area.

The willingness to pay for households living in 0.0 – 0.5, 0.5 – 1.0, 1.0 – 1.5 and 1.5 – 2.0 miles from the crossing is \$6,824, \$3,275, \$1,427 and \$217 per household,

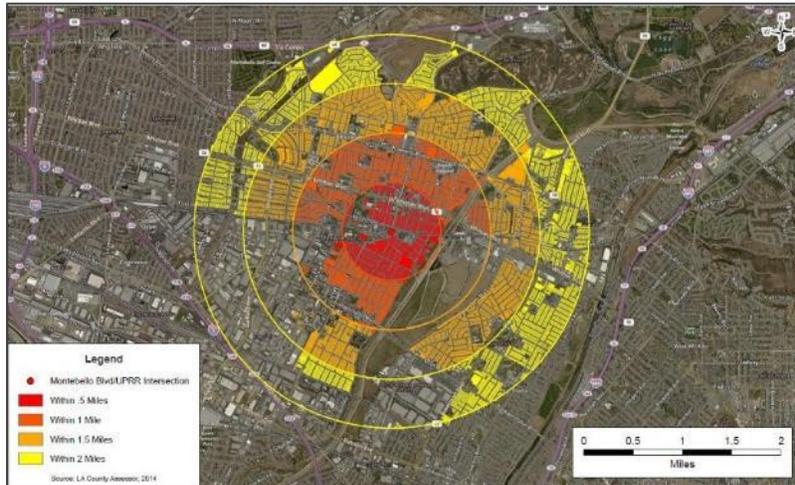


Figure 9: Properties within one mile of Project site

respectively leading to a total of \$30.3 million. For this benefit to be realized, upgrading existing safety gates to four-quadrant or “quad” gates will be undertaken by the applicant at two other at-grade-crossings located immediately to the west of Montebello Boulevard, at Greenwood and Maple avenues. Those projects have an estimated cost of \$0.5 million each. (The street immediately to the east, Bluff Road, is already grade separated). Assuming noise reduction benefits are allocated to individual project proportional to their respective costs, the share for Montebello Boulevard from the total benefits will be equal to \$30.1 million. Based on this adjustment, the **total noise reduction benefit of the project is equal to \$18.7 million at 7% discount rate.**

### C. SECONDARY SELECTION CRITERIA

#### i. Innovation

##### a. Innovative Technologies

The Project will significantly enhance motorist, rail passenger, cyclist and pedestrian safety by providing a grade separation at the rail crossing ranked as one of the most hazardous crossings of the UPRR in Los Angeles County, according to the Federal Railroad Administration’s Web Accident Prediction System. As noted earlier, the ACE Program will also separately fund and install innovative safety vehicle-barrier safety gates (“quad gates”) to seal at-grade crossings on Greenwood and Maple avenues. Construction of the grade separation and installation of the safety gate enhancements will enable the City to seek a Quiet Zone ban on routine locomotive horn blowing.



*b. Innovative Project Delivery*

The Project is positioned to proceed rapidly to construction within 18 months due to expedited environmental approvals anticipated under the delegation of authority by USDOT to the California Department of Transportation (Caltrans) for National Environmental Policy Act (NEPA) compliance for bridge and road projects, as well as the ACE Program's advanced preparation of environmental documentation. Since 2007, California has been one of a few states authorized to implement the assignment of authority under NEPA. NEPA Assignment streamlines the federal environmental review and approval process by eliminating FHWA's project-specific review and approval and assigning responsibility and liability to Caltrans for compliance with and decisions regarding applicable federal environmental laws, regulations, policies and guidance.

Although the Project has not yet secured federal funds, consultants in 2016 prepared and submitted to Caltrans a Preliminary Environmental Study (posted to [www.theaceproject.org/build](http://www.theaceproject.org/build)) identifying technical studies and reports proposed to be conducted in anticipation of receiving an expedited Categorical Exclusion (CE) for the Project under NEPA due to a lack of significant environmental impacts. Technical studies anticipated concern traffic and construction noise, special-status species or habitat, visual impacts, storm water, relocation impact statements, community impacts, cultural resources, paleontological resources, and air and water quality. Hazardous waste contamination of properties is unlikely as determined via an Initial Site Assessment. The initial assessment will be followed by preparation of a Limited Site Investigation or Phase 2 report. If studies reveal that a Categorical Exclusion (CE) is not appropriate, a mitigated Finding of No Significant Impact (FONSI) will be prepared.

If a BUILD grant is awarded, the Project can be expeditiously approved through a CE or a FONSI because the necessary technical studies and NEPA compliance documents can expeditiously be prepared. **The applicant is confident that NEPA approval can be secured no later than June 2020.**

*c. Innovative Financing*

**Approximately 85% (\$113,295,000) of Project funding is from non-federal sources**, with 46% (\$64,295,000) committed from Measure R, a half-cent transportation sales tax approved by Los Angeles County in 2009, and Proposition C funds, a half-cent transportation sales tax approved by Los Angeles County voters in 1990. These regional funds are augmented by a \$49 million 2018 state diesel fuel tax revenue grant from the California Trade Corridor Enhancement Program (TCEP), comprising 37% of the total project funds. In addition, UPRR will provide a private railroad contribution estimated at \$2.7 million (about 2% of total estimated cost), consistent with federal statute.

Federal funding is essential to provide the final 15% of the Project budget to allow the construction phase to proceed on schedule. Federal support will leverage substantial regional,

state and railroad funding. Following longstanding practice and in accordance with inter-agency agreements within the Alameda Corridor-East Program, the following entities will commit local or private funds toward the long-term maintenance of the Project:

- The City of Montebello will maintain all the roadway assets.
- UPRR will maintain the bridge structure and the track, signal and rail bed assets.
- Los Angeles County will maintain the stormwater inlets and all connected infrastructure.

**ii. Partnership**

Grade separating the Montebello Boulevard rail crossing is a regional priority, as demonstrated by strong community support in the City of Montebello and by strong regional support summarized in the public and private stakeholder chart below and illustrated through the robust commitment of Los Angeles County sales tax measure funds to the Project. Letters of support from Project endorsers are posted to <https://www.theaceproject.org/build>.



The applicant for this BUILD grant, **the San Gabriel Valley Council of Governments (SGVCOG)** is a joint powers authority of 30 incorporated cities, the unincorporated communities in Los Angeles County Supervisorial Districts 1, 4, and 5, and 1 seat for the three San Gabriel Valley Municipal Water Districts (San Gabriel Valley Municipal Water District, Three Valleys Municipal Water District, and Upper San Gabriel Valley Municipal Water District). The SGVCOG is the largest and most diverse sub-regional council of governments in Los Angeles County. In 2017, the SGVCOG was restructured and assumed full responsibility for implementing the ACE Project upon integration of its subsidiary, the ACE Construction Authority, into the SGVCOG organizational structure.

Other Project stakeholders are shown in Table 8.

*Table 8: Project stakeholders*

PUBLIC AND PRIVATE STAKEHOLDERS		
	<p>City of Montebello, CA</p>	<p><b>Public stakeholder:</b> The Project is located in the City of Montebello, California. The citizens of Los Angeles County and Montebello also contribute to the Project’s funding through LA County Prop C and Measure R sales tax revenues.</p>
	<p>Alameda Corridor Transportation Authority</p>	<p><b>Public stakeholder:</b> ACTA owns the 20-mile Alameda Corridor freight rail corridor connecting the Alameda Corridor-East Corridor with the Ports of LA/LB.</p>

PUBLIC AND PRIVATE STAKEHOLDERS		
	Union Pacific Railroad (UPRR)	<p><b>Private stakeholder &amp; funding contributor:</b> The Project is located on the Los Angeles Subdivision owned by UPRR. This line serves as the main transcontinental rail route for UPRR freight trains traveling to and from the Ports of LA/LB. ACE has coordinated with UPRR on the design and construction of 19 grade separation projects and at-grade crossing improvements. UPRR will contribute an estimated \$2.7 million to the Project.</p>
	California Department of Transportation (Caltrans)	<p><b>Public stakeholder:</b> Caltrans is California’s state transportation agency. The 2014 California Freight Mobility Plan includes the Project and designates ACE rail corridor as a highest priority, or Tier 1, freight rail corridor. Caltrans District 7 has been an active participant throughout the ACE Program, with oversight for state and federal environmental and funding compliance.</p>
	LA County Metropolitan Transportation Authority	<p><b>Public stakeholder:</b> As the transportation planner and coordinator, designer, builder and operator for one of the country’s largest, most populous counties, LA Metro supports the Montebello Boulevard Grade Separation Project as a project that will benefit the region and its residents.</p>
	Ports of Los Angeles / Long Beach (LA/LB)	<p><b>Public stakeholder:</b> The Ports of LA/LB make up the largest port complex in the western hemisphere. Imports and exports going to and from the ports travel along the ACE Trade Corridor.</p>
	Southern California Council of Governments (SCAG)	<p><b>Public stakeholder:</b> SCAG is the nation’s largest Metropolitan Planning Organization and a supporter of the Montebello Boulevard Grade Separation Project.</p>
	Metrolink	<p><b>Public stakeholder:</b> Metrolink commuter trains operate along the rail line that the Project is located on, carrying commuters from downtown LA, through Montebello, and on to Riverside County. The 512 route-mile network has seven service lines, 55 stations and 44,000 daily boardings.</p>

## V. PROJECT READINESS

The Project is currently in the final engineering and design stage. State environmental clearances have been obtained and right-of-way is being acquired. Federal environmental clearance can be obtained on an expedited basis. Upon approval of final design plans by the City of Montebello, **construction could begin in 2020 and be complete by 2024.**

### A. TECHNICAL FEASIBILITY

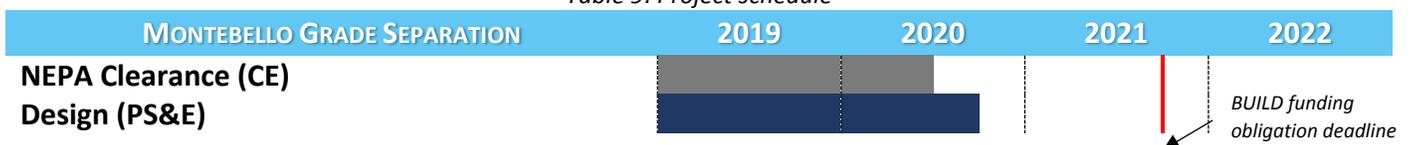
**The Project has advanced to the final design engineering phase.** It consists of the construction of a roadway underpass, with Montebello Boulevard lowered beneath the UPRR right-of-way, and a rail bridge structure constructed for the UPRR’s Los Angeles Subdivision tracks, which currently consist of two mainline tracks with one commercial spur located immediately east of the crossing. The existing intersection of Montebello Boulevard and Olympic Boulevard, located north of the right-of-way, will also be grade separated, with a new roadway bridge structure constructed for Olympic Boulevard to span the lowered Montebello Boulevard. The Project also includes:

- Retaining structures along the depressed alignment of Montebello Boulevard to retain soil where sloped embankments are not feasible due to right of way impacts.
- Relocated utilities along Montebello Boulevard prior to railroad bridge construction and pump stations to drain the underpass.
- New / replacement traffic signals at the intersections of Montebello Boulevard and Los Angeles Street, Olympic Boulevard and new one-way frontage streets (northbound and southbound), Montebello Boulevard and Roosevelt Avenue and Montebello Way and Greenwood Avenue.

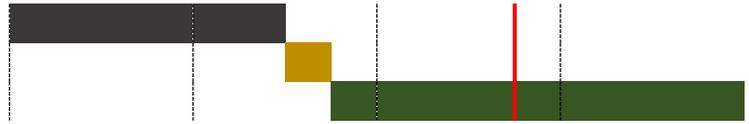
#### a. PROJECT SCHEDULE

Project design commenced in August 2015, and preliminary engineering was completed in 2018. Final design plans are underway and expected in June 2020, with a construction contract anticipated to be awarded no later than December 2020 and to be complete by January 2024. Table 9 shows the Project schedule based on the planned design/bid/build process:

Table 9: Project schedule



Right of Way  
Obligation Approval/Construction Advertising  
Construction



## B. REQUIRED APPROVALS

### i. Environmental Permits & Reviews

#### a. NEPA Status

In April 2018, the implementing agency prepared and submitted to Caltrans a Preliminary Environmental Study (PES) outlining the supporting technical studies necessary to receive a Categorical Exclusion (CE). A CE could be received within six months of submittal of the studies. CEQA clearance was received in November 2017 via a Statutory Exemption (SE) (see [www.theaceproject.org/build](http://www.theaceproject.org/build)).

**Through extensive project experience, the ACE Construction Authority has appropriately planned for contingencies to accelerate project phasing if environmental permitting and review delays are encountered or anticipated.** Hazardous waste or contaminated soils risk appears minimal due to positive results of corridor and site-specific Phase 1 environmental site assessments.

#### b. Other Reviews, Approvals, and Permits

Other permits required for this Project will include:

- Right of Entry (ROE) permit from UPRR to allow access to the railroad corridor which will be granted to the construction contractor at the time of award.
- Approval from the California Public Utilities Commission (CPUC) for new rail/highway underpass and at-grade crossing safety improvements, expected by December 2019.
- Approval of final design plans by City of Montebello in May 2020 with issuance of permit to construction contractor at time of award.

#### c. Environmental Studies

As noted, a Preliminary Environmental Study has been prepared for the Project, and is posted to <https://www.theaceproject.org/build>.

#### d. Public Engagement

SGVCOG has conducted extensive community outreach and public engagement activities for the Project. In coordination with the City of Montebello, SGVCOG held a community-wide project public information meeting on May 17, 2016. The meeting was well-publicized, with more than 22,000 invitation letters mailed to Montebello residents, businesses and key stakeholders and

articles published in community newspapers. Nearly 90 people attended the meeting, including residents, business owners and representatives of the City of Montebello, Congresswoman Linda Sanchez’s office, Montebello Unified School District, Montebello Chamber of Commerce and Beverly Hospital.

The purpose of the meeting was to provide information and solicit comments and questions based on updated concept design plans for the proposed roadway underpasses at Montebello Boulevard and Maple Avenue and safety gate and crossing improvements at Greenwood and Vail Avenues. Display boards were made available showing concept design plans, traffic detours and right-of-way/easements required at each crossing. Materials were made available in English, Spanish and Chinese and translators were on hand to provide assistance to attendees. The plans developed were based on conceptual proposals approved by the Montebello City Council in February 2015.

The community input and concerns and SGVCOG responses were summarized in a written report sent to the Montebello City Manager. SGVCOG staff presented the concept plans for review and approval by the Montebello City Council, and the final concept was approved in July 2016, with an amendment to replace the underpass on Maple Avenue with a pedestrian overcrossing and quad gates. The underpass was replaced due to concerns over potential property access impacts to a nearby dairy and the lack of significant vehicular traffic on Maple Avenue.

SGVCOG has also created a Business Support Program to assist businesses during project construction. The agency voluntarily provides signage, advertising and other support to eligible businesses that choose to participate in this “good neighbor” program. The services are administered through the Community Outreach program.

ACE may offer participating businesses in the immediate proximity to construction activities or affected by long-term street and lane closures during the construction of major grade separation projects the following services:

- Business Support Program outreach interviews and periodic monitoring.
- Distribution of construction notices.
- Advertising placed in direct mail circulars, including multilingual placements.
- Directional signage indicating access points or informing customers that businesses remain open during construction.
- Maps with directions and detours to hand out to business customers.



*Figure 10: A traffic sign installed by ACE directing motorists to open businesses adjacent to an ACE project site*

SGVCOG also conducts a school Safety Education Program, which includes a series of four activities:

- Meetings with school officials to identify and discuss necessary safety measures and detour routing informational requirements
- School safety assemblies
- Distribution of safety kits
- Annual evaluations and continued support



In addition to the recommended school safety assemblies, ACE makes available an age-appropriate safety video and safety kit materials for distribution to each school.

## ii. State and Local Approvals

The Montebello City Council approved the Project's concept design in February 2015 and authorized moving toward completion of 35% Preliminary Engineering and Design in October 2016. The Project is currently programmed in the Southern California Association of Governments' (SCAG) 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Toward a Sustainable Future. It is also included in the SCAG's 2017 Federal Adopted Transportation Improvement Program (FTIP) at:

[http://ftip.scag.ca.gov/Documents/17FTIP\\_LocalAmend17\\_0126LA.pdf](http://ftip.scag.ca.gov/Documents/17FTIP_LocalAmend17_0126LA.pdf) (see TIP No. LA990359 on page 112).

The UPRR mainline is included as a Tier 1 railroad corridor in California's 2015 California Freight Mobility Plan, and the individual ACE grade separation projects are also programmed into the plan. The Montebello Boulevard Grade Separation Project's ID/Reference Number in the California Freight Mobility Plan is #1120015 and can be found on Appendix/Project List of the California Freight Mobility Plan (page 33) posted to [www.theaceproject.org/build](http://www.theaceproject.org/build).

## C. ASSESSMENT OF PROJECT RISKS AND MITIGATION STRATEGIES

As a traditional design-bid-build project, the Project's ability to be delivered on time and on budget has few challenges. SGVCOG's track record of completing construction of safety improvements at 40 crossings and completing 14 grade separations with UPRR as part of the overall ACE Program offers assurance that implementation of the Project will be timely and on budget. The risks to the project and the associated mitigation plans are outlined in Table 10.

*Table 10: Risk and mitigation strategies*

RISK	DESCRIPTION	IMPACT / PROBABILITY	MITIGATION
Funding	\$20 million shortfall	High / Moderate	BUILD grant; INFRA grant; Calif. Section 190 grade separation grant program
Environmental	NEPA CE	Moderate / Moderate	Contingencies to accelerate project phasing; minimal risk for hazardous waste due to results of corridor and site-specific Phase 1 environmental site assessments; revised design concept mitigated significant community concern.
Right-of-Way	Parcel acquisition timeline	Moderate / High	ROW acquisition is under way and can be accelerated as needed.
Utilities	Utility relocation	Moderate / Moderate	Accelerate and continue coordination of PE with utilities.
Scope Variations	Scope variations due to railroad requirements.	Moderate / High	Timely and final railroad scope decisions to allow for any design or construction changes.