

Altamont Corridor Vision

Universal Infrastructure, Universal Corridor



Tri-Valley & San Joaquin Valley
REGIONAL RAIL AUTHORITY





Altamont Corridor Vision: Universal Infrastructure, Universal Corridor

What is the Altamont Corridor Vision?

The Altamont Corridor that connects the San Joaquin Valley to the Bay Area is one of the most heavily traveled, most congested, and fastest growing corridors in the Northern California megaregion. The Bay Area Council estimates that congestion will increase an additional 75% between 2016 and 2040. To achieve state and regional environmental and economic development goals, a robust alternative is needed to provide a sustainable / reliable travel choice and greater connectivity.

The **Altamont Corridor Vision** is a long-term vision to establish a universal rail corridor connecting the San Joaquin Valley and the Tri-Valley to San Jose, Oakland, San Francisco and the Peninsula. This Vision complements other similar investments being planned for Caltrain, which is in the process of electrifying its corridor and rolling stock; Capitol Corridor, which is moving its operations to the Coast Subdivision as it improves its service frequency and separates freight from passenger service; a new Transbay Crossing, which would allow for passenger trains to flow from Oakland to San Francisco; the Dumbarton Rail Crossing, which is being studied to be brought back into service; and Valley Rail, which will connect Merced and Sacramento. The Vision also complements and connects with High-Speed Rail (HSR), and would enable a one-seat ride from the initial operating segment in the San Joaquin Valley throughout the Northern California Megaregion.



One-Hour Travel Time

Oakland, Peninsula, San Jose ↔ Stockton, Modesto

One-Seat Ride

Express service, modern rolling stock

One Shared Corridor

Shared facilities, integrated ticketing, timed connections

- The limited stop (two intermediate stops) travel time between Stockton and San Jose is estimated to be 60 minutes.
- The local travel time between Stockton and San Jose (all stops) is estimated to be 75 minutes.
- Express travel times between Stockton or Modesto to San Jose, Oakland or the Peninsula is estimated to be 60 minutes.
- Express travel times between Merced to San Jose, Oakland or the Peninsula is estimated to be 80 minutes.

The Vision will provide safe, frequent, and reliable service by modernizing the corridor connecting the Central Valley and San Francisco Bay Area. The proposed universal infrastructure would also allow for passenger rail connectivity to the HSR initial operating segment at Merced. Consistent with the 2018 State Rail Plan, 2007 MTC Regional Rail Plan, and the Altamont Corridor Rail Project, the Vision would allow for the possibility of **one-seat rides** across the megaregion, shared services, dramatically reduced travel times, increased service frequencies, express service, and megaregional connectivity. A universal rail corridor that supports electrified service would allow various passenger rail services in the Northern California Megaregion to share corridors, stations, and maintenance facilities to allow for better network integration, lower costs, higher ridership, and increased efficiency.

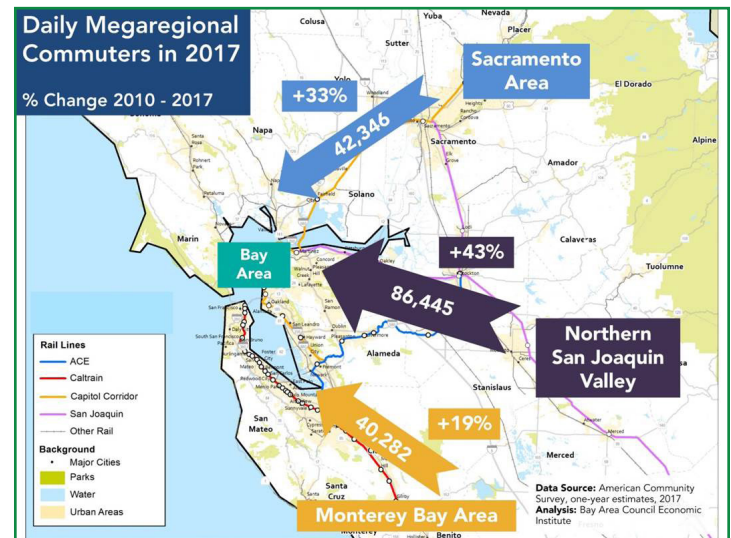


Altamont Corridor Vision

Background

The Altamont Pass Corridor is one of the most heavily traveled corridors in the Bay Area. Approximately 86,000 daily commute trips occur over the Altamont Corridor between the Northern San Joaquin Valley and the Bay Area. This corridor is the most heavily traveled, most congested, and fastest growing megaregional in-commute corridor into the Bay Area.

The Bay Area Council estimates that these already-high levels of congestion will continue to increase, projecting an additional 75% increase in traffic between 2016 and 2040. To achieve state and regional environmental and economic development goals, the Northern California Megaregion needs infrastructure that allows for robust passenger rail service throughout the megaregion that helps provide greater connectivity and improve quality of life for its residents.



Goals

- Focus on connection between the Central Valley and East Bay
- Connecting services, shared facilities, speeds up to 125+ mph
- One-seat ride from Central Valley to San Jose/Peninsula/San Francisco
- Dramatically improved travel times and frequency
- Electrification and freight separation

Objectives

- **Universal Infrastructure:** Shared corridors, stations, and maintenance facilities allow for network integration, lower costs, higher ridership, and better efficiency
- **One-Seat-Ride:** Improvements allow for new express service overlays, integrated local service, higher frequency, and one-seat rides across the region
- **Utilization of New Bay Crossings:** Investments in new crossings between San Francisco-Oakland and at Dumbarton can be utilized by all markets and services, including high-speed rail, express, and local service
- **Connectivity to High-Speed Rail:** Early connectivity to high-speed rail at Merced provides early access to the Bay Area

Improvements in the Altamont Corridor can be phased based upon the funding that is available. The Near Term/Phase 1 Priority Improvements are the highest priority for the Altamont Corridor Vision implementation. Incremental improvements can bring near-term benefits and help lead to the development of the Altamont Corridor Vision.

Near Term/Phase 1 Priority Improvements

- 2 additional round-trips between SJV and San Jose via Altamont Pass and weekend service (6 daily round trips weekdays)
- Valley Link initiated: Dublin/Pleasanton to North Lathrop (25 daily round trips)
- Altamont Pass Tunnel/Alignment Improvements

Mid Term

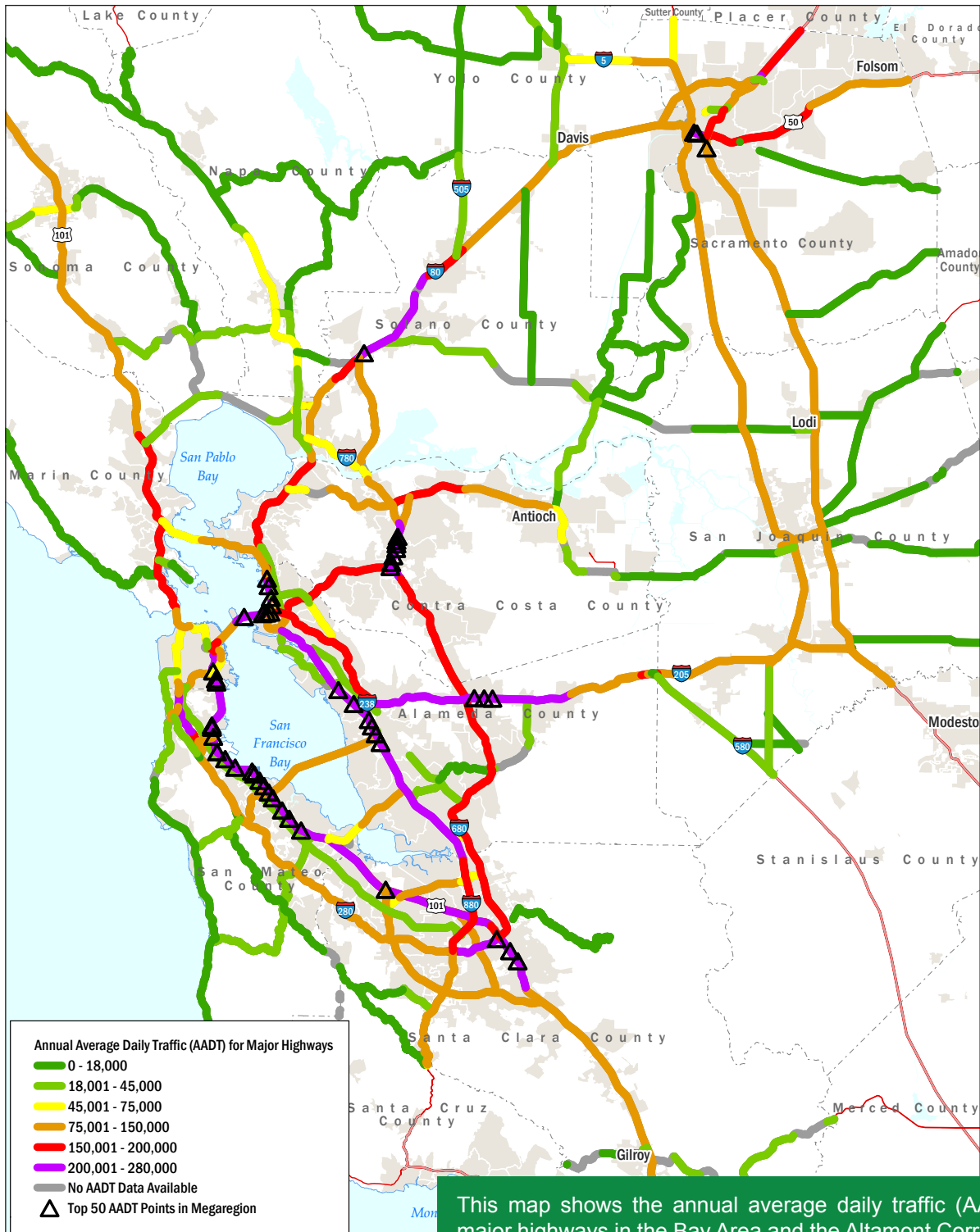
- 4 more round-trips between SJV and San Jose via Altamont Pass (10 daily round trips weekdays)
- Newark to Alviso improvements
- Valley Link extended to Stockton (30 daily round trips)

Longer Term/Vision

- 15 minute to ½ hour frequency during peak periods
- Dedicated Track – “Universal Corridor”
- One seat ride SJV – San Jose/Oakland/SF/ Peninsula



Bay Area Highway Annual Average Daily Traffic Flows Heat Map





Altamont Corridor Vision



The Altamont Corridor Vision is the result of partnership between the Tri-Valley–San Joaquin Valley Regional Rail Authority (Valley Link), the San Joaquin Regional Rail Commission (Altamont Corridor Express [ACE]), and the San Joaquin Joint Powers Authority (Amtrak San Joaquins).

ACE Service



The ACE service has been operating for over 20 years. ACE is focused on serving commuters from San Joaquin County and Alameda County to the Silicon Valley/Santa Clara County, and commuters from San Joaquin Valley to Alameda County. ACE runs on UPRR-owned track and right-of-way, and is currently restricted to 4 daily round trips. ACE ridership has been steadily growing and currently serves about 1.5 million passengers per year.

WESTBOUND TRAINS

	ACE 1	ACE 3	ACE 5	ACE 7
Stockton	4:20AM	5:35AM	6:40AM	7:05AM
Tracy	4:51AM	6:06AM	7:11AM	7:36AM
Pleasanton	5:33AM	6:48AM	7:53AM	8:18AM
GreatAm.	6:13AM	7:28AM	8:33AM	8:58AM
San Jose	6:32AM	7:47AM	8:52AM	9:17AM

EASTBOUND TRAINS

	ACE 4	ACE 6	ACE 8	ACE 10
San Jose	3:35PM	4:35PM	5:35PM	6:38PM
GreatAm.	3:49PM	4:49PM	5:49PM	6:52PM
Pleasanton	4:28PM	5:28PM	6:28PM	7:31PM
Tracy	5:11PM	6:11PM	7:11PM	8:14PM
Stockton	5:47PM	6:47PM	7:47PM	8:50PM



Valley Link Service



California State Assembly Bill 758 (Eggman), passed in 2017, established the Tri-Valley–San Joaquin Valley Regional Rail Authority. This Authority is moving forward with the Valley Link Project that will connect to BART (at the Dublin/Pleasanton Station) and to ACE (via the I-580 right-of-way at the Greenville Station in Livermore). Valley Link will then proceed over the Altamont Pass

using Alameda County-owned right-of-way to get to San Joaquin County – with several stops in San Joaquin County. Phase 1 of the Valley Link program is between Dublin/Pleasanton Station and the North Lathrop Station, and is estimated to cost \$1.8 billion. The Tri-Valley–San Joaquin Valley Regional Rail Authority has identified \$628 million in existing funding for the Valley Link Project, predominately from Alameda Measure BB funds (and other Bay Area funding sources).





Altamont Corridor Vision

California State Rail Plan



The 2018 State Rail Plan envisions vastly improved passenger rail service in the Altamont Corridor. For the 2040 Vision, the State Rail Plan shows ½ hour frequencies along the Altamont Corridor with connectivity to San Jose, Oakland, the Peninsula (via a new Dumbarton Crossing) and San Francisco (via a new Transbay Crossing). The Altamont Corridor Vision builds upon the 2018 State Rail Plan and provides more details for the type of passenger infrastructure that should ultimately be implemented in this corridor.



The Altamont Corridor Vision builds on the 2018 State Rail Plan, but this concept is not new.



The Altamont Corridor Vision is consistent with and builds upon the work done for the 2007 MTC San Francisco Bay Area Regional Rail Plan, and is consistent with MTC Resolution 3829 from 2007. It also takes advantage of the work done part of the Altamont Corridor Rail Project by the California High-Speed Rail Authority from 2009 to 2011.



Universal Corridor, Shared Facilities

Express Travel Times - One-Seat Ride

- 60 minutes: Stockton to San Jose
- 60 minutes: Stockton to Oakland
- 60 minutes: Stockton to Redwood City

Local Travel Times

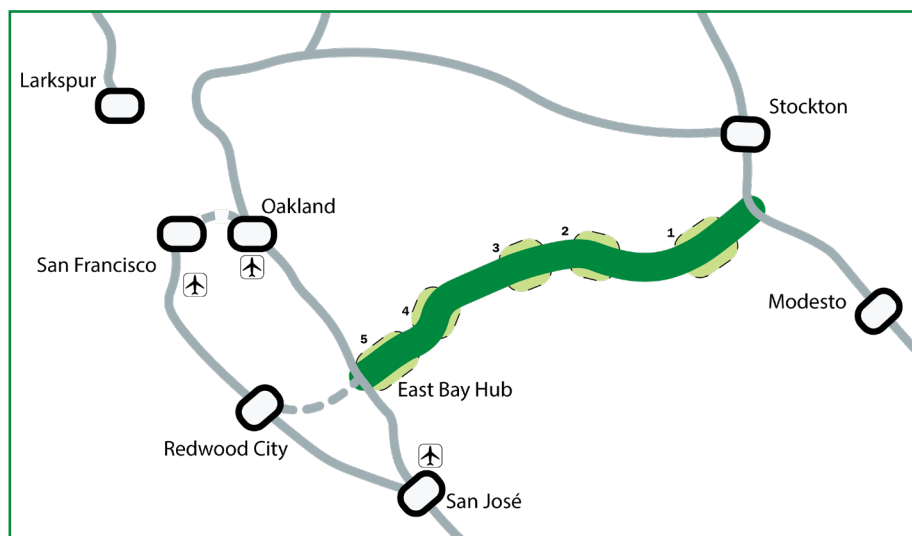
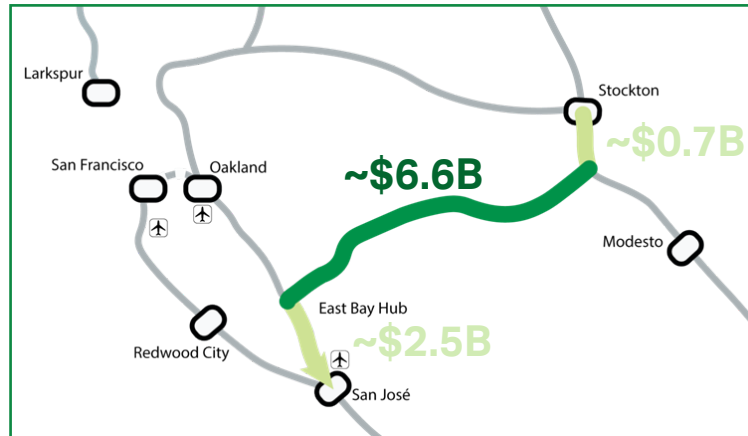
- 75 minutes: Stockton to San Jose

The Altamont Corridor Vision from Stockton to San Jose is estimated to need just over \$9.7 billion in funding. The segment from Newark to San Jose is estimated to need \$2.5 billion in funding. This estimate is from the

Capitol Corridor Vision study, and would be shared with the Capitol Corridor between Newark and San Jose, and with the Caltrain Corridor from Santa Clara to San Jose. The Capital Corridor Vision between Newark and San Jose would also include improvements through Alviso Flats to increase capacity and elevate the alignment to address sea level rise. The segment between North Lathrop and Stockton is estimated to need \$0.7 billion in funding.

Investment in “Universal Infrastructure” throughout the San Joaquin Valley and the Bay Area would enable one-seat rides via the Altamont Corridor to San Jose, the Peninsula via a new Dumbarton Bridge, Oakland, and San Francisco via a new Transbay Crossing. Universal infrastructure would be compatible with HSR and would enable a one-seat ride from the HSR initial operating segment at Merced.

Improvements in the Altamont Corridor can be phased based upon the funding that is available. Incremental improvements can bring near-term benefits and help lead to the development of the ultimate Altamont Corridor Vision. In the near-term, the goal is to add two additional ACE round-trips between the San Joaquin Valley and San Jose and have full weekend service, and to initiate Valley Link service between Dublin/Pleasanton BART and North Lathrop (with 25 daily round trips). Another key short-term goal is the transformational implementation of a new 3.5 mile tunnel in the Altamont Pass and to straighten the alignment throughout the pass to enable speeds up to 125 mph that would be used by both ACE and Valley Link services (decreasing travel times by 11-15 minutes). Implementing these near-term goals is the first phase and highest priority for Altamont Corridor Vision implementation.



Major Projects

- 1 Tracy alignment improvements
- 2 Altamont Pass Tunnel
- 3 Livermore alignment improvements
- 4 Pleasanton alignment improvements
- 5 Niles Canyon Tunnel/Fremont improvements



Altamont Corridor Vision (Newark to North Lathrop) by Segment

The Vision between Newark and North Lathrop has been broken down by segment to allow an understanding of not only the improvements, but the order-of-magnitude costs associated with each segment. The following table includes the estimated funding needs for electrification and station improvements, as well as the total cost for each segment.

The segment from Newark to North Lathrop is estimated to need about \$6.6 billion in funding. Improvements in the Altamont Corridor can be phased based upon the funding that is available. This estimate reflects the cost of electrified infrastructure separated from freight with double-track, allowing for express capabilities with maximum speeds of approximately 125 mph. The Vision assumes major infrastructure investments, including about 3.5 miles of new tunneling in the Altamont Pass, and about 4 miles of tunneling to circumvent Niles Canyon. Significant improvements would also be needed in Fremont, the Tri-Valley and San Joaquin Valley cities.

Cost by Segment	
Description	Cost
Electrification	\$0.8 billion
Station Improvements	\$0.3 billion
Segment 1 - San Joaquin County	\$0.6 billion
Segment 2 - Altamont Pass	\$1.1 billion
Segment 3 - Tri-Valley	\$2.4 billion
Segment 4 - Niles Canyon/Fremont	\$1.4 billion
Total	\$6.6 billion

Note: This assumes the BART to Livermore funding of \$628 million applied.

E

Electrification

Electrification is a key component of the Altamont Vision to not only to reduce the travel times for riders, but also to assist in the state goals to electrify the passenger rail infrastructure throughout the state. Electrification increases speed of service and improves air quality by reducing the reliance of fossil fuels and GHG.

S

Station Improvements

Station improvements are critical to the success of the Altamont Vision. With implementation of a second side platform, the corridor would be able to truly operate as a double track system. The inclusion of station tracks would allow express trains to pass local trains without impacts to the schedule. Increased service would also require additional parking to meet the increased demand.



1

San Joaquin County Improvements

Proposed Segment 1 could utilize either the Oakland Subdivision or the Tracy Subdivision. If the Oakland Subdivision is utilized, this segment would start at the North Lathrop Station to a proposed Altamont Pass Tunnel, include two new main tracks, and use a combination of at-grade (ground running) and aerial (on a bridge-like structure) alignments, which run along the west and/or north side of the UPRR right-of-way. There would be an aerial segment used to transition from

south of the North Lathrop Station to the Oakland Subdivision that allows for higher speeds. The proposed alignment would run on the ground until the alignment comes to a UPRR customer's spur track (track that leads to a customer's pick-up location of their goods for shipping). Since the proposed alignment would be located on the west side of UPRR, when UPRR's customers are located on the west side, the proposed alignment would be constructed as an aerial alignment to allow continued unfettered access to UPRR's customer. The current ACE service utilizes the Oakland Subdivision; therefore, this option would provide improvements to the existing ACE corridor. The current ACE Tracy Station would also be upgraded.

If the Tracy Subdivision is utilized, this segment would include two new main tracks and to be all at-grade on the north side of the UPRR right of way. The Tracy Subdivision runs through Downtown Tracy, the surrounding area of which has been planned for transit-oriented development. The Tracy Subdivision is currently being planned for use for the near-term proposed Valley Link project. In addition to maintaining customer access for the freight railroad, the proposed alignment design is optimized to allow for higher operating speeds by flattening out curves along the alignment. This option would also include improvements to the Downtown Tracy Station.

2.4
miles
aerial

13.9
miles
at-grade

10
crossing
modifications

7.7
miles
cut/fill

Oakland
Subdivision

OR

20.1
miles
at-grade

10
at-grade crossing
modifications

3.0
miles
cut/fill

Tracy
Subdivision

2

Altamont Pass Improvements

Segment 2 is proposed to be a combination of tunnels and aerial structures to cross the Altamont Pass while removing the majority of the slower curves. The alignment provides a straight alignment across the Altamont Pass lining up with the existing railroad alignment at the proposed intermodal ACE and Valley Link Greenville Station near Greenville Road. The proposed intermodal ACE and Valley Link Greenville Station as part of the Valley Link project would be further upgraded as part of the Altamont Vision in the long-term.

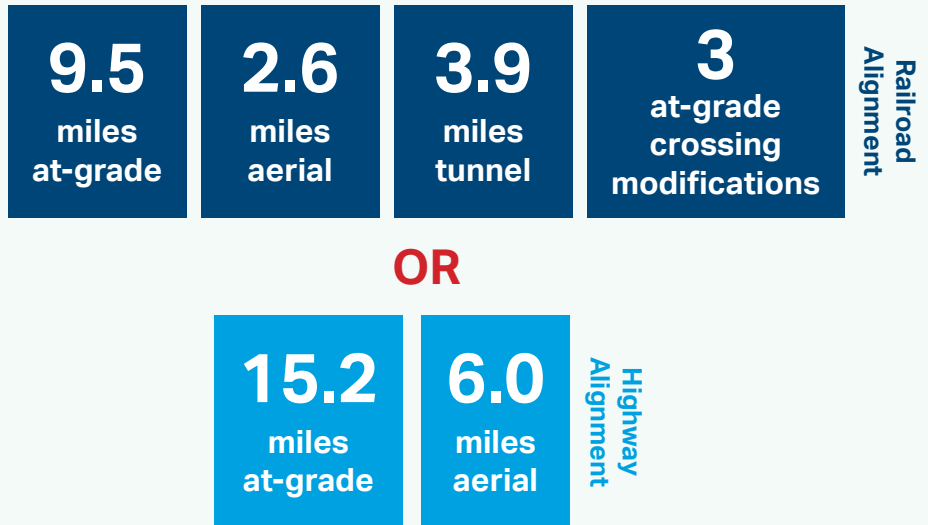
1.4
miles
aerial

3.5
mile
tunnel



3 Tri-Valley Improvements

Segment 3 through the Tri-Valley could utilize either a railroad alignment option or a highway alignment option. The **railroad alignment option** is envisioned to be at-grade through the Livermore area from the proposed intermodal ACE and Valley Link Greenville Station mostly within the UPRR right-of-way. The Valley Link Greenville to Dublin/Pleasanton segment would be added for direct access to BART. The alignment would also straighten out a few curves to allow for higher operating speeds. This segment would include two new main tracks, as well as upgrades to both the proposed intermodal ACE and Valley Link Greenville Station and the current ACE Livermore Station. Through the Pleasanton area, the railroad alignment option would go through a tunnel, which would allow trains to reach higher speeds and avoid grade crossings. Following the tunnel, the alignment would utilize a combination of aerial and at-grade alignments that generally follow the existing rail corridor, with a few curves straightened to allow for higher speeds and to connect with the proposed Niles Tunnel.



The **highway alignment option** through Livermore would leave the proposed intermodal ACE and Valley Link Greenville Station and head along the proposed Valley Link alignment at-grade in the median of I-580. The Valley Link Greenville to Dublin/Pleasanton segment would be included. At the Dublin/Pleasanton Station, the track would become aerial with an aerial station above BART, and remain aerial until it enters the I-680 median heading south, where the track alignment would be at-grade within the I-680 median until just south of the Castlewood Golf Course area. Here, the track would exit the freeway utilizing another aerial guideway to connect to the Niles Tunnel.

The **highway alignment option** through Livermore would leave the proposed intermodal ACE and Valley Link Greenville Station and head along the proposed Valley Link alignment at-grade in the median of I-580. The Valley Link Greenville to Dublin/Pleasanton segment would be included. At the Dublin/Pleasanton Station, the track would become aerial with an aerial station above BART, and remain aerial until it enters the I-680 median heading south, where the track alignment would be at-grade within the I-680 median until just south of the Castlewood Golf Course area. Here, the track would exit the freeway utilizing another aerial guideway to connect to the Niles Tunnel.

4 Niles Canyon and Fremont Improvements

Segment 4 includes a proposed tunnel that removes the slow curves through the Niles Canyon while also avoiding train operation in the environmentally sensitive Alameda Creek area. The alignment provides a straight alignment across Niles Canyon and lines up with the proposed Fremont alignment improvements that include two new main tracks at-grade within the existing UPRR right of way. The Fremont alignment would be flattened out to allow for a higher operating speed, and the Fremont Station would be upgraded.





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