Valley Link Rail Project: Dublin/Pleasanton to Mountain House Community

Environmental Assessment
December 2024

Cities of Dublin, Pleasanton, Livermore, and Mountain House
Alameda and San Joaquin Counties, California

ValleyLink
Connecting People, Housing, and Jobs

Prepared by:

U.S. Department of Transportation – Federal Transit Administration

Tri-Valley – San Joaquin Valley Regional Rail Authority

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACE	Altamont Corridor Express
ADA	Americans with Disabilities Act
AMM	Avoidance, minimization, and mitigation measure
APE	Area of potential effects
ASTM	American Society for Testing and Materials
Authority	Tri-Valley – San Joaquin Valley Regional Rail Authority
AVE	Area of visual effect
BART	Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
BRT	Bus Rapid Transit
BTS	Bureau of Transportation Statistics
Caltrans	California Department of Transportation
CBC	California Building Code
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalents
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibels
DMU	Diesel Multiple Unit
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EIR	Environmental Impact Report
EMU	Electric Multiple Unit
EO	Executive Order
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FY	Fiscal Year
GHG	Greenhouse gas

I-205	Interstate 205
I-580	Interstate 580
IIJA	Infrastructure Investment and Jobs Act
IOS	Initial operating segment
K-rail	Temporary concrete railing
L_{dn}	Day-night average sound level
L_{eq}	Equivalent continuous sound level
LF	Layover Facility
LPA	Locally Preferred Alternative
MOW	Maintenance-of-Way
MSAT	Mobile source air toxics
MT CO_2e	Metric tons of CO_2e
MTC	Metropolitan Transportation Commission
MVM	Million vehicle miles
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OMF	Operations and Maintenance Facility
OSS	Operations Support Site
Proposed Project	Valley Link Rail Project
RTD	Regional Transit District
RTP	Regional Transportation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SEIR	Subsequent Environmental Impact Report
SFBAAB	San Francisco Bay Area Air Basin
SHPO	State Historic Preservation Office
SJCOG	San Joaquin Council of Governments
SJRRC	San Joaquin Regional Rail Commission
SJRTD	San Joaquin Regional Transit District
SJVAB	San Joaquin Valley Air Basin
SPRR	Southern Pacific Railroad
TANC	Transmission Agency of Northern California
TCE	Temporary construction easement
TMP	Transportation Management Plan
U.S.C.	United States Code

UPRR	Union Pacific Railroad
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VIA	Visual Impact Assessment
VMT	Vehicle miles traveled
WAPA	Western Area Power Administration
WPRR	Western Pacific Railroad
ZEMU	Zero-Emission Multiple Unit

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Executive Summary

Executive Summary

The Tri-Valley – San Joaquin Valley Regional Rail Authority (the Authority) is proposing the Valley Link Rail Project: Dublin/Pleasanton to Mountain House Community (Proposed Project), which is a 22-mile initial operating segment of a proposed 42-mile rail system between Dublin/Pleasanton and North Lathrop (overall Valley Link Project). The Proposed Project would be partially federally funded and would consist of a new passenger rail service between Dublin/Pleasanton in Alameda County and Mountain House in western San Joaquin County, California (Figure ES-1).

The Federal Transit Administration (FTA), the federal lead agency, and the Authority, as project sponsor, are completing this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA).

Purpose and Need

The purpose of the Proposed Project is to:

- Provide a **frequent and reliable transit** option in the Interstate 580 (I-580) corridor
- Connect the **Tri-Valley Hub** at Dublin/Pleasanton
- Enhance safe **mobility and accessibility** options
- Provide a **sustainable transportation** option

The Proposed Project would respond to the following needs in the Northern California Megaregion:

- Greater **access** to jobs, housing, recreation, etc., through additional mode choice
- More capacity and reliability to support current and future regional **mobility** needs
- **Safety** alternatives to passenger vehicles on the congested I-580
- Improvements to **equity** in travel time and health burdens from long commutes heavily borne by disadvantaged communities
- Meeting regional, state, and federal **sustainability** initiatives with a zero-emission transit alternative

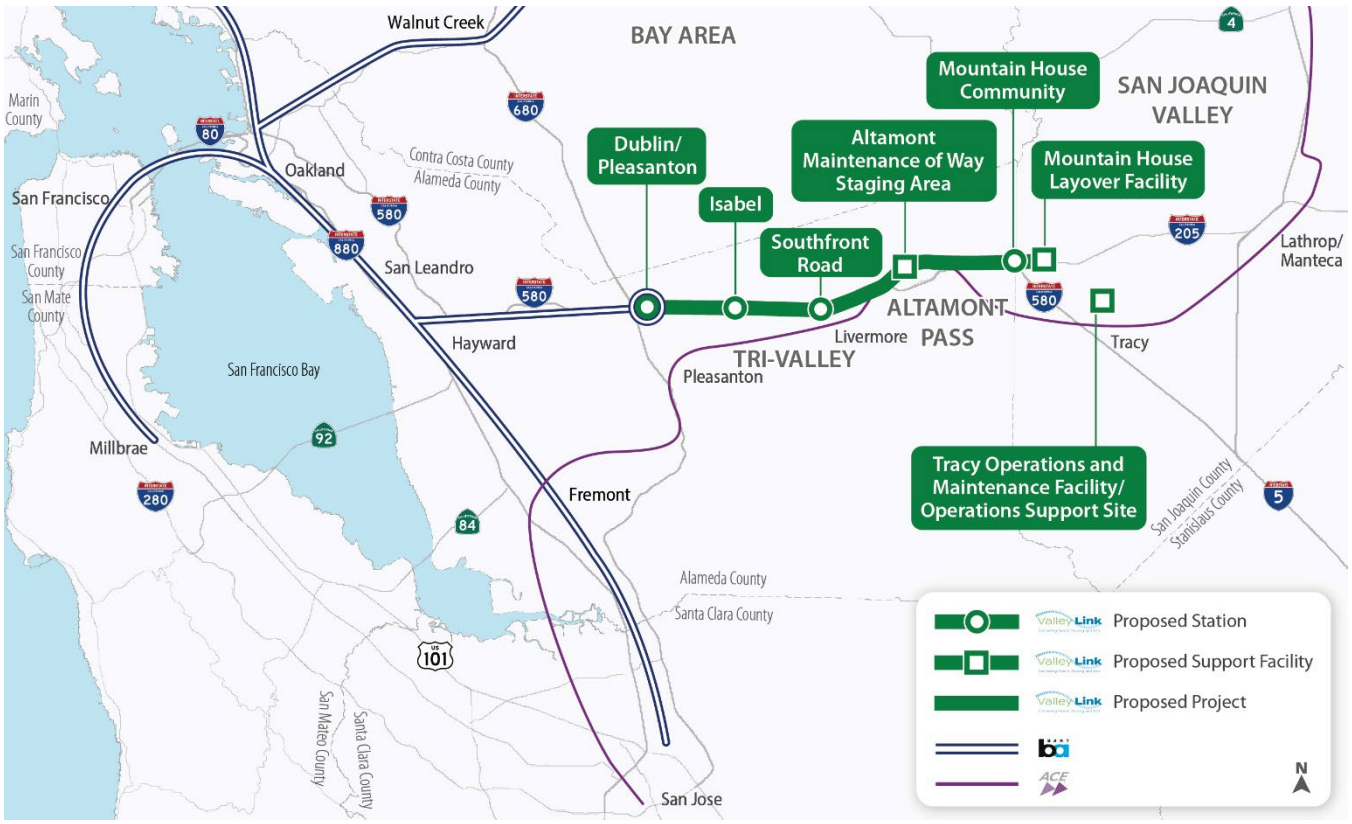

Figure ES-1: Proposed Project (Build Alternative)

Alternatives

This EA analyzes two alternatives: the Proposed Project (Build Alternative) and a No Build Alternative, described in detail in Chapter 2, Alternatives Considered.

Proposed Project (Build Alternative)

The Build Alternative includes the following components in addition to the rail line:

- Dublin/Pleasanton Station connection to the Bay Area Rapid Transit (BART) system
- Isabel Station
- Southfront Road Station
- Mountain House Community Station
- Altamont Maintenance-of-Way (MOW) Staging Area
- Mountain House Layover Facility (LF)
- Tracy Operations and Maintenance Facility/Operations Support Site (OMF/OSS)
- Zero-emission multiple unit vehicles, assumed to be hydrogen-powered
- 7 days a week, all-day, bi-directional service
- Estimated total average weekday boardings of 15,390 passengers in 2028 and 30,346 in 2040 (AECOM 2023)
- Service beginning as soon as 2028

No Build Alternative

The No Build Alternative reflects the reasonably foreseeable transportation network without the Proposed Project. This includes both the existing transportation network and the planned transportation improvements identified in the constrained *Plan Bay Area: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2013–2040* (2013).

Summary of Impacts

Table ES-1 summarizes potential environmental effects associated with the Build Alternative and related avoidance, minimization, or mitigation measures. Chapter 3, Affected Environment and Environmental Consequences, provides a detailed discussion of the environmental resources analyzed and the potential impacts from the Build Alternative. The following resources are either not present in the project area, would not be impacted, or would result in net beneficial impacts:

- Coastal Zone and Resources
- Energy
- Greenhouse Gas Emissions and Climate Change
- Recreation Resources
- Safety and Security
- Section 4(f) Properties
- Section 6(f) Resources
- Socioeconomics
- Wild and Scenic Rivers

Public and Agency Outreach

This current phase of the Proposed Project builds upon previous planning and environmental phases that included robust public, stakeholder, and agency engagement. These include:

- Valley Link Project Feasibility Report: 2018 and 2019
- California Environmental Quality Act (CEQA) Environmental Impact Report (EIR): 2019–2020
- CEQA Subsequent EIR: 2022–2024
- Equity Community Engagement: 2024

The project website at www.getvalleylinked.com provides relevant documents, status updates, current policies, events, and initiatives.

The California Department of Transportation is participating in the NEPA process as a state cooperating agency due to its jurisdiction over the I-580 corridor.

FTA is conducting Section 106 consultation with the California State Historic Preservation Office pursuant to Section 106 of the National Historic Preservation Act of 1966 and with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act of 1973. Both the Section 106 and Section 7 consultation processes are ongoing during the public circulation of the EA. Responses from the State Historic Preservation Office regarding Section 106 and the U.S. Fish and Wildlife Service regarding Section 7, and information pertinent to the conclusion of each consultation process, will be documented in FTA's decision document.

In October 2023, FTA sent tribal consultation letters to federally recognized Native American individuals specified by the Native American Heritage Commission, as well as tribes that showed interest during previous CEQA outreach. Other interested parties were also invited to participate in the Section 106 consultation process at this time.

Next Steps

After a 30-day public review and comment period for the EA in late 2024, comments received on the EA during the comment period will be documented and addressed as part of FTA's decision document.

Table ES-1: Summary of Build Alternative Impacts and Mitigation Measures

Environmental Resource (Chapter 3 Section)	Summary of Effects	Summary of Potential Avoidance, Minimization, and/or Mitigation Measures [a, b]
Aesthetics (3.2)	Moderate overall visual impacts for viewers in the area, primarily related to more visually prominent components such as retaining walls and overpasses.	AES-1 to AES-10: Visual barriers during construction, limiting construction during daylight hours, minimizing fugitive light from portable sources, aesthetic design treatments and landscaping, undergrounding new electric transmission lines in areas, replacement of disturbed vegetation, and minimum lighting standards.
Agricultural Lands (3.3)	Temporary conversion of Important Farmland to non-agricultural uses for construction access, material laydown, and staging areas; and permanent conversion to non-agricultural uses to accommodate the Isabel Station and Mountain House LF.	AG-1, AG-2: Restoration of Important Farmlands used for temporary construction activities and conservation easements or mitigation to offset impacts.
Air Quality (3.4)	Temporary construction emissions from earth disturbance, use of vehicles and heavy-duty equipment. Operational emissions would originate from operation of transit stations and support facilities; track alignment and facilities service equipment; and employee vehicles, operations and maintenance vehicles, and haul trucks. Hot-spot analysis for carbon monoxide (CO) or particulate matter 2.5 or 10 ($PM_{2.5}$ or PM_{10}) not required.	AQ-1 to AQ-4: Equipment emissions controls, maintenance and idling restrictions, and fugitive dust control during construction; and offsetting construction emissions in the San Francisco Bay Area Air Basin.
Biological Resources (3.5)	Impacts to vegetation communities, special-status plant species, and jurisdictional waters are primarily anticipated during construction. Impacts to special-status wildlife species would occur during both construction and operations and maintenance. Overall impacts to these resources are not anticipated to be adverse with mitigation.	BIO-1 to BIO-41: Environmental awareness training; preconstruction surveys and on-site monitoring; protecting sensitive natural communities during construction; limiting construction work, access, and staging areas, discharges, and vegetation removal; replanting, reseeding, and restoring disturbed areas; preventing invasive plant species; nighttime light disturbance; fugitive dust controls; water quality/erosion control best management practices (BMPs); avoidance of wildlife species entrapment; construction site BMPs; tree removal compensation; protection of vernal pool endemic species and special status species and their habitats; compensate for impacts to vernal pool species and special status species habitat loss; develop feasibility study for wildlife movement corridors; protect roosting bats during construction

Environmental Resource (Chapter 3 Section)	Summary of Effects	Summary of Potential Avoidance, Minimization, and/or Mitigation Measures [a, b]
		and maintenance; protect wetlands during construction and compensate for impacts on jurisdictional wetlands; among others.
Cultural Resources (3.6)	No Adverse Effect to eight historic properties identified in the Area of Potential Effects as listed or eligible for listing in the National Register of Historic Places; low potential for construction activities to disturb archaeological resources.	CUL-1 to CUL-5: Cultural resource awareness training, archaeological monitoring plan, compliance with state laws relating to Native American remains, and procedures in case of unanticipated discoveries.
Environmental Justice (3.7)	Environmental justice populations are not expected to bear disproportionate high or adverse effects. Improved transportation options and mobility for environmental justice communities.	None required.
Geology, Soils, and Paleontological Resources (3.8)	Potential for temporary construction-related soil erosion due to grading and excavation operations that could expose soils and/or disturb or expose paleontological resources in areas of high sensitivity. Construction would require ground disturbance that could affect notable geological resources.	GEO-1: Monitoring for discovery of paleontological resources, evaluating found resources, and preparing and following a recovery plan for found resources.
Greenhouse Gas Emissions and Climate Change (3.9)	Construction and operational emissions from mobile and energy sources. The Build Alternative would result in 43,124 metric tons of carbon dioxide equivalents (CO_2e), offset within three years of operations due to emissions reductions associated with reduced passenger vehicle miles travelled and increased rail ridership. Long-term emissions reductions resulting in a net benefit.	None required.
Hazardous Materials (3.10)	Potential to encounter contaminated sites that have been listed on either federal or state hazardous waste sites during construction.	HAZ-1: Implementation of a construction risk management plan.
Hydrology and Water Quality (3.11)	Potential pollution to stormwater could occur during construction activities due to the improper handling and management of disturbed soil and imported fill, improper storage of substances such as fuels and oils, and spills of hazardous materials. Alteration of drainage patterns could	HYD-1 to HYD-3: Performance of detailed hydraulic evaluations and implementing new or modified existing stormwater controls; performance of hydrologic and hydraulic studies for improvements in floodplains; prevention of construction materials from being exposed to storm flooding hazards.

Environmental Resource (Chapter 3 Section)	Summary of Effects	Summary of Potential Avoidance, Minimization, and/or Mitigation Measures [a, b]
	impact the amount of runoff accessing storm drainage systems or result in additional pollutant transport.	
Land Use and Property Acquisitions (3.12)	Overall, compatible with surrounding existing and planned uses. In total, 149 parcels would be affected, consisting primarily of temporary construction easements (TCEs), partial acquisitions, and Section 83 land, as well as 13 potential full land acquisitions and five potential displacements (four commercial, one residential).	Acquisitions and relocations would be conducted in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended). For TCEs, subsequent to completion of construction activities, the affected portions of the parcels would be restored to their original use as feasible.
Noise and Vibration (3.13)	Operation of construction equipment would generate temporary, intermittent loud noise levels, and could result in substantial temporary increases in ambient noise levels at noise-sensitive receivers. Moderate increase in operational noise levels at 31 noise-sensitive locations in the Tri-Valley area, due to the shifting of automotive traffic lanes closer to receivers. Noise would not reach a threshold to substantially disrupt daily activities, pose health risks, or severely impact quality of life. Construction activities would cause intermittent, localized vibrations and, in rare circumstances, could potentially exceed the threshold for building damage. For operational vibration, no sensitive receivers would be exposed to perceptible vibrations, and no buildings would be exposed to possible structural effects.	NV-1 and NV-2: Development and implementation of a construction noise plan and vibration reduction plan.
Transportation and Traffic (3.14)	Impacts to vehicular traffic near stations could entail an increase in traffic volumes at peak periods or slight delays on roadways/intersections accessing station areas during peak periods. Construction-related temporary impacts to roadways, sidewalks, bikeways, and potentially existing transit service (primarily BART).	TRA-1 to TRA-3: Implementation of a transportation management plan, mainline railway disruption control plan, and BART railway disruption control plan for project construction.
Utilities (3.15)	Construction may result in conflicts with existing utilities within the project area, potentially requiring protection-in-place or relocation.	The Authority will coordinate with utility providers during final design and construction stages to confirm utility locations, potential for impact, and any potential relocations.

Environmental Resource (Chapter 3 Section)	Summary of Effects	Summary of Potential Avoidance, Minimization, and/or Mitigation Measures [a, b]
Indirect and Cumulative Effects (3.16)	Potential cumulative effects were considered for such resources as agricultural lands, biological resources, hydrology and water quality, noise and vibration, and transportation and traffic. Impacts would be minimized or mitigated using the measures identified in this table, resulting in minimal impacts that would contribute to cumulative impacts.	None required.

[a] Detailed descriptions of avoidance, minimization, and mitigation measures are provided in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures).

[b] These avoidance, minimization, and mitigation measures are referenced as "AMMs" throughout the EA using a unique title that corresponds to the resource area they address (e.g., "CUL-1" refers to the first avoidance, minimization, and mitigation measure for effects related to cultural resources).

ValleyLink
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Chapter 1:
Purpose and Need

1 Purpose and Need

1.1 Introduction

The Tri-Valley – San Joaquin Valley Regional Rail Authority (the Authority) is proposing the Valley Link Rail Project: Dublin/Pleasanton to Mountain House Community (Proposed Project), which is a 22-mile initial operating segment (IOS) of a proposed overall 42-mile rail system between Dublin/Pleasanton and North Lathrop (overall Valley Link Project) (Figure 1-1). The Proposed Project would be partially federally funded and would consist of a new passenger rail service between Dublin/Pleasanton in Alameda County (part of the Bay Area) and the city of Mountain House in western San Joaquin County, California, as outlined on Figure 1-2.

It would provide a frequent and reliable transit option along the Interstate 580 (I-580) corridor for Bay Area workers commuting over the Altamont Pass from the San Joaquin Valley; expand transit connectivity between the Northern California Megaregion (21 counties encompassing four regions: Bay Area, Sacramento Area, Northern San Joaquin Valley, and Monterey Bay Area) and the proposed state rail system in the San Joaquin Valley as defined by the *2018 California State Rail Plan* (California Department of Transportation [Caltrans] 2018) and proposed in the *draft 2023 California State Rail Plan* (Caltrans 2023); enhance mobility and accessibility options for many communities within the Northern California Megaregion; and support local, state, and federal sustainability goals.

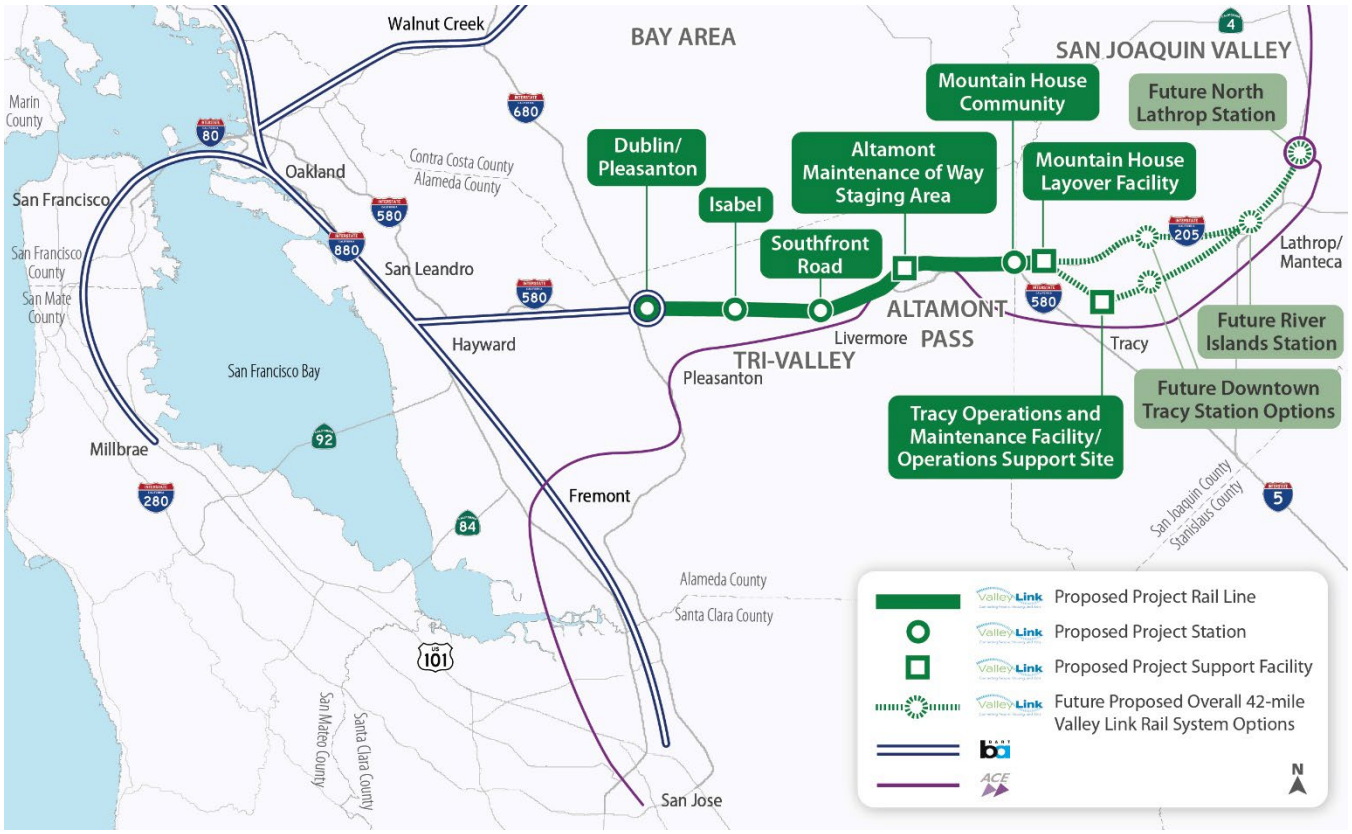

Figure 1-1: Proposed Project and Future Proposed Overall 42-mile Valley Link Rail System

Figure 1-2: Proposed Project

The Proposed Project is expected to be federally funded through the Fixed Guideway Capital Investment Grant program (49 United States Code [U.S.C.] Section 5309; Infrastructure Investment and Jobs Act [IIJA] Section 30005) administered by the Federal Transit Administration (FTA). As such, FTA is the federal lead agency for the Proposed Project and oversaw the preparation of this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 Code of Federal Regulations [CFR] Parts 1500–1508), FTA's Environmental Impact and Related Procedures (23 CFR Part 771), Section 4(f) requirements (49 U.S.C. 303 and 23 U.S.C. 138), and FTA's Section 4(f) implementation procedures (23 CFR Part 774). FTA will use this EA and public comments on the EA to make a decision on its action for the Proposed Project, which may lead to preparation of a Finding of No Significant Impact or the decision to prepare an Environmental Impact Statement.

This EA discusses the purpose of and need for the Proposed Project, the alternatives considered, the potential environmental effects of the Proposed Project, and the agencies and persons consulted.

1.1.1 Project Background

The implementation of a reliable transit service in this corridor expanding or connecting to the San Francisco Bay Area Rapid Transit (BART) system has been studied for many years.

Regional agencies, stakeholders, and communities have wanted a service that could:

- Increase access to employment, affordable housing, education, healthcare, and recreational opportunities for Bay Area and San Joaquin Valley residents and disadvantaged communities
- Improve mobility in the corridor through added transportation capacity and reliability
- Enhance safety on the congested highways in the corridor
- Support the federal government's goal to reduce greenhouse gas (GHG) emissions and deliver benefits

Refer to Section 1.2, Purpose of the Proposed Project, for a comprehensive list of the Authority's objectives for the Proposed Project, and Section 1.3, Project Need, for the need for the Proposed Project.

AB 758 (amended by Senate Bill [SB] 548 in 2021) was signed into law on October 13, 2017, establishing the Authority for the purposes of planning, developing, and delivering transit connectivity between the BART system and ultimately connecting to the future expansion of the Altamont Corridor Express (ACE). The Proposed Project is the first step to meeting the intent of this law.

The ACE Valley Rail expansion includes the construction of a North Lathrop Station (Figure 1-1) that facilitates the expansion of the ACE service to Sacramento and Merced for a connection to California High-Speed Rail and a potential future Valley Link connection. ACE existing service and the proposed Valley Rail service would provide access to different destinations in the Bay Area, including San Jose and Santa Clara, for access to Silicon Valley versus Valley Link that provides service to Oakland, San Francisco, and other cities on the BART system. While both serve the Tri-Valley, they are complementary services not duplicative. Both services together support the vision of the proposed state rail system in the San Joaquin Valley as defined by the *2018 California State Rail Plan* (Caltrans 2018) and proposed in the *draft 2023 California State Rail Plan* (Caltrans 2023).

Both BART and the San Joaquin Regional Rail Commission (SJRRC), the operator of the ACE service, have previously studied rail service expansion ideas in the Tri-Valley area. ACE identified long-term improvements in the Tri-Valley area that included a separate rail service connecting ACE to BART with the ACE*forward* Draft Environmental Impact Report (EIR) (SJRRC 2017), whereas BART assessed the feasibility of extending BART service one station to Livermore in the BART to Livermore Draft EIR (BART 2017). In May 2018, the BART Board of Directors decided to no longer plan for expansion of the BART system to Livermore, and instead took action to defer project development in the corridor to the Authority. SJRRC did not certify the ACE*forward* Draft EIR long-term improvements, which included a similar rail service to the Proposed Project. Once this decision was made by SJRRC, they determined to work with the Authority to advance the Proposed Project instead. The Authority continues coordination with BART and SJRRC and relied on work in the corridor completed by these agencies for developing the alternatives in the Final Project Feasibility Report published in October 2019 (Authority 2019).

1.1.2 Project Planning and California Environmental Quality Act

The Authority completed the 2019 Feasibility Report for the overall Valley Link Project, a 42-mile rail service project between Dublin/Pleasanton in Alameda County and Lathrop in San Joaquin County.[1] The Feasibility Report included an extensive scope that included goal identification, potential alternatives development and evaluation, and substantial public and stakeholder input throughout the process. The Final Project Feasibility Report (Authority 2019) outlined adopted project goals and identified a preferred project concept to serve as a foundation for future decision-making and environmental review processes.

Beginning with scoping in 2019, the Authority, acting as lead agency under the state's environmental review process (the California Environmental Quality Act, or CEQA), prepared a Draft EIR for the overall Valley Link Project. The Authority Board certified the Final EIR and approved the staff-recommended CEQA-Certified Alternative on May 12, 2021 (Authority 2021).[2] The CEQA-Certified Alternative consisted of a 42-mile, seven station passenger rail service linking the Dublin/Pleasanton BART Station in Alameda County and a proposed ACE North Lathrop Station in San Joaquin County. The CEQA-Certified Alternative also included an IOS that would establish initial service from the Dublin/Pleasanton BART Station to the Mountain House Station Alternative located south of Mountain House and west of Hansen Road along the existing Union Pacific Railroad freight tracks. The Mountain House Station Alternative IOS is the basis of the Proposed Project.

Subsequent to the Board certification of the Final EIR in 2021, the Authority continued stakeholder and public outreach and advanced design and analysis of the Mountain House Station Alternative IOS, resulting in the Proposed Project. The changes include locating the

[1] Valley Link Project Feasibility Report, https://www.valleylinkrail.com/final-feasibility-report (Authority 2019).
[2] Valley Link Final Environmental Impact Report, https://www.valleylinkrail.com/deir (Authority 2021).

Dublin/Pleasanton Station platform to the south side of I-580 (rather than in the freeway median), realignment of the trackway in the Altamont Pass, a new Mountain House Community Station and Layover Facility (LF), and construction of an Operations and Maintenance Facility/ Operations Support Site (OMF/OFS) in Tracy. The Mountain House Community Station would be constructed north of Interstate 205 (I-205) on a site west of Mountain House Parkway near the I-205/Mountain House Parkway interchange. The new LF would be constructed on a site east of Mountain House Parkway and north of I-205. These changes align with the San Joaquin Council of Governments (SJCOG) plans to accommodate rail transit in the I-205 median (SJCOG 2024). Chapter 2, Alternatives Considered, of this document includes a full description of the Proposed Project.

As shown on Figure 1-2, extension of service beyond Mountain House would be the subject of future environmental processes, including NEPA and potentially subsequent CEQA documentation, depending on the extension's proposed rail and station locations.

Pursuant to Section 15162 of the State of California Guidelines for the implementation of CEQA, the Authority is also preparing a Subsequent EIR (SEIR) to evaluate potential impacts associated with the Proposed Project, as revised since adoption of the CEQA-Certified Alternative in 2021. The SEIR (Authority 2024) is a separate document to meet CEQA requirements, although the NEPA and CEQA processes are being conducted concurrently (https://www.getvalleylinked.com/document-library).

1.1.3 Project Location

The proposed rail service would extend approximately 22 miles in Alameda and San Joaquin Counties and span through the cities of Dublin, Pleasanton, Livermore, and Mountain House (refer to Figure A1-1 in Appendix A [Environmental Assessment Figures]).

1.2 Purpose of the Proposed Project

A high-capacity transportation infrastructure solution is required in order to address the transportation challenges faced by the region, and more specifically within the I-580 corridor and across the Altamont Pass, and to cultivate a more sustainable cycle of growth for the future. This transportation solution must address the needs of the corridor: enhancing mobility; increasing equitable access by connecting and expanding transit options; connecting residences, major activity, and employment centers; and providing a safe and sustainable travel option. This solution must also support local land use plans that call for compact development to manage and channel future growth along the transportation corridors in order to sustainably support regional growth, promote economic development, and preserve a high quality of life.

The Altamont Pass, located in the center of the Northern California Megaregion, connects the San Joaquin Valley to the Tri-Valley in the Bay Area. The I-580 freeway provides movement across the pass and plays a vital role in the megaregion's economic ecosystem and transportation network. The I-580 freeway ranks as one of the most congested freeways in the megaregion during peak hours due to a high volume of regional and interregional commuter, truck freight, and recreational traffic. According to the Bay Area Council Economic Institute, more than 100,000 commuters currently travel this route daily, a number expected to increase by up to 75 percent by 2040 (Bay Area Council Economic Institute 2021). With latent and growing demand in the corridor, there is no transit option that has a dedicated right-of-way and operates outside of the congestion. Current transportation demands are not being met due to these limitations of the existing transportation network. The region's transportation needs and related challenges represent an opportunity for a transit investment that can enhance mobility, capture new and existing riders, provide equitable access sustainably, and support desired development patterns for the future.

The purpose of the Proposed Project is to:

- Provide a frequent and reliable transit option in the I-580 corridor while connecting housing, people, and jobs and promoting transit-oriented development.
- Connect the Tri-Valley Hub, a transit hub located at the Dublin/Pleasanton BART Station offering connections to intercity and local buses and the Proposed Project, to the state rail system to support megaregional mobility, furthering the vision of the 2023 *California State Rail Plan*, the Metropolitan Transportation Commission's (MTC) *Plan Bay Area*

2050 (Association of Bay Area Governments [ABAG]/MTC 2021), and the SJCOG *Regional Transportation Plan and Sustainable Communities Strategy* (SJCOG 2022).

- Enhance safe mobility and accessibility options for all communities within the Northern California Megaregion.
- Provide a sustainable transportation option and support local, state (California Climate Initiative), and federal goals to promote sustainability, reduce GHG emissions, and enhance environmental quality.

1.3 Project Need

Expanding rail from the existing Dublin/Pleasanton BART Station to Livermore and beyond to the San Joaquin Valley would provide commuters a reliable option to reach jobs, educational opportunities, and healthcare facilities safely and sustainably.

The Proposed Project would respond to the needs described below:

- **Access**: Inadequate mode choice limits regional connectivity and access to employment, housing, education, healthcare, and recreational opportunities. Better connectivity and access between major activity and employment centers is needed between the San Joaquin Valley and the Bay Area, while supporting local land use plans that foster compact development in Livermore and the San Joaquin Valley.
- **Mobility**: The existing transportation system is not adequate to serve current and future transportation conditions. Expanded transit options between the Bay Area and San Joaquin Valley are needed that seamlessly connect with the existing and future Northern California transit system and offer a competitive, reliable transportation solution that will reduce travel time.
- **Safety:** Increased safety through decreased vehicle miles traveled (VMT) is needed along this congested section of I-580, which is a major truck freight route and commuter corridor. Safe travel options are needed for commuters and travelers through the corridor.
- **Equity**: Disadvantaged populations are overburdened by a lack of jobs, education, and healthcare options in the San Joaquin Valley and a lack of affordable housing in the Bay Area, requiring these populations to commute into the Tri-Valley and larger Bay Area. These communities are also subject to the negative effects of GHG emissions. A zero-emission travel option for commuters would provide air quality benefits to disadvantaged communities in the region.
- **Sustainability**: Regional, state (California Climate Initiative), and federal (2021 Global Climate Ambition Initiative) initiatives have been established to decarbonize and reduce GHG emissions. A sustainable zero-emission transportation choice is needed to support these initiatives.

1.3.1 Need to Increase Access and Connectivity and Support Dense Development

1.3.1.1 Support Local Land Use Planning to Address Housing

There is a jobs-housing imbalance and high cost of living in the Bay Area. Bay Area median home prices are estimated to be more than double the median home price in San Joaquin County, which continues to contribute to those employed in the Bay Area commuting from San Joaquin County for work.

Metropolitan areas are implementing strategies to encourage more efficient use of land resources and provide alternative transportation services as a means to maintain air quality standards and quality of life. The Proposed Project would further improve regional air quality and reduce GHG emissions, beyond reducing VMT from automobiles, by supporting regional land use and transportation planning goals under the Sustainable Communities and Climate Protection Act of 2008 (also known as SB 375) and other local, regional, and state sustainability initiatives. The Proposed Project is evaluating potential new stations in Mountain House and Livermore in areas of proposed or potential future planned development, including at the Mountain House Community Station and both the Southfront Road and Isabel Stations in Livermore. The new transit stations could act as a catalyst for smart growth in communities by concentrating development around the Proposed Project stations providing much needed housing opportunities.

1.3.1.2 Large and Growing Employee Travel Market

San Joaquin County places in the top 10 nationally for its percentage of residents with a commute over 90 minutes long (Stacker 2022). It is estimated that these commuters spent over 5,000 hours stuck in traffic in each direction during an average day during 2017 (Bay Area Council Economic Institute 2021). These long commutes can be explained in part by the long distance traveled for work and by the growing congestion on I-580.

The current transportation system will be further strained by projected growth in population and households, in Alameda and San Joaquin Counties and jobs in the Bay Area. By 2040, San Joaquin County is projected to have an approximately 29 percent increase in population from 2020 estimates (to more than 1 million persons), an approximately 30 percent increase in households (to approximately 323,446), and an approximately 23 percent increase in jobs (to more than 314,544) (SJCOG 2022). By 2040, Alameda County is projected to experience an increase in population from 2020 estimates of approximately 22 percent (from 1,711,460 to 2,092,370 persons) and have an increase in households of approximately 19 percent (from 614,965 to 734,210 households). Furthermore, by 2040, the county is projected to have an approximately 11 percent increase in jobs (from 858,685 to 952,940 jobs) (ABAG/MTC 2017). A large portion of Alameda County's growth is projected to occur in the eastern part of the county, primarily in the communities of Dublin, Pleasanton, and Livermore. Livermore is projected to increase in population by 34 percent and jobs by only 7 percent (ABAG/MTC 2017).

1.3.1.3 Serve Major Activity Centers within and between San Joaquin Valley and the Tri-Valley and Larger Bay Area

The Bay Area is the major job center in the Northern California Megaregion with more than 3.9 million jobs (Bay Area Council Economic Institute 2024). The need to address all-day, bidirectional travel exists for employment as well as school, business, shopping, social engagements, and medical-related travel, which constitute increasing shares of travel. Along the Proposed Project corridor, riders can access six places of worship, community centers, libraries, and recreational opportunities. There are over 10 schools from kindergarten through college, including Delta College in Tracy and Las Positas in Livermore, in the corridor. The John Muir Health Outpatient Center, the Sutter Tracy Community Hospital, the Kaiser Permanente Dublin Medial Offices and Cancer Center, and Stanford Health Care Tri-Valley are accessible in the corridor.

The Tri-Valley region in California is home to several major employers, including Lawrence Livermore and Sandia National Laboratories, and 10X Genomics and houses the headquarters for six major companies, including Chevron, Workday, and Safeway.

With the Proposed Project's connection to the BART system, riders would have access to 50 stations located across San Francisco, Alameda, Contra Costa, San Mateo, and Santa Clara Counties, providing access to a significant number of employers, hospitals, colleges and universities, as well as entertainment and recreational opportunities.

1.3.2 Need to Improve Mobility within and through the Corridor

As stated in Section 1.2, Purpose of the Proposed Project, I-580 serves the Altamont Pass Corridor and ranks as one of the most congested freeways in the megaregion during peak hours due to a high volume of regional and interregional commuter, freight, and recreational traffic. Alternatives to the automobile and bus are needed to address the limited capacity of the corridor's roadway system and to accommodate increased travel demand.

1.3.2.1 Roadway System Lacks Capacity to Accommodate Increased Travel Demand

I-580 is the primary east-west transportation corridor, and the topography of the areas north and south of I-580 limits alternative east-west transportation routes. Additionally, significant development along both sides of I-580 in the Tri-Valley limits the ability to add sufficient lanes for the existing, latent, and future travel demand.

Increasing the capacity of the highway (i.e., adding new general-purpose lanes) would be incompatible with Caltrans and California Transportation Commission's transportation strategies for reducing VMT and SB 743. Therefore, an alternative involving highway expansion was not studied.

1.3.2.2 Growing Auto and Truck Traffic in the Corridor Limits Mobility

The population and employment growth anticipated within the corridor will translate into a continued increase

in travel demand. Throughout the Bay Area region, daily minutes of delay per worker due to commute congestion have steadily increased, rising by more than 40 percent over the past two decades (ABAG/MTC 2017). Within Alameda County, the highways are key regional and interregional connectors. As one of the region's highway network hubs, Alameda County experiences a disproportionately high share of the region's congestion. Overall, 47 percent of trips on Alameda County roads originate outside of the county (ABAG/MTC 2021).

Truck traffic has also increased through the Altamont Pass to the Bay Area's five seaports and the inland Port of Stockton, exacerbating the congestion. While all highways saw decreases in traffic volumes during COVID-19, according to Caltrans, I-580's traffic volume at the I-205 interchange was 160,000 pre-pandemic (2019), then down to 122,000 during the pandemic (2020), but then surpassed pre-pandemic levels in 2021 at 178,000 (Caltrans 2024).

Rapid residential development within eastern Alameda County and in the Tri-Valley area, as well as interregional commuting from San Joaquin County, has resulted in severe congestion along I-580 due to the increased population in those areas utilizing I-580 to access work and other destinations. For example, 84 percent of Tracy residents commute out of Tracy for work (Bay Area Council Economic Institute 2021).

1.3.2.3 Existing Transit Cannot Effectively Serve Travel Between San Joaquin Valley and the Tri-Valley

There is no transit service that covers the Proposed Project's travel corridor that allows for travel out of the I-580 congestion.

The San Joaquin Regional Transit District (SJRTD) Express Route 150 from Stockton to the Dublin-Pleasanton BART Station has planned 2-hour run times with travel time between the Tracy Transit Center and the Dublin/Pleasanton BART Station just under 1 hour. The service does not stop in Mountain House. The latest Short Range Transit Plan indicates approximately 75 percent on-time performance (SJRTD 2019).

In addition, if buses, conceptually, were used to move the projected 30,000 Valley Link riders over the Altamont Pass per day, there would need to be nearly 300 buses operating at roughly 3-minute intervals during peak periods. As an example, the 2021 EIR considered an express bus alternative, but ultimately determined that a rail transit alternative was environmentally superior (Authority 2021). An express bus alternative would result in a smaller construction footprint but would not have the same capacity as a rail transit project and would subsequently result in less VMT savings. A bus alternative was also shown to have greater impacts on air quality, GHG emissions, and energy usage than a rail transit alternative. Additionally, a potential shuttle bus from the ACE Livermore Station to BART Isabel Avenue was explored as part of the Project's initial feasibility study. This was determined to result in significantly lower potential ridership than the rail transit alternative and was therefore not studied further.

No direct passenger rail service connects San Joaquin County to BART in the Tri-Valley. The existing ACE service and the proposed ACE Valley Rail program extend service from Stockton to Sacramento and to Ceres and Merced. The Valley Rail service would provide additional commute direction trips. Valley Link would provide service to different destinations, including BART, and would operate all day service at 15-minute headways in both directions. ACE operates in the commute direction only currently and does not connect with BART in the Tri-Valley.

The *California State Rail Plan* identifies a Tri-Valley hub at the existing Dublin/Pleasanton BART Station that will include bus and passenger rail connections, including rail from San Joaquin County. Transportation Strategy T11 of the Bay Area Regional Transportation Plan (RTP), *Plan Bay Area 2050,* is to expand and modernize the regional rail network (ABAG/MTC 2021). Strategy T11 directly references the Valley Link Project. The Proposed Project and its associated rail connection are also referenced and listed in the capital projects of the *California State Rail Plan* (Caltrans 2023). One of the goals listed in the State Rail Plan is to assist communities throughout the Northern California Megaregion in better connecting transit systems to rail.

1.3.3 Need for Safe Travel Options through the Corridor

The increased volumes of vehicles both from commuters and truck freight noted in Section 1.3.2, Need to Improve Mobility within and through the Corridor, coincides with increased safety concerns for users of the highway system along the Proposed Project corridor. A Caltrans I-580/I-205

Roadside Safety Improvement Project report noted the accident rate for this stretch of I-580 was more than three times the national average, and a quarter of the accidents resulted in fatalities (Caltrans 2020a).

1.3.3.1 Provide Safe Transit Option to Reduce Conflicts with Growing Truck Traffic

The Altamont Pass freeways experience the highest level of truck traffic of any roadway in the Bay Area, and I-580 specifically experiences a higher-than-average number of truck incidents (Caltrans 2021). On I-580, the area between Greenville Road and the East County Line has poor pavement conditions and permanent jersey barriers, which lead to continuous needs for maintenance work. This poor condition, coinciding with the heavy truck traffic, presents safety challenges that will only increase as the region continues to grow.

1.3.3.2 Support Safe Transit Options that Operate in Dedicated Right-of-Way

Rail transit is one of the safest modes of travel, and continuous improvements in maintenance regimes and advanced signaling systems continue to improve safety for rail transit systems. According to the United States Department of Transportation (USDOT) Bureau of Transportation Statistics' (BTS) *Transportation Statistics Annual Report 2023*, there were 42,939 highway fatalities and 2.5 million injuries accounting for 95.5 percent and 99.5 percent of all transportation fatalities and injuries, respectively, versus 222 or 0.4 percent fatalities and 4,473 or 0.2 percent for transit rail. Transit rail consistently had the least fatalities of any other transportation mode (BTS 2023). According to BTS, very few transit rail and train passengers or crew members die in train or transit rail accidents in most years, and nearly all fatalities were "trespasser," grade crossing, or transit vehicle conflict fatalities.

Transit operating on the highway mainline alongside trucks and passenger vehicles makes transit susceptible to accidents. Currently, bus services utilize I-580 and the surrounding roadway network in Alameda and San Joaquin Counties. In 2021, both Alameda County and San Joaquin County ranked[3] among the top 10 in California for speed-related crashes, traffic fatalities, and injuries. I-580 has higher than the state average accidents per million vehicle miles (MVM) (Caltrans 2020a).[4] On average, the 14 locations studied along I-580 in the Proposed Project corridor have an accident rate of 1.40 accidents per MVM compared to a sitewide average of 0.49 accidents per MVM. Of all accidents at the 14 locations, about 26 percent resulted in injury or fatality.

Dedicated right-of-way for transit would provide for safer conditions. As an example, the bus alternative studied in the Valley Link Feasibility Report proposed to use the right-side shoulders of the freeways during peak periods. The use of the shoulders to operate buses during these times creates more potential conflicts with automobiles and heavy trucks operating in the right-hand lanes of the freeway and eliminates the use of shoulders as safety zones for vehicular incidents occurring on the freeway.

1.3.4 Need to Expand Options for Disadvantaged Communities

Multiple environmental justice communities were identified at or adjacent to both of the Proposed Project's stations in Livermore, and one state-identified disadvantaged community is located at the Mountain House Community Station. These communities have a statistically significant percentage of minority residents, as described in Section 3.7, Environmental Justice. Providing benefits to these communities is in line with the Authority's commitment to equity and supports addressing transportation-related inequalities.

1.3.4.1 Expanding Transportation Options for Disadvantaged Populations

The Bay Area is the economic engine of the Northern California Megaregion, but there are limited reliable transportation choices to access jobs, education, and healthcare in and from the Tri-Valley, and particularly for priority populations[5] in San Joaquin County. Disadvantaged populations in the region—including

[3] According to the California Office of Traffic Safety Data, crash rankings are based on the Empirical Bayesian Ranking Method, which adds weights to different statistical categories, including observed crash counts, population, and vehicle miles traveled. The crash counts reflect the aggregated impacts of all influential factors containing even the unrecognized or unmeasurable ones (e.g., level of enforcement), and the population and vehicle miles traveled represent the important traffic exposure factors that affect crash occurrence (California Office of Traffic Safety Data 2021).

[4] I-580/ I-205 Roadside Safety Improvement Project Report, June 2020 (Caltrans 2020a)

[5] Priority populations include disadvantaged or communities, and/or low-income households as identified by SB 535 and/or AB 1550.

environmental justice communities and communities of color that have been historically underserved—are overburdened by a lack of jobs, education facilities, and healthcare in the San Joaquin Valley and reliable access to those available in the Tri-Valley. A lack of affordable housing in the Bay Area requires these populations to commute into the Tri-Valley and larger Bay Area. These populations are also burdened with the negative effects of GHG emissions.

These environmental justice and state-disadvantaged communities are located adjacent to congested highways, I-580 and I-205, and would benefit from a reliable transit option that operated out of congestion.

By providing increased public transportation options and accessibility for residents, the Proposed Project would align with federal executive orders and state policies on environmental justice, including Executive Order (EO) 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All (2023), FTA's Environmental Justice Policy Guidance (FTA 2012), and Caltrans' Equity Statement (2020b).

1.3.5 Need to Improve Air Quality and Sustainability

One of the main benefits of rail is the ability to provide capacity while reducing GHG and supporting environmental resources.

1.3.5.1 Reduce Greenhouse Gas Emissions

Passenger rail projects have a higher potential for removing gasoline-powered vehicles from the road than would be removed with other alternatives. According to the Proposed Project's ridership study (AECOM 2023), the proposed rail transit service would have an estimated 30,346 total weekday boardings (across all stations) by 2040. According to the same study, it would also take gasoline-powered vehicles off the road, reducing weekday VMT by an estimated 477,000 miles by 2040.

In addition, by maximizing connections with other transit services within the Bay Area and San Joaquin Valley, the Proposed Project could contribute to indirect benefits related to alleviating congestion and improving regional air quality. Reductions in air pollutant emissions represent long-term health benefits for riders, and for residents and employees along the Proposed Project corridor.

1.3.5.2 Support Federal and State Initiatives

The White House Global Climate Ambition Initiative (2021) is the federal government's goal to reduce GHG emissions by 50 to 52 percent below 2005 levels in 2030 and to deliver climate benefits to disadvantaged communities. The provision of zero-emission transit options is one mechanism in line with helping to meet this initiative.

Reduction of GHG emissions is needed to help California to meet its goals under AB 32, the Global Warming Solutions Act of 2006, as well as post-2020 state GHG emission reduction goals. The Sustainable Communities and Climate Protection Act of 2008 (SB 375) is a State of California law targeting GHG emissions from passenger vehicles. Passenger vehicles are the single largest source of GHG emissions statewide, accounting for 30 percent of total emissions. Reduction of VMT on the most heavily traveled corridors is a key need to accomplish the state's California Climate Initiative strategy. On a more localized level, *Plan Bay Area 2050* stemmed from SB 375 and requires the Bay Area to reduce GHG emissions from cars and light trucks (ABAG/MTC 2021). A key component of the state initiative and strategy to meet *Plan Bay Area 2050* requirements is to provide alternatives to car travel with zero-emission rail options.

1.3.5.3 Focus on Sustainability and Support Preservation of Environmental Resources

In acknowledgement of the climate crisis, the Authority's Board of Directors adopted a sustainability policy in 2018 that focuses on the Proposed Project as a model of sustainability in design, construction, and operations (Authority 2018). To this end, the Proposed Project includes solar panels at stations, strives to concentrate dense development around the stations with local cities, and is proposing zero-emission vehicles.

The Proposed Project would support environmental resources in the Altamont Pass, an environmentally sensitive area. The Proposed Project would employ the use of viaducts that allow for the crossing of wildlife safely across the rail line. Additionally, the Proposed Project was adjusted to avoid the existing habitat conservation areas in the Altamont Pass.

ValleyLink
Connecting People, Housing, and Jobs

Chapter 2:
Alternatives Considered

2 Alternatives Considered

This Environmental Assessment (EA) analyzes two alternatives—the No Build Alternative and the Proposed Project (Build Alternative). The Proposed Project was adopted as the Locally Preferred Alternative (LPA) by the Tri-Valley – San Joaquin Valley Regional Rail Authority (the Authority) Board of Directors on April 12, 2023. Other alternatives were considered, but dismissed from further evaluation, as described in Section 2.3, Alternatives Considered but Eliminated from Further Evaluation.

2.1 No Build Alternative

The National Environmental Policy Act (NEPA) requires consideration of the environmental effects of not implementing a proposed action. The No Build Alternative provides a baseline for comparing environmental effects of the Build Alternative. The No Build Alternative would result in no new rail transit or other transit connection being established between the San Joaquin Valley and Tri-Valley. Existing transit services between the San Joaquin Valley and the Tri-Valley would continue, including Altamont Corridor Express (ACE) between Stockton and San Jose and the various existing bus connections to Bay Area Rapid Transit (BART), and the public commuter bus services operated by the San Joaquin Regional Transit District (SJRTD). The existing roadway system connecting the San Joaquin Valley with the Bay Area (the central arterial being Interstate 580 [I-580]) would continue to undergo routine maintenance activities, but no capacity expansion projects are planned. The only expansion of rail service in the project area would be ACE service increases planned by the San Joaquin Regional Rail Commission (SJRRC), which is currently expected by 2026 (SJRRC 2021).

The reasonably foreseeable transportation network in the region, with or without the Proposed Project, would include both the existing transportation network and the planned transportation improvements, which are identified in the Plan Bay Area constrained long-range transportation plan (Association of Bay Area Governments [ABAG] / Metropolitan Transportation Commission [MTC] 2013). These other projects would be implemented regardless of whether the Proposed Project is implemented.

2.2 Proposed Project (Build Alternative)

The Proposed Project (Build Alternative) would establish a new all-day bidirectional passenger rail service at frequent intervals along a 22-mile corridor between the existing location of the Dublin/Pleasanton BART Station in Alameda County and the proposed Mountain House Community Station in San Joaquin County, as well as four new stations and three support facilities as depicted on Figure 1-2 in Section 1.1, Introduction, and described below. For the purposes of this EA, the project area encompasses 1,825 acres in the Tri-Valley, including the Cities of Dublin, Pleasanton, and Livermore of Alameda County, and western San Joaquin Valley, including the City of Mountain House of San Joaquin County. The project area includes the I-580 corridor and interchanges between Dougherty Road and Greenville Road, the Alameda County Transportation Corridor, the California Department of Transportation (Caltrans) I-580 right-of-way adjacent to the westbound lane in the Altamont Pass, continuing south and east to the Mountain House Community Station just west of Mountain House Parkway, new right-of-way to be acquired for the rail line, stations, and facilities, temporary construction laydown areas, and access roads (refer to Figure 2.2-1 to Figure 2.2-8).

2.2.1 Proposed Rail Line

The proposed 22-mile new rail line would be constructed within a combination of the existing I-580 freeway median, the existing Alameda County Transportation Corridor owned by Alameda County (formerly Southern Pacific Transcontinental Railroad), existing Caltrans right-of-way adjacent to westbound I-580, and new right-of-way to be acquired. A detailed description of the new rail line from west to east is provided below and illustrated on Figure 2.2-1 through Figure 2.2-8. Preliminary temporary and permanent right-of-way requirements are shown in Appendix B (Proposed Right-of-Way).

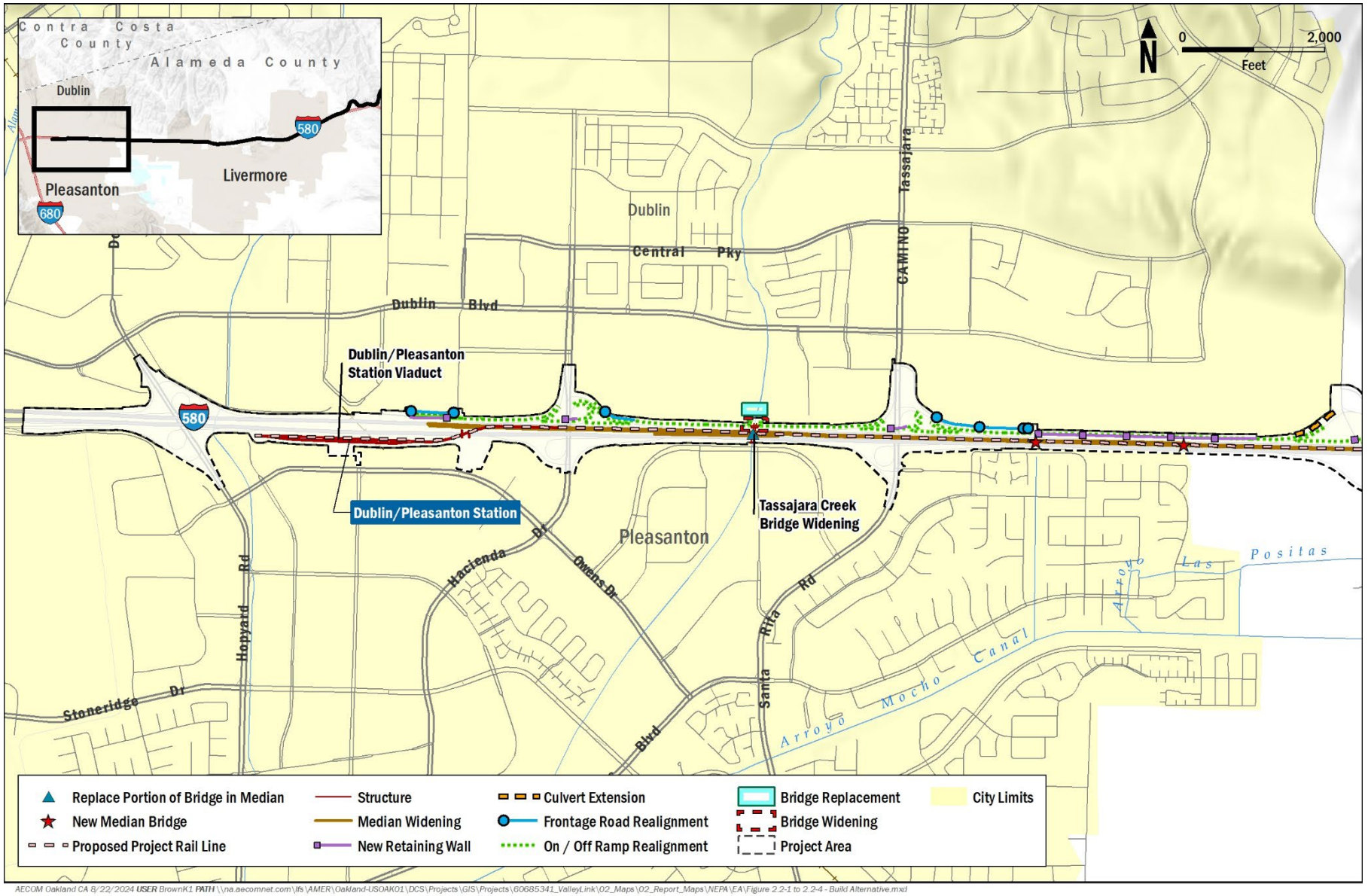

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Figure 2.2-1: Build Alternative - Project Elements (1 of 8)

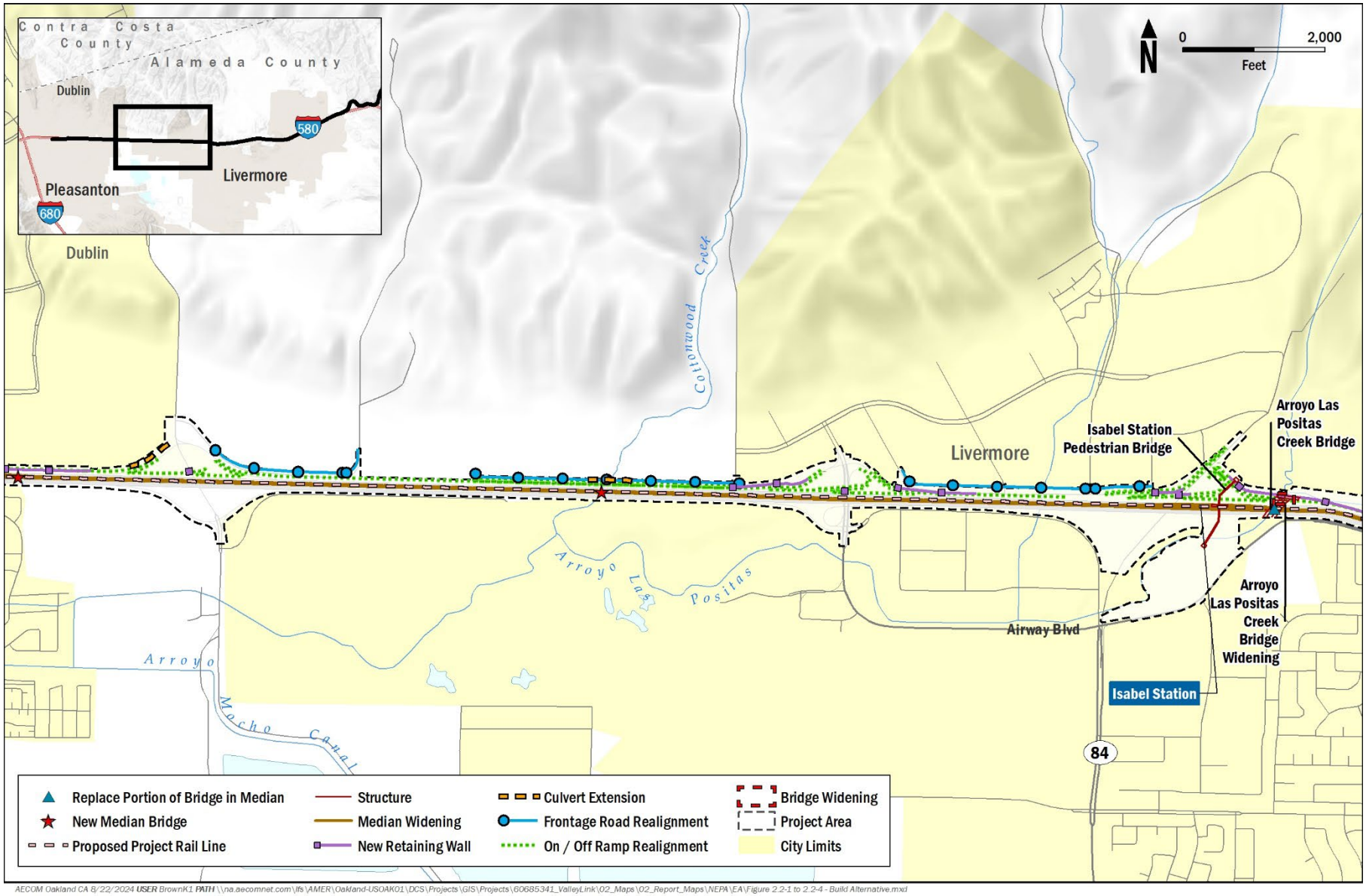

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Figure 2.2-2: Build Alternative - Project Elements (2 of 8)

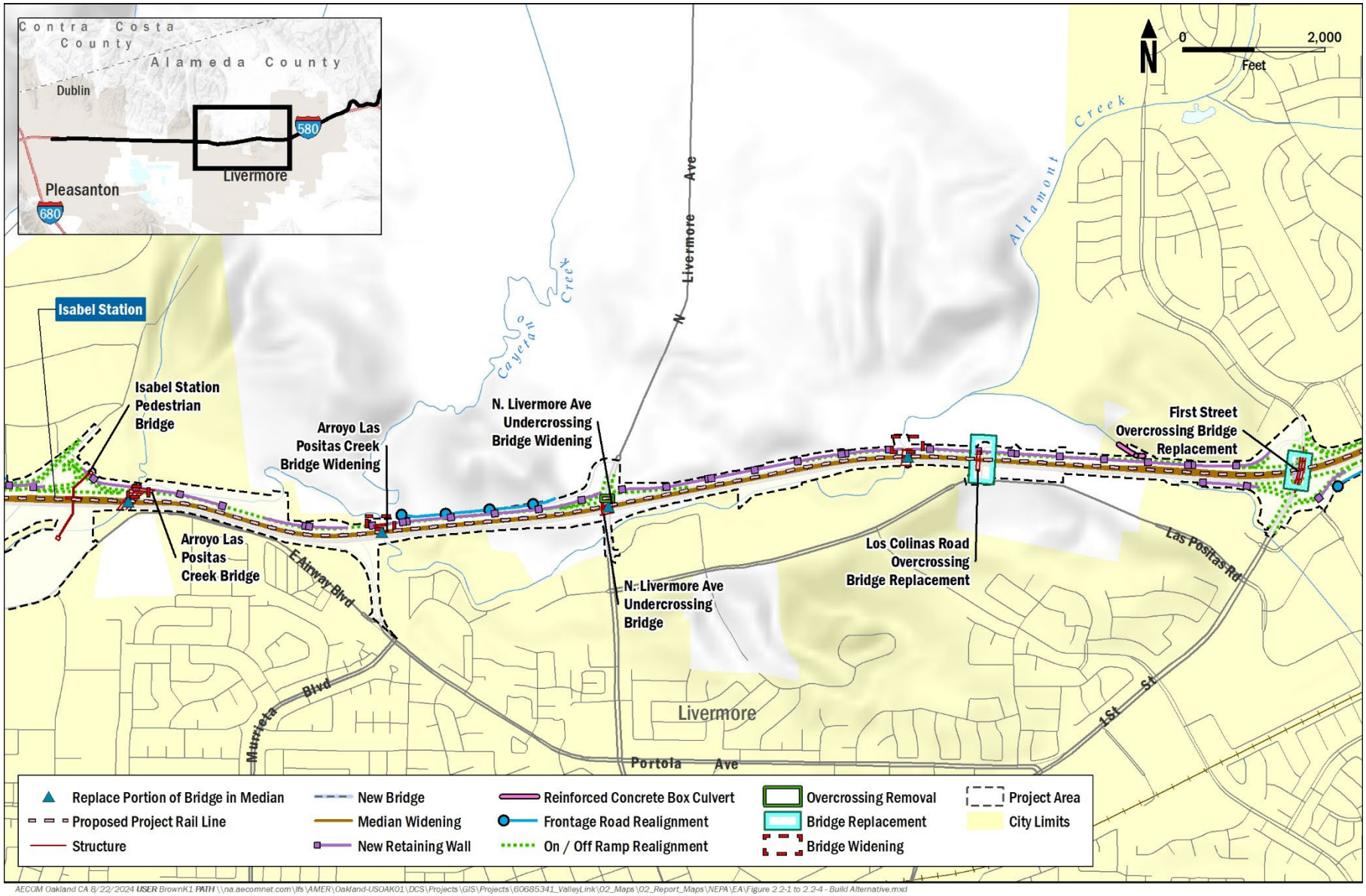

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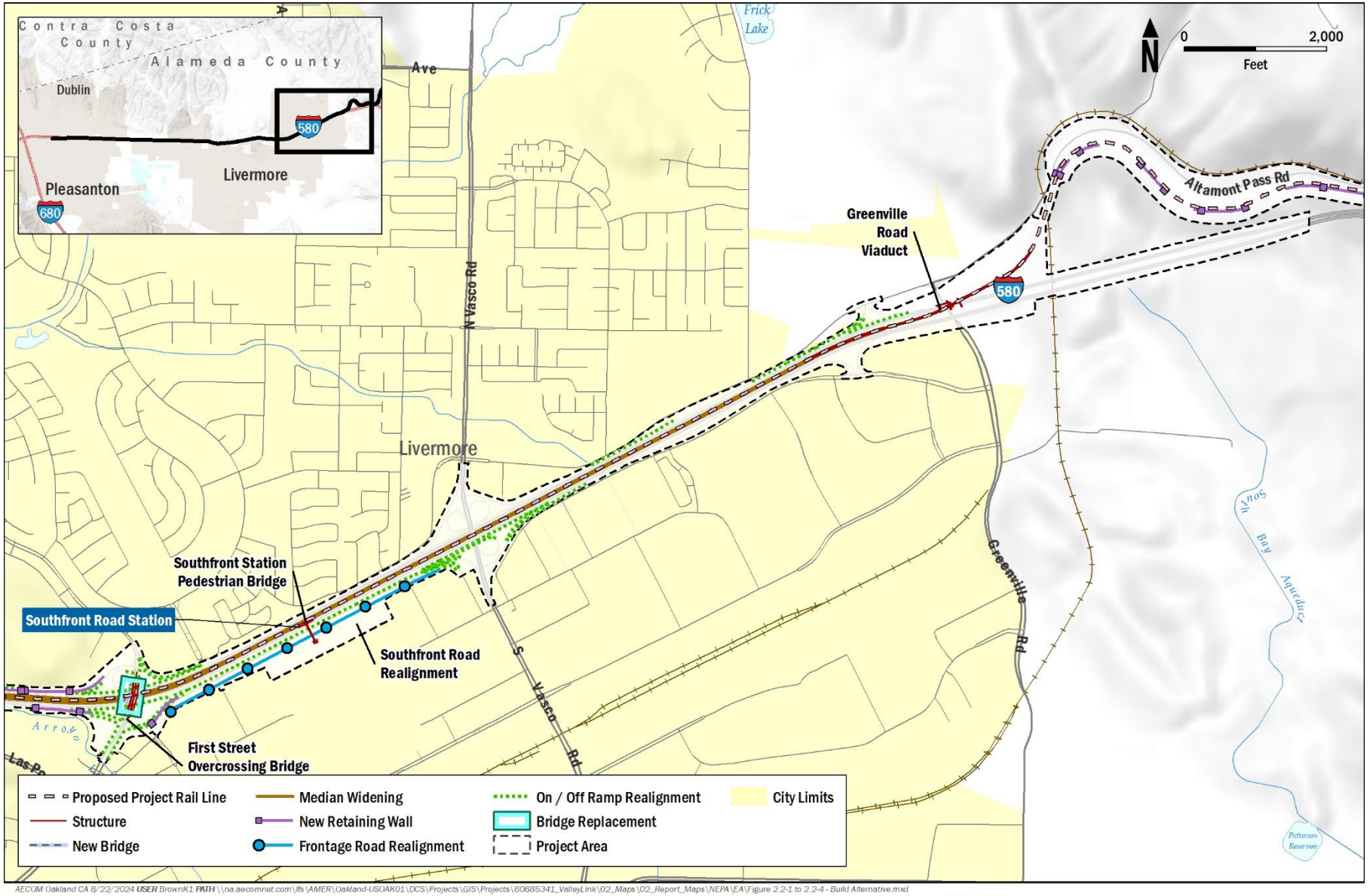
Figure 2.2-3: Build Alternative - Project Elements (3 of 8)



AECOM Oakland CA 8/22/2024 USER BrownK1 PATH \\na.aecomnet.com\lfs\AMER\Oakland-USOAK01\DCS\Projects\GIS\Projects\60685341_ValleyLink\02_Maps\02_Report_Maps\NEPA\EA\Figure 2.2-1 to 2.2-4 - Build Alternative.mxd

Figure 2.2-4: Build Alternative - Project Elements (4 of 8)

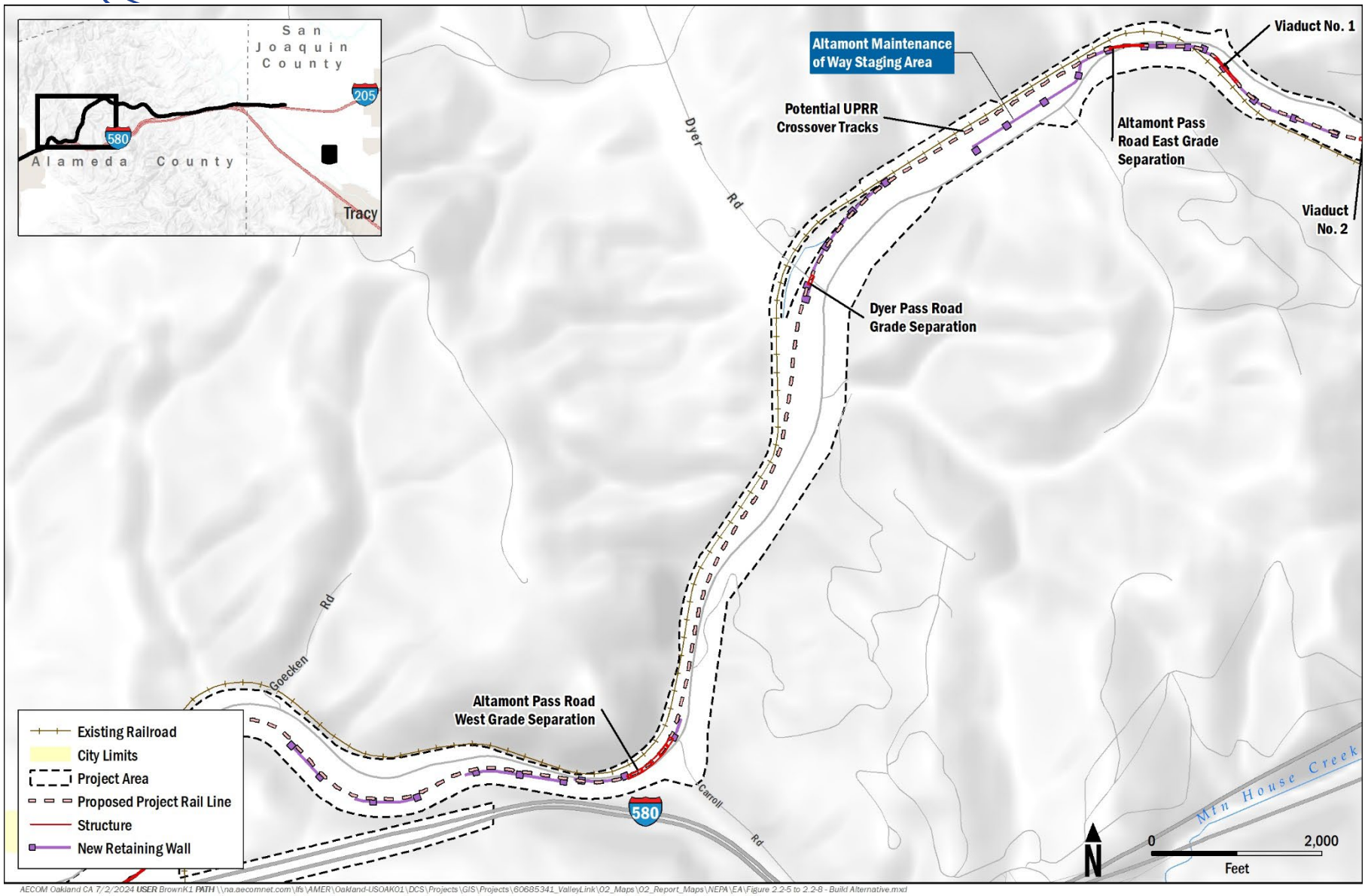


Figure 2.2-5: Build Alternative - Project Elements (5 of 8)

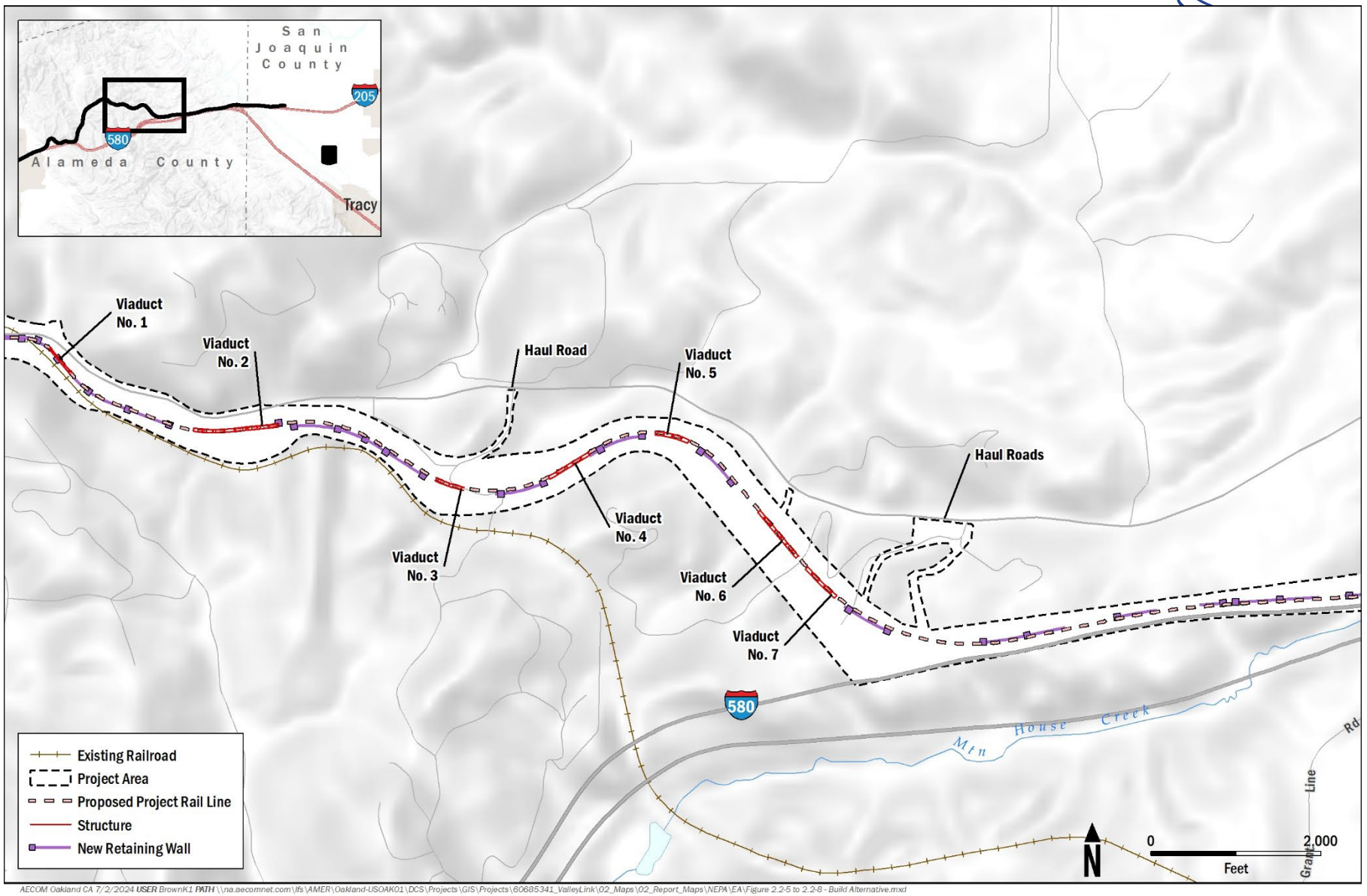


Figure 2.2-6: Build Alternative - Project Elements (6 of 8)

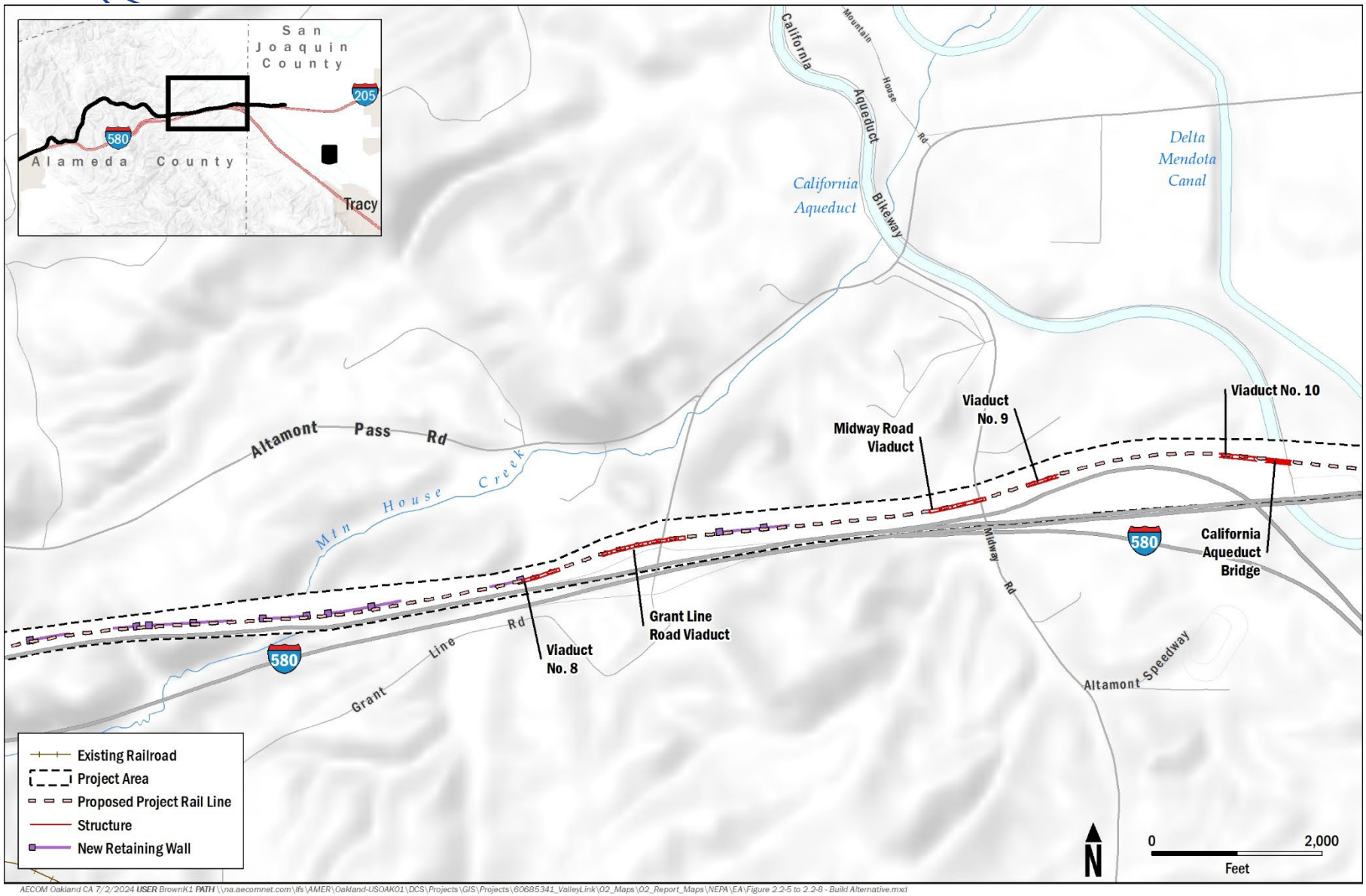


Figure 2.2-7: Build Alternative - Project Elements (7 of 8)

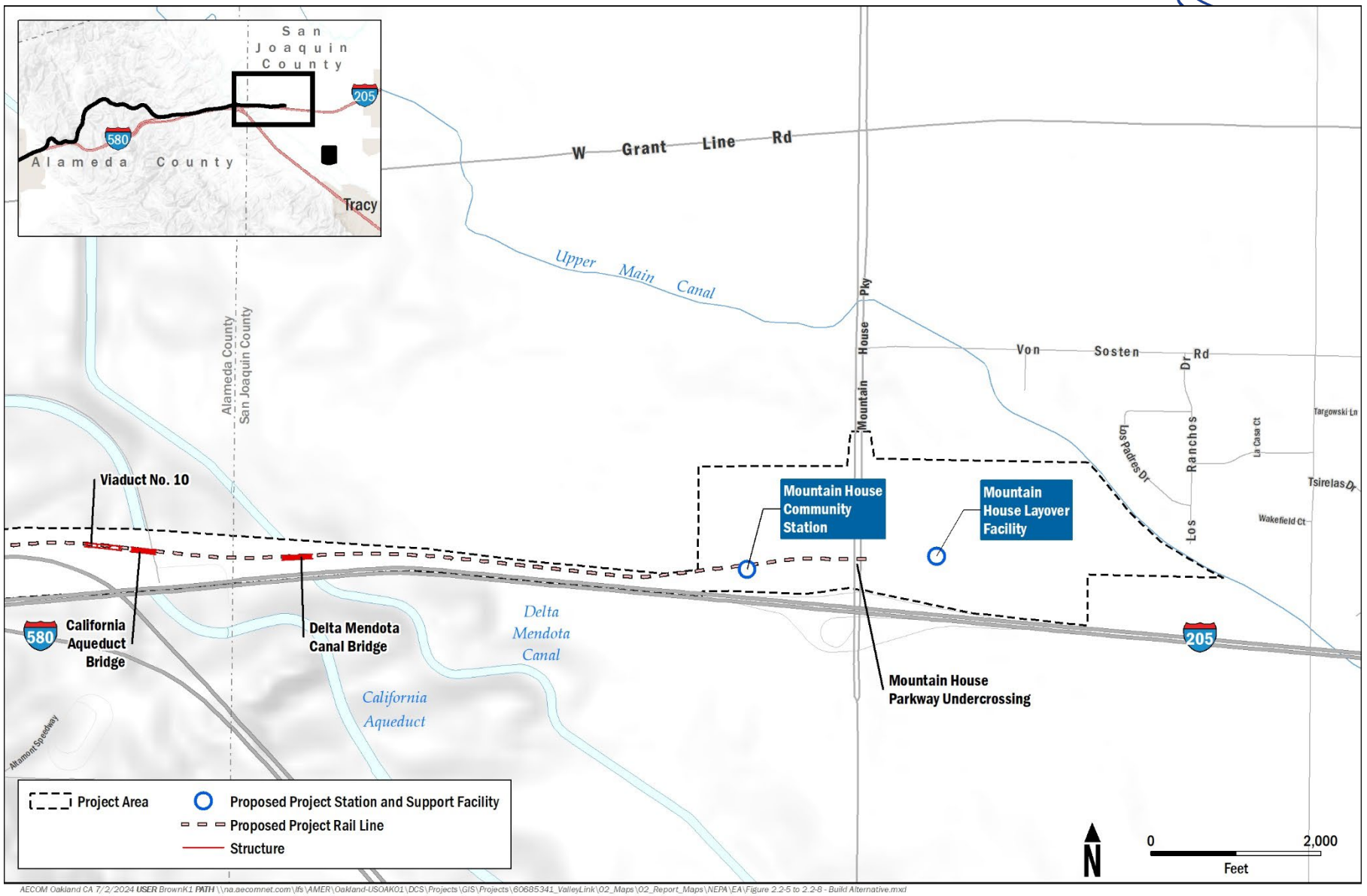


Figure 2.2-8: Build Alternative - Project Elements (8 of 8)

As shown on Figure 2.2-1 through Figure 2.2-4, the new rail line would operate at grade in the median of I-580 for approximately 11 miles from east of the existing Dublin/Pleasanton BART Station to Greenville Road in Livermore. I-580 would be modified throughout this section to provide adequate space within the freeway median for the accommodation of the new rail line and station platforms (further discussed in Section 2.2.2, Stations). In some locations, these modifications would require the shifting of the freeway lanes and frontage roads and minor realignment of on- and off-ramps at interchanges. Existing freeway lane and interchange ramp configurations, including existing express lane facilities, would be maintained during and after construction (see Section 2.2.5, Construction Activities and Methods) (Authority 2023). The majority of the new rail line within the I-580 corridor would be single-track to minimize impacts on the existing freeway configuration. However, to facilitate the passing of opposing trains, sidings would be constructed at the proposed stations (see Section 2.2.2, Stations).

East of Greenville Road, the new rail line would transition from the median of I-580 to the Alameda County Transportation Corridor via an elevated viaduct (referred to as the Greenville Road Viaduct (Figure 2.2-4).[1] As shown on Figure 2.2-5 through Figure 2.2-8, from the Greenville Road Viaduct the new rail line would then operate across the Altamont Pass for approximately 5.25 miles mostly at-grade (varying between single-track and sections of double-track to facilitate the passing of opposing trains) within the Alameda County Transportation Corridor right-of-way, then proceed east for approximately 0.75 mile on private land (anticipated to be acquired), followed by approximately 5 miles of primarily double-track along the north side of I-580 and Interstate 205 (I-205) within a combination existing Caltrans right-of-way and private land (anticipated to be acquired). No changes to existing Caltrans facilities in this section are proposed. The proposed new rail line would terminate at the Mountain House Community Station (Figure 2.2-8).

As shown on Figure 2.2-5 to Figure 2.2-8, the new rail line across the Altamont Pass would include the following project elements:

- Two grade separations over Altamont Pass Road (Altamont Pass Road West Grade Separation and Altamont Pass Road East Grade Separation)
- One grade separation over Dyer Road (Dyer Pass Road Grade Separation)
- Concrete retaining walls of varying heights and lengths
- New railroad viaducts across Grant Line Road (Grant Line Road Viaduct) and Midway Road (Midway Road Viaduct)
- Ten additional railroad viaducts of varying lengths (Viaduct Numbers 1 through 10)
- New steel truss bridges across the California Aqueduct (California Aqueduct Bridge) and the Delta-Mendota Canal (Delta-Mendota Canal Bridge)
- Rail undercrossing of Mountain House Parkway (Mountain House Parkway Undercrossing)

Grade separations and viaducts would be concrete box girder and have either concrete pier foundations or straddle bent columns for straight and curved portions of the viaducts, respectively. The columns in these viaducts would typically be between 8 and 10 feet wide and would typically be spaced between 90 and 150 feet. The sides of the viaducts would be 9 feet tall, topped by a railing with handrail that would be approximately 5 feet high. Retaining walls of varying heights would be at the ends of the viaducts where the viaducts transition to existing grades.

The new steel truss bridge over the California Aqueduct (Figure 2.2-7 and Figure 2.2-8) would be approximately 265 feet long and 40 feet high, with trusses spaced 23 feet apart. The steel truss bridge over the Delta-Mendota Canal (Figure 2.2-8) would be approximately 325 feet long and 40 feet high, with trusses spaced 18 feet apart.

The new rail line may also include new crossover tracks in the vicinity of the Altamont Maintenance of Way (MOW) staging area to provide interoperability with the Union Pacific Railroad (UPRR) trackway during construction (see Figure 2.2-5 and Section 2.2.3, Operations and Maintenance Facilities). The UPRR crossover tracks would allow for a connection between the UPRR and Valley Link rail alignments for the potential delivery of construction materials (such as stick and/or string running rail, concrete ties, etc.) by the construction contractor; for the potential delivery of rail vehicles by the vehicle supplier; and for

[1] A viaduct is a bridge that connects two elevated points, such as a valley or gorge, with the purpose of carrying road or rail traffic.

Stockton, California. Construction of the crossover track and their use would be subject to agreement with UPRR; however, for the purposes of this EA, construction of these crossover tracks is included in the Build Alternative.

2.2.2 Stations

The Build Alternative includes the construction and operation of four stations, described below from west to east (see Figure 2.2-9 through Figure 2.2-12).

2.2.2.1 Dublin/Pleasanton Station

The proposed Dublin/Pleasanton Station would be constructed south of the eastbound I-580 freeway lanes on the opposite side of the highway from the existing Dublin/Pleasanton BART Station (Figure 2.2-9). The new station would be on property owned by BART and the Alameda Flood Control Agency, as well as private land. Construction of the station would require temporary construction easements and permanent overhead easements from these parcels. Use of the station would be designed to provide seamless intermodal passenger service among Valley Link, BART, and local bus transit providers that currently serve the Dublin/Pleasanton BART Station. Improvements for the Dublin/Pleasanton Station would include:

- A 642-foot-long by 30-foot-wide, double-track Valley Link aerial station platform approximately 34 feet above ground with shade canopies
- Stairs, escalators, and elevators for vertical circulation within the station

Valley Link passengers wishing to transfer from BART trains at the existing Dublin/Pleasanton BART Station would travel down to the station concourse level (via stairs, escalators, or elevators), exit the BART station, cross under I-580 for 250 feet using the existing BART station access walkway, and then travel to the platform for the proposed Dublin/Pleasanton Station (via stairs, escalator, or elevator). If transferring from the proposed Dublin/Pleasanton Station to the existing Dublin/Pleasanton BART Station, patrons would do the reverse. The Authority will coordinate with BART on the final operating plan for the proposed Dublin/Pleasanton Station.

The existing Dublin/Pleasanton BART Station has two designated parking lots for passengers, one on the north side of I-580 and one on the south side. The Build Alternative does not include the construction of additional parking for the new station.

2.2.2.2 Isabel Station

The proposed Isabel Station would be 5 miles east of the proposed Dublin/Pleasanton Station and constructed within Caltrans right-of-way (the I-580 median) with adjacent parking on a 24-acre site along East Airway Boulevard south of I-580 and east of the Isabel Avenue I-580 bridge in Livermore (Figure 2.2-10). The parking lot would be on two parcels owned by BART, which would be acquired. The station site is within the City of Livermore's Isabel Neighborhood Specific Plan, which envisions more than 4,000 new housing units, parks, offices, and retail all within walking distance to the station (City of Livermore 2022). Vehicular access to the station would be provided from three driveways along East Airway Boulevard, which would be restriped for left-turn lanes, and a traffic signal would be constructed at the East Airway Boulevard/Rutan Drive intersection. Improvements for the Isabel Station would include:

- A 642-foot-long by 30-foot-wide, double-track, at-grade Valley Link station platform with shade canopies in the median of I-580.
- An 11-acre paved surface parking lot providing 850 parking spaces (including accessible spaces), kiss-and-ride, and bus bays.
- A pedestrian bridge (concrete box girder with galvanized safety barriers) from the parking lot over Arroyo Las Positas and eastbound I-580 to the station platform, as well as a potential pedestrian bridge over westbound I-580 (construction depending on available funding and participation from the City of Livermore), including elevators and stairs to the station platform and at both ends of the bridge. The potential extension of the pedestrian bridge over westbound I-580 would serve areas planned for future residential development as described in the City of Livermore's Isabel Neighborhood Specific Plan (City of Livermore 2022).

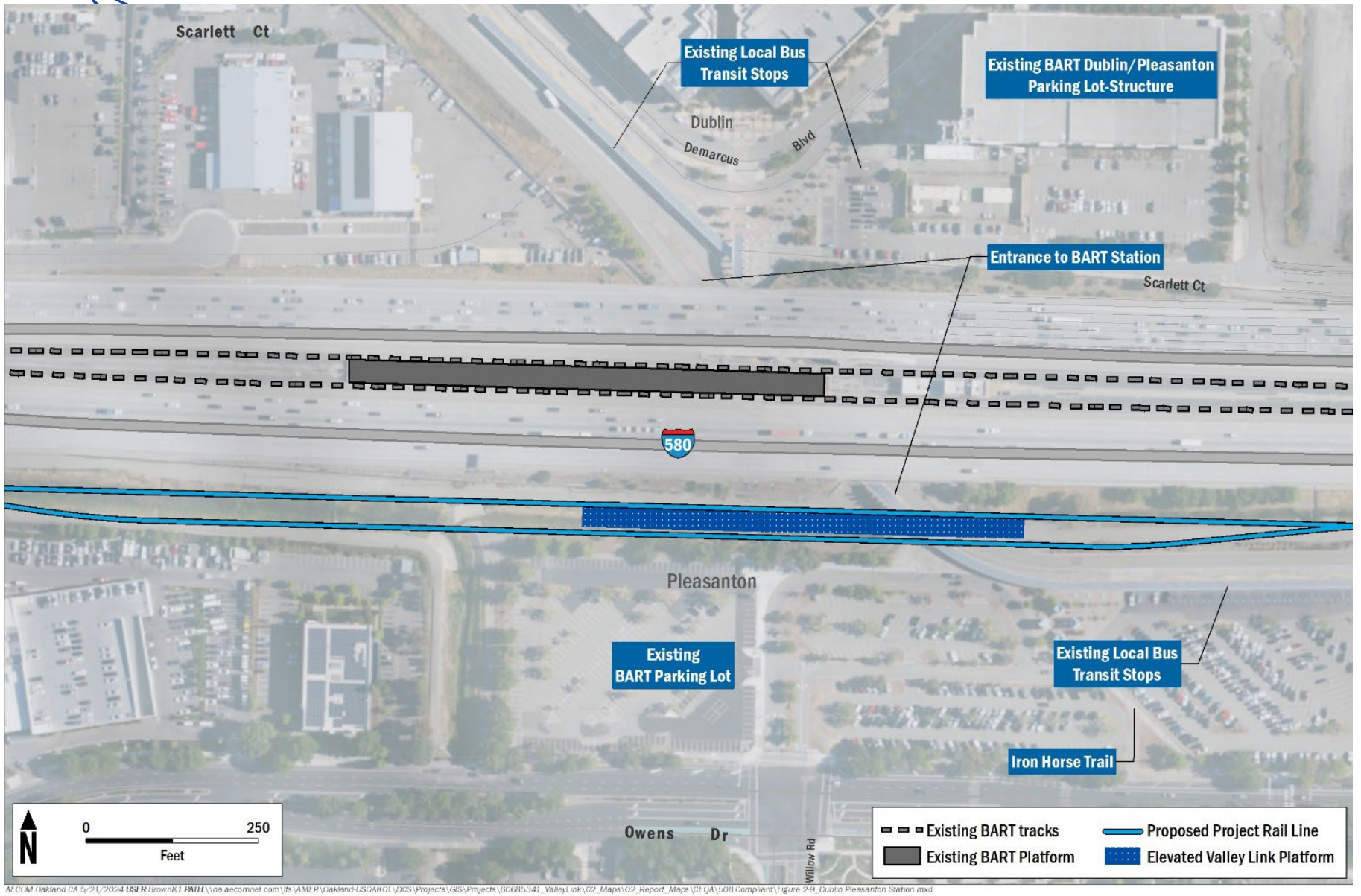


Figure 2.2-9: Dublin/Pleasanton Station

Figure 2.2-10: Isabel Station

2.2.2.3 Southfront Road Station

The proposed Southfront Road Station in Livermore would be 4 miles east of the Isabel Station and constructed within Caltrans right-of-way (the I-580 median) with adjacent parking located south of I-580 on a 7-acre site along Southfront Road between McGraw Avenue and Franklin Lane (Figure 2.2-11). The proposed station parking lot would be on private land anticipated to be acquired. Vehicular access to the station would be provided from Southfront Road. Approximately 0.8 mile of Southfront Road would be realigned to the south to accommodate shifting of the I-580 median, the relocation of the eastbound I-580 lanes farther south to the land currently used for Southfront Road, and new driveways for buses and vehicles into the station parking lot (Authority 2023). This realignment of Southfront Road is expected to require the acquisition of private land.

Improvements for the Southfront Road Station would include:

- A 642-foot-long by 30-foot-wide, double-track, at-grade Valley Link station platform with shade canopies in the median of I-580
- A paved surface parking lot providing 680 parking spaces (including accessible spaces), kiss-and-ride, and bus bays on the 7-acre parcel
- A pedestrian bridge (concrete box girder with galvanized safety barriers) from the parking lot over Southfront Road and eastbound I-580 to the median station platform, including elevators and stairs to the station platform and at both ends of the bridge

The platform and pedestrian bridge would be designed so as not to preclude a future extension of the pedestrian bridge to the north of I-580. This would be accomplished by leaving sufficient space for the potential extension. This future pedestrian bridge extension is subject to funding and station area planning by the City of Livermore.

2.2.2.4 Mountain House Community Station

The proposed Mountain House Community Station would be constructed north of I-205 on an approximately 54-acre site west of Mountain House Parkway near the I-205/Mountain House Parkway interchange (Figure 2.2-12). The location of this station was determined based on stakeholder input during the 2021 California Environmental Quality Act (CEQA) process to construct a station near or within Mountain House. The proposed station location would have convenient freeway access and allow for the opportunity to advance the transit-oriented development being planned as a separate project by the City of Mountain House.

Construction of the station is expected to require the acquisition of private land. Access to the station would be provided from a new four-way intersection with turning lanes along Mountain House Parkway that would also provide access to the Mountain House Layover Facility (LF) to the east. An approximately 3-acre drainage basin would be constructed south of the station platform (Figure 2.2-12). Improvements for the Mountain House Community Station would include:

- A 642-foot-long by 30-foot-wide, at-grade, double-track Valley Link station platform with shade canopies
- A 25-acre paved surface parking lot north of the tracks providing 2,990 parking spaces (including accessible spaces), kiss-and-ride, and bus bays
- Two grade-separated pedestrian crossings (concrete box girder with galvanized safety barriers) from the parking lot to the platform, including stairs, ramps, and elevators
- To meet 2040 parking demand, an additional parking level over the surface parking lot within the 54-acre site for a total of up to 5,980 parking spaces

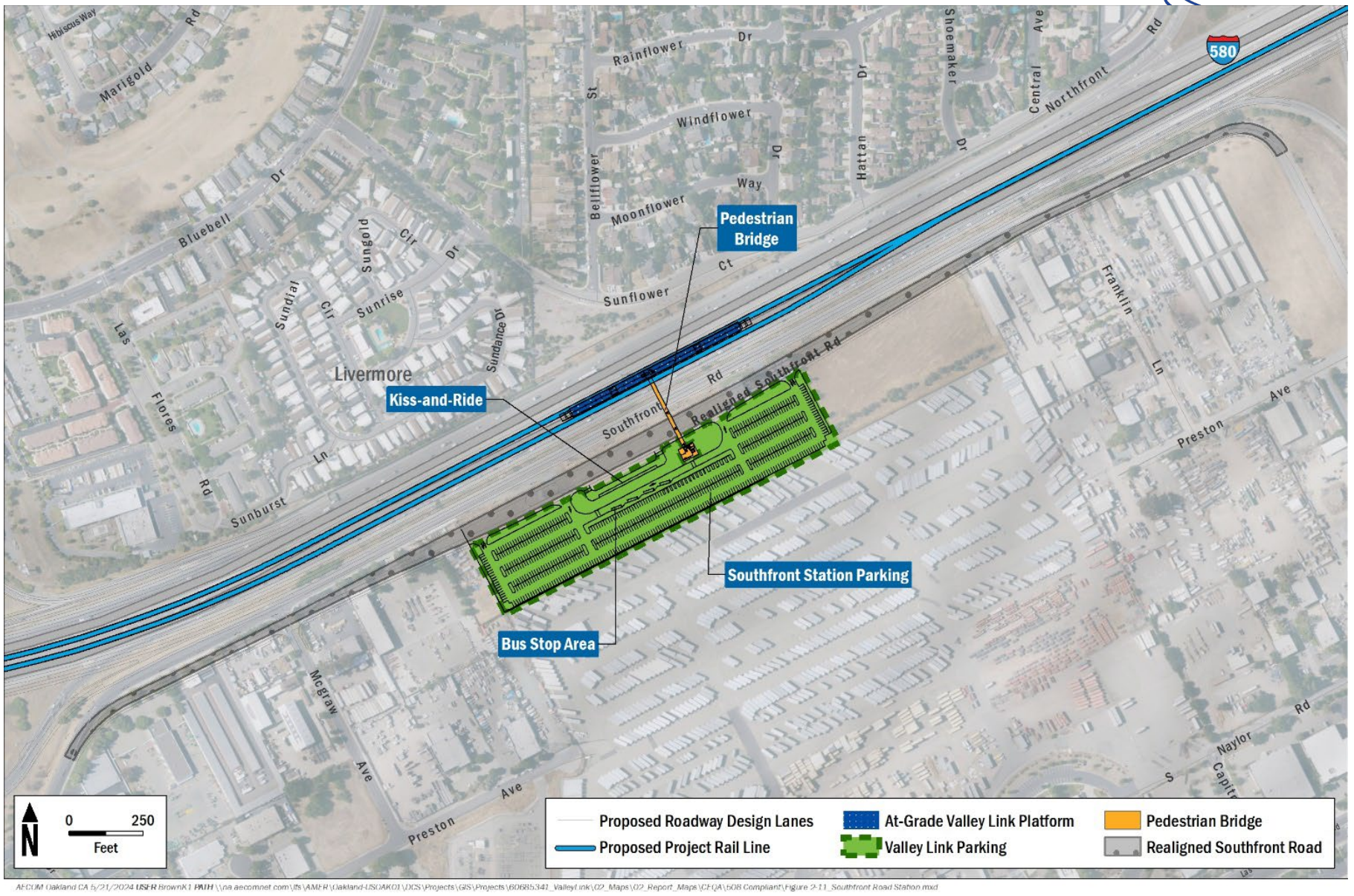


Figure 2.2-11: Southfront Road Station

Figure 2.2-12: Mountain House Community Station

2.2.3 Operations and Maintenance Facilities

2.2.3.1 Altamont Maintenance of Way Staging Area

A MOW facility would be constructed on a 10-acre portion of the Alameda County Transportation Corridor right-of-way, approximately 2,250 feet east of Dyer Road, between the Southfront Road and Mountain House Community Station (Figure 2.2-13). The MOW may be used as a contractor staging area during construction and ultimately be designed to support the short-term storage of Valley Link trains and maintenance vehicles and storage of maintenance materials.

The site would include an office building of approximately 1,100 square feet with restrooms and parking available for employees. Expected functions of this site would include track and systems personnel reporting when required. The Altamont MOW would include yard tracks for the storage of equipment, which would connect to the mainline track via five siding tracks, and waste capture and disposal features.

The Altamont MOW would be access controlled with 8-foot-high perimeter fencing with automatic entrance gates for Valley Link and employee vehicles. Access would be off Altamont Pass Road with a new entrance gate and driveway. Other than the new driveway connection, no modifications to Altamont Pass Road are proposed. The facility would be operational 24 hours a day, with site and facility lighting, and supported by an emergency generator, utilities, and fire protection equipment.

2.2.3.2 Mountain House Layover Facility

The proposed Mountain House LF would be constructed on an approximately 75-acre site east of Mountain House Parkway and the proposed Mountain House Community Station on the north side of I-205 (Figure 2.2-14). Construction of the Mountain House LF is expected to require acquisition of private land.

Valley Link trains would access the Mountain House LF from the Mountain House Community Station. The proposed rail line would leave the station and cross under Mountain House Parkway into the proposed LF site. The Mountain House LF would support train layovers, storage, and light maintenance.

Vehicular access to the LF would be provided from Mountain House Parkway at a proposed four-way intersection that would also provide access to the Mountain House Community Station to the west. An approximately 7-acre drainage basin would be constructed on the southern portion of the site.

The Mountain House LF would include an administrative and operations building of approximately 31,000 square feet. The administrative building would include management, administrative, and security offices; an operations control center and dispatch center; conference rooms, day rooms, and restrooms; utilities and fire protection; and an emergency generator. The operations building would be used for cleaning, fueling, light maintenance, and periodic preventive maintenance. The operations building would also include two tracks for preventive maintenance and one track for repairs.

The Mountain House LF would also include yard tracks with enough capacity for the following:

- Two service and inspections tracks (one with an inspection pit)
- Storage tracks (18 vehicles for initial operations with ability to expand by 28 to 46 vehicles)
- One train wash rack on a separate track
- Fuel island with dispensers
- Gaseous hydrogen storage and vaporizers (if hydrogen vehicle selected)

All the common equipment for vehicle maintenance equipment would be provided, including shore power and air, fume ventilation, fluid servicing, small component repair shop, storage rooms, utilities and fire protection, and waste capture and disposal, and an emergency generator.

The Mountain House LF would be access controlled with 8-foot-high perimeter fencing with automatic entrance gates for Valley Link employee vehicles and visitors. Two employee parking lots are proposed off an access road on the north side of the tracks. The parking lot adjacent to the administrative office would include 120 spaces to accommodate staff and public visitor parking. The parking lot adjacent to the operations building would include 90 spaces for employees. This facility would be capable of operations 24 hours a day, with site and facility lighting.

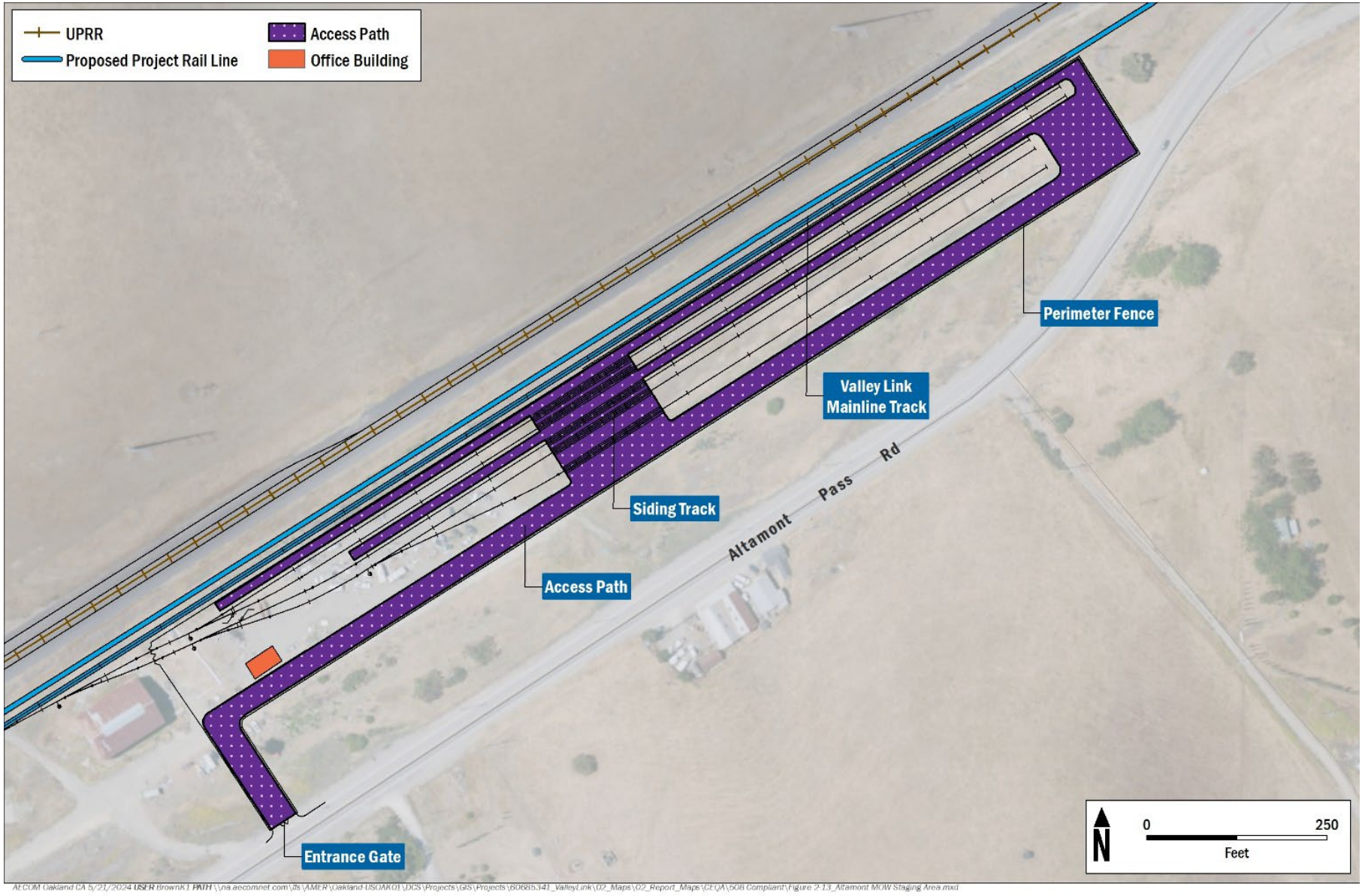


Figure 2.2-13: Altamont MOW Staging Area

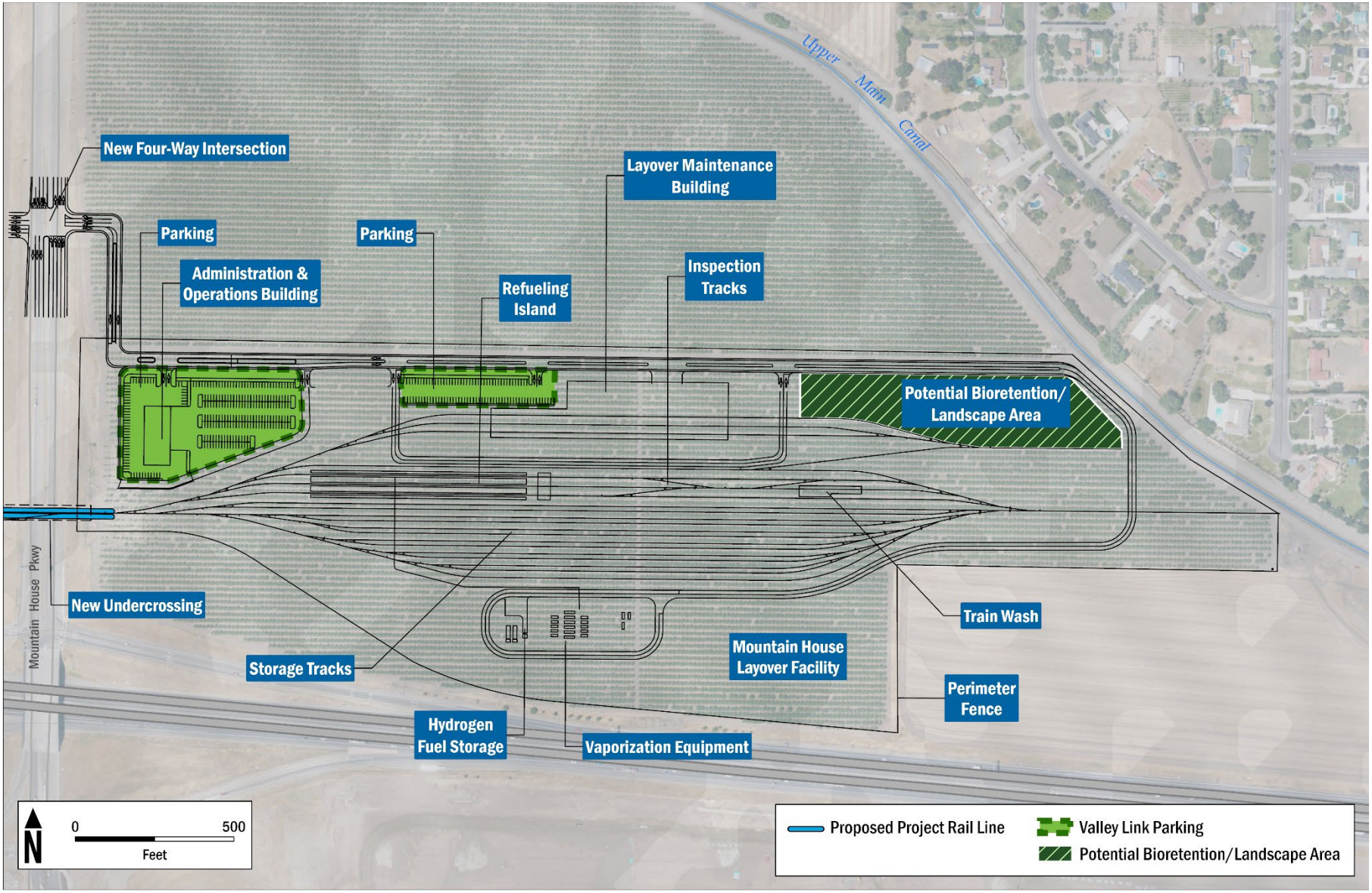


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Figure 2.2-14: Mountain House LF

2.2.3.3 Tracy Operations and Maintenance Facility/Operations Support Site

The proposed Tracy Operations and Maintenance Facility/Operations Support Site (OMF/OSS) would be constructed on part of an approximately 200-acre property along West Schulte Road west of the City of Tracy (Figure 2.2-15). The Authority does not currently own the Tracy OMF/OSS site (it is currently owned by the City of Tracy) but would have the option to purchase the site following environmental and project approvals. The site would accommodate heavy maintenance vehicle and component rebuilds, vehicle maintenance, buildings and stations maintenance, warehouse storage, and a backup control center.

Heavy vehicle maintenance would primarily consist of component repairs such as rail truck repairs, wheel truing, gear box repairs, traction motor repairs, and electro-mechanical and electronics repairs. Trains would be transported by truck between the Mountain House LF and the Tracy OMF/OSS.

The Tracy OMF/OSS would also handle disposal of project-related hazardous wastes. Hazardous wastes would be transported via truck from the Mountain House LF to a hazardous waste room at the Tracy OMF/OSS where the wastes would be collected and burned in an approved incinerator. The resulting ashes and other non-burnable solid waste would then be placed in hazardous waste drums for collection by a hazardous waste contractor for final approved disposal.

The warehouse building (assumed to be approximately 50,000 square feet) and laydown area would include the backup control center and dispatch, storage racks and storage rooms, exterior laydown areas, and restrooms.

The heavy maintenance building (assumed to be approximately 63,000 square feet) would include maintenance and supervisory offices, day rooms and restrooms, locker and changing rooms, bridge crane, shore power and air, fume ventilation, truck repair shop, rail vehicle cleaning, wheel truing, large and small component rebuild shop, storage, offices, employee rooms, utilities and fire protection, and waste capture and disposal.

The vehicle and facility maintenance building (assumed to be approximately 72,000 square feet) would include maintenance and supervisory offices, shore power and air, bridge crane, fume ventilations, storage rooms, utilities and fire protection, and waste capture and disposal.

The Tracy OMF/OSS would be access controlled with 8-foot-high perimeter fencing with automatic entrance gates for Valley Link employee and visitor vehicles. Employee parking would be provided in two lots, a 1.25-acre, 100-space lot at the heavy maintenance building and a 1.75-acre, 200-space lot at the warehouse building. This facility would be capable of operations 24 hours a day, with site and facility lighting. It would be supported by an emergency generator, utilities, and fire protection equipment. An approximately 7-acre drainage basin would be construction on the northern portion of the site.

The design of the Tracy OMF/OSS would accommodate the opening year (2028) and anticipated 2040 Valley Link service. The warehouse, backup operations control center, and laydown area are planned to be constructed to support initial operations. The remaining facilities are being cleared for future construction as the train and maintenance vehicle fleets are expanded.

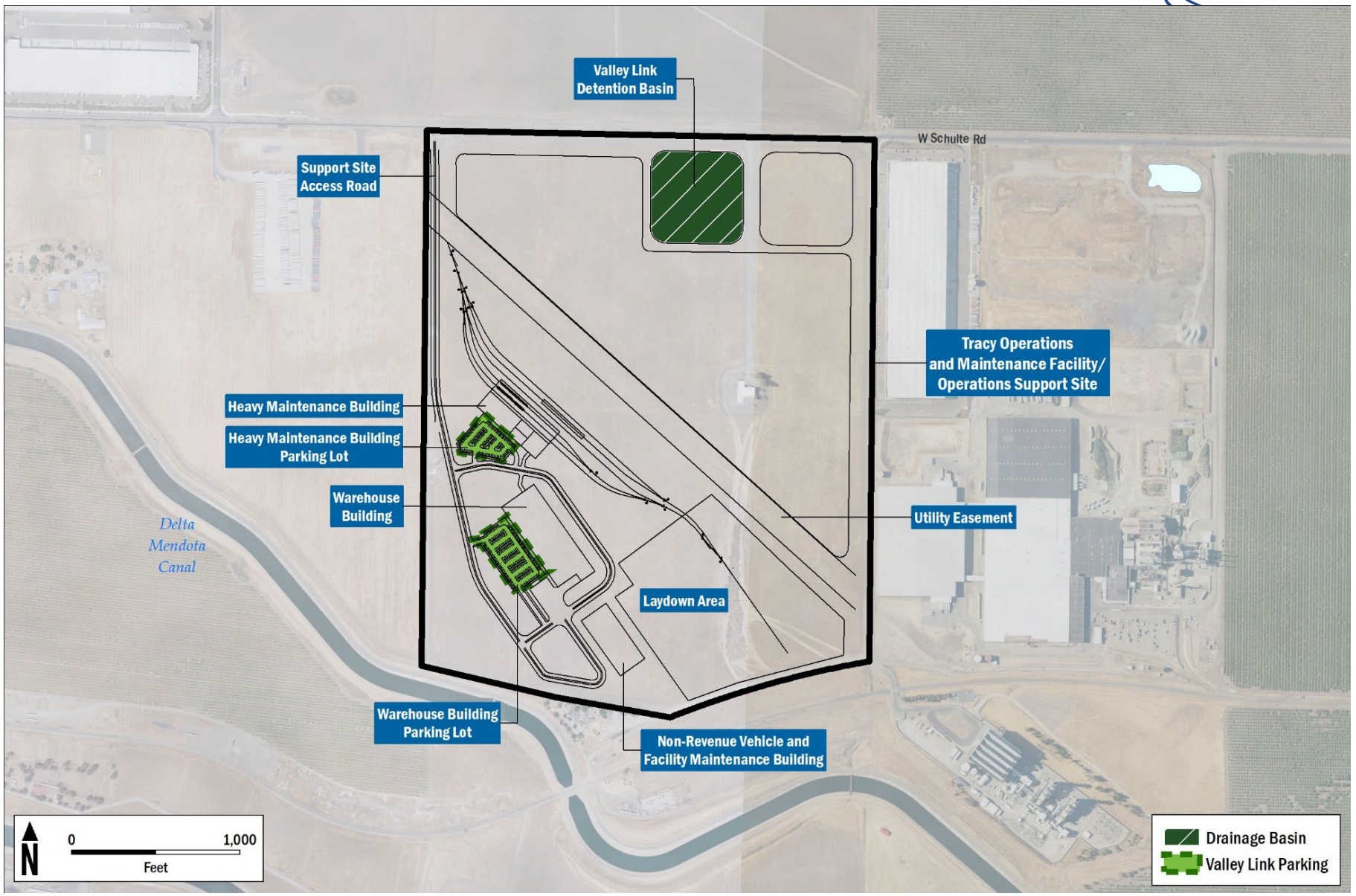


Figure 2.2-15: Tracy OMF/OSS

2.2.4 Vehicles

Consistent with the purpose and need and implementing strategies identified in the Authority's Board-adopted Sustainability Policy (Authority 2018), the Build Alternative includes the use of zero-emission multiple unit vehicles. The use of hydrogen vehicles is assumed for environmental documentation given recent state procurement activities and consistency with the State Rail Plan (Caltrans 2023).

2.2.5 Construction Activities and Methods

Table 2.2-1 briefly summarizes construction activities for the Build Alternative.

Table 2.2-1: Summary of Construction Activities and Methods

Project Activity	Construction Activity Summary
Construction Site Preparation	• Installation of environmentally sensitive area fencing • Vegetation removal • Installation of water quality construction best management practice features such as silt fences, fiber rolls, and drainage inlet protection systems
Roadway (local roadway construction, freeway ramp realignment, bridge replacement)	• Removal of existing features such as concrete barriers, retaining walls, portions of bridge structures, curbs and gutters, sidewalks, signs (roadway and overhead), streetlights, express lane electronic toll system (ETS), and traffic signals • Clearing and grubbing, embankment construction, earthwork excavation, grading and compaction, aggregate base, hot-mix asphalt, and pavement marking and striping • Modification of median concrete barriers to accommodate overhead signs, dynamic message signs, variable toll message signs, and toll gantry structures to carry ETS equipment • Construction of structural elements, including new bridges, box culvert extensions, retaining walls, and new concrete barrier • Construction of noise barriers (sound walls) where appropriate, including a potential 14- to 22-foot-high noise barrier along westbound I-580 east of the Isabel Avenue off-ramp (subject to final Caltrans determination and outreach with neighborhood groups)
Track Work	• Grading and compaction of track subgrade, installation of trackway drainage and systems raceway, placement of sub-ballast and initial ballast, and installation of ties and continuous welded rail • Use of on-track equipment to place additional ballast and make final adjustments to the rail line
Track and Roadway Support Structures (new bridges, underpasses, overpasses, etc.)	• Modifications to existing overhead structures: clearing, grubbing, and rough grading for the installation of pier protection along the existing piers that support the overhead roadway structure and retaining walls along the length of existing abutment slopes • Construction of structural elements, including new bridges, box culvert extensions, retaining walls, and new concrete barrier • Conformance to the current Caltrans Bridge Design Specifications and associated standards of the local agency having jurisdiction at a given location for bridged structure types

Project Activity	Construction Activity Summary
Stations (including platforms, amenities, tail track, passenger amenities, surface parking lots, pedestrian connections, etc.)	• Depending on the project element: clearing and grubbing; rough and final grading; structural excavation for walls; forming and pouring concrete for the walls, access stairs and ramps, and platform surface; and installation of shelters, lighting, security, railings, benches, trash receptacles, drainage and utilities, aggregate base, curb and gutter, paving, landscaping, and signage and striping • For station tracks, similar construction activities to those described above for track work • For pedestrian overcrossings and undercrossings: clearing and grubbing; rough grading; installation of utilities, cast-in-drilled-hole piles, ramp footings, and lighting; pouring structural concrete for columns, ramps, and abutments; placement of column-reinforcing steel, falsework for ramps and abutments, reinforcing steel and structural concrete for decks, and handrails for ramps; construction of steel superstructures
Operations and Maintenance Facilities	• Clearing and grubbing; grading; installation of new service utilities; paving; drainage; area lighting; track and special trackwork; and construction of buildings with associated mechanical, electrical, and plumbing
Haul Roads and Staging Areas	• While haul roads would not be required for the proposed improvements to I-580, use of temporary concrete railing (K-rail) with other traffic control devices to separate the work area from moving traffic, and to close travel lanes, sidewalks, and other areas as needed to provide construction staging areas • Construction of three haul roads along Altamont Pass Road for access to the construction site (see Figure 2.2-6); these roads would be constructed on privately owned parcels to be acquired for the Build Alternative and used for maintenance access during operation • Potential use of Altamont MOW site as a contractor staging area during construction; contractor(s) would be responsible for obtaining environmental clearance for additional temporary staging areas (if needed)
Post-construction	• Removal of construction-related materials, including the environmentally sensitive area fencing, after construction activities are complete • Restoration of temporarily disturbed areas and staging areas, including cleaning up sites, recontouring to original grade, and revegetating with appropriate native species, as necessary • Application of permanent erosion control, including soil stabilization measures such as hydroseeding and coir netting, to temporarily affected areas to minimize erosion after construction

2.2.5.1 Road Closures and Transportation Management

The I-580 corridor currently experiences noticeable traffic congestion during both AM and PM peak hours. To ensure traffic operation (including existing express lane facilities) would not be further affected during construction of the Build Alternative, during the final design phase, a Transportation Management Plan (TMP) would be prepared in accordance with Caltrans requirements and guidelines., including:

- Detour and detailed construction staging plans to minimize impacts on the traveling public from any construction activity on I-580 as well as maintain access for emergency response vehicles and express lane maintenance vehicles
- Distribution of press releases and other documents as necessary to notify local jurisdictions, agencies, and the public of upcoming road closures and detours, in addition to public meetings to notify motorists of traffic impacts
- Coordination with the California Highway Patrol and local law enforcement on contingency plans

- Use of portable changeable message signs, highway advisory radio, Caltrans information network, California Highway Patrol Construction Zone Enhanced Enforcement Program, and Freeway Service Patrol where possible to minimize delays
- Use of traffic control devices during construction in accordance with the California Manual on Uniform Traffic Control Devices (Caltrans 2024)

Within the detailed construction staging plans, through a multi-staged approach, the existing number of lanes would be maintained. Shoulder widths would vary from a minimum of 2 to 10 feet, where feasible. Temporary concrete railing (K-rail) and temporary traffic screens would be used for traffic and worker safety. During construction, temporary or long-term shoulder closures would be expected to occur in both directions during daytime or nighttime; travel lane and ramp closures would only occur during nighttime and weekends. Twenty-four-hour traffic counts would be performed to assess the impact of any needed lane closures and development of feasible staging plans. Impacts to pedestrian and bicyclist movements (such as along the Iron Horse Trail near the proposed Dublin/Pleasanton Station), as well as access to local business properties, would also be addressed in the staging plans.

2.2.5.2 Construction Schedule and Durations

The Authority proposes to implement the Build Alternative as soon as 2028. Table 2.2-2 identifies the estimated duration for construction of each component of the Build Alternative. The construction durations are not sequential; construction could occur simultaneously at several locations.

Table 2.2-2: Estimated Construction Duration

Improvement	Estimated Construction Duration (Months) [a]
Track Work (from the proposed Dublin/Pleasanton Station to Greenville Road Viaduct)	36
I-580 Modifications	42
Dublin/Pleasanton Station	24
Isabel Station	18
Southfront Road Station	16-18
Track Work including Altamont MOW (from Greenville Road Viaduct to the Mountain House LF)	30
Mountain House Community Station	12-16
Mountain House LF	36
Tracy OMF/OSS	36

[a] As Build Alternative improvements would require permitting, contractor selection, and final design prior to construction, the total duration is subject to change.

2.2.6 Conceptual Operating Plan

Valley Link trains would operate 7 days a week between the Mountain House Community Station and the proposed Dublin/Pleasanton Station, with all trains stopping at the Isabel and Southfront Road Stations. The first weekday train to depart the Mountain House Community Station would be timed to arrive at the proposed Dublin/Pleasanton Station 11 minutes prior to the first BART departure at 5:06 AM. During weekdays, trains would operate from 4:25 AM to 8:30 PM at 15-minute headways during peak periods (4:25 AM to 8:25 AM and 3:00 PM to 7:00 PM) and 45-minute headways during non-peak periods (9:10 AM to 3:00 PM and 7:00 PM to 8:30 PM). The last westbound weekday train would depart the Mountain House Community Station at 7:45 PM, and the last eastbound weekday train would depart the proposed Dublin/Pleasanton Station at 8:30 PM. Weekend and holiday headways would be 45 minutes with trains operating from 8:00 AM until 8:00 PM.

2.3 Alternatives Considered but Eliminated from Further Evaluation

Alternatives were considered throughout the Valley Link planning process. Figure 2.3-1 depicts the steps and alternatives considered ultimately resulting in confirmation of the Build Alternative as defined and analyzed in this EA. An initial evaluation of alternatives was completed for the 2019 Project Feasibility Report (Authority 2019). Previous rail expansion alternatives and sub-options from the ACE*forward* Draft EIR (SJRRC 2017) and BART to Livermore Draft EIR (BART 2017) were identified and analyzed in the Project Feasibility Report (see Figure 2.3-2 through Figure 2.3-3). As stated in Chapter 1, Purpose and Need, in May 2018, the BART Board of Directors decided to no longer plan for expansion of the BART system to Livermore, and instead took action to defer project development in the corridor to the Authority. The SJRRC ACE*forward* Draft EIR did not certify the long-term improvements and determined to work with the Authority to advance Valley Link instead. The Authority continues coordination with BART and SJRRC and relies on work in the corridor completed by these agencies for a Final Project Feasibility Report.

The Project Feasibility Report alternatives evaluation process included a multi-tiered analysis, starting with multiple modes: rail (alternatives based upon the previous ACE/BART analyses and efforts); diesel multiple unit/electric multiple unit [DMU/EMU]); bus (including express/bus rapid transit [BRT] and bus-on-shoulder options); alignment options; and rideshare. Several alternatives were dismissed from further analysis due to not meeting the Authority's goals and objectives, being infeasible due to high cost or other challenges, or not avoiding or substantially reducing one or more potentially adverse impacts. A summary of the alternatives evaluated in the Project Feasibility Report, as well as the reason for their dismissal, is provided in Table 2.3-1.

In addition, the 2021 CEQA evaluation included an analysis of multiple alternatives with a range of operating technologies, modes, alignments, and stations. The 2021 evaluation also analyzed multiple variants for station locations, parking facilities, rail alignments, and four vehicle technologies (Authority 2021). The 2021 CEQA evaluation included the alternatives and variants summarized in Table 2.3-2, which were eliminated from further consideration.

The Project Feasibility Report and other past alternative assessments discussed above were reviewed and considered in defining the Build Alternative analyzed herein, during design of the Build Alternative, and/or again at the start of the NEPA process. None of the previously considered alternatives warranted evaluation in this EA, since they either do not meet the purpose and need, are infeasible, have excessive or high construction costs, or do not avoid or substantially reduce adverse impacts.

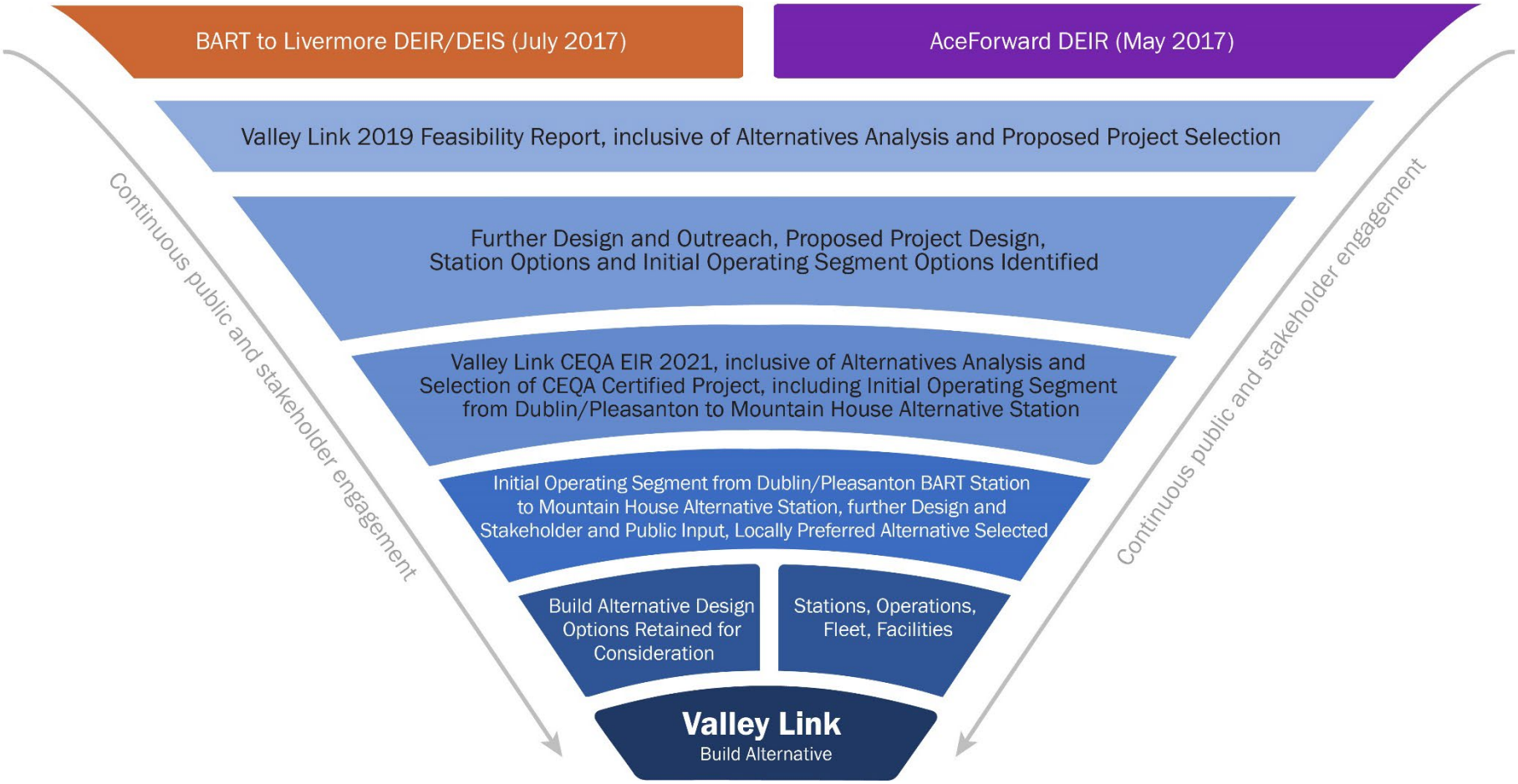
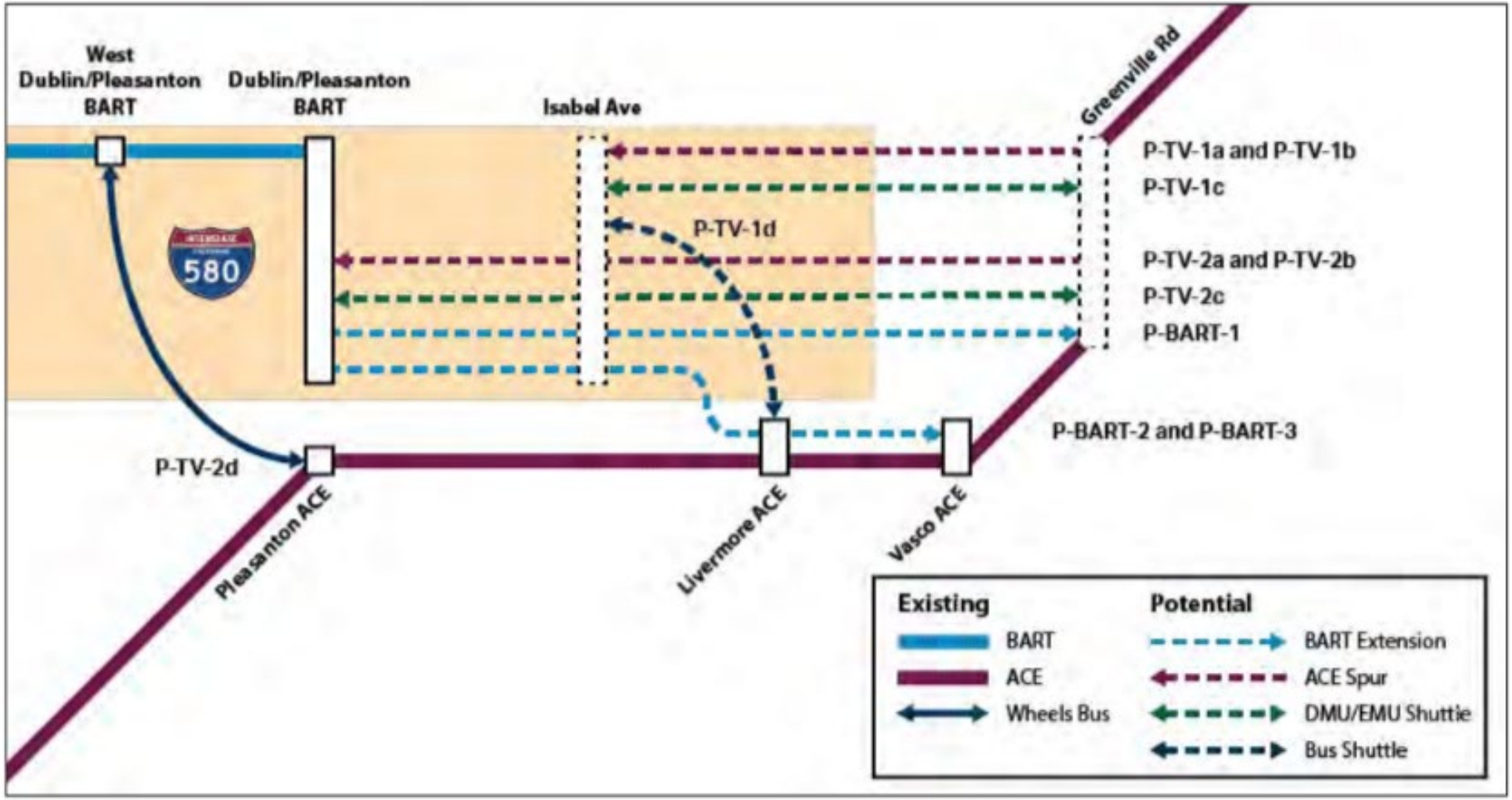
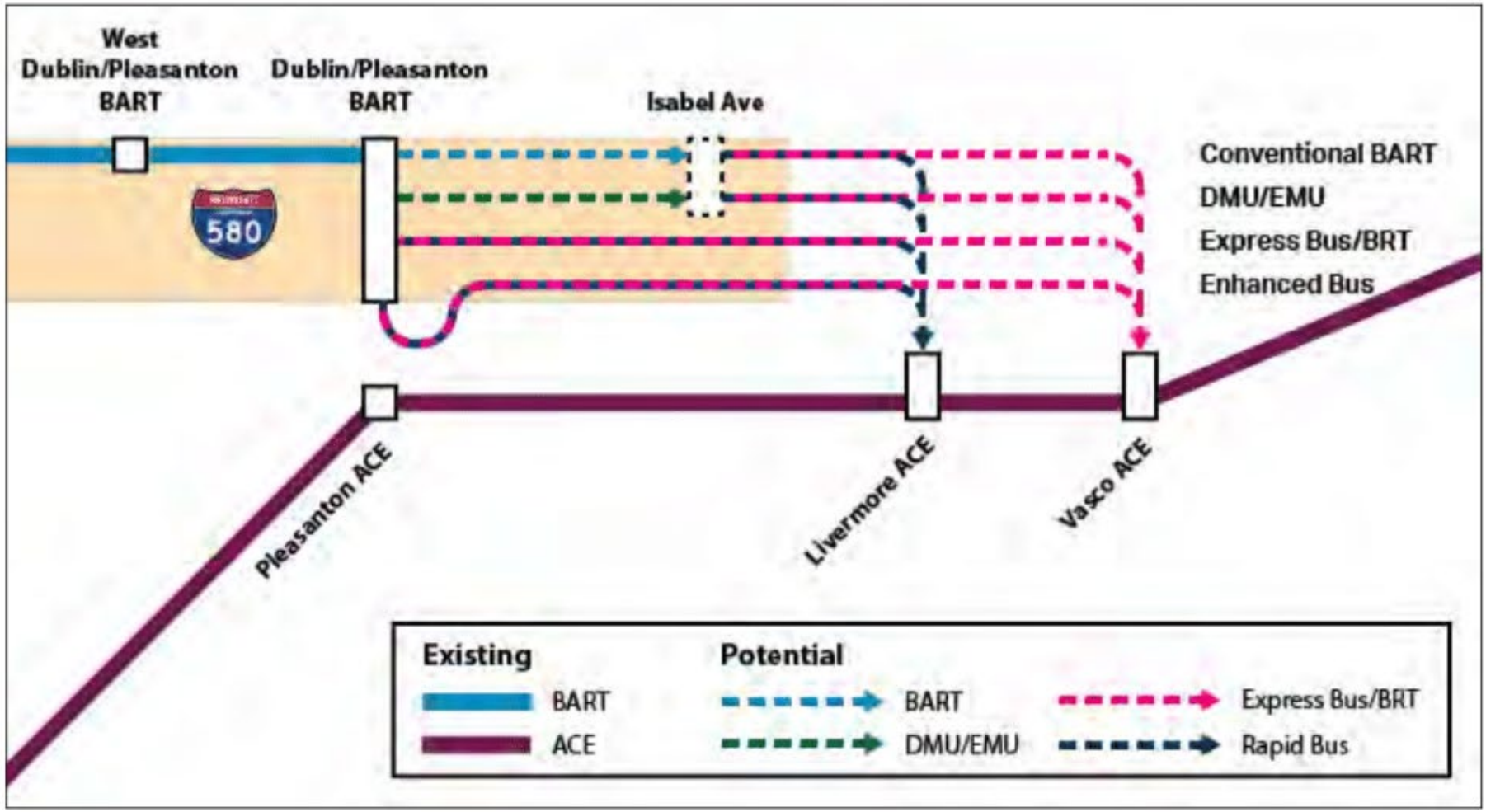


Figure 2.3-1: Development Steps for the Proposed Project (Build Alternative)



Source: Valley Link Project Feasibility Report (Authority 2019)

Figure 2.3-2: Previous ACEforward Alternatives Considered



Source: Valley Link Project Feasibility Report (Authority 2019)

Figure 2.3-3: Previous BART Alternatives Considered

Table 2.3-1: Previous ACEforward, BART, and Valley Link Feasibility Report Alternatives Considered

Source	Alternative	Description	Reason for Dismissal
ACE*forward*	P-TV-1a, P-TV-1b	ACE to BART Isabel Avenue Station (1a) at grade or (1b) on elevated structure	Lower ridership and vehicle miles traveled (VMT) reduction expected
ACE*forward*	P-TV-1c	ACE to BART Isabel Avenue Station (1a) at grade or (1b) on elevated structure	Lower ridership and VMT reduction expected
ACE*forward*	P-TV-1d	Bus shuttle from ACE Livermore Station to BART Isabel Avenue Station	Substantially lower ridership expected
ACE*forward*	P-TV-2a, P-TV-2b	ACE to Dublin/Pleasanton BART Station (2a) at grade or (2b) on elevated structure	Lowest levels of ridership and VMT reduction expected
ACE*forward*	P-TV-2c	DMU/EMU to Dublin/ Pleasanton BART Station	**Carried forward to Valley Link Feasibility Study.**
ACE*forward*	P-TV-2d	Existing bus shuttle from ACE Pleasanton Station to BART West Dublin/Pleasanton Station	Substantially lower ridership expected
ACE*forward*	P-BART-1	BART to Greenville Station and ACE Greenville Road Station	High-cost alternative at approximately $3.3 billion (FY 2016)
ACE*forward*	P-BART-2	BART to ACE Livermore intermodal Station and ACE Vasco Road Station	Highest cost alternative at approximately $4.3 billion (FY 2016)
ACE*forward*	P-BART-3	BART to ACE Livermore Station and ACE Vasco Road Intermodal Station	Highest cost alternative at approximately $4.3 billion (FY 2016)
BART	Conventional BART	Extend conventional BART to Isabel Avenue Station	High cost, does not extend beyond Isabel Station
BART	DMU/EMU	Introduce new DMU or EMU rail service to Isabel Avenue Station	**Carried forward to Valley Link Feasibility Study.**
BART	Express Bus/BRT	Construct new bus ramps from the I-580 express lanes to a new transfer platform at Dublin/Pleasanton BART Station	Performs well in cost-effectiveness and financial capacity measures, but generally worse for all other measures

Source	Alternative	Description	Reason for Dismissal
BART	Enhanced Bus	Implement new and enhanced bus services to ACE Vasco Road Station and ACE Livermore Station	Low scores in providing alternative to I-580 congestion and in improving air quality; does not score well in linking existing BART, inter-regional rail, Priority Development Areas
Valley Link Feasibility Report	Valley Link Rail	Rail service between Dublin/Pleasanton BART Station and future North Lathrop ACE Station with stops at Isabel Avenue Station, Southfront Road Station (future infill station), Greenville Road Station, Grant Line Road Station (future infill station), Mountain House Station, Ellis Avenue Station (future infill station), Downtown Tracy Station, and River Islands Station.	Lowest travel time, but highest capacity, ridership, and cost; **carried forward for further study into the Valley Link 2021 CEQA process**
Valley Link Feasibility Report	3a. Bus Option	Incorporated features of the Express Bus/BRT Alternative presented in the Bart to Livermore Draft EIR and existing SJRTD Route 150. Bus-only lanes and construction of new bus ramps from the existing I-580 express lanes to a new transfer platform at the existing Dublin/Pleasanton BART Station then stops at park-and-ride lots at Isabel Avenue, Laughlin Road, Grant Line Road, Tracy Transit Center, and future North Lathrop ACE Station.	Eliminated from further consideration due to not meeting the project objectives. In addition, while this alternative had reduced capital cost, it would have resulted in longer travel times and lower capacity compared to the Proposed Project.
Valley Link Feasibility Report	3b. Bus-on-Shoulder Option	Utilized shoulder operations and express lanes where feasible. Had a total of nine stops and traveled along portions of I-5, I-205, and I-580.	Eliminated from further consideration due to not meeting the project objectives. This alternative did not provide an alternative to I-580 congestion and would not improve air quality.
Valley Link Feasibility Report	Rideshare Option	The Rideshare Option alternative would facilitate shuttles, vanpools and traditional carpools, casual carpools, and ride hailing in the study corridor.	This alternative was eliminated from further consideration due to not meeting the project objectives. This alternative would not meet ridership projections nor provide sufficient capacity or a reliable alternative to congestion.

Source: Valley Link Project Feasibility Report (Authority 2019)

Table 2.3-2: Previous Valley Link 2021 CEQA EIR Alternatives Considered but Eliminated

Alternative or Variant	Description	Reason for Dismissal
Stone Cut Alignment Alternative	This alternative analyzed a variation from the CEQA-Certified Alternative in alignment for a portion of the Altamont Alignment. The Stone Cut Alignment Alternative is an approximately 2.25-mile-long bypass of the existing railroad tunnel, which passes under westbound I-580 along the Altamont Alignment. With the Stone Cut Alignment Alternative, a short segment of the Altamont Alignment would transition from the Alameda County Transportation Corridor right-of-way to the UPRR right-of-way, parallel the existing UPRR tracks to cross I-580, and transition back to the Alameda County Transportation Corridor right-of-way. The entire length of the Stone Cut Alignment Alternative would be double tracked.	New proposed rail alignment location no longer requires an alternative to the existing railroad tunnel. No longer included as part of the alignment for the Valley Link 2023 Build Alternative
Southfront Road Station Alternative	This alternative included an alternative to the proposed Greenville Station as proposed in the CEQA-Certified Alternative. The Southfront Road Station Alternative would be constructed south of I-580 on a 7.3-acre site along Southfront Road between McGraw Avenue and Franklin Lane in Livermore. Access to the station would be provided from Southfront Road. The Southfront Road Station Alternative would include the same passenger amenities and sustainable design features as described for the CEQA-Certified Alternative.	**Carried forward for further study in the Valley Link 2023 Build Alternative**
Mountain House Station Alternative	The Mountain House Station Alternative would be constructed on an approximately 8-acre site (6 acres of UPRR property) west of Hansen Road between the Owens-Illinois Industrial Lead and the California Aqueduct. Access to the station would be provided by new station driveways along Hansen Road. The Mountain House Station Alternative would include the same passenger amenities and sustainable design features as described for the CEQA-Certified Alternative.	Deemed infeasible due to significant and unavoidable impacts on biological resources and inconsistency with land use planning for the area
West Tracy OMF Alternative	This alternative would be an alternative to the proposed Tracy OMF considered as part of the CEQA-Certified Alternative. The West Tracy OMF Alternative would be constructed on an approximately 27-acre site south of Patterson Pass Road west of the proposed Mountain House Station. Access to the West Tracy OMF would be provided from Via Nicolo Road.	Dismissed due to significant and unavoidable impacts on biological resources

Alternative or Variant	Description	Reason for Dismissal
Downtown Tracy Parking Alternatives 1 and 2	The Downtown Tracy Station Parking Alternative 1 would include construction of a three-level parking structure at the site of the existing Tracy Transit Center surface parking lot (4-acre site) at the corner of North Central Avenue and West 4th Street, providing approximately 1,040 parking spaces. The Downtown Tracy Station Parking Alternative 2 would include the construction of a three-level parking structure (5-acre site) at the southwest corner of the North Central Avenue/West 6th Street intersection providing approximately 930 parking spaces.	The Build Alternative does not extend to the City of Tracy. Consideration of stations in the City of Tracy will be the subject of a future environmental process. At that time, construction of both the parking alternatives would be dependent on completion of station area plans and identification of funding from local jurisdictions or funding partners.
Bus/Bus Rapid Transit with Managed Lanes Alternative	Alternative would have express buses originate in Manteca, near State Route 120 and Airport Way, and travel along local streets to the (planned) North Lathrop ACE Station, with bus stations at the River Islands community, the Tracy Transit Center, West Tracy, Mountain House, Greenville Road, Vasco Road, Isabel Avenue, and the Dublin/Pleasanton BART Station. Buses would travel along portions of I-5, I-205, and I-580, operating on the right-side shoulders of these roadways during heavy traffic conditions (when traffic speeds fall below 35 miles per hour [mph]) at a maximum speed of 35 mph.	Would require less new infrastructure than a rail project due to its use of existing roadways for a large extent of the express bus service; lower upfront capital costs; dismissed due to substantially lower ridership and failure to meet project objective to "[s]upport the vision of the California State Rail Plan to connect the Northern California Megaregion to the State rail system."
Electric Multiple Unit with Overhead Catenary System Alternative	Generally, the same alignment, stations, frequency, ridership, and general operations; however, this alternative would use electric multiple unit trainsets that would receive electric power from an overhead catenary system supported by a series of poles placed immediately along the rail alignment.	Dismissed due to excessive construction costs due to catenary poles and wires for the entire length of the route.
Iron Horse Alternative	The Iron Horse Trail Alternative would utilize the Iron Horse Trail alignment in Pleasanton to connect the Dublin/Pleasanton BART Station to rail services along the UPRR Oakland Subdivision or Alameda County Transportation Corridor right-of-way through Livermore and eastern Pleasanton.	Would not meet the project objective regarding fast, cost-effective implementation that is responsive to the communities it would serve. In addition, its impacts on residential neighborhoods, parklands, and a regional trail, and inferior ridership (resulting in less reductions of vehicle miles traveled, greenhouse gas [GHG] emissions, etc.), would not meet the project's objective to be a model of sustainability. Would result in use of a Section 4(f) resource.

Alternative or Variant	Description	Reason for Dismissal
Diesel Multiple Unit (DMU) Variant	Utilization of a DMUs, which are passenger rail vehicles that are self-propelled by on-board diesel engines.	Would not support the Authority's Sustainability Policy to provide a sustainable transportation option and support local, and federal goals to promote sustainability, reduce GHG emissions, and enhance environmental quality.
Hybrid Battery Multiple Unit (HBMU) Variant	Utilization of HBMU train technology, which includes on-board diesel engines as well as on-board batteries for electrical power.	Would not support the Authority's Sustainability Policy to provide a sustainable transportation option and support local, and federal goals to promote sustainability, reduce GHG emissions, and enhance environmental quality. Would result in cumulative health risks to sensitive receptors along the alignment.
Battery-Electric Multiple Unit (BEMU) Variant	Utilization of a BEMU technology, which solely uses on-board batteries for electrical power.	Would result in visual impacts in the Altamont Pass due to catenary poles and wires within the Altamont section.
Diesel Locomotive Haul (DLH) Variant	Utilization of trainsets with (non-powered) passenger cars pulled or pushed by a diesel-electric locomotive, similar to conventional commuter rail operations such as ACE and Amtrak.	Would not support the Authority's Sustainability Policy to provide a sustainable transportation option and support local, and federal goals to promote sustainability, reduce GHG emissions, and enhance environmental quality. Would result in cumulative health risks to sensitive receptors along the alignment.

Source: Authority 2020; Authority 2021

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Chapter 3:

Affected Environment and Environmental Consequences

3 Affected Environment and Environmental Consequences

3.1 Introduction

This chapter presents an overview of the affected environment and discusses the anticipated environmental consequences associated with construction and operation of the Build Alternative. Supporting technical studies and analyses are referenced in respective resource sections of this chapter, with some included as appendices to this Environmental Assessment (EA). The project area as defined in Chapter 2, Alternatives Considered, is used as the basis for the analysis and encompasses the project footprint (i.e., permanent and temporary impact areas). For some resources, the resource-specific study area differs from the project area and is defined in its respective section of this chapter.

3.1.1 Environmental Resources of No Concern

Based on early coordination and background research, the following resources are either not present in the project area, would not be affected by the Build Alternative, or would have net beneficial impacts; as such, these resources are dismissed from detailed analysis and not discussed further in this chapter:

- **Coastal Zone and Resources:** The project area is not in or near the coastal zone.
- **Wild and Scenic Rivers**: No wild and scenic rivers are in or near the project area.
- **Energy:** Implementation of the Build Alternative would have a beneficial effect on energy resources by reducing vehicle miles traveled (VMT) and associated petroleum fuel consumption through the expected transit mode shift from passenger vehicle traffic to hydrogen-powered rail transit. While construction of the Build Alternative would result in a one-time, indirect energy expenditure, this expenditure would be temporary and an unavoidable energy investment typical for any major infrastructure project (AECOM 2024).
- **Recreation Resources:** The project area does not contain any parks or other recreational areas, although several parks are nearby. The Iron Horse Trail (a trail used for transportation purposes and to provide access to the Dublin/Pleasanton Bay Area Rapid Transit (BART) Station faregates) crosses through the project area; the Iron Horse Trail is addressed in Section 3.14, Transportation and Traffic. Based on the nature of the Build Alternative, nearby recreational properties or activities would not be affected.
- **Section 4(f) Properties:** The project area contains three historic Section 4(f) properties (Southern Pacific Railroad [SPRR] Grade, California Aqueduct, and Delta-Mendota Canal), but no other types of Section 4(f) properties. No constructive use of potential nearby properties would occur based on the nature of the Build Alternative and existing conditions in and near the project area. Improvements to the SPRR Grade do not require a Section 4(f) approval per Title 23 of the Code of Federal Regulations (CFR) Part 774.13(a)(2). No permanent or temporary use of the remaining Section 4(f) properties would occur under the Build Alternative.
- **Section 6(f) Resources:** The project area does not contain any Section 6(f) resources (i.e., parks or recreation properties funded with Land and Water Conservation Fund Act of 1964 funds).
- **Socioeconomic Resources:** The Build Alternative would not directly affect population, housing, or demographic characteristics in the project area or at a regional level. It would have a beneficial effect on land use and housing through the future opportunities for transit-oriented development along the alignment. Construction of the Build Alternative would also result in an increase in short-term construction-related job opportunities.

  Furthermore, implementation of the Build Alternative would not divide an established community, given its location along established existing publicly owned right-of-way and undeveloped to minimally developed land. The Build Alternative would benefit the local communities by improving mobility, connectivity, accessibility, reliability, and travel safety for people and goods by

reducing passenger VMT and providing a new mode of public transportation, commuter rail.

3.1.2 No Build Alternative

The No Build Alternative would not result in impacts to resources in the project area, other than those associated with ongoing uses of the area, planned expansion of the Altamont Corridor Express (ACE) system, and operations of existing transportation systems (see Section 2.1, No Build Alternative, for a full description of the No Build Alternative). Environmental impacts associated with the ACE system expansion and the Valley Rail Program are covered in a separate California Environmental Quality Act (CEQA) Environmental Impact Report (EIR); no federal action under the National Environmental Policy Act (NEPA) is associated with that project (San Joaquin Regional Rail Commission 2021). No transit-specific operational changes along the Interstate 580 (I-580) corridor would be realized, and ongoing concerns related to traffic congestion and emissions would continue. The No Build Alternative would not meet the purpose of and need for the Proposed Project, and thus, this alternative does not address the mobility, safety, access, equity, and sustainability needs discussed in Chapter 1, Purpose and Need.

Future conditions without the Build Alternative are presented in the Environmental Consequences sections of this chapter for those resources (such as air quality) where a comparison is needed to support the impact analysis of the Build Alternative.

3.1.3 Avoidance, Minimization, and/or Mitigation Measures

A number of avoidance, minimization, and mitigation measures have been identified to avoid or reduce potential adverse impacts to meet federal and/or state and local requirements. These avoidance, minimization, and mitigation measures are referenced as "AMMs" throughout this chapter using a unique title that corresponds to the resource area they address. For example, "AMM CUL-1" refers to the first avoidance, minimization, and mitigation measure for effects related to cultural resources. Descriptions of the AMMs, along with a list of anticipated permits and approvals, are included in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures).

3.2 Aesthetics

This section describes the visual setting of the area of visual effect (AVE) surrounding the project area, which is broken into three landscape units, and discusses the changes to visual quality and scenic views as a result of the Build Alternative within each landscape unit. The extent of the AVE is limited to the distance within which the Build Alternative would be visible. It is based on the Visual Impact Assessment (VIA) available at www.getvalleylinked.com/document-library (AECOM 2024). The VIA includes site reconnaissance and photographic simulations, and provides additional information regarding methodology and definition of terms and visual impact ratings.

3.2.1 Affected Environment

The existing visual setting of the AVE is representative of a mixture of urban, suburban, and rural developments, with transportation infrastructure dominating foreground views in most locations and residential, commercial, and industrial buildings and structures and agricultural fields in the viewshed throughout. Across the project area, I-580 is identified as an Eligible State Scenic Highway by the California Department of Transportation (Caltrans) and a San Joaquin County-designated scenic route and contains portions of designated landscaped freeways as defined by Caltrans (Caltrans 2008). The landscape varies throughout the AVE and was separated into three landscape units, each with similar visual characteristics. Twelve total viewpoints were defined within the landscape units to represent views from key perspectives and user groups (neighborhood and traveler viewers).

3.2.1.1 Landscape Unit 1

Landscape Unit 1 extends from the existing Dublin/Pleasanton BART Station to Greenville Road in Livermore. Viewpoints within Landscape Unit 1 include:

- Viewpoint 1: Dublin/Pleasanton Station
- Viewpoint 2: I-580 Flyover
- Viewpoint 3: Hacienda Drive Overpass
- Viewpoint 4: I-580 at Isabel Station
- Viewpoint 5: I-580 Westbound at Greenville Road Interchange

The topography within Landscape Unit 1 is generally characterized by flat terrain. Views within this landscape unit primarily include transportation corridors, commercial areas, and business parks in the middle and

foreground and views of the Diablo Mountain Range in the background looking east. Due to the relatively flat terrain, view distances within Landscape Unit 1 range from 3 to 5 miles.

The built environment within Landscape Unit 1 includes transportation corridors (I-580, Owens Drive, Hacienda Drive, Tassajara Road, Fallon Road, Isabel Avenue, and Vasco Road), urban commercial, and suburban residential areas adjacent to the freeway. Many of the commercial features are one- to three-story commercial office buildings, one-story concrete tilt up buildings with commercial or industrial tenants, or freeway-dependent commercial uses such as gas stations or two- to three-story hotels. Most of these features are moderately to notably set back from the collector and arterial roads (including I-580, Hacienda Drive, and Owens Drive) and separated from the roads by parking lots, including multi-story parking garages. The suburban residential areas include single-family homes and are visually separated from I-580 by retaining walls or vegetation.

Views throughout Landscape Unit 1 are dominated by roadway pavement, freeway bridge structures, ramps, lighting, signs, and freeway noise barriers, creating strong horizontal and vertical lines and smooth surfaces. Sound walls provide a visual screen of I-580 from some adjacent residential and commercial areas.

In Landscape Unit 1, the existing vividness of the area is moderately low. Although the foreground of the area is dominated by the built environment—including transportation elements, buildings, and sound walls—the background includes views of the Diablo Mountain Range.

Primary viewer groups in Landscape Unit 1 include residential, institutional, industrial, retail, and commercial types. Commuters, pedestrians and truckers are also neighbor viewers in this landscape unit. Specifically, these neighbors include BART riders and employees at businesses adjacent to I-580, motorists traveling on I-580 and across the highway on arterial roads, and bicyclists and pedestrians using these arterials and other surface streets that surround I-580.

3.2.1.2 Landscape Unit 2

Landscape Unit 2 extends primarily along Altamont Pass Road from the eastern boundary of Landscape Unit 1 at Greenville Road to westbound I-580 approximately 1.75 miles west of Grant Line Road. Viewpoints within Landscape Unit 2 include:

- Viewpoint 6: Altamont Pass Road at Dyer Road
- Viewpoint 7: Altamont Pass Road at the Proposed Maintenance-of-Way (MOW) Site
- Viewpoint 8: Altamont Pass Road at the Proposed Grade Separation
- Viewpoint 9: Altamont Pass Road

The topography in this landscape unit is generally characterized by grass-covered, rounded hills and smooth contours, with occasional steep slopes and ridges. Views are limited to between approximately 600 feet and 1,200 feet due steep terrain, and consist of the Diablo Mountain Range, Altamont Hills, and the Altamont Pass Wind Farm. Altamont Pass Road is an Alameda County-designated scenic route. Features throughout Landscape Unit 2 are primarily undeveloped, county-maintained transportation corridors and rail corridors.

Views throughout Landscape Unit 2 are dominated by rolling hills, grassland, oaks, and agriculture. Wind turbines line the ridgelines of the Altamont Hills. Visual texture in the area is marked by a mixture of manmade structures and naturally occurring features such as the grass and hills. Therefore, the vividness of Landscape Unit 2 is moderately high.

Primary viewer groups in Landscape Unit 2 include motorists and bicyclists along Altamont Pass Road. The rolling Altamont Hills is the focal viewpoint that is memorable and most attracts viewer attention. However, this key view is interrupted by other transportation and utility elements.

3.2.1.3 Landscape Unit 3

Landscape Unit 3 is from the eastern boundary of Landscape Unit 2 to just east of Mountain House Parkway in Mountain House and includes the area near Tracy south of West Schulte Road. Viewpoints within Landscape Unit 3 include:

- Viewpoint 10: I-580 Westbound at Grant Line Road
- Viewpoint 11: Mountain House Community Station
- Viewpoint 12: Mountain House Layover Facility (LF)

The topography within Landscape Unit 3 is generally characterized by grass-covered, rounded hills and smooth contours, with occasional steep slopes and ridges. I-580 cuts through the hills in various locations. Views in the west portion of Landscape Unit 3 are limited to approximately 1,000 feet, while views in the east portion of Landscape Unit 3 are relatively unlimited.

Views primarily include rural transportation corridors, residential housing, wind turbines on top of the ridgeline, a high-voltage transmission line, the Diablo Mountain Range, Altamont Hills, the California Aqueduct, and the Delta-Mendota Canal. The built environment in Landscape Unit 3 is primarily undeveloped adjacent to I-580 with scattered residential communities.

Views in Landscape Unit 3 combine the transportation infrastructure of I-580 and I-205 with the natural landscape. The strong horizontal and vertical lines and smooth surfaces of the roadway are intertwined with the soft texture of the grassy hillsides.

In Landscape Unit 3, the vividness of the area is moderately high, with existing views of the Altamont Hills and wind turbines. Primary viewer groups in Landscape Unit 3 include motorists and residential viewers. Commuters, pedestrians, and truckers are also neighbor viewers in this landscape unit.

3.2.2 Environmental Consequences

Visual changes resulting from implementation of the Build Alternative would vary depending on the number of viewers present, proximity of viewers, and the degree of physical change in the landscape. Figures A3.2-1 to A3.2-24 in Appendix A (Environmental Assessment Figures) show representative visual simulations of the expected viewshed changes resulting from the Build Alternative.

The Build Alternative would result in moderate overall visual impacts for viewers in the area. Table 3.2-1 summarizes the findings at each viewpoint. The majority of the Build Alternative would be constructed and operated in a freeway corridor with supporting site elements such as parking lots in an existing built environment that supports freeway commercial development and rural highway development. The new elements of stations, pedestrian overpasses, and parking lots would be consistent with the existing land uses in the immediate vicinity and therefore, would not constitute a substantial change to the visual setting. Some of the more evident structures, such as retaining walls and overpasses, may detract from views. Various design elements and AMMs are proposed to minimize visual changes throughout the AVE as described throughout this section.

Table 3.2-1: Summary of Visual Impacts

Landscape Unit	Viewpoint	Location	Visual Change	Visual Sensitivity	Visual Impact
1	Viewpoint 1	Dublin/Pleasanton Station	Moderately Adverse	Moderately Low	Moderate
1	Viewpoint 2	I-580 Flyover	Moderately High Adverse	Moderate	Moderately High
1	Viewpoint 3	Hacienda Drive Overpass	Moderately High Adverse	Moderate	Moderately High
1	Viewpoint 4	I-580 at Isabel Station	Moderately Adverse	Moderate	Moderate
1	Viewpoint 5	I-580 Westbound at Greenville Road Interchange	Highly Adverse	Moderately High	Moderately High
2	Viewpoint 6	Altamont Pass Road at Dyer Road	Slightly Adverse	Moderate	Moderate
2	Viewpoint 7	Altamont Pass Road at Proposed MOW Site	Slightly Adverse	Moderate	Moderate
2	Viewpoint 8	Altamont Pass Road at Proposed Grade Separation	Moderately Adverse	Moderately High	Moderately High
2	Viewpoint 9	Altamont Pass Road	Moderately Adverse	Moderately High	Moderately High
3	Viewpoint 10	I-580 Westbound at Grant Line Road	Moderately Adverse	Moderate	Moderate

Landscape Unit	Viewpoint	Location	Visual Change	Visual Sensitivity	Visual Impact
3	Viewpoint 11	Mountain House Community Station	Moderately Adverse	Moderate	Moderate
3	Viewpoint 12	Mountain House LF	Moderately Adverse	Moderate	Moderate

Source: AECOM. 2024. Visual Impact Assessment: Valley Link Rail Project.

3.2.2.1 Landscape Unit Construction Impacts

Across all three landscape units, visual changes associated with construction activities would be temporary for the Build Alternative and include the use of various types of construction equipment, clearing and storage of materials and equipment at staging areas, increased fugitive dust and noise, removal and/or trimming of vegetation, and increased light and glare. Construction of the Build Alternative would generally occur in a phased manner, with temporary impacts in each area lasting between 3 and 9 months. The construction activities would be visible to travelers along nearby roads, workers in nearby buildings, and residents in homes with views of the work area. In urban areas, the activities would generally blend in with daily activities typical of developed areas, but in rural areas, the activities would be more noticeable and stand out from typical activities.

Most viewer groups are likely to be accustomed to seeing machinery, trucks, and vehicles within the construction areas because other roadway improvement projects, development projects, agriculture and ranching, and rail maintenance activities require the use of such equipment. Depending on the location, viewers would see staging areas, worker parking, and equipment and materials storage areas, which would add industrial-looking elements into viewsheds. Construction activities may be visible from some locations with scenic vista views throughout Landscape Unit 2 along Altamont Pass Road or from adjacent multilevel buildings in the vicinity of the proposed Dublin/Pleasanton Station.

The view from elevated roadways and bridges would be fleeting for passing motorists traveling at high speeds. Bicyclists and pedestrians would experience longer durations of views. Therefore, impacts from construction prior to implementation of AMMs could result in an adverse impact for these viewers along scenic routes. Construction activities would not affect scenic vistas because viewers would be elevated above the work area, and equipment and construction-related materials would not block the view of the surrounding hillsides from adjacent multilevel buildings.

Construction staging is a common visual element in Landscape Unit 1 because of the level of development present as well as the new development and utility and infrastructure projects that are occurring in the vicinity. Therefore, the visual presence of staging areas would not be uncommon. Within Landscape Units 2 and 3, construction would be staged along the alignment within the Alameda County Transportation Corridor and right-of-way to be acquired for the Build Alternative. Staging within these landscape units could result in slightly adverse impacts. However, AMMs will be implemented to reduce these adverse impacts (see AMMs AES-1 through AES-4 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]).

3.2.2.2 Operation Impacts in Landscape Unit 1

The Build Alternative would introduce overpasses and station structures that may interfere with some views of the Diablo Mountain Range from ground level; however, because of the setback of the existing commercial buildings from I-580 and from the arterial roads, views of the foreground and views from high elevations (such as in buildings higher than the two stories) would experience negligible changes.

Removal of vegetation within landscaped freeway segments of I-580, particularly at Isabel Station, would alter the localized visual setting along the scenic highway corridor. Replacement of vegetation along the freeway (AMM AES-9) would lessen impacts associated with the Build Alternative and help retain the visual setting of a landscaped freeway. The Build Alternative would not substantially conflict with the eligibility of the State Scenic Highways designation or county aesthetic goals. Landscaping of the parking facilities at stations (AMM AES-5) and replacement of vegetation along I-580 (AMM AES-9) will aid in maintaining or minimally impacting

visual intrusions along the eligible scenic highway, thus allowing the official designation to be pursued.

Overall, the visual impact in Landscape Unit 1 would be moderately adverse. Existing transportation infrastructure including the BART line, freeways, bridges, local roadways, and parking facilities are prevalent throughout Landscape Unit 1. Within the landscape unit, the Build Alternative would be generally consistent with the existing forms, lines, and colors of the existing infrastructure nearby.

However, the Build Alternative would introduce overpasses and station structures that may interfere with some views of the mountain range. The proposed flyover over eastbound I-580 would introduce a new block structure with additional lines and varying dimensions; however, the overall view would remain in context with the surrounding elements of the eight-lane freeway and would not detract from the existing unity of the view.

At the Isabel and Southfront Road Stations, the Build Alternative would introduce additional lines, form, and various dimensions that may block the views of the horizon of freeway travelers; however, in most cases travelers would not notice this contrast at high speeds. As the Build Alternative transitions from the I-580 median into the Alameda County Transportation Corridor at Greenville Road, additional lines, forms, and colors would be introduced and intrusive, primarily to freeway and city users on westbound I-580. AMMs will be implemented to lessen adverse impacts associated with the Build Alternative and help retain the visual setting (see AMMs AES-5, AES-6, and AES-9 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]).

3.2.2.3 Operation Impacts in Landscape Unit 2

Throughout Landscape Unit 2, the Build Alternative would introduce elements such as bridges and viaducts, as well as cuts and retaining walls in the hillside, that are not as prevalent through the area. Overall, the visual impact in Landscape Unit 2 along Altamont Pass Road would be moderate. Visual changes would be moderately adverse due to the introduction of different colors (grays compared to the existing seasonal tans and greens), lines (strong lines compared to the existing soft curves of the rolling hills), and elements (new rail structures and retaining walls in an area with minimal structures). While these changes would be noticeable to highway users, the changes in the view would be fleeting due to driver speeds on the roadway. Visual sensitivity to the changes proposed in Landscape Unit 2 would be moderate. Retaining walls and overpasses may detract from views if not properly designed.

Implementation of AMMs, including the use of selective grading and planting techniques (AMM AES-4); applying aesthetic design treatments to pedestrian overcrossings, viaduct structures, and retaining walls (AMM AES-6); utilizing underground electric transmission lines (AMM AES-7); and applying aesthetic surface treatments to certain structures in visually sensitive areas (AMM AES-8), would lessen impacts associated with the Build Alternative throughout the Altamont Section.

3.2.2.4 Operation Impacts in Landscape Unit 3

Throughout Landscape Unit 3, the Build Alternative would introduce elements such as bridges and viaducts, as well as cuts and retaining walls in the hillside, which may add visual intrusions along I-580. Overall, the visual impact in Landscape Unit 3 would be moderate. As the alignment transitions from the Altamont Hills to north of the I-580 corridor, the visual changes would be moderately adverse, altering the colors along the hillside and adding new lines, forms, and elements. Retaining walls and viaducts proposed north of the freeway would add lines, forms, textures, and colors to the viewshed. The changes at the Mountain House Community Station, including pedestrian bridge, and Mountain House LF would be partially consistent with the existing visual character of I-205 since the freeway consists of linear gray transportation elements but less consistent with the existing visual character of the land on which the station and LF are proposed.

These visual changes would by noticeable to viewers. Viewer sensitivity for these resource changes would likely be moderate. Viewer exposure is brief due to the high travel speeds. Residential viewers in the community west of the Mountain House Community Station may notice visual changes due to the differing colors and elements that would be introduced. Landscaped parking facilities at stations (AMM AES-5), replacement of vegetation along the freeway (AMM AES-9), applying aesthetic design treatments to pedestrian bridges (AMM AES-6), and application of minimum lighting standards (AMM AES-10) would lessen impacts associated with the Build Alternative and help retain the visual setting.

3.3 Agricultural Lands

This section describes the extent of agricultural land within the project area and evaluates the potential for conversion of agricultural land to nonagricultural uses associated with implementation of the Build Alternative. The Farmland Protection Policy Act of 1981 (FPPA) (7 U.S. Code [U.S.C.] Section 4201 et seq.) is intended to protect important farmland, including active farmlands (e.g., croplands, grazing land) and soils that could be used as farmland. The FPPA requires federal agencies to coordinate with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland to nonagricultural use, either directly or indirectly.

3.3.1 Affected Environment

The project area contains active farmlands, primarily grazing lands, and undeveloped lands that could be used as farmland, although most of the project area is developed or built land and transportation right-of-way. Grazing lands are found north of I-580 in the Tri-Valley area of Alameda County and north and south of I-580 in the Altamont Hills. Some irrigated farmland is also found in the eastern Altamont Hills. The Farmland Mapping and Monitoring Program has mapped a total of 55 acres of prime and unique farmland (collectively referred to as important farmland in this section) in several locations in the project area—a small pocket just south of I-580 and east of State Route 84 in Livermore and in the eastern portion of the project area north and south of I-205 (California Department of Conservation 2018a, 2018b) (see Figures A3.3-1 and A3.3-2 in Appendix A [Environmental Assessment Figures]).

Some of the farmlands in the project area in Alameda County are protected under Williamson Act contracts, which prevent conversion of the land to nonagricultural uses. There are no lands in San Joaquin County under Williamson Act contracts within the project area. An estimated 1,550 acres in the project area along Altamont Pass Road are protected as agricultural preserves (see Figures A3.3-3 and A3.3-4 in Appendix A [Environmental Assessment Figures]).

3.3.2 Environmental Consequences

Construction activities would require temporary easements for construction access, material laydown, and staging areas on some properties that contain agricultural lands. The use of agricultural land has been minimized, but activities that occur on active farmland (i.e., land currently being prepared or used for agricultural production) would temporarily disrupt existing agricultural operations, remove land from agricultural production, and result in a temporary loss in agricultural productivity. If temporary staging areas are not restored to former agricultural use (preconstruction condition) in a timely manner following construction, disruption in agricultural use would become permanent and result in permanent conversion of important farmland to nonagricultural use. The Tri-Valley – San Joaquin Valley Regional Rail Authority (Authority) will require its contractor to restore agricultural lands with an appropriate soil restoration plan to return the land to a condition equal to the preconstruction condition (AMM AG-1).

Permanent conversion of agricultural land to nonagricultural uses would occur where the Build Alternative would intersect agricultural land or, more specifically, where the direct impact area would be situated on agricultural land. Construction of the Isabel Station would permanently convert approximately 6.2 acres of prime farmland and 5.5 acres of unique farmland. Construction of the Mountain House LF would permanently convert approximately 1.5 acres of prime farmland. In total, these impacts would convert 13.3 acres of important farmland out of a total 55 acres of important farmland in the project area.

The Build Alternative would result in the conversion of minor amounts of agricultural land under Williamson Act contracts north of I-580 in Livermore and along the rail alignment in the Altamont Hills. However, none of these lands under Williamson Act contracts are important farmland or are otherwise under active agricultural uses. Acquisition of these lands for the Build Alternative would be subject to the requirements of Sections 51290–51295 of the California Government Code. These sections describe the roles of public agencies and notification requirements related to the acquisition of lands under Williamson Act contracts. In accordance with Section 51295, once the lands have been acquired by the Authority, the Williamson Act contract(s) shall be deemed null and void.

The total conversion of agricultural land would be small in the context of each county's entire agricultural land base and would not cause a substantial reduction in either county's total agricultural production. A permanent conversion of approximately 11.7 acres of agricultural land with construction of the Isabel Station would account for less than 1 percent of important

farmland in Alameda County. Similarly, a permanent conversion of approximately 1.5 acres of important farmland with construction of the Mountain House LF would account for less than 0.1 percent of important farmland in San Joaquin County. Based on coordination with the NRCS (see Appendix D [Agency Correspondence]), the estimated farmland conversion due to the Build Alternative is negligible and does not require further evaluation under the FPPA.

3.4 Air Quality

This section describes the affected environment and potential effects of the Build Alternative compared to the No Build Alternative related to air quality. Air quality effects are evaluated on a local and regional scale; therefore, the air quality study area includes the San Francisco Bay Area Air Basin (SFBAAB) and the San Joaquin Valley Air Basin (SJVAB), which are within the Bay Area Air Quality Management District and San Joaquin Valley Air Pollution Control District, respectively. The Clean Air Act regulates air pollutants across the nation and establishes National Ambient Air Quality Standards (NAAQS) for criteria pollutants such as ozone, carbon monoxide, and particulate matter. As a transit project, the transportation conformity rule applies (40 CFR 51 and 93). Information in this section is based on air quality monitoring data, field visits, maps of the area, and modeling of emissions associated with the alternatives, which are described in more detail in the Air Quality and Greenhouse Gas Emissions Technical Report available at www.getvalleylinked.com/document-library (ICF 2024).

3.4.1 Affected Environment

Air quality is monitored in each air basin in California to assess compliance with the NAAQS and classify the basins as attainment, non-attainment, or maintenance following U.S. Environmental Protection Agency (EPA) guidance. The SFBAAB does not meet the NAAQS for 8-hour ozone and 24-hour fine particulate matter (2.5 microns in diameter) (considered non-attainment), and the SJVAB does not meet the NAAQS for 8-hour ozone and annual and 24-hour fine particulate matter (also non-attainment). The SJVAB meets the NAAQS but is considered a maintenance area for small particulate matter (10 microns in diameter). The air basins are in attainment or unclassified for other criteria pollutants, meaning their levels do not exceed the NAAQS.

Existing sources of criteria air pollutants and air toxics include emissions from land use development and mobile sources. Development in the immediate vicinity of the project area includes a mix of commercial, residential, industrial, office, agricultural, public use, and vacant parcels that are planned for future development. These uses may generate emissions from stationary sources as well as off-road equipment and area sources. Additionally, industrial warehouses and distribution centers in Livermore are a prominent source of mobile source air toxics (MSATs) emissions, including from diesel-powered vehicles associated with these facilities. The most prominent sources of criteria air pollutants and air toxics are mobile sources, including passenger vehicles and haul trucks. Traffic congestion is common during peak commute times, which can result in localized concentrations (also referred to as "hot spots") of particulate matter and carbon monoxide.

Land uses or facilities including schools and schoolyards, parks and playgrounds, daycare centers and preschools, hospices, dormitories, prisons, nursing homes, hospitals, and residential communities are considered to be more sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. The primary sensitive receptors in the study area are associated with residential and commercial uses, which are found across the study area along I-580 and in the developed communities.

3.4.2 Environmental Consequences

The analysis of air quality impacts is based on emission modeling to demonstrate transportation conformity, specifically for ozone and particulate matter, and compliance with applicable air quality plans. An overview of the impacts is presented below for the No Build and Build Alternatives. The analysis of impacts considers the following in relation to transportation conformity:

- Contributions to ozone, particulate matter, or MSAT emissions
- Contributions to particulate matter hot spots
- Inclusion of the Build Alternative in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) or Federal Transportation Improvement Plan (Association of Bay Area Governments [ABAG]/Metropolitan Transportation Commission [MTC] 2021, ABAG/MTC 2023, San Joaquin Council of Governments [SJCOG] 2022)

3.4.2.1 No Build Alternative

Near-term air quality impacts under the No Build Alternative would be similar to current conditions, with future conditions anticipated to worsen as more vehicles use the roads and highways in the study area. The No Build Alternative would not introduce new emission sources associated with construction or operation of a new transit service in the study area. Modeling for the No Build Alternative was conducted for the years 2028 and 2050 for the portion of I-580 that would otherwise be affected by the Build Alternative. The estimated daily VMT for the No Build Alternative in 2028 and 2050 is 2,157,019 and 2,368,250, respectively, resulting in an increase in mobile source emissions over time (ICF 2024).

The benefits of a new transit option in the study area would not be realized in terms of reduced vehicle emissions of criteria air pollutants and MSATs. The No Build Alternative would not result in any construction emissions, as no new transit infrastructure or facilities associated with the Build Alternative would be constructed. The No Build Alternative would not help meet state and regional plans to improve air quality.

3.4.2.2 Build Alternative

Implementation of the Build Alternative would result in construction-related and operational emissions. Construction would occur over approximately 4 years, and related emissions from earth disturbance and use of vehicles and heavy-duty equipment would be temporary. Operational emissions would originate from operation of transit stations and support facilities (area and energy sources); track alignment and facilities service equipment and vehicles (off-road vehicles); and employee vehicles, operations and maintenance vehicles, and haul trucks (on-road vehicles).

Emissions of particulate matter would be generated by the minimal use of off-road vehicles and equipment and on-road vehicles associated with operation of the Build Alternative. Emissions of ozone precursors (reactive organic gases and nitrogen oxides) would also be minimal and limited to area source emissions, which include the use of cleaning supplies and reapplication of surface coatings, and mobile emissions from the use of off-road equipment and on-road vehicle trips associated with operation of the Build Alternative. Operational emissions would be well below regional air district-recommended thresholds of significance, which were developed to support attainment of NAAQS in the SFBAAB and SJVAB. As illustrated by the carbon monoxide and particulate matter hot spot analyses conducted in the Air Quality and Greenhouse Gas Emissions Technical Report, the Build Alternative would not introduce a substantial number of diesel sources and would not affect traffic congestion at intersections; therefore, hot spots of carbon monoxide and particulate matter would not be a concern.

Operation of the Build Alternative would provide a new passenger train service that would utilize zero-emission rail vehicles, thereby resulting in zero direct emissions from train operations along the new rail line and while idling at stations. Furthermore, the Build Alternative would provide an alternative mode of transportation that would cause some commuters to mode-shift from personal automobile use to rail use, thereby reducing single-occupancy vehicles from the transportation network and associated mobile source emissions. With the anticipated reduction in vehicle traffic, MSATs in the study area would be reduced as more people use the new transit system. In addition, health risks due to operation of the new transit line and associated facilities would be minimal and within acceptable levels for the air districts.

While the Build Alternative is intended to promote a mode shift from passenger vehicle use to mass transit, it would not change roadway capacity in any way, and therefore, any change in mobile source emissions between the Build Alternative and No Build Alternative would be speculative and was not considered for the purposes of this analysis. As described above, under the Build Alternative, there would be no substantial operational emission sources of criteria air pollutants or MSATs. The primary operational activity under the Build Alternative is the passenger rail service, which would be a zero-emissions, alternative transportation option to single-occupancy vehicles.

The Build Alternative is a planned project that has been adequately described in the ABAG 2021 RTP (Plan Bay Area 2050), and Federal Transportation Improvement Program Amendment 2023-10 (ABAG/MTC 2023). The Build Alternative is also included in the SJCOG Final 2025 Federal Transportation Improvement Program (including conformity analysis) adopted in August 2024 (SJCOG 2024). With regard to transportation conformity, the Build Alternative is covered by existing transportation plans and is consistent with the rule.

The Build Alternative, which would provide a zero-emissions rail connection between the San Francisco Bay Area and San Joaquin Valley, is consistent with the goals and strategies of the MTC RTP/SCS and SJCOG RTP/SCS to expand and modernize the regional rail network and promote alternatively fueled transit options. Additionally, a portion of the operational on-road and off-road vehicle and equipment fleet used under the Build Alternative would be electric. There are no measures in the MTC RTP/SCS and SJCOG RTP/SCS related to construction that apply directly to the Build Alternative.

A series of project-specific air quality AMMs (AMM AQ-1 through AMM AQ-4) will be implemented for the construction phase of the Build Alternative to reduce emissions and minimize fugitive dust generation. These measures are detailed in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures).

3.5 Biological Resources

This section describes vegetation communities, aquatic resources, general wildlife species, and federal species of concern (threatened or endangered, proposed, or candidate plant and animal species as identified by the U.S. Fish and Wildlife Service [USFWS]) that may occur in the biological resources study area and potential impacts to those resources as a result of the Build Alternative. The biological resources study area encompasses the project area and a 500-foot buffer. The biological resources study area is equivalent to the "Action Area" as defined in the Biological Assessment (Appendix E [Biological Assessment]). Information in this section is based on reconnaissance-level field surveys, habitat modeling, available data, literature reviews, and biologist expertise, as described in more detail in the Biological Assessment.

The Clean Water Act (CWA) and various state laws require permitting for discharges into certain aquatic resources and minimization of the loss of wetlands. The Migratory Bird Treaty Act of 1918 protects migratory birds, their parts, eggs, and nests from take. The Bald and Golden Eagle Protection Act protects bald and golden eagles, eggs, and nests. The Endangered Species Act of 1973 protects threatened and endangered species and critical habitat and requires federal agencies to consult with USFWS to ensure projects they authorize, fund, or carry out will not jeopardize the continued existence of an endangered or threatened species or destroy or adversely modify designated critical habitat. Proposed and candidate species may become listed in the future and are not specifically protected until they are listed.

3.5.1 Affected Environment

The biological resources study area is characterized by a transitional zone that encompasses the interior coast range separating the San Francisco Bay Area from the Central Valley. The climate in the study area is considered Mediterranean, with moist, mild winters and dry, warm summers. Dominant vegetation communities include grasslands and developed or ruderal vegetation, and several streams and wetlands are found across the study area. These communities could support various wildlife species and federal species, as discussed below.

3.5.1.1 Vegetation Communities

Soils in the biological resources study area consist of loam, clay, and silt textures typically found in landscapes including terraces, foothills, alluvial fans, and flood basins. Additionally, the majority of the soil series mapped throughout the biological resources study area is slightly to strongly alkaline (USDA Soil Survey Staff 2023). These soils support upland and wetland vegetation communities common to this region of California, ranging from developed/landscaped and ruderal (growing on human-disturbed ground) in the western portion of the study area to open grassland on rolling hills and wetlands in the eastern portion. Specifically, eight types of vegetation communities occur within the study area: agricultural, ruderal, developed/landscaped, nonnative grassland, scrub, aquatic, riparian, and wetlands (Holland 1986; California Native Plant Society 2023). These vegetation communities include native, naturalized, and non-native (invasive) vegetation species. Nonnative species that frequently occur in these grasslands include purple star-thistle (*Centaurea calcitrapa*), yellow star-thistle (*Centaurea solstitialis*), skeleton weed (*Chondrilla juncea*), cardoon (*Cynara cardunculus*), and shortpod mustard (*Hirschfeldia incana*), among others. Nonnative species that may occur within wetland vegetation communities include giant reed grass (*Arundo donax*), poison hemlock (*Conium maculatum*), perennial pepperweed (*Lepidium latifolium*), pennyroyal (*Mentha pulegium*), and Russian thistle (*Salsola tragus*).

Due to the proximity to urban development and agricultural and rangeland use (see Section 3.12, Land Use and Property Acquisitions), prevalent invasive plant species in the study area include grasses (brome, Bermuda,

fountain, and oat), mustards, thistles, shrubs (slat cedar and tree tobacco), and trees (palm, olive, and eucalyptus).

3.5.1.2 Aquatic Resources

The biological resources study area includes intermittent and ephemeral streams, wetlands, and riparian habitats. Intermittent streams include Tassajara Creek, Arroyo Mocho, Arroyo Las Positas, Cottonwood Creek, Collier Canyon Creek, Cayetano Creek, and Mountain House Creek. Additionally, the Delta-Mendota Canal and the California Aqueduct traverse the eastern portion of the study area. Wetland vegetation includes mixed riparian woodland, mixed willow riparian scrub, alkali seasonal wetland, freshwater marsh, seasonal wetland/riverine wetland, and vernal pools. These aquatic resources may be considered waters of the U.S. and subject to U.S. Army Corps of Engineers jurisdiction under the CWA as well as the state under the Porter-Cologne Act of 1969 or California Fish and Game Code (Section 1600).

3.5.1.3 General Wildlife Species

The biological resources study area is host to several non-listed wildlife species common to the Tri-Valley to Altamont regions. These species include a variety of common reptiles, amphibians, mammals, and birds such as the western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), northern raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), and turkey vulture (*Cathartes aura*), among others. These species are often associated with the urban/wildland interface that exists along the I-580 corridor and into the Altamont Hills.

Wildlife Corridors

The Altamont Hills are an important migration route for wildlife because they link the northern and southern sections of the Diablo Mountain Range as well as the East Bay and San Joaquin Valley (Spencer et al. 2010; Penrod et al. 2013). I-580 is a major impediment to wildlife movement in the Altamont Hills. The freeway, which bisects hilly terrain dominated by annual grassland, is at-grade or on a slight embankment for much of its length through the Altamont Hills (Penrod et al. 2013). There are only a few locations in the Altamont Hills where wildlife may pass over or under the I-580 corridor, the most viable options being the underpass east of Greenville Road and the Contra Costa Water District I-580 wildlife undercrossings north of Grant Line Road. These undercrossings are designated wildlife movement corridors that connect to the Contra Costa Water District's mitigation land and allow for safe passage under the I-580 alignment for a variety of wildlife species. Other potential wildlife corridors under I-580 include existing waterways such as Tassajara Creek, Cottonwood Creek, and Arroyo Las Positas.

Migratory Birds and Eagles

The biological resources study area is located within the Pacific Flyway, and migratory birds fly perpendicular to the study area during migration. The study area is situated with the Diablo Mountain Range to the north, the East Bay to the west, and the San Joaquin Valley to the east. The undeveloped portions of the lowlands of the Altamont Hills serve as cover and refuge during migration through the greater region. Additionally, undeveloped land within the study area provides nesting habitat for both resident and migratory birds.

Bald eagles are not known to nest in the study area but are known to fly through and occasionally use habitat within the area. Golden eagles are known to nest in the northern Diablo Mountain Range north and south of the study area and have been documented foraging over the grasslands in the Altamont Hills in the eastern portion of the study area (USGS 2021).

3.5.1.4 Federal Species

Based on the vegetation communities and habitat conditions in the biological resources study area, the following one federally listed plant species, four federally listed wildlife species, two proposed to be listed wildlife species, and one candidate wildlife species have the potential to occur within the study area:

Plant Species

- Palmate-bracted bird's-beak (*Chloropyron palmatum*) (federally endangered)

Wildlife Species

- Vernal pool fairy shrimp (*Branchinecta lynchi*) (federally threatened)
- Monarch butterfly (*Danaus plexippus*) (candidate for California overwintering population)
- California tiger salamander (*Ambystoma californiense*) (federally threatened for the central California distinct population segment)
- California red-legged frog (*Rana draytonii*) (federally threatened)

- Western spadefoot (*Spea hammondii*) (proposed threatened)
- Northwestern pond turtle (*Actinemys marmorata*) (proposed threatened)
- San Joaquin kit fox (*Vulpes macrotis mutica*) (federally threatened)

In addition, USFWS-designated critical habitat for the following three federally listed wildlife species overlaps the study area:

- Delta smelt (aquatic habitat in the easternmost portions of the study area in the vicinity of Mountain House Parkway [USFWS 1994])
- Vernal pool fairy shrimp (north of I-580 and north of Northfront Road [USFWS 2006])
- California red-legged frog (aquatic and adjacent upland habitats north of I-580 and along the Altamont Pass from Croak Road east toward Collier Canyon Road [USFWS 2010])

While critical habitat for the delta smelt overlaps with the easternmost portions of the biological resources study area, current land cover in these areas consists of annual grassland, development, and intensive agriculture not suitable for the species. The delta smelt is therefore not carried forward in this EA for further analysis.

3.5.2 Environmental Consequences

The Build Alternative would primarily result in impacts to biological resources during the construction phase with less potential for impacts during operations and maintenance, as discussed below. A series of general AMMs (AMM AQ-3, NV-1, NV-2, and AMM BIO-1 through AMM BIO-8) will be implemented in accordance with the construction management plan for the Build Alternative. These measures are detailed in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures).

3.5.2.1 Vegetation Communities

The Build Alternative would result in the temporary and permanent loss of vegetation, which would reduce available habitat for plants and wildlife that currently inhabit those communities. Impacts to vegetation communities include agricultural land (286 acres), ruderal (91 acres), non-native grassland (149 acres), scrub (less than 1 acre), open water (6 acres), riparian (2 acres), and potential wetland (16 acres). An estimate of the acreage of vegetation communities within the biological resources study area, potential impacts, and impact type (permanent or temporary) are detailed in Table 3.5-1. Project component impacts to vegetation communities include access roads (4 acres), bridges and viaducts (10 acres), road widening and restriping (23 acres), the Operations and Maintenance Facility/ Operations Support Site (OMF/OSS) (277 acres), rail corridor (45 acres), retaining walls (28 acres), staging areas (7 acres), stations (67 acres), and temporary work areas (87 acres).

Table 3.5-1: Vegetation Community Impacts in the Biological Resources Study Area

General Vegetation Community/Land Cover Type	Acreage in Biological Study Area	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Agricultural	663	199	87	286
Ruderal	225	51	40	91
Developed/ Landscaped/Urban	1,511	104	194	298
Nonnative Grassland	1,572	102	47	149
Scrub	1	<0.1	<0.1	0.17
Aquatic (Open Water)	28	4	2	6
Riparian	5	1	1	2
Wetland (Potential)	103	8	8	16
Total[a]	**4,108**	**469**	**379**	**848**

Source: AECOM. 2024. Valley Link Rail Project Biological Assessment (Appendix E).

[a] Numbers may not sum due to rounding.

Note: Impact calculations are based on the Valley Link Rail 15% Preliminary Design (Authority 2023).

Additional impacts to vegetation communities may result from the potential spread of invasive plants during construction activities. Invasive plant species are pervasive, particularly throughout the western portion of the biological resources study area adjacent to developed areas. Unlike the western portion, the eastern portion of the biological resources study area is largely dominated by nonnative grasslands. Therefore, construction activities in the western portion of the biological resources study area have a high potential of spreading existing invasive plants than in other vegetation communities in the study area, and equipment used in these areas could spread the plants if also used in other areas.

AMM BIO-1 through AMM BIO-4, AMM AQ-3, AMM BIO-6, AMM NV-1, AMM NV-2, and AMM BIO-40 (described in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]) will be implemented to reduce construction and operational impacts to vegetation communities by protecting sensitive communities including riparian, requiring dust control measures, limiting vegetation removal, revegetating disturbed areas, reducing spread and introduction of invasive plant species, and protecting vegetation communities.

3.5.2.2 Aquatic Resources

The Build Alternative would result in approximately 11.7 acres of permanent impacts and 9.4 acres of temporary impacts to aquatic resources (wetlands, streams, and riparian areas) due to construction of stations, parking areas, and trackway. Specific project elements that would affect aquatic resources include the installation of permanent aerial trackway support columns in the less developed areas east of Livermore, parking areas southeast of I-580 and Isabel Avenue, south of I-580 between 1st Street and South Vasco Road, the station north of Altamont Pass Road, and the station and parking areas near Mountain House. Temporary impacts would result from soil disturbance and access during construction and placement of stream diversion systems during in-stream work.

Impacts to aquatic resources would require permitting under the CWA and/or Porter-Cologne Act and possibly the Fish and Game Code (Section 1602). All permits will be obtained prior to construction activities that could affect aquatic resources. In addition to various measures to minimize impacts to wetlands during construction (AMM BIO-1 through AMM BIO-4, AMM AQ-3, AMM BIO-6, AMM BIO-8, and AMM BIO-40), compensatory mitigation is anticipated to offset the permanent loss of wetlands and streams as a result of the Build Alternative (AMM BIO-43).

3.5.2.3 General Wildlife

Wildlife Corridors

The Build Alternative has the potential to interfere with wildlife movement throughout the biological resources study area. Transportation corridors, including roads and highways, can pose barriers to wildlife dispersal and migration through direct mortality from traffic, habitat fragmentation, light, and traffic noise-induced effects.

The Build Alternative would include multiple retaining walls for slope protection through the Altamont Pass that may limit movement for small wildlife such as amphibians and reptiles between breeding and upland/dispersal areas. Additionally, the track rail bed may prevent movement of small wildlife. However, based on preliminary design, the majority of the proposed trackway would align with the existing I-580 freeway, which would limit the increase in wildlife barriers, or be constructed on viaduct and/or bridge structures, allowing for unimpeded movement beneath the tracks in these areas.

The Build Alternative would include new nighttime lighting at the Altamont MOW, the Mountain House LF, and the Tracy OMF/OSS. The proposed stations would also include new nighttime lighting at station platforms, walkways, and parking lots. As stated in AMM AES-4, no nighttime lighting is proposed along the rail alignment, including the rail alignment that would be adjacent to the Altamont MOW. As such, the introduction of new nighttime lighting outside currently populated areas would be limited to the Altamont MOW.

The Build Alternative does not include overhead streetlights, bridge luminaries, flashing beacons, informational signs, or warning signals outside the stations and support facilities. Additionally, AMM AES-4, AMM NV-1, and AMM NV-2 will minimize fugitive light during construction, and AMM AES-10 (includes low-angle lights and light shielding) will minimize lighting impacts on wildlife during operation. With most project components proposed adjacent to existing transportation infrastructure, utility corridors, and other development or on elevated structures, and the implementation of lighting and noise reduction measures, effects to wildlife corridors would be negligible.

Additionally, wildlife corridors were discussed with the Alameda County Resource Conservation District in 2024. Existing wildlife corridor structures (culverted underpasses) under I-580 located north of Grant Line Road adjacent to Contra Costa Water District preserved land would not be permanently impacted. Other existing wildlife corridors including the underpass east of Greenville Road and existing waterways would be maintained by the installation of bridges and viaducts. Additional information will be gathered on wildlife corridors by the implementation of AMM BIO-29, which includes wildlife camera and track surveys, and AMM BIO-37, which includes consultation with the California Department of Fish and Wildlife and USFWS on feasibility and design of new wildlife corridors.

Migratory Birds and Eagles

Construction activities, particularly vegetation removal or clearing and grubbing, could remove active migratory bird nests and disrupt nesting activity by discouraging migratory birds from using refuge and cover, foraging, or nesting in the area of activities or adjacent undeveloped habitat. General disturbance due to increased noise, visual, and human activity associated with construction activities could also disrupt migratory bird nesting and golden eagle foraging activities. The proposed trackway where it crosses through grasslands and undeveloped areas could also increase the potential for edge effects, defined as changes in community structures at the boundary of two or more habitats. Similar to current conditions, train or vehicle bird and/or eagle strikes could occur periodically during operation. Implementation of AMM BIO-1 through AMM BIO-5, AMM BIO-31 through AMM BIO-33, and AMM BIO 35 would avoid the potential for construction activities to take migratory birds and /or eagles and reduce the potential for other bird-related impacts.

Federally Listed Plant Species

Palmate-bracted Bird's-Beak

Direct Impacts: Potential direct impacts include ground disturbance (primarily during construction, but also during operations and maintenance activities) to alkaline grassland and wetland habitats (grassland and wetland vegetation communities occurring on alkaline soils) that are suitable for this species.

Indirect Impacts: Potential indirect impacts include habitat degradation from invasive plants, sedimentation of wetland habitat features, habitat fragmentation, and exposure to urban contaminants and dust. Additional information for this species is provided in Appendix E (Biological Assessment).

Avoidance, Minimization, and Mitigation: AMM BIO-1 through AMM BIO-4, AMM AQ-3, AMM BIO-6, AMM BIO-23, and AMM BIO-24 will be implemented to avoid and minimize impacts to Palmate-bracted bird's-beak. The Build Alternative may affect and is likely to adversely affect this species.

Federal Wildlife Species

The Build Alternative has the potential to impact four federally listed wildlife species, two proposed to be listed wildlife species, and one candidate wildlife species. Table 3.5-2 includes potential direct habitat impacts for each federally listed wildlife species, and Table 3.5-3 includes potential impacts to the proposed and candidate species. Potential direct and indirect impacts, and measures to be implemented to avoid and minimize impacts to each species, are described below. Consultation pursuant to Section 7 of the Endangered Species Act is in process, and this analysis presents preliminary impacts and measures, pending issuance of a Biological Opinion by USFWS. Additional information for each species is provided in Appendix E (Biological Assessment).

Vernal Pool Fairy Shrimp and Critical Habitat

Direct Impacts: Potential direct impacts include mortality of adults and cysts occurring in wetland habitat features (vernal pools) that are impacted, permanent habitat loss, and habitat degradation. Direct impacts may occur as a result of ground disturbance, including filling vernal pools or disturbing restrictive soil layers that act as aquitards necessary for pool function. Direct permanent modification of potential habitat would result from construction of the track, stations, operations and maintenance facilities, and retaining walls. The Build Alternative is also anticipated to result in temporary impacts to potential habitat due to staging and clearing.

Direct impacts to vernal pool fairy shrimp are listed in Table 3.5-3.

Table 3.5-2: Impacts to Federally Listed Wildlife and Plant Species

Species	Habitat Use	Habitat Type	Total Potential Habitat in Study Area (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Vernal pool fairy shrimp (Threatened)	Breeding	Vernal Pools	16	2	1	3
California tiger salamander (Threatened)	Breeding	Waters/Wetlands	56	5	4	9
	Dispersal/ Burrows	Grassland/Upland	1,500	108	71	180
California red-legged frog (Threatened)	Breeding	Waters/Wetlands	45	5	4	9
	Dispersal/ Estivation	Riparian/Upland	1,351	96	64	160
San Joaquin kit fox (Threatened)a	Foraging/ Denning	Grassland Agricultural/Ruderal	487	353	175	528
Palmate-bracted bird's-beak (Endangered) a	Breeding	Vernal Pools/ Wetland in Alkaline Grasslands	NA	NA	NA	NA

a Habitat-based modeling was not performed for these species.

Table 3.5-3: Impacts to Federally Proposed and Candidate Species

Species	Habitat Use	Habitat Type	Total Potential Habitat in Study Area (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Monarch butterfly [a] (Candidate)	Breeding	Wherever host plant occurs, non-native grassland and scrub	1,572	103	48	151
Western spadefoot (Proposed Threatened)	Breeding	Waters/Wetlands	56	5	4	9
	Dispersal/ Burrows	Riparian/Upland	1,492	189	67	255
Northwestern pond turtle (Proposed Threatened)	Aquatic	Waters/Wetlands	58	5	5	10
	Upland	Riparian/Upland	1,447	99	68	167

[a] Habitat-based modeling was not performed for this species.

Critical Habitat: Potential direct impacts to critical habitat for vernal pool fairy shrimp are not expected, as that habitat occurs outside of the biological resources study area (Appendix E [Biological Assessment]).

Indirect Impacts: Potential indirect impacts include habitat degradation from alteration of hydrology or aquatic thermal regime, sedimentation of aquatic habitat features, habitat fragmentation, and toxic material exposure such as from petroleum and herbicide.

Habitat Fragmentation: The Build Alternative aligns with I-580 (approximately 72 percent of the Build Alternative), which currently limits habitat continuity within the biological resources study area. Additionally, approximately 15 percent of the Build Alternative would be constructed on viaduct and/or bridge structure, minimizing direct impacts to aquatic features. Therefore, the increase in habitat fragmentation and direct permanent habitat modification as a result of the Build Alternative would not substantially reduce the numbers, reproduction, or distribution of this species.

Avoidance, Minimization and Mitigation: AMM BIO-1 through AMM BIO-6, AMM BIO-9, and AMM BIO-10 will be implemented to reduce potential adverse impacts to the vernal pool fairy shrimp and to the extent possible avoid, minimize, and compensate for impacts to vernal pool fairy shrimp.

California Tiger Salamander, California Red-legged Frog, Western Spadefoot, and California Red-legged Frog Critical Habitat

Direct Impacts: Potential direct impacts to these special-status amphibians include direct injury or mortality or behavioral changes due to construction activities. If occupied aquatic breeding habitat or upland aestivation habitat are present in the study area, individuals could be injured or killed if the aquatic or terrestrial habitats are removed through excavation and other ground disturbance, or if occupied burrows or refugia are collapsed on the occupants due to the movement of heavy equipment. Direct permanent modification of potential habitat would result from construction of the track, stations, operations and maintenance facilities, retaining walls, and roadway realignment/access road. The Build Alternative is also anticipated to result in temporary impacts of potential aquatic habitat due to temporary staging and clearing.

Direct impacts to each species and type of habitat impacted (e.g., breeding, upland, burrowing) are listed in Table 3.5-3.

Additionally, the Build Alternative would result in 58 acres of permanent impacts and 31 acres of temporary impacts to California red-legged frog critical habitat.

Indirect Impacts: Potential indirect impacts may occur due to construction noise and vibration (e.g., equipment involved in site preparation, grading, and earthwork and the installation of the rail tracks and infrastructure) and nighttime lighting. There is also potential for indirect effects to water quality during construction due to sedimentation as well as other potential indirect effects from contaminants and dust, which may affect the habitat for these species. Impacts to these special-status amphibians are summarized below.

- *Dispersal and Corridors:* Based on the preliminary design, approximately 72 percent of the Build Alternative aligns with the existing freeway (I-580), which already presents a barrier to these species. Additionally, 15 percent of the Build Alternative would be constructed on viaduct and/or bridge structures, allowing for unimpeded movement beneath the tracks in these areas. The Build Alternative may still contribute to creating a partial impediment to dispersal and movement between aquatic bodies by the installation of retaining walls, impeding movement of the California tiger salamanders, California red-legged frog, and western spadefoot across portions of the biological resources study area. However, retaining walls would be installed along steep hill slopes, not valley bottoms or drainages that are more likely to be movement corridors for these species (the location of many of the viaducts). Where the track is installed at grade, it is anticipated that there will be sufficient gaps between the rail and gravel bed to permit amphibians to pass underneath the rail. It is also anticipated that California red-legged frogs and western spadefoot toads would be capable of jumping over the rail, if needed. The sections of the Build Alternative that include viaduct structures will also allow for unimpeded movement of amphibians. Due to these considerations, the Build Alternative's effect on landscape permeability for these amphibian species would be minimal.
- *Noise:* While habituation to transportation noise, such as at airports, highways, and urban centers, is

commonly seen in some species, the effect of trainset noise and vibration on amphibians is unclear, as it has not been thoroughly studied. The Build Alternative would operate an electric train, which would generate less noise and vibration when compared to diesel trains. For the majority of the alignment, the train would be operated in close proximity to I-580 and/or the Union Pacific Railroad (UPRR) freight corridor, both of which are substantial existing sources of noise and vibration. As a result of these factors, the Build Alternative's contribution to noise and vibration is expected to be minimal.

- *Water Quality:* There is potential for indirect effects to water quality during operation as a result of sedimentation as well as other potential indirect effects from contaminants and dust that may enter aquatic habitats. The Build Alternative would include an electric train, which does not produce any exhaust or particulates, aside from potential brake dust. However, the train would utilize regenerative braking systems, using the trains' motors to facilitate braking. As a result, the amount of brake dust or other particulates generated is not expected to be substantial.

Avoidance, Minimization and Mitigation: AMM AQ-3, AMM NV-1, AMM NV-2, AMM BIO-1 through AMM BIO-8, AMM BIO-13 through AMM BIO-16, AMM BIO-40, and AMM BIO-41 will be implemented to avoid, minimize, and compensate for impacts to special-status amphibians and their habitat and California red-legged frog critical habitat. The Build Alternative may affect and is likely to adversely affect California tiger salamander and California red-legged frog. The Build Alternative may affect but is not likely to jeopardize western spadefoot. Modification to California red-legged frog critical habitat is not anticipated to be adverse.

San Joaquin Kit Fox

Direct Impacts: The Build Alternative would result in permanent modification to approximately 353 acres of grassland, ruderal, and agricultural land cover that may provide foraging habitat and denning opportunities for the San Joaquin kit fox. Direct, permanent modification of potential habitat would result from construction of the rail trackway; stations, operations and maintenance facilities; retaining walls; and access roads and roadway widening. The Build Alternative is also anticipated to result in temporary impacts to potential foraging and denning habitat.

Potential direct impacts include permanent habitat loss and/or degradation for foraging, dispersal, and denning from noise, vibration, soil compaction, or burrow collapse; mortality from vehicle traffic or trains; anthropogenic barriers to dispersal; reduction in prey availability; and habitat fragmentation.

Direct impacts to San Joaquin kit fox, are listed in Table 3.5-3.

Indirect Impacts: Potential indirect impacts include habitat degradation from invasive species; nighttime lighting that disturbs breeding and foraging activities; soil compaction leading to loss of underground burrow/refuge and the reduced availability of prey items, thereby impacting reproductive efforts; habitat fragmentation; increased predation pressure; loss or decrease of suitable prey base; increased light and noise levels, thereby decreasing habitat suitability; and toxic material exposure.

- *Noise:* San Joaquin kit foxes within the biological resources study area may have behavioral reactions to construction noise and the presence of heavy equipment and personnel during construction. However, resident kit foxes have been documented to continue utilizing construction sites and other disturbed areas despite the intensive construction activities causing noise and vibration on the site. Therefore, indirect effects caused by construction noise and vibration (e.g., equipment involved in site preparation, grading, and earthwork and the installation of the rail tracks and infrastructure) are expected to be limited and not result in the permanent displacement of individuals, if they are present.
- *Dispersal, Corridors and Prey Availability:* Based on the preliminary design, approximately 72 percent of the Build Alternative would align with the existing freeway and approximately 15 percent of the Build Alternative would be constructed on viaduct and/or bridge structures, allowing for unimpeded movement beneath the tracks in these areas.

  The Build Alternative would permanently alter 353 acres of habitat potentially supporting occasional foraging and denning opportunities for the species. However, prey species such as ground squirrels,

gophers, and mice are often seen occupying areas directly adjacent to railways and other developed areas, indicating that operation of the Build Alternative would not decrease the regional availability of potential prey for the species.

Avoidance, Minimization and Mitigation: AMM AQ-3, AMM NV-1, AMM NV-2, AMM BIO-1 through AMM BIO-8, AMM BIO-19 through AMM BIO-21, AMM BIO-29, AMM BIO-30, and AMM BIO-37 will be implemented to avoid, minimize, and compensate for impacts on special-status mammal species including San Joaquin kit fox. The Build Alternative may affect and is likely to adversely affect San Joaquin kit fox.

Northwestern Pond Turtle

Direct Impacts: Potential direct impacts would include mortality of adults, young, and eggs occurring in grassland, scrub, ruderal, and riparian habitat; permanent habitat loss; and habitat degradation.

Direct, permanent modification of potential aquatic breeding habitat would result from construction of the rail trackway; stations, operations and maintenance facilities; retaining walls; and roadway widening/access road (0.5 acre). Direct permanent modification of potential upland dispersal habitat would result from construction of the rail trackway; stations, operations and maintenance facilities; retaining walls; and roadway widening/access road. The Build Alternative would result in temporary impacts to approximately 5 acres of potential aquatic breeding habitat and approximately 68 acres of upland dispersal habitat due to temporary staging and clearing.

Direct impacts to northwestern pond turtle and type of habitat (aquatic or upland) are listed in Table 3.5-3.

Indirect Impacts: Potential indirect impacts would include habitat degradation from invasive plants; noise and vibration from construction and operation; nighttime lighting that may increase predation of adult and juveniles as well as nests; soil compaction leading to loss of underground burrow/refuge and the reduced availability of prey items, thereby impacting reproductive efforts; increased predator presence; increased light and noise levels; habitat fragmentation; movement barriers; and toxic material.

- *Noise:* The Build Alternative would operate an electric train, which would generate less noise and vibration compared to diesel trains. For the majority of the alignment, the train would be operated in close proximity to I-580 and/or the UPRR freight corridor, both of which are substantial existing sources of noise and vibration. As a result of these factors, the Build Alternative's contribution to noise and vibration is expected to be minimal.
- *Lighting:* The Build Alternative does not include overhead streetlights, bridge luminaries, flashing beacons, informational signs, or warning signals outside the stations and operations and maintenance facilities. Additionally, AMM BIO-5 and AMM-AES-10 (includes low-angle lights and light shielding) will minimize lighting impacts on wildlife during operation. AMM NV-1 and AMM NV-2 will minimize noise and vibration during construction. With most project elements proposed adjacent to existing transportation infrastructure, utility corridors, and other development or on elevated structures, and the implementation of lighting and noise reduction measures, effects to wildlife corridors would be negligible.
- *Water Quality:* There is potential for indirect effects to water quality during operation as a result of sedimentation as well as other potential indirect effects from contaminants and dust that may enter aquatic habitats. The Build Alternative would operate an electric train, which does not produce any exhaust or particulates, aside from potential brake dust. However, the train would utilize regenerative braking systems, using the trains' motors to facilitate braking. As a result, the amount of brake dust or other particulates generated would not be substantial.

Avoidance, Minimization and Mitigation: AMM AQ-3, AMM NV-1, AMM NV-2, BIO-1 through AMM BIO-8, AMM BIO-17, AMM BIO-18, AMM BIO-34, AMM BIO-40 and AMM BIO-41 will be implemented to avoid, minimize, and compensate for impacts to northwestern pond turtle and their habitat. The Build Alternative may affect but is not likely to jeopardize northwestern pond turtle.

Monarch Butterfly

Direct Impacts: Potential direct impacts would include mortality of overwintering adults, eggs, or caterpillars and habitat loss or degradation due to removal of host plants (milkweed). Direct permanent modification of potential habitat would result from construction of the rail trackway; stations, operations and maintenance

facilities; retaining walls; and roadway widening. The Build Alternative is also expected to result in temporary impacts to habitat that has potential to support host plants due to temporary staging and clearing.

Direct impacts to monarch butterfly are listed in Table 3.5-3.

Indirect Impacts: Potential indirect effects to monarch butterfly include habitat degradation for host plants from invasive plants, contaminant exposure, and dust. Also, operational maintenance activities could result in direct mortality and continued disturbance of habitat during vegetation maintenance. Temporarily affected areas would be restored through restoration of natural habitat, including reseeding of native milkweed.

Dispersal and Corridors: Locating the Build Alternative infrastructure adjacent to existing transportation infrastructure, utility corridors, and other development would minimize effects to the monarch butterfly.

Avoidance, Minimization and Mitigation: AMM AQ-3, AMM BIO-1 through AMM BIO-5 and AMM BIO-12 will be implemented to avoid, minimize, and compensate for impacts to monarch butterflies and their habitats. The Build Alternative may affect but is not likely to jeopardize the monarch butterfly.

3.6 Cultural Resources

This section describes cultural resources such as archaeological sites and historic buildings and structures in and near the project area and analyzes impacts to those resources, with a focus on historic properties protected under the National Historic Preservation Act of 1966 (NHPA). The study area for cultural resources is the same as the area of potential effects (APE), as used for the NHPA compliance process and described in Appendix F (Section 106 Documentation). The APE encompasses approximately 5,240 acres and extends from 70 feet up to approximately 2,500 feet from the project area, depending on the size and shape of the County Assessor parcel in question. Information in this section is based on archaeological and built environment studies conducted in support of Section 106 of the NHPA, which included records searches, background research, fieldwork, and evaluations of cultural resources in the APE.

3.6.1 Affected Environment

To capture all potential historic properties and account for the lapse in time between environmental analysis and opening year, the historic age used for the built environment survey was set at least 45 years old as of the assumed opening year (2028) for the Build Alternative. Therefore, all built environment resources that were constructed in, or before, 1983 were included in the survey. Historic-age built environment resources in the APE date from the 1870s to the 1980s and reflect the region's history of transportation, agriculture, and residential development. The majority of historic-age property types are related to railroads, including portions of the Central Pacific Railroad/SPRR and the Western Pacific Railroad (WPRR)/ UPRR in the Altamont Pass. Other resources relate to agriculture, rural residential properties, commercial roadside development, and water conveyance features, including canals and aqueducts. Archaeological resources in the APE date from precontact to the early 1900s and include evidence of past uses by Native Americans and historical occupations. An overview of specific resources in the APE and their eligibility for listing in the National Register of Historic Places (NRHP) (i.e., considered historic properties) is presented below.

3.6.1.1 Built Environment Resources

The APE contains 27 historic-age built environment resources, including buildings, railroads and associated bridges, canals, ranches, and a townsite. Of these, eight resources are eligible for listing in the NRHP and may also be considered properties under Section 4(f) of the Department of Transportation Act:

- **Gandolfo Ranch Historic District**: The ranch property is south of I-580 near State Route 84. It is a working ranch with buildings and features that date from the late nineteenth and early twentieth centuries. The property is also listed in the California Register of Historical Resources.
- **WPRR Alignment**: Signified as the last transcontinental railroad to be constructed in the United States, the WPRR (formerly Union Pacific Railroad) runs through the Altamont and Livermore Passes, with a segment constructed in the early 1900s following Altamont Pass Road north of I-580. It is eligible only as a contributing element of the WPRR.

- **West Altamont Pass Road Underpass at the WPRR (Bridge No. 330C0013)**: Notable for its association with the WPRR, this railroad bridge crosses Altamont Pass Road north of I-580 and east of Greenville Road and was built in the early 1900s. It is eligible only as a contributing element of the WPRR.
- **Altamont Pass Road Underpass at the WPRR (Bridge No. 330C0109)**: Also notable for its association with the WPRR, this railroad bridge crosses Altamont Pass Road northeast of Dyer Road and was built in the early 1900s. It is eligible only as a contributing element of the WPRR.
- **SPRR Grade**: Completed in 1869, the SPRR follows Altamont Pass Road and the WPRR across the Livermore Pass and was the last segment of the transcontinental railroad connecting the Atlantic and Pacific Oceans. Important features of the SPRR are its sandstone masonry culverts and a concrete-lined tunnel.
- **Summit Garage**: This garage is on Altamont Pass Road northeast of Dyer Road along the former Lincoln Highway route. It is an example of commercial roadside automotive architecture dating to the early 1900s and is associated with the historic highway corridor. The associated nearby Summit Garage Residence is not eligible at the federal level but does have local importance and is on the Alameda County Register.
- **California Aqueduct**: The aqueduct is a 444-mile-long canal that runs from the Sacramento-San Joaquin Delta in the north to Riverside County in the south. It was constructed between 1961 and 1972 by the California Department of Water Resources as part of the State Water Project. The aqueduct is important as part of a comprehensively planned and publicly sanctioned water conveyance public works project that facilitated development throughout the state The aqueduct is also important for its historical, complex design.
- **Delta-Mendota Canal**: The canal was constructed in 1952 as part of the Delta Division of the Central Valley Project, a large-scale federal water storage, transfer, and delivery system that conveys water from California's wetter northern regions to the more arid central and southern regions. The canal is important for its association with the development of irrigation and agriculture in California.

All but one of the remaining historic-age built environment resources are buildings and properties that do not contain unique or important features and are not eligible for listing in the NRHP or on state or local registers. The Summit Garage Residence was added to the Alameda County Register in conjunction with the Summit Garage but was found ineligible for listing in the NRHP and state register. The APE also contains several roads and associated infrastructure that are historic in terms of age but have been modified or improved and are not considered to be unique or important resources (i.e., not historic properties).

3.6.1.2 Archaeological Resources

Few archaeological resources have been documented in the APE, with some isolated resources found in the vicinity (remnant fences, sparse artifact scatters, and modified rocks). No eligible archaeological resources are known to be present in the APE. Overall, the APE is not considered sensitive for archaeological resources, except for the area near State Route 84 and I-580 (near Las Positas Creek in Livermore), which is sensitive for both surface and buried archaeological resources. This area, along with the Greenville Road/Altamont Pass Road intersection and areas surrounding the Delta-Mendota Canal, California Aqueduct, and Mountain House north of I-205, was identified as sensitive for archaeological resources through tribal consultation (see Section 4.2, Agency and Tribal Consultation).

3.6.2 Environmental Consequences

In support of the Section 106 process under the NHPA, the Federal Transit Administration (FTA) assessed effects to historic properties in the APE and is in the process of consulting with the California State Historic Preservation Officer. This section summarizes the preliminary findings from that process and discusses effects to cultural resources that are not considered historic properties but are part of the human environment.

3.6.2.1 Built Environment Resources

While construction activities would not result in adverse effects to any of the NRHP-eligible or locally listed built environment resources in the APE, construction activities would cause intermittent, localized vibrations and in rare circumstances, could potentially exceed the threshold for building damage depending on final equipment selection and work areas. Specific activities that would be a concern are pile driving, such as for bridge pier or abutment installation, and vibratory compacting or

rolling for grading activities. To alleviate potential vibration concerns, a construction vibration reduction plan would be developed to identify equipment-specific operational distance restrictions and a vibration monitoring program would be enacted when activities must occur within restricted distances (see AMM NV-2 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]). An overview of other potential effects to each NRHP-eligible and locally listed built environment resource is as follows:

- **Gandolfo Ranch Historic District**: Construction activities would not modify or encroach on the ranch property; thus, no direct physical disturbance to the property would occur. An elevated pedestrian overpass and other passenger facilities associated with the proposed Isabel Station would be visible from the ranch (more than 500 feet to the west) but would generally blend in with the viewshed, which primarily consists of modern development with a highway corridor, and would not adversely modify the feeling or setting of the ranch or surrounding area.
- **WPRR Alignment, West Altamont Pass Road Underpass at the WPRR (Bridge No. 330C0013) and Altamont Pass Road Underpass at the WPRR (Bridge No. 330C0109)**: Construction activities would not destroy or alter the railroad alignment or the railroad bridges and would not cause a change of the character of the property's use as an active rail line. Construction of the Greenville viaduct from the I-580 freeway and the three grade separations along or near Altamont Pass Road would introduce new features into the setting of the WPRR alignment and railroad bridges. However, these new features would not adversely affect the setting of these WPRR resources. Construction of the Altamont MOW would introduce new structures into the setting of the WPRR alignment to support train layovers, storage, maintenance, and operations associated with the Build Alternative. However, the setting was not identified as a character-defining feature of the WPRR and does not contribute to its historic significance. Likewise, construction of a new railroad grade separation just west of the Altamont Pass Road Underpass would carry rail traffic over Altamont Pass Road and tie into the SPRR Grade to reactivate approximately 0.4 mile of rail. Construction of this new railroad grade separation would not result in an indirect effect to the nearby Altamont Pass Road Underpass (Bridge No. 330C0109) because it would not demolish or materially alter its character-defining features. Additionally, a 1923-constructed vehicular overpass was historically located approximately 500 feet southwest of the underpass that was demolished in the 1980s. Re-introduction of a grade separation that was once historically located in this section of Altamont Pass Road would not adversely affect the underpass.
- **SPRR Grade**: The Build Alternative would result in direct effects to the SPRR Grade because construction and operation within the existing Alameda County Transportation Corridor right-of-way (the former SPRR Grade alignment) would be required. Physical impacts to segments of the SPRR Grade would include crossing the extant grade at several locations, construction of associated retaining walls across the grade, and construction of a small access road over the grade as part of the proposed improvements at the Altamont MOW. While construction of the crossings, retaining walls, and viaducts would result in physical impacts that would affect the design, materials, workmanship, and feeling of this portion of the SPRR Grade, these improvements would occur in an approximately 5-mile-long section of the approximately 11.25-mile-long SPRR Grade that was recorded and evaluated. Additionally, none of the improvements would demolish or materially alter the character-defining features of the SPRR Grade. The Build Alternative would add rail improvements to an area that historically has included rail infrastructure; therefore, the Build Alternative would not result in a substantial adverse change in the significance of the SPRR Grade, and effects would not be adverse.
- **Summit Garage and Summit Garage Residence**: Construction activities would not modify or occur on the property, and thus would not destroy or alter the buildings or cause a change of the character of the property's use as a roadside automotive repair building and adjacent residence. The Altamont MOW across Altamont Pass Road from the Summit Garage and Summit Garage Residence would introduce new structures into the setting of the property that would support train layovers, storage, maintenance, and operations associated with the Build Alternative. However, the setting was not identified as a

character-defining feature of the Summit Garage and does not contribute to their historic significance. Construction noise would be temporary, and operational noise would not substantially change from existing operational noise levels.

- **California Aqueduct**: Construction of a new railroad bridge over the California Aqueduct would introduce new infrastructure into the setting of the aqueduct. However, the aqueduct is a long, linear resource, and the introduction of a new railroad bridge crossing over one small segment would not substantially alter the setting of the entire resource or the individual segment. The new railroad bridge would be fabricated off-site and lifted and placed over the California Aqueduct to rest on new bridge abutments that would be constructed outside the historic boundary for the aqueduct. No temporary construction activities would occur, or permanent features placed, within the historic boundary of the California Aqueduct. The new crossing would not be an obtrusive element and would be adjacent to existing I-580 viaducts (approximately 400 feet north). Also, setting was not identified as a character-defining feature of the historic property.
- **Delta-Mendota Canal**: Construction of a new railroad bridge over the Delta-Mendota Canal would introduce a new railroad bridge into the setting of the canal. However, the canal is a long, linear resource, and introduction of a new railroad bridge crossing over one small segment would not substantially alter the setting of the entire resource or the individual segment. The new railroad bridge would be fabricated off-site and lifted and placed over the Delta-Mendota Canal to rest on new bridge abutments that would be constructed outside the historic boundary of the canal. No temporary construction activities would occur, or permanent features placed, within the historic boundary of the Delta-Mendota Canal. The new crossing would not be an obtrusive element and would be adjacent to existing I-580 viaducts (approximately 400 feet north). Also, setting was not identified as a character-defining feature of the historic property. Construction of the Tracy OMF/OSS could result in visual impacts on the adjacent Delta-Mendota Canal. However, because the canal is a long, linear resource, and the introduction of an OMF/OSS would be in the vicinity of one small segment of the canal, it would not substantially alter the feeling and setting of the entire water conveyance resource or the individual segment, especially as construction would occur in a previously altered setting surrounded by recent residential and industrial development.

Most of the historic-age built environment resources in the APE would not be directly modified under the Build Alternative, although similar types of visual effects described above could alter the visual settings around buildings. Construction of the Southfront Road Station parking lot under the Build Alternative would require demolition of a warehouse constructed in the 1970s and would abut a property with a residence constructed in 1947 and a 1950s detached garage; however, these buildings do not contain unique or important features and are not eligible for listing in the NRHP or on state or local registers.

3.6.2.2 Archaeological Resources

Construction activities associated with the Build Alternative have the potential to disturb archaeological resources; however, this potential is considered low for most of the APE. Human remains are not expected to be encountered in the APE based on the types of archaeological sites documented in the area. Soil- or ground-disturbing activities in previously undisturbed or native soils could expose or damage archaeological resources near the proposed Isabel Station (particularly in areas near Las Positas Creek), the Greenville Road Viaduct, the steel truss bridge over the California Aqueduct, the steel truss bridge over the Delta-Mendota Canal, and the Mountain House Community Station. Due to the sensitivity of this area and to avoid potential adverse effects, work in the vicinity of areas called out through tribal consultation would be subject to archaeological monitoring (either full time or by spot-checking) and implementation of an inadvertent discovery treatment plan with worker awareness training and inadvertent discovery protocols implemented for the overall construction activities (see AMM CUL-1 through AMM CUL-5 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]). Archaeological resources would not be affected during operation or maintenance activities.

3.7 Environmental Justice

This section describes environmental justice populations in the environmental justice study area—which comprises the Census block groups that overlap the

project area—and discusses effects on those populations in terms of the potential for disproportionately high and adverse impacts on minority and low-income populations. The environmental justice analysis was conducted in accordance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994); the U.S. Department of Transportation (USDOT) Environmental Justice Order 5610.2(a) (DOT 2021); FTA Circular 4703.1, Environmental Justice Policy Guidance for Federal Transit Administration Recipients (FTA 2012); and Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All (2023).

Minority and low-income and populations are defined using the USDOT Environmental Justice Order 5610.2(a) (DOT 2021). Minority populations are defined as a person who is:

- **Black**: A person having origins in any of the black racial groups of Africa
- **Hispanic or Latino**: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race
- **Asian American**: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent
- **American Indian and Alaskan Native**: A person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition
- **Native Hawaiian and Other Pacific Islander**: A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands (DOT 2021)

Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2023, a household income for a family of four that falls below $27,750 is considered low income.

3.7.1 Affected Environment

The study area contains residential populations in both urban and rural development areas. Based on U.S. Census data, 27 geographic block groups overlap the study area and were assessed for this analysis (Table 3.7-1). Most of these block groups do not contain a dominance of minority populations; however, 12 of the block groups have more than 50 percent minority populations or a dominance of a single minority group and are considered environmental justice communities (see Figure A3.7-1 in Appendix A [Environmental Assessment Figures]). These block groups are in Alameda County in the western portion of the study area or in the Tri-Valley area, primarily associated with the communities of Dublin, Pleasanton, and Livermore.

None of the block groups were reported to have more than 25 percent of the population below the poverty threshold for the county; thus, no low-income environmental justice communities are present.

3.7.2 Environmental Consequences

The environmental justice communities identified in Alameda County would be exposed to various temporary effects (e.g., noise, traffic, visual changes, emissions, and dust) associated with construction of various Build Alternative elements within the I-580 corridor, primarily between the proposed Dublin/Pleasanton Station and just east of the Isabel Station. The elements in this area include the new rail line, shifting of I-580 to accommodate the rail line, the proposed Dublin/Pleasanton Station, Isabel Station and its related parking lot and pedestrian bridge, and widening of existing bridge structures along I-580. These effects are discussed in other sections of this chapter, and AMMs have been identified to reduce the potential for adverse effects. Based on the nature of the impacts, they would affect all nearby populations equally and would not disproportionately affect environmental justice communities.

Table 3.7-1: Environmental Justice Demographics in the Environmental Justice Study Area

Geography	County	Total Population	Black or African American	Native American and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Minority %	Hispanic or Latino	Hispanic or Latino %	Population below Poverty	Poverty %	Environmental Justice Community
Alameda County	N/A	1,661,584	167,316	4,942	515,105	12,924	42%	369,546	22%	152,060	9%	N/A
San Joaquin County	N/A	751,615	50,920	1,447	116,618	4,228	23%	313,385	42%	100,689	14%	N/A
Tract 450101, BG 1	Alameda	3,790	100	0	1,928	6	**54%**	433	11%	262	7%	**Yes**
Tract 450101, BG 2	Alameda	2,373	56	18	1,462	0	**65%**	78	3%	100	4%	**Yes**
Tract 450300, BG 2	Alameda	1,191	222	0	564	0	**66%**	107	9%	0	0%	**Yes**
Tract 450603, BG 4	Alameda	1,145	11	0	298	0	27%	142	12%	67	6%	No
Tract 450743, BG 2	Alameda	879	95	0	384	0	**54%**	39	4%	31	4%	**Yes**
Tract 450743, BG 3	Alameda	1,706	10	5	1,271	13	**76%**	59	3%	40	2%	**Yes**
Tract 450744, BG 1	Alameda	2,720	18	11	853	22	33%	232	9%	46	2%	No
Tract 450744, BG 2	Alameda	3,230	0	22	1,127	0	36%	158	5%	204	6%	No
Tract 450750, BG 1	Alameda	2,074	8	2	1,441	9	**70%**	143	7%	145	7%	**Yes**
Tract 450750, BG 2	Alameda	3,859	281	30	2,250	14	**67%**	357	9%	133	3%	**Yes**
Tract 450751, BG 1	Alameda	7,216	0	0	6,181	18	**86%**	297	4%	72	1%	**Yes**
Tract 450752, BG 1	Alameda	4,620	178	0	2,576	59	**61%**	583	13%	152	3%	**Yes**
Tract 451104, BG 2	Alameda	2,759	0	19	595	53	24%	679	25%	51	2%	No
Tract 451201, BG 1	Alameda	1,660	134	0	515	0	39%	157	9%	99	6%	No
Tract 451201, BG 2	Alameda	2,914	0	0	239	0	8%	310	11%	94	3%	No
Tract 451201, BG 3	Alameda	1,844	51	36	86	0	9%	898	**49%**	254	14%	**Yes**
Tract 451201, BG 4	Alameda	1,265	6	0	274	2	22%	73	6%	5	0%	No
Tract 451202, BG 1	Alameda	3,158	0	0	961	6	31%	404	13%	53	2%	No
Tract 451300, BG 1	Alameda	3,458	65	0	330	0	11%	1,151	**33%**	233	7%	**Yes**

Geography	County	Total Population	Black or African American	Native American and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Minority %	Hispanic or Latino	Hispanic or Latino %	Population below Poverty	Poverty %	Environmental Justice Community
Tract 451300, BG 3	Alameda	2,103	17	0	140	0	7%	677	**32%**	0	0%	**Yes**
Tract 451401, BG 1	Alameda	1,134	75	0	65	0	12%	273	24%	162	14%	No
Tract 451401, BG 2	Alameda	2,714	226	0	247	0	17%	634	23%	18	1%	No
Tract 451504, BG 1	Alameda	1,630	17	0	386	0	25%	369	23%	76	5%	No
Tract 5213, BG 2	San Joaquin	1,699	0	0	155	0	9%	462	27%	0	0%	No
Tract 5213, BG 3	San Joaquin	984	0	0	0	0	0%	426	43%	0	0%	No
Tract 451104, BG 1	Alameda	2,376	34	1	796	0	35%	63	3%	81	3%	No
Tract 451104, BG 3	Alameda	2,145	69	0	432	15	24%	420	20%	181	8%	No

Source: U.S. Census Bureau 2020

Notes: BG = Block Group

Bold – Meets at least one of the criteria of an environmental justice community of concern

The design of the Build Alternative has maximized use of an existing transportation corridor along I-580 and includes new supporting facilities in established developed areas and rural areas that are readily accessible from existing roads and are part of future planned developments. Right-of-way acquisitions primarily consisting of minor partial acquisitions and temporary construction easements (TCEs) would be needed within areas containing environmental justice populations. Where those acquisitions are needed in environmental justice communities, they would primarily be on undeveloped or non-residential properties. The majority of these permanent acquisitions and TCEs would impact relatively small portions of the affected parcels and not impact existing structures or alter the overall use of the site. As such, these acquisitions would not displace or require relocation of residences or commercial businesses in the environmental justice communities and would not disproportionately affect environmental justice populations.

Similar to construction effects, operational effects discussed in other sections of this chapter would affect communities of all types in the study area, with no expected disproportionate effects to environmental justice communities. The new facilities along I-580 in these communities would introduce new visual elements to the area, but design elements and AMMs would help ensure they blend in as much as possible and not degrade the quality of the community.

The Build Alternative would improve transportation options and mobility for environmental justice communities by providing convenient access to transit services along I-580, especially for those environmental justice communities near the Dublin/Pleasanton and Isabel Stations. By siting these stations near existing and proposed housing, the Build Alternative would provide convenient multi-modal transit access for residents of environmental justice communities. Further benefits to these populations could be achieved with incentive programs to ride the proposed transit service. These types of programs would be considered by the Authority Board of Directors as design progresses.

3.8 Geology, Soils, and Paleontological Resources

This section describes the existing geology, soils, seismic conditions, and paleontological resources within the project area and analyzes effects to these resources as a result of hazards that could be caused by implementation of the Build Alternative. Information in this section is based on desktop research and regional geologic mapping of the San Francisco Bay Area and Central Valley.

3.8.1 Affected Environment

3.8.1.1 Geological Hazards

Seismicity

The entire Northern California region is seismically active and crossed by a network of major regional faults and minor local faults. The San Andreas Fault System dominates the region. Other faults near the project area include the Las Positas fault to the southeast, the Northern Calaveras fault to the west, the Verona Thrust fault (inactive) to the southwest, and other smaller faults associated with the Mount Diablo Thrust fault to the north (California Geological Survey [CGS] 2008). The active and high-risk Greenville and Pleasanton faults cross under I-580 in the project area (see Figure A3.8-1 in Appendix A [Environmental Assessment Figures]). The Greenville fault is also part of the Alquist-Priolo Earthquake Fault Zoning Act of 1972 in the State of California (see Figure A3.8-2). Several historic earthquakes with a magnitude of 4.0 or greater have occurred in the Diablo Mountain Range in the vicinity of the project area (Bonilla, Lienkaemper, and Tinsley 1980).

Liquefication

Liquefaction takes place when, as a result of strong ground shaking, loosely packed, water-logged sediments lose their strength. The sediments most susceptible to liquefaction are recent Holocene-age sediments or deposits of artificial fill areas, which underlie the project area. Most of the project area along I-580 in the Tri-Valley is mapped as susceptible to liquefication (CGS 2022).

Subsidence and Settlement

Subsidence is the gradual settling or sudden sinking of the ground resulting from underground movement of earth materials. Settlement refers to the compaction of soils caused by ground shaking. Subsidence and settlement are most likely to occur in geologic units of

recent (historic) and Holocene-age streambed deposits and could occur in the project area.

Landslides

A landslide is the downhill movement of earth material due to gravity. The factors contributing to landslide potential are steep slopes, weak rock, unstable terrain, rainfall, and proximity to earthquake faults. In Alameda County, areas of concern for landslide hazards correlate with drainages from Greenville Road eastward to the Alameda County/San Joaquin County line. According to the U.S. Geological Survey Landslide Inventory, the Altamont area is the only portion of the project area with recorded landslides.

3.8.1.2 Soil-Related Hazards

Soils across the project area could pose hazards for construction and new structures due to shrink-swell concerns, erosion, and corrosion. Soils mapped within 0.5-mile of the project area are shown on Figures A3.8-3 and A3.8-4 in Appendix A (Environmental Assessment Figures) for broader context, while consideration of potential soil-related concerns focused more specifically on the project area.

Soil Expansion

Expansive soils that shrink or swell with changes in moisture content have the potential to damage structures that are constructed on them. The soils mapped in the project area are rated, on average, moderate for potential expansion, with several areas noted as moderate-high to very high—the area near the Dublin/Pleasanton BART Station, areas along existing Altamont Pass Road, the I-205 corridor, and within Mountain House (NRCS 2018).

Soil Erosion

In general, the soil in the project area has a low to moderate susceptibility to water-based erosion based on the soils' texture and amount of runoff and lower susceptibility to wind erosion due to the soil types' coarseness and wetness (NRCS 2018).

Soil Corrosivity

Soils with a high clay content can be highly corrosive. Buried steel and concrete in direct contact with this type of soil can become corroded. The potential for corrosion of steel is rated as high for most of the project area, including the Dublin/Pleasanton BART Station, the I-580 corridor, areas along Altamont Pass Road, and within Mountain House. The area south of I-580 and west of South Vasco Road is moderate-high. The majority of the project area is rated as low for potential corrosion of concrete, with the area near the Dublin/Pleasanton BART Station and parts of I-580 rated moderate.

3.8.1.3 Paleontological Resources

Paleontological resources include vertebrate, invertebrate, and plant fossils, which are usually found in certain types of geologic units (e.g., sedimentary and metasedimentary deposits). Geologic units along the I-580 and I-205 corridors in the project area have a high potential to contain fossils (University of California Museum of Paleontology 2018a, 2018b, 2018c, 2018d, 2018e). These geologic units are of Holocene/Pleistocene and Pleistocene/Pliocene (both of which have non-marine sedimentary deposits with the potential to yield fossils) as well as Pliocene, Miocene, and late cretaceous (all of which have produced vertebrate fossils from a number of localities) epochs.

3.8.2 Environmental Consequences

The Build Alternative would involve construction activities in areas that could be subject to various geologic and soil hazards. Temporary structures and work areas, such as offices and staging areas, would not be placed within a designated fault zone to avoid potential seismic-related impacts. Construction workers would follow applicable safety protocols for working in seismically active areas. Temporary construction-related soil erosion due to grading and excavation operations could expose soils to wind and water erosion. Appropriate best management practices, such as stabilization of graded areas with appropriate erosion control devices and use of rock slope protection, will be implemented in compliance with a project-specific stormwater pollution prevention plan to reduce erosional impacts during construction activities. The Authority or its construction contractor will also obtain coverage under the California Construction General Permit for stormwater discharges, pursuant to Section 402 of the CWA.

Ground-disturbing activities associated with construction generally involve grading, excavating, and drilling and placing piles. Of these, grading and excavating can disturb paleontological resources. Drilling and placing piles disturbs a relatively small area and is not considered substantial enough to disturb paleontological resources. However, construction activities would involve grading, rough grading, structural excavation for walls, and excavation for installation of utilities.

Most of these ground-disturbing activities would involve excavation at depths greater than 5 feet below ground surface. Ground-disturbing activities along the new rail line within the median of I-580 from the Dublin/Pleasanton Station to the Greenville Road viaduct, Dublin/Pleasanton Station, Isabel Station, and Southfront Road Station could disturb or expose paleontological resources because these facilities would be constructed in areas of high sensitivity.

The potential to affect fossils varies with the depth of disturbance, previous disturbance, and the improvement that would be implemented. The logistics of excavation also affect the possibility of recovering scientifically significant fossils because information regarding location, vertical elevation, geologic unit of origin, and other aspects of context is critical to the significance of any paleontological discovery. Implementation of AMM GEO-1 (see Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]) would require training for construction crews to better recognize paleontological resources, stopping work in case of discovering such resources, evaluating those resources by a qualified paleontologist, and as appropriate, preparing and implementing a recovery plan. With implementation of this measure, the impact on paleontological resources due to construction of the Build Alternative would not be adverse.

The design of the Build Alternative is required to meet engineering standards that address seismic and other geologic hazard risks. Measures to minimize the risk of loss, injury, and death from the effects of earthquakes and ground shaking on buildings are included within the California Building Code (CBC) with specific provisions for seismic design. Structures that are within the Caltrans right-of-way would also be subject to the Caltrans Seismic Design Criteria (Caltrans 2019), including the new rail line within the median of I-580 from the Dublin/Pleasanton Station to the Greenville Road viaduct and approximately 5 miles along the north side of I-580 and I-205 at the eastern end of the new rail line, the Isabel Station platform and pedestrian bridge, and the Southfront Road Station platform and pedestrian bridge. Facilities proposed as part of the Build Alternative are required to resist seismic ground shaking in accordance with the Zone 4 design parameters identified in the CBC. For structures or facilities in designated fault zones, the design would also need to meet requirements of the Alquist-Priolo Earthquake Fault Zoning Act of 1972. Proposed elements in areas susceptible to liquefaction and landslides would also need to meet CBC standards that address risks for those hazards. Most project elements, such as track alignment and proposed structures, are proposed in areas with shallow bedrock where liquefaction and landslide hazards due to ground shaking are of minimal concern.

Since certain sections in the project area lie in earthquake-induced landslide hazard zones, detailed soils and geotechnical analysis and geologic investigations would be required prior to issuance of building permits in compliance with the CBC. The Build Alternative would require a site-specific slope-stability design to ensure adherence to the standards contained in the CBC and any County of Alameda, County of San Joaquin, City of Dublin, City of Pleasanton, City of Livermore, and City of Tracy guidelines, as well as by the State of California Department of Industrial Relations Division of Occupational Safety and Health requirements for stabilization. As previously discussed, the Altamont region of the project area is likely to be prone to landslide hazards, both seismically induced as well as water based. Compliance with the regulations and acceptable design standards, which include erosion control measures, would minimize adverse effects due to seismic activity, water-based, and seismically induced landslides, and other geologic hazards throughout the project area.

Implementation of the Build Alternative would not result in substantial soil erosion or the loss of topsoil during operation. Operational activities would also not be expected to disturb or expose paleontological resources, as no ground disturbance is expected.

3.9 Greenhouse Gas Emissions and Climate Change

This section discusses contributing factors to greenhouse gas (GHG) emissions and climate change and potential impacts of the Build Alternative. Because the environmental effects of climate change are experienced regionally, this analysis considers those effects of climate change that would be experienced at a regional scale. Therefore, the GHG and climate change study area consists of the San Francisco Bay Area and the San Joaquin Valley. GHG emission calculations are presented in the Valley Link Air Quality and Greenhouse Gas

Emissions Report (ICF 2024). GHGs, as defined in Section 19(i) of Executive Order 13514, Focused on Federal Leadership in Environmental, Energy, and Economic Performance (2015), include carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Global Warming Potential is a GHG emission metric used to express emissions of different GHGs in a common unit. The potential of various GHG emissions is defined on a normalized scale that recasts all GHG in terms of carbon dioxide equivalents (CO_2e), which compares the gas in question to that of the same mass of CO_2.

3.9.1 Affected Environment

GHG emissions, which result from the burning of fossil fuels and other processes, contribute to the threat of global climate change (National Aeronautics and Space Administration [NASA] 2023). The greenhouse effect is the process through which heat is trapped near earth's surface by GHGs. Human activities in recent history, including the burning of fossil fuels, have led to an imbalance of CO_2 and other GHGs in the atmosphere, resulting in rising temperatures as GHGs trap heat near earth's surface, and an increase in CO_2 in the ocean.

The environmental effects of GHG emissions are widespread, and the greenhouse effect occurs high in the atmosphere after the transport of locally generated emissions by meteorological conditions. For this reason, GHG emissions have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. It is unlikely that a single project would substantially contribute to climate change, but the incremental contribution from many projects could affect global GHG concentrations and the global climate system. Sources of GHG emissions in the study area can be generally categorized as either mobile or stationary sources. Mobile sources include passenger vehicles, trucks, off-road equipment, and locomotives. Stationary sources include power plants, refineries, industrial, and manufacturing facilities, and residential and commercial natural gas combustion.

Reasonably foreseeable climate-related changes in the study area include, but are not limited to, increased temperature; continued highly variable precipitation year-to-year; an increase in extreme weather events such as drought, heat waves, wildfires, and precipitation; decreased Sierra Nevada snowpack and reduced water storage from the resulting snowmelt; increased water and energy consumption; sea level rise along the California coast; changes in species' distribution and range; and increased risk of coastal and riverine flooding. Certain low-lying areas may be susceptible to flooding resulting from events related to climate change (Ackerly et al. 2018, Fernandez-Bou et al. 2021).

3.9.2 Environmental Consequences

The Build Alternative would generate construction and operational emissions from mobile and energy sources. The emissions analysis demonstrates that construction of the Build Alternative would result in an estimated 43,124 metric tons of CO_2e (MT CO_2e), which would be offset within 3 years of operations due to emissions reductions associated with reduced passenger VMT and increased rail ridership (i.e., transportation mode shift). Following offset of the construction GHG emissions, operation of the Build Alternative would result in a net total reduction of 400,072 MT CO_2e between initial operations and the year 2045. The emissions reductions would be a cumulative benefit and align with federal, statewide, and regional objectives to reduce GHG emissions, including the national climate commitment under the Paris Agreement pledging to reduce U.S. GHG emissions by 50 percent to 52 percent from 2005 levels by 2030 (World Resources Institute 2021); California's target of carbon neutrality by 2045 set by Assembly Bill 1279; ABAG/MTC and SJCOG RTP/SCS goals to reduce regional GHG emissions through coordinated development of transportation, housing, and land use planning; and GHG emission reduction goals set by local county and city General Plans and Climate Action Plans. Additionally, the Build Alternative would be consistent with development plans for the area to provide a passenger rail service as an alternative mode to passenger vehicle travel, thereby reducing VMT and associated GHG emissions.

As discussed in Section 3.11, Hydrology and Water Quality, elements of the Build Alternative would be in designated flood zones, and the design of those facilities would provide climate change resilience and adaptation in the Build Alternative's infrastructure. Based on a review of tools modeling future impacts due to sea level rise and associated potential flooding, the study area would not be affected by future sea level rise because it is outside the coastal zone (San Francisco Bay Conservation and Development Commission [BCDC] 2024). The Build Alternative would be designed to ensure no change to base flood elevations where project facilities would be constructed in 100-year flood zones, and necessary

approvals would be obtained from regulatory agencies to ensure proposed facilities would not alter flooding potential or increase the risk of downstream flooding. A range of other potential climate change events include increased temperatures, heat stress days, and water supplies. No element of the Build Alternative would exacerbate these issues. The Build Alternative would be designed with these considerations, including the selection of construction materials (pavement binder grades, landscaping, etc.) and station and facility building design elements (e.g., energy and water efficiency standards).

3.10 Hazardous Materials

This section describes known hazardous materials sites in the project area and potential impacts associated with disturbance of these contaminated sites as a result of the construction and operation of the Build Alternative. This analysis is based on detailed initial site assessments, which included database searches and field visits, and were completed in accordance with American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Standard E 1527-21), and the EPA's standard for All Appropriate Inquiries (40 CFR 312) (AECOM 2023a, 2023b).

3.10.1 Affected Environment

The initial site assessments and searches of the Environmental Data Resources, Inc. (EDR) database, the State Water Resources Control Board's online database GeoTracker, and the Department of Toxic Substances Control's online database EnviroStor identified a variety of sites within the project area. The following potential sources of contamination in the project area were identified:

- Historical uses associated with transportation and agriculture may have resulted in petroleum constituents from highway runoff, metals and polycyclic aromatic hydrocarbons from rail line activities, pesticides, and herbicides.
- Storage tanks and uses on six properties within the project area have the potential to contribute volatile organic compounds and/or chlorinated solvents in soil and groundwater.
- Various uses in the vicinity of the project area could contribute aerially deposited lead from highway corridors, soil contamination from railroad corridors, and hazardous building materials.

3.10.2 Environmental Consequences

The sites listed in Table 3.10-1 are those that could be disturbed during construction and maintenance activities, potentially resulting in exposure of hazardous materials from contaminated soils or groundwater. Key concerns are associated with the disturbance of soil and ballast within the former Southern Pacific Transcontinental Railroad alignment and in the Altamont Hills where former agricultural activities may have contaminated soils and groundwater.

As described in AMM HAZ-1 in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures), a construction risk management plan will be implemented prior to construction that would provide a framework for proper characterization, management, and disposal or discharge of contaminated soil, ballast, and groundwater that could be disturbed during construction and maintenance activities. Implementation of this plan would avoid short- and long-term adverse effects.

Table 3.10-1: Hazardous Materials Sites with Potential for Impacts

Facility Name / EDR Number / Facility Address	Contamination Type	Site Description	Potential for Impact
Herc Rentals, Inc. / V82-93 / 5237 Southfront Road, Livermore	Closed LUST: Diesel AST: Petroleum USTs: Gasoline/Diesel	The closed LUST cleanup was recorded in 1995. Any soil excavations or earth-moving activities during construction may volatize residual petroleum constituents that may still be present.	Potential disturbance or exposure of contaminated materials due to construction on a 0.4-acre portion of this 3.3-acre parcel related to the Southfront Road Station and realignment of Southfront Road.
BAY-CAL Equipment Inc. / T64-69 / 5605 Southfront Road, Livermore	USTs: Gasoline/Diesel	Potential spills or releases from the on-site UST may result in residual petroleum constituents that may volatize during earth-moving or soil excavations during construction activities.	Potential disturbance or exposure of contaminated materials due to construction on this parcel related to the Southfront Road Station.
Robert Thomas Livermore Museum and Historic Farm / CF481-482 / 3680 Las Colinas Road, Livermore	CORTESE, CA ENF, CA CERS	This facility is a ranch and appears to have possible agricultural fields. The potential for residual pesticides or herbicides in soil and groundwater may be present. Potential exposure to pesticides and herbicides during construction earth-moving activities and/or soil excavation may be present.	Potential disturbance or exposure of contaminated materials due to construction on a portion of this parcel related to the reconfiguration of I-580, the Las Colinas Road bridge, and frontage road.
Private Owner / I24-25 / 9989 Altamont Pass, Livermore	UST: Leaded Gasoline	Potential spills or releases from the on-site UST may result in residual petroleum constituents that may volatize during earth-moving or soil excavations during construction activities.	Limited potential for disturbance or exposure of contaminated materials; site is identified as a potential TCE for temporary construction staging, access, etc., that is not likely to disturb existing soil.
Vacant Property / E12-13 / 23577 Mountain House Parkway, Tracy	CA CPS-SLIC, CA CERS	The former agricultural fields on these parcels may have residual pesticides or herbicides present in soil and groundwater. Potential exposure to pesticides and herbicides during construction earth-moving activities and/or soil excavation may be present.	Potential disturbance or exposure of contaminated materials due to construction on a 54.5-acre portion of this 135-acre parcel related to the construction of the Mountain House Community Station.
FAA-Antennae Farm / A1 / 15178 West Schulte Road, Tracy	UST	One reported UST is located on the parcel, which may have spills or leaks of petroleum constituents into soil. No confirmation of any leaks have been identified. However, the potential for residual petroleum constituents near the UST may volatize during earth-moving activities or soil excavation during construction activities.	Potential disturbance or exposure of contaminated materials due to construction of the Tracy OMF/OSS on the entirety of the site.

Source: AECOM. 2023a, 2023b. Valley Link Project Phase 1 Initial Site Assessment Reports.

AST – Aboveground Storage Tank
CA CERS – California Environmental Reporting System
CA CPS-SLIC – California Cleanup Program Sites and/or Spills, Leaks, Investigations, and Clean-ups
CA ENF – California Enforcement
CORTESE – State Hazardous Waste and Substances Site
LUST – Leaking underground storage tank
UST – Underground Storage Tank

3.11 Hydrology and Water Quality

This section describes surface and groundwater resources and associated water quality in the project area and analyzes the potential effects of the Build Alternative on hydrology and water quality, stormwater runoff and urban pollutants, flooding, and groundwater resources. This section is based on background research, field visits in the project area, and maps and data for the region.

3.11.1 Affected Environment

3.11.1.1 Surface Waters

The project area is in the Alameda Creek and San Joaquin River watersheds, which encompass the land west and east of Altamont Pass Road, respectively. Primary surface waters in the watersheds include Chabot Canal, Pleasanton Canal, and Tassajara Creek in Dublin; Arroyo Las Positas, Arroyo Mocho, Cottonwood Creek, Cayetano Creek, and Altamont Creek in Livermore; and Mountain House Creek, Delta Mendota Canal, and California Aqueduct near Mountain House (see Figure A3.11-1 in Appendix A [Environmental Assessment Figures]). The western portion of the project area is in the San Francisco Bay Hydrologic Basin, and the eastern portion of the project area is in the San Joaquin Valley Hydrologic Basin. An overview of these basins in presented in Table 3.11-1.

Table 3.11-1. Overview of Hydrologic Basin Traits

Hydrologic Basin	Surface Water Beneficial Uses	Surface Water Pollutants and Established TMDLs	Groundwater Beneficial Uses	Groundwater Sources of Contamination and COCs
San Francisco Bay	For inland streams: municipal, domestic, agricultural, and industrial process supply; commercial and sport fishing; freshwater replenishment, groundwater recharge; rare and endangered species preservation; water contact and non-contact water recreation; wildlife, cold freshwater and warm freshwater habitat; and fish migration, and spawning. The Bay itself supports all of the above-listed beneficial uses plus industrial service supply and navigation.	Pesticides, heavy metals, dioxins, furans, and PCBs. TMDLs established for pesticide-related toxicity in urban creeks, as well as PCBs and mercury in San Francisco Bay.	Municipal and domestic supply, industrial supply, industrial process supply, agricultural supply, groundwater recharge, freshwater replenishment to surface waters.	Industrial and agricultural chemical spills, underground and aboveground tank and sump leaks, landfill leachate, septic tank failures, and chemical seepage via shallow drainage wells and abandoned wells. COCs include TDS, nitrate, boron, and organic compounds.
San Joaquin River	Municipal and domestic supply, agricultural supply, industrial supply, contact and non-contact recreation, warm and cold freshwater habitat, fish migration and spawning, and wildlife habitat.	Pesticides and heavy metals. TMDLs established for pesticides including diazinon and chlorpyrifos, metals including selenium and boron, salt, and dissolved oxygen.	Municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply.	High salt concentrations from evaporation and poor drainage, disposal of human and animal waste products and fertilizer, agricultural pesticides and herbicides, and industrial organic contaminants. COCs include TDS, nitrate, boron, chloride, and organic compounds.

Sources: San Francisco Bay Regional Water Quality Control Board 2017, 2018; Central Valley Regional Water Quality Control Board 2018a, 2018b; California Department of Water Resources 2003; State Water Resources Control Board 2017.
COC = constituent of concern; PCB = polychlorinated biphenyl; TDS = total dissolved solids; TMDL = total maximum daily load.

3.11.1.2 Flood Zones

Arroyo Mocho and Arroyo Las Positas have designated 100-year flood zones that intersect the western portion of the project area along I-580 (see Figure A3.11-1 in Appendix A [Environmental Assessment Figures]). Other small streams within the project area have narrower 100-year flood zones. A 100-year flood zone is an area that has a 1 percent chance of being covered in water during a flood event in any given year. The most notable 100-year flood zone concentration within the project area is adjacent to I-580 around the existing Dublin/Pleasanton BART Station; this area includes floodway areas for both Hewlett Canal and Chabot Canal.

The Dublin/Pleasanton BART Station is within the inundation boundary of the Del Valle Dam (see Figure A3.11-2 in Appendix A [Environmental Assessment Figures]). Existing bridge crossings along I-580 are over Arroyo Seco within the dam inundation boundary for Patterson Dam. A breach of Dyer Dam would inundate existing Altamont Pass Road.

3.11.1.3 Groundwater

The project area overlies the Livermore Valley and San Joaquin Valley-Tracy groundwater basins (Figure A3.11-3 in Appendix A [Environmental Assessment Figures]). Groundwater is used in these basins for municipal and domestic water supply, industrial process and service water supply, and agricultural water supply or irrigation (Zone 7 Water Agency 2016, California Department of Water Resources 2019).

Depth to groundwater in the project area varies. Unincorporated Alameda County does not have recorded groundwater depth data. However, recorded depths for Alameda County cities within the project area range from 10 feet near the Dublin/Pleasanton BART Station and in the Livermore area, to 27 feet near State Route 84. East of Altamont Pass, a well near the Delta-Mendota Canal has a historical groundwater level of 50 feet, and a well north of I-205 in Mountain House has historical groundwater depth of 10 feet.

3.11.2 Environmental Consequences

Construction activities could introduce pollutants into stormwater runoff and nearby surface waters from soil erosion, equipment maintenance, and potential spills of hazardous materials, which could degrade water quality. Activities that take place near streams or other water bodies, such as bridge construction, or in designated flood zones, such as the proposed Dublin/Pleasanton and Isabel Stations, have a high potential to discharge pollutants directly into the water. For other activities, construction during or after storm events would have a high potential to affect water quality due to stormwater runoff flowing through the work area and carrying pollutants off-site and into nearby surface waters. As noted in Section 3.8, Geology, Soils, and Paleontological Resources, implementation of a stormwater pollution prevention plan and compliance with the construction general permit for stormwater discharges would ensure minimal off-site impacts to water quality during construction and avoid impacts to area hydrologic basins. In addition, material staging would not be allowed in flood zones during the winter rainy season (November 1 through April 31) (see AMM HYD-3 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]).

Some ground-disturbing activities could expose groundwater and require dewatering of excavated areas. The types of ground disturbance activities include excavation and grading at various locations from a depth of less than 5 feet to a depth of 135 feet for structures.

The water would need to be pumped out of the area and may need to be treated to avoid discharging contaminated groundwater onto land. Any dewatering activities would be conducted in accordance with the Permit for Construction Dewatering Activity (Order R5-2013-0074 as modified by R5-2016-0079-01), a risk management plan prepared for construction, and applicable resource agency permit requirements, including treating the effluent prior to discharge, if necessary. Because dewatering activities would be of short duration and would only occur in limited areas, and the discharged water would eventually be returned to surface waters where it would percolate through to the aquifer, construction dewatering would have a negligible effect on groundwater resources and groundwater recharge. The Altamont MOW would require the use of a very small amount of groundwater—approximately 2,000 gallons per day—for operations. Applicable water rights and permits will be obtained to support the use.

Improvements associated with station platforms, parking lots, and three support facilities would increase the amount of impervious surface area due to new pavement and roofs, which can increase stormwater runoff and the potential for pollutants on the surfaces to enter nearby surface waters. Design and construction of stormwater

controls and treatment systems would be in accordance with applicable municipal separate stormwater system permit requirements (e.g., use of infiltration features, vegetated swales, retention basins, biofiltration, and minimizing impermeable surfaces to manage stormwater to maintain predevelopment runoff rates, volumes, and quality) to ensure that stormwater runoff is properly treated before being discharged off-site. Water quality impacts from stormwater control and treatment systems during operations would be negligible.

Drainage basins are proposed at the parking lots to collect surface runoff and allow it to settle before percolating into the soil and ultimately returning to the groundwater aquifer. Landscaping and buffers around the impervious surfaces would also help reduce the potential for pollutants to enter nearby surface waters. The design of these facilities would comply with applicable post-construction stormwater requirements identified in the construction general permit and local municipal stormwater permits (see AMM HYD-1 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]).

Portions of the alignment, the proposed Dublin/Pleasanton Station, and the proposed Isabel Station would be constructed in 100-year flood zones. The design of these facilities would ensure no change to base flood elevations, with bridges across streams being designed to pass 100-year flows (AMM HYD-2). As needed, approvals would be obtained from regulatory agencies to ensure the facilities do not alter flooding potential or increase the risk of downstream flooding.

The potential for seismic-induced flooding hazards such as tsunamis and seiches is low as the Build Alternative would be constructed in an area that is approximately 32 miles inland of the Pacific Ocean and approximately 16 miles inland from the San Francisco Bay. Waterways that could be subject to seiche include the Pleasanton Quarry ponds, the California Aqueduct, and the Delta-Mendota Canal. The Build Alternative is at a sufficient distance from the quarry ponds (a minimum of 0.5 mile south of I-580) that no pollutant release would occur from a seiche. Portions of the Build Alternative are within the dam failure inundation zone. However, catastrophic dam failure is considered a very low likelihood event with regular inspections and required maintenance of the dams under the National Dam Inspection Act of 1972 (Public Law 92-367).

3.12 Land Use and Property Acquisitions

This section describes land uses and ownership in the project area and analyzes changes to those uses and corresponding impacts from property acquisitions associated with the Build Alternative. Information in this section is based on applicable regional and local land use plans, property ownership data, maps of the area, and the Valley Link preliminary 15% design plans.

3.12.1 Affected Environment

The project area is in portions of Dublin, Pleasanton, Livermore, Mountain House, Tracy, and unincorporated areas of San Joaquin County. Most of the project area is within existing transportation corridors owned by Caltrans or Alameda County. Most of the areas surrounding the project area contain urban, suburban, and rural developments with private ownership dominating. Existing land uses consist of a mix of commercial, educational facilities, industrial, mixed use, office, open space, parks, public facilities, residential (low- to high-density), transportation, and large swaths of farmland (see Figures A3.12-1 and A3.12-2 in Appendix A [Environmental Assessment Figures]). The western portion of the project area along I-580 is a more urban setting, heavily made up of commercial businesses, offices, and pockets of residential neighborhoods. The eastern portion of the project area is primarily rural, with undeveloped land and agricultural uses, and a mix of industrial, intermittent residential and commercial uses at the eastern-most terminus in Mountain House.

3.12.2 Environmental Consequences

Because land use compatibility and impacts are a function of other factors, this section is also closely related to other resource topics (see Sections 3.2, Aesthetics, 3.3, Agricultural Lands; 3.4, Air Quality; 3.13, Noise and Vibration; 3.15, Transportation and Traffic; and 3.16, Utilities). Analysis in those sections supplements this land use evaluation, and mitigation measures identified in those sections would also aid in reducing land use conflicts or incompatibilities, including those related to temporary impacts during construction.

The majority of the Build Alternative would be constructed within a combination of the existing I-580 freeway median, the existing transportation corridor

owned by Alameda County, and the existing Caltrans right-of-way adjacent to westbound I-580. Project elements—including stations, support facilities, and parking lots—would largely be compatible with the surrounding existing and planned uses. Construction and operation of the Build Alternative would serve existing and planned land uses in the vicinity of the project area, and would not conflict with or preclude future development of the area.

During construction activities, access to and use of portions of surrounding land uses may temporarily be impeded or altered. These impacts would be temporary and would vary depending on the use of the parcel and duration/extent of the TCE. Examples of such impacts could include those related to closures and access changes to roadways, lanes, and parking; and temporary impacts to portions of agricultural properties, potentially temporarily impacting the agricultural use of portions of those parcels. TCEs would be needed for construction access and staging, but would not result in permanent or substantial changes to the existing land uses on the majority of the affected parcels.

The Build Alternative would require permanent right-of-way acquisitions and conversion of various land uses to transportation uses throughout the corridor to construct the proposed rail alignment, stations, support facilities, and other proposed elements. Existing land uses that may be permanently converted to transportation use include residential, agriculture, commercial, industrial, and open space.

Based on the current preliminary design for the Build Alternative, 149 parcels could be subject to TCEs, permanent easements, partial and full acquisitions, displacements, or highway-based land transfers. A detailed list of these parcels and their potential impacts is provided in Appendix B (Proposed Right-of-Way). Most of the affected parcels would require a combination of TCEs and partial land acquisitions that would not change the current use or ownership of the rest of the property. Partial acquisitions are estimated to total approximately 120 acres from a mix of private and public ownership spanning residential, commercial, industrial, agricultural, institutional, and vacant uses. The Build Alternative could result in 13 potential full acquisitions—totaling approximately 310 acres from a mix of private and public agricultural and private industrial uses—and 5 possible relocations (4 businesses and 1 residence). Further refinement of the design could minimize and/or avoid the impacts to any given parcel.

Acquisitions and relocations would be conducted in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended). In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, relocation advisory assistance would be provided to any person, business, farm, or non-profit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Compensation for property to be acquired would be based on fair market value and would be part of the right-of-way acquisition phase.

3.13 Noise and Vibration

This section describes the existing noise environment and sensitive receivers in the noise and vibration study area and discusses the anticipated increases in noise and vibration during construction and operational activities associated with the Build Alternative. For the purposes of the EA analysis, the noise and vibration study area encompasses noise-sensitive land uses up to 800 feet from the project area. Information in this section is based on baseline noise measurements across the study area and modeling traffic and transit noise.

The counties of Alameda and San Joaquin and cities of Dublin and Livermore each establish noise level exposure limits in their respective General Plan documents that are generally targeted at the siting of new land uses (e.g., residential developments), except for the County of San Joaquin, which applies the transportation noise exposure limit of 65 A-weighted decibels (dBA), L_{dn} (day-night average sound level) to both future and existing uses.

The transit noise analysis followed FTA's Transit Noise and Vibration Impact Assessment Manual (FTA 2018) and is discussed in more detail in the FTA Noise and Vibration Technical Report (AECOM 2024a) (Appendix G [Noise and Vibration]). The traffic noise analysis is based on Federal Highway Administration (FHWA) guidance and is described in the Noise Study Report (AECOM 2024b) and Noise Abatement Decision Report (AECOM 2024c), available at www.getvalleylinked.com/document-library.

3.13.1 Affected Environment

Noise is a loud, unpleasant, unexpected, or undesired sound that interferes with or disrupts normal ongoing noise-sensitive activities. It typically considers the frequencies of sound most sensitive to the human ear. Noise levels considered annoying or disruptive vary across different settings. According to the FTA Noise and Vibration Impact Assessment Manual (FTA 2018), noise levels are typically measured in decibels (dB), with various thresholds indicating potential impacts on individuals and communities. Noise levels around 50 dB are generally quiet and unlikely to disrupt normal patterns. As the noise level increases to around 60 dB, it may become noticeable but typically isn't considered disruptive. However, at 70 dB, which is equivalent to heavy traffic or a vacuum cleaner, noise can begin to interfere with activities and be perceived as annoying. At 80 dB and above, comparable to busy streets or concerts, noise becomes increasingly disruptive, potentially causing discomfort, stress, and even hearing damage with prolonged exposure. These guidelines help assess the potential impacts of transportation projects on noise levels in surrounding areas, aiding in decision-making and mitigation efforts.

Ground-borne vibration can be caused both by construction activities and operations related to a rail corridor. Vibration can be a cause for concern due to the potential for cosmetic damage to adjacent structures and for the shaking of neighboring residential buildings, which may generate annoyance.

3.13.1.1 Noise- and Vibration-Sensitive Receivers

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound or vibration could adversely affect the use of the land. These land uses can include residences, hotels, schools, places of worship, and medical offices. Modeled noise receivers utilized for the noise analysis discussed herein are shown on Figures G3.13-1 through G3.13-16 in Appendix G (Noise and Vibration).

Noise- and vibration-sensitive uses in the City of Dublin, are residential land uses along Iron Horse Parkway. In Pleasanton, residential areas are present near Pimlico Drive, alongside a golf course at Las Positas Golf Course. Livermore features diverse land use: an office space at University of Phoenix on Constitution Drive, a park at Saddleback Circle and Sutter Street, a Kaiser Permanente hospital and medical offices, and several residential zones including along Shoemaker Drive and Scenic Avenue, and a hotel and the swimming pool at Best Western Plus Vineyard Inn. Additionally, commercial activity occurs near Altamont Pass Road. Tracy exhibits residential areas around Altamont Pass Road, North Midway Road, east of Central Parkway, at Mountain House Parkway, and Los Ranchos Drive.

3.13.1.2 Noise Setting

Existing noise sources in the study area include roadway traffic (particularly in the western and eastern portions along the I-580 corridor), commuter and freight rail operations (particularly in areas with existing adjacent railway alignments, such as the Altamont Pass), and general urban and natural noises (e.g., speech, music from cars, landscaping equipment, birdcalls). The only sources of existing vibration in the study area are commuter and freight rail operations.

Existing daytime noise levels at baseline measurement locations ranged from 52 to 72 dBA L_{eq} (equivalent continuous sound level) and nighttime noise levels ranged from 54 to 68 dBA L_{eq}. Proximity to adjacent highways, arterial roads, and existing rail alignments was a major contributing factor determining this range. Existing noise levels in the study area range from 60 to 75 dBA L_{dn} over a 24-hour period. These noise levels fall within a typical range expected in urban areas with a variety of residential, commercial, and industrial uses hosting common urban noise sources such as vehicular traffic and mechanical (e.g., HVAC [heating, ventilation, and air conditioning]) systems. All counties and cities in the study area generally discourage the development of residential uses in existing noise environments of greater than 70 dBA L_{dn}.

The lowest levels are in Livermore on the north side of I-580 near a residential development. Various sources contribute to the overall noise environment of the study area. Surface transportation generates noticeable vehicular traffic noise, especially near major thoroughfares. Railway noise from nearby rail corridors can also be a notable source of noise pollution. Additionally, residential activities such as landscaping and mowing can contribute to localized noise. Parking lots may produce noise from car engines and doors slamming.

In commercial areas within these regions, various activities contribute to the noise environment. HVAC systems, commonly found in commercial buildings, can emit noise from air handling units, compressors, and fans.

Additionally, parking lots in these areas generate noise from vehicle movements, including engines running, tires squealing, and doors slamming. Delivery trucks and service vehicles accessing commercial establishments also contribute to the noise levels. Furthermore, outdoor equipment such as generators, trash compactors, and loading docks can generate additional noise during operation.

Overall, the combination of these commercial activities adds to the ambient noise levels within the study area. Furthermore, recreational activities in parks can generate noise from gatherings, events, and amplified music. Natural elements such as wind rustling through trees and birds chirping also add to the ambient noise levels in these regions. The highest measured existing sound levels are in the City of Pleasanton close to I-580.

3.13.2 Environmental Consequences

The Build Alternative would generate temporary noise and vibration during construction activities, with some activities taking place near sensitive receivers, and could contribute to increased noise and vibration due to train operations and associated activities over the long term (see Table G-1 and Figures G3.13-1 through G3.13-16 in Appendix G [Noise and Vibration]). Construction noise was estimated based on typical equipment and activities, and operational noise was estimated based on three-dimensional noise prediction models (Appendix G [Noise and Vibration]).

3.13.2.1 Construction Noise and Vibration

Construction activities that generate noise above 80 dBA could disrupt daily activities of people in nearby sensitive receiver locations. Construction activity and equipment involved in site work, rail work, and structures encompass a wide array of machinery and vehicles. Site work operations include the use of graders, water trucks, dozers, compactors, and dump trucks for earthmoving and site preparation. Rail line work involves dozers, graders, water trucks, tampers, aligners, swingers, welders, flat-bed trucks, pickup trucks, and cranes to support railway infrastructure development. For project structures, equipment such as impact pile drivers, generators, mobile cranes, water trucks, flat-bed trucks, pickup trucks, concrete mixers, concrete pumps, wheel loaders, and welders may be used.

Operation of this equipment would generate average hourly noise levels between 69 and 83 dBA at a reference distance of 50 feet, and impact pile drivers could generate up to 94 dBA at 50 feet. Construction noise impacts could be noticeable up to 135 feet from site work, 150 feet from rail line construction, and 270 feet from structures work.

Most construction activities would be scheduled during daytime hours, when high noise levels are acceptable, but nighttime construction may be allowed and would be a concern near residential uses. Several noise-sensitive receivers exist within the distances stated above and could be exposed to substantial temporary increases in ambient noise levels. Exposure to temporary increases in ambient noise levels can result in annoyance, disruption of focus, disruption of sleep, or heightened levels of stress. To alleviate potential noise concerns or any non-compliance with county or city municipal code limits for time-of-day, day-of-week, and maximum construction noise level limits, a construction noise reduction plan will be developed (see AMM NV-1 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]).

Construction activities would cause intermittent, localized vibrations and, in rare circumstances, could potentially exceed the thresholds for potential cosmetic building damage depending on final equipment selection, distance to structures, and susceptibility of the structure to experience cosmetic damage (e.g., plaster on historic structures). Specific activities that would be of concern are pile driving, such as for bridge pier or abutment installation, and vibratory compacting or rolling during grading and/or paving activities. To alleviate potential vibration concerns, a construction vibration reduction plan would be developed to identify equipment-specific operational distance restrictions as well as a vibration monitoring program to be enacted when activities must occur within restricted distances (see AMM NV-2 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures.

3.13.2.2 Operational Noise and Vibration

The Build Alternative would produce operational noise from supporting facilities, the proposed rail line, and changes in existing traffic noise resulting from the realignment of existing roadways. The assessment of railroad operation noise considers noise from the type of train, track, and stationary noise sources at proposed station and operations and maintenance facilities. The overall assessment of noise considered the proposed rail line and the realignment of existing roadways, as well as

future noise levels from ongoing and planned operations in the study area.

Based on noise modeling for the Build Alternative, operation of proposed elements within the Altamont Section and at the operations and maintenance facilities, including the Altamont MOW, Mountain House LF, and Tracy OMF/OSS, would not result in an increase in noise levels to sensitive receivers. No operational noise impacts would occur at these locations.

The Build Alternative would not result in an increase in the capacity of any roadways. The realignment of highway lanes and ramps either closer to or farther from existing noise-sensitive receivers would alter existing noise levels depending on the highway shift.

Noise levels would increase by up to 3.8 dBA with the new transit system in service and traffic noise changes due to the highway realignment in the Tri-Valley area, with the greatest increase at the exterior use of a hotel in Livermore (at receiver point 08-06 on Figure G3.13-7 in Appendix G [Noise and Vibration]). The Build Alternative would result in a moderate increase (i.e., changes in noise levels that may result in annoyance) at 31 noise-sensitive locations, all of which are in the Tri-Valley area, due to the shifting of automotive traffic lanes closer to receivers. Severe increases (i.e., changes in noise levels that may result in a high level of annoyance) would not occur at any location along the proposed new rail line. Although changes in noise levels may be noticeable, they are not expected to disrupt daily activities, pose health risks, or severely affect the quality of life in the study area. Additionally, the moderate change in noise levels along some portions of the Tri-Valley area would be caused solely by the roadway realignment, which is an existing and familiar noise source.

Although no severe transportation noise impacts would result from the Build Alternative, a 14- to 22-foot-high noise barrier is recommended along westbound I-580 east of the Isabel Avenue off-ramp to reduce traffic-related noise associated with the operation of the shifted highway. This barrier is being recommended for construction based on vehicle traffic–specific noise impact thresholds stipulated by Caltrans and FHWA. As required by the Caltrans noise policy, final approval to construct this noise barrier would be dependent on the majority approval by the benefitted receivers (Caltrans 2020). This approval vote by receivers is required by law and would be coordinated by Caltrans during final design.

Operational vibration would be generated by train car wheels rolling on the rails, but no specific concerns were identified based on the greater than 50-foot distance between the proposed rail alignment and existing structures (sensitive receivers). No sensitive receivers would be exposed to perceptible vibrations, and no buildings would be exposed to possible structural effects.

3.14 Transportation and Traffic

This section describes current transportation and traffic conditions in the project area and evaluates the potential impacts to transit facilities and services, traffic and circulation, parking, and bicycle and pedestrian facilities as a result of the Build Alternative. Information in this section is based on background research, transportation mapping, field visits, and modeling (see Appendix H [Traffic Technical Memorandum]), and aligns with applicable requirements laid out in 23 CFR 771, 23 CFR 652, and the Americans with Disabilities Act (ADA).

3.14.1 Affected Environment

The project area contains two interstate freeways (I-205 and I-580) and one state route (State Route 84), as well as local roads, transit services, parking areas associated with the transit services, and various pedestrian and bicycle paths and trails. An overview of these existing facilities and services is presented below.

3.14.1.1 Vehicular Traffic

I-580 serves as an important east-west connection that runs the length of Alameda County from the Central Valley to the Bay Bridge. It is an important travel and freight corridor, carrying over 200,000 vehicles per day and approximately 20,000 truck trips per day. The Altamont Pass, which connects Almeda County to the Central Valley, experiences the highest level of truck activity of any roadway in the Bay Area (Alameda County Transportation Commission 2024). Within the project area, both the eastern and western segments of I-580 experience extensive congestion during morning and evening peak hours (Alameda County Transportation Commission 2020).

I-580 intersects with I-205 east of Altamont Pass and traverses due east and north of Tracy before intersecting with I-5. The corridor is a major commuter route for Central Valley residents connecting to Tri-Valley and Bay

Area employment opportunities. Daily traffic volume on I-205 is approximately 170,000 vehicles. Under existing conditions, the average travel time during the morning peak hour from I-5 to I-580 is approximately 40 minutes and can sometimes exceed 1 hour due (SJCOG 2020).

Traffic delays were estimated at key intersections near existing and proposed transit stations and park-and-ride lots, during morning and evening peak hour traffic (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.). As shown in Table 3.14-1, current traffic conditions during peak hour travel are stable at most intersections with 5 to 14 seconds of delay per vehicle and only two intersections experiencing minor travel delays during peak hours (19 to 33 seconds per vehicle).

Table 3.14-1: Existing (2023) Traffic Delays at Key Intersections within the Project Area

Intersection [a]	Control	AM Peak Hour Delay [b]	PM Peak Hour Delay [b]
Isabel Avenue and Airway Boulevard	Signal	29.3	33.4
Southfront Road and Preston Avenue	Stop	9.7	9.4
Mountain House Parkway and Von Sosten Road	Signal	14.0	10.3
Mountain House Parkway and I-205 Westbound Ramps	Signal	32.8	19.6
Mountain House Parkway and I-205 Eastbound Ramps	Signal	5.0	7.0

Source: WSP. 2024. Valley Link Rail Project Environmental Assessment Support – Traffic Technical Memorandum (located in Appendix H [Traffic Technical Memorandum])

[a]The intersection analysis focused on key existing intersections most proximal to the Build Alternative stations.

[b]Delay is measured in seconds/vehicle.

3.14.1.2 Transit Services

The BART system provides rail-based transit service in the western portion of the project area, to the existing Dublin/Pleasanton BART Station, which is the eastern terminus of BART's Blue (Dublin/Pleasanton) line. The Blue line operates at 15-minute headways during the weekday AM peak, midday, and PM peak periods and at 20-minute headways during weekday evenings and on weekends. Existing park-and-ride facilities for BART use are on the north side of I-580 on Altamirano Drive, south side of I-580 on Owens Drive, south of I-580 on East Airway Boulevard, and on Southfront Road, adjacent to I-580. Surface parking and a seven-level parking structure accommodate existing service needs associated with BART use.

The ACE is also a rail-based transit service that operates south of the Tri-Valley area, primarily serving regional commute trips from San Joaquin County into the San Francisco Bay Area, as well as from the Tri-Valley area to the East Bay and South Bay. ACE has stations at Vasco Road (beneath Vasco Road between Brisa Street and Patterson Pass Road), Livermore (Livermore Transit Center, near the First Street/Railroad Avenue intersection in downtown Livermore), and Pleasanton (near the Pleasanton Avenue/Bernal Avenue intersection in downtown Pleasanton). ACE operates during weekday peak periods only, with four westbound trips in the morning and four eastbound trips in the afternoon/evening. In addition, ACE provides morning and afternoon shuttle service between the Dublin/Pleasanton BART Station and the Pleasanton ACE station (Wheels Route 54).

Bus service within the Tri-Valley area is provided by Wheels, operated by the Livermore Amador Valley Transit Authority. Wheels service includes six routes (10R, 14, 15, 20X, 30R, and 54) that connect to the existing BART and ACE rail stations.

The San Joaquin Regional Transit District (RTD) provides weekday bus service, east of Altamont Pass, to the cities of Stockton, Lathrop, Tracy, and surrounding communities. In addition, Route 150 provides service from Stockton's Downton Transit Center to the Dublin/Pleasanton BART Station. RTD's County Hopper provides intercity connections between Stockton, Tracy, Lodi, Manteca, Ripon, Lathrop, and Escalon but does not currently serve Mountain House. The District offers two

on-demand rideshare transit options throughout San Joaquin County. The Van Go on-demand rideshare option is available for single riders or groups up to three. The Dial-a-Ride service is available by appointment to those who qualify for ADA accommodations. Both options are available 7 days a week.

3.14.1.3 Bicycle and Pedestrian Facilities

The Iron Horse Regional Trail, a Class I bikeway, passes directly underneath I-580, adjacent to the Dublin/Pleasanton BART Station. Connecting Class II bikeways (on-street bicycle lanes) are provided along Dublin Boulevard north of the station and along Owens Drive and Willow Road south of the station. Pedestrian access to the Dublin/Pleasanton BART Station is provided via the Iron Horse Regional Trail and the surrounding street network, including DeMarcus Boulevard, Hamlet Lane, and Iron Horse Parkway north of the station, and Owens Drive and Willow Road south of the station. Within the project area, the Iron Horse Trail is owned and managed by BART as a transportation facility. Sidewalks and crosswalks provide clearly marked paths of travel along these streets, as well as through and around the BART surface parking lots north and south of the station. Bicycle lockers are available at the west end of the parking lot.

Class II bikeways exist along Isabel Avenue as well as connecting segments of Portola Avenue north of Airway Boulevard (west of Isabel Avenue). There are no bicycle facilities along East Airway Boulevard; however, shoulders are on both sides of the road. Marked crosswalks are at Isabel Avenue, Rutan Drive, and Portola Avenue.

Sidewalks are present along East Airway Parkway, but there are no sidewalks nor bicycle facilities along Southfront Road, Altamont Pass Road, Mountain House Parkway, or West Schulte Road.

3.14.2 Environmental Consequences

3.14.2.1 No Build Alternative

No Build Alternative traffic delays are listed in Table 3.14-2. Anticipated traffic conditions during peak hour travel would be stable at most intersections with 3 to 17 seconds of delay per vehicle and only two intersections experiencing minor travel delays during peak hours (36 to 39 seconds per vehicle).

Table 3.14-2: Opening Year (2030) No Build Alternative Traffic Delays at Key Intersections within the Project Area

Intersection [a]	Control	AM Peak Hour Delay [b]	PM Peak Hour Delay [b]
Isabel Avenue and Airway Boulevard	Signal	36.0	39.1
Southfront Road and Preston Avenue	Stop	10.4	10.9
Mountain House Parkway and Von Sosten Road	Signal	16.0	10.8
Mountain House Parkway and I-205 Westbound Ramps	Signal	17.9	12.9
Mountain House Parkway and I-205 Eastbound Ramps	Signal	3.0	7.2

Source: WSP. 2024. Valley Link Rail Project Environmental Assessment Support – Traffic Technical Memorandum (located in Appendix H [Traffic Technical Memorandum])

[a]The intersection analysis focused on key existing intersections most proximal to the Build Alternative stations.

[b]Delay is measured in seconds/vehicle.

3.14.2.2 Build Alternative

Vehicular Traffic and Station Access

Overall mobility in the region would improve with the Build Alternative compared to the No Build Alternative due to the addition of a new transit service option. While the Build Alternative would reduce weekday VMT on I-580 by an estimated 480,000, traffic conditions would likely remain at their current level due to the anticipated latent demand and growth in and surrounding the project area. The Build Alternative would not result in notable changes to vehicular

traffic near proposed station accesses compared to the No Build Alternative except at the proposed Mountain House Community Station where a new signalized intersection with turn lanes along Mountain House Parkway is proposed to support traffic circulation around the station (Table 3.14-3). To avoid an at-grade crossing of Mountain House Parkway, the proposed rail line would be constructed under the roadway.

Furthermore, the Build Alternative would have beneficial impacts to relieving Dublin/Pleasanton BART Station parking demand and access traffic because BART patrons currently parking at the Dublin/Pleasanton BART Station would instead park at one of the Valley Link stations rather than driving to and parking at the Dublin/Pleasanton BART Station.

Construction activities could result in temporary disruption of the roadway network due to construction detours, traffic control measures, and temporary road closures. A Transportation Management Plan (TMP) (AMM TRA-1) will be developed and implemented in coordination with the California Highway Patrol, BART, Caltrans, local transit providers, and public works and transportation departments of local jurisdictions to address the construction-related impacts on transit, roadway, bicycle, and pedestrian facilities. The TMP will include measures to limit street closures, provide advance notice of detours, provide safety measures, implement traffic control measures, and limit sidewalk closures.

Table 3.14-3: Opening Year (2030) Build Alternative Traffic Delays at Key Intersections within the Project Area

Intersection [a]	Control	AM Peak Hour Delay [b]	PM Peak Hour Delay [b]
Isabel Avenue and Airway Boulevard	Signal	33.6	40.2
Southfront Road and Preston Avenue	Stop	10.8	11.5
Mountain House Parkway and Von Sosten Road	Signal	16.0	11.0
Mountain House Parkway and Station Entrance	Signal	28.5	11.8
Mountain House Parkway and I-205 Westbound Ramps	Signal	17.8	10.5
Mountain House Parkway and I-205 Eastbound Ramps	Signal	3.0	7.0

Source: WSP. 2024. Valley Link Rail Project Environmental Assessment Support – Traffic Technical Memorandum (located in Appendix H [Traffic Technical Memorandum])

[a]The intersection analysis focused on key existing intersections most proximal to the Build Alternative stations.

[b]Delay is measured in seconds/vehicle.

Transit Services

Operation of the Build Alternative would expand the reach and connectivity of the local and regional public transit network, allowing passengers to transfer directly to BART and improving rail access to the San Francisco Bay Area. The Build Alternative would serve up to approximately 15,400 boardings on an average weekday (4 million annually) in 2028 (opening year) and approximately 30,350 boardings (7.9 million annually) in 2040 (AECOM 2023).

The Authority has coordinated extensively with BART during the preliminary design and planning of the Build Alternative. At the Dublin/Pleasanton BART Station, improvements or changes to existing BART Station access would be designed according to BART Facilities Standards (BART 2022) and other applicable standards. Based on ridership forecasts, BART has determined that no additional BART train capacity is needed to accommodate added ridership due to the Build Alternative in 2028.

Bus bays at each proposed station would provide local transit access and further improve connectivity with local transit services, including at the Tri-Valley Hub, a transit hub located at the Dublin/Pleasanton BART Station offering connections to intercity and local buses and the proposed transit services.

The proposed parking at each station has been designed to meet or exceed the anticipated demands for the station access. At the Dublin/Pleasanton Station, the existing parking associated with the Dublin/Pleasanton BART Station would be adequate to support both stations. It is anticipated that potential Valley Link passengers who park at the Dublin/Pleasanton BART Station with destinations west of the station would be offset by BART patrons currently parking at the station that would instead park at one of the Valley Link stations farther east instead of driving to and parking at the Dublin/Pleasanton BART Station.

Access to the existing Dublin/Pleasanton BART Station and existing bus services would be maintained during construction, and service delays are not anticipated. In addition, AMMs TRA-1, TRA-2, and TRA-3 will be implemented to avoid and minimize potential disruptions to existing transit service, BART service, and freight service during construction of the Build Alternative.

Bicycle and Pedestrian Facilities

The Build Alternative would include improvements to roadway segments and intersections adjacent to proposed stations as needed to provide adequate multi-modal access, including crosswalks, pedestrian beacons, and sidewalks. In addition, the Build Alternative would not impact the limited existing bicycle and pedestrian facilities in the project area since roadway improvements (other than the realignment of Southfront Road) would be limited to new driveways. The realignment of Southfront Road would include new sidewalks where none currently exist.

Temporary construction-related closures may affect existing bicycle and pedestrian facilities, due to detours and road closures. However, as previously discussed, AMMs TRA-1 and TRA-2 will be implemented to avoid and minimize potential disruptions to existing bicycle and pedestrian facilities.

3.15 Utilities

The analysis area for utilities is the project area. Utilities were identified within the project area from available records and preliminary coordination with utility companies.

3.15.1 Affected Environment

To date, utilities identified within or crossing the project area include communications, fiber, electric, water, storm, sewer, gas, and oil transmission. Utility owners include Alameda County Flood Control, AT&T, BART, Caltrans, California Department of Water Resources, Cal Water Services, Century Link, City of Livermore, Comcast, Crimson, Dublin-San Ramon Services District, Kinder-Morgan, Mountain House, PG&E, Phillips 66, Sprint, Transmission Agency of Northern California (TANC), Verizon, Western Area Power Administration (WAPA), and Zone 7.

3.15.2 Environmental Consequences

Table 3.15-1 summarizes potentially impacted utilities within the project area. When construction of the Build Alternative would conflict with the utilities, protecting-in-place would be considered where possible as it would be less disruptive to streets and utility services. Where protection in place is not feasible, utility relocations could occur to accommodate the Build Alternative, including roadway improvements or realignments, and shifting of I-580 to accommodate the median widening. The Authority will coordinate with utility providers during final design and construction stages to confirm specific locations of utilities, as well as potential levels of impact, and update this information accordingly as more details are gathered. Utility relocations will be coordinated with the utility owner, and designed and constructed in accordance with applicable provisions set forth by uniform codes, city ordinances, and public works standards.

Table 3.15-1: Summary of Potential Utility Impacts

Owner	Utility Type	Impact Type	Project Element Potentially Conflicting with Existing Utility
AT&T	Communications (Overhead, Overhead Fiber, Telephone), Electric	Protect In Place, Relocate	I-580 Corridor and Surrounding Improvements
Cal Water Services	Water	Protect In Place	
Century Link	Communications,	Protect In Place	
City of Livermore	Sanitary Sewer, Water, Reclaimed Water	Protect In Place, Relocate	
Comcast	Communications, Fiber, Overhead Cable	Protect In Place, Relocate	
Dublin-San Ramon Services District	Sanitary Sewer, Water	Protect In Place, Relocate	
PG&E	Electric (Overhead, Underground), Gas	Protect In Place, Relocate	
Sprint	Communications (Fiberoptic)	Relocate	
Verizon	Communications	Protect In Place	
Zone 7	Water	Protect In Place, Relocate	
BART	Misc. Station Utilities	Protect In Place	Dublin/Pleasanton Station
Dublin-San Ramon Services District	Water, Sanitary Sewer	Protect In Place	
Kinder Morgan	10 inch Gas	Protect In Place	
MCI/Verizon	Communications	Protect In Place	
PG&E	Electric	Protect In Place	
Verizon	Communications	Protect In Place	
Zone 7	Water	Protect In Place	
City of Livermore	Sanitary Sewer	Protect in Place	Isabel Station and Surrounding Improvements
PG&E	Electric (Overhead)	Relocate	
Zone 7	Water	Protect In Place	
City of Livermore	Water	Protect In Place	Southfront Road Station and Surrounding Improvements
PG&E	Electric Overhead	Protect In Place	
AT&T	Communication (Overhead, Fiberoptic Underground)	Relocate	Rail Line - Altamont Pass Area
California Department of Water Resources Water	Water, Communications (Underground)	Avoid through Final Design	
Caltrans	Storm Drain	Relocate	
Crimson	Transmission (Fuel Underground)	Confirm through Final Design	
Lumen/CenturyLink	Communication (Fiberoptic Underground)	Relocate	

Owner	Utility Type	Impact Type	Project Element Potentially Conflicting with Existing Utility
PG&E	Electrical (Overhead, Underground), Transmission (Natural Gas Underground)	Relocate, Confirm through Final Design	
Phillips 66	Transmission (Fuel Underground)	Confirm through Final Design	
Sprint	Communication (Fiberoption Underground)	Relocate	
TANC	Transmission (Electric Overhead)	Confirm through Final Design	
WAPA	Electrical Overhead	Relocate	

Note: Impacts are a preliminary estimate based on 15% design; as design progresses, presence of each utility will be confirmed, impacts avoided or minimized based on more detailed design, and potential impacts and relocation or protection measures coordinated with respective utility owners.

3.16 Indirect and Cumulative Effects

This section considers two types of impacts—indirect and cumulative—that are not directly related to, but could be influenced by, the Build Alternative.

Indirect impacts are reasonably foreseeable impacts that could occur in the future or at a distance from a project (40 CFR Section 1508.8). Indirect impacts include induced growth and related environmental impacts, such as changes to land use patterns, population density or growth rates, and related impacts on air quality, water, and other natural systems.

Cumulative impacts are the result of the combined impacts of past, current, and future projects within a project's geographic area (40 CFR Section 1508.7).

The analysis for both these topics included the review of environmental resource analyses and potential impacts identified throughout Chapter 3; see Sections 3.2 through 3.15 for additional resource-specific information.

3.16.1 Indirect Effects

The study area for this analysis was a 0.5-mile radius around each proposed station. This approach is supported by the Transportation Research Board's *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*, which states that "development effects are most often found up to 0.5 mile around a transit station" (Transportation Research Board 2002). The indirect effects (such as induced development) from the Build Alternative are most likely to occur in the areas around the stations because the improved transit service would enhance access to these areas.

3.16.1.1 Built Environment

As the Build Alternative would make commuting to the Tri-Valley region and the San Francisco Bay Area quicker and more reliable, it is anticipated that the population of areas surrounding the stations would increase due to enhanced opportunities for walkable, mixed-use environments, including residential areas. Long-term growth of this nature could require additional services in the region, including schools, utilities, etc. In addition, diversification of the housing types within the station areas could boost infill and redevelopment of land that is currently vacant or not fully utilized. Impacts to cultural resources and increased conversion of agricultural lands to other uses could also result from the potential increase in future development.

The anticipated increase in population of areas surrounding the stations related to the Build Alternative could also have an indirect impact on the existing roadway network. The areas of indirect impact on roadways and traffic could include additional localized vehicle traffic volumes from the anticipated new development in the region; however, a decrease in auto trips on the surrounding roadway network as people switch from auto to transit would be anticipated.

The Build Alternative is consistent with existing local and regional plans and development. Regulatory and

permitting approvals for future projects would ensure implementation of appropriate AMMs to alleviate impacts, such as those identified for the Build Alternative.

3.16.1.2 Natural Environment

The Build Alternative could lead to long-term increased development around station areas resulting in indirect impacts to biological resources, such as wildlife habitat, plant species, threatened or endangered species, and sensitive habitats, due to further clearing for other construction projects. Potential future indirect impacts to wetlands, floodplains, and water quality due to increased station area development could result in diminished water quality due to increased pollutant loading from runoff. Future development activities would be required to meet applicable regulations and permit requirements, ensuring implementation of appropriate AMMs, such as those identified for the Build Alternative.

3.16.2 Cumulative Effects

The horizon year for assessing cumulative impacts is 2040, which represents the regional transportation and land use planning horizon currently in effect for the region as well as the horizon year the Build Alternative is anticipated to be in full operational service.

The approach to the cumulative impacts analysis follows the guidance provided in the Council on Environmental Quality's (CEQ) *Considering Cumulative Effects Under the National Environmental Policy Act* (CEQ 1997) and varies slightly by discipline. Analyses whose cumulative impacts would accrue on a regional basis, such as regional traffic and air quality, are based on applicable planning documents designed to evaluate regional and area-wide conditions and rely on regional projections prepared and adopted by Alameda County and San Joaquin County. For those disciplines where cumulative impacts are more localized (e.g., visual and aesthetic impacts), the analysis considers specific development projects that may also have localized impacts, at or adjacent to the Build Alternative, and that may contribute to cumulative impacts. If the Build Alternative would not result in a direct or indirect impact on a resource, it would not contribute to cumulative impacts on that resource and thus is not carried forward in the analysis.

For the purposes of this analysis, the potential cumulative effects of the Build Alternative are based upon a list of projects identified by Alameda County, San Joaquin County, City of Dublin, City of Pleasanton, City of Livermore, City of Tracy, various transportation agencies, and consideration of buildout of the General Plans or other criteria, which is dependent upon the specific impact being analyzed. To accomplish the evaluation, past, current, and probable future projects with the potential to produce related or cumulative impacts were identified and are presented in both table and map format in Appendix I (Related Projects).

Table 3.16-1 summarizes the potential cumulative effects associated with the Build Alternative and the other past, present, and reasonably foreseeable future projects.

Table 3.16-1: Cumulative Effects Summary

Resource	Cumulative Effects
Aesthetics	Visual changes resulting from implementation of the Build Alternative would vary depending on the number of viewers present, proximity of viewers, and the degree of physical change in the landscape. The Build Alternative would result in moderate overall visual impacts for viewers in the project area due to the construction of new bridges, viaducts, and retaining walls. However, implementation of the AMMs described in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures) would reduce Build Alternative impacts to low or moderate levels for the Build Alternative. The Build Alternative, in combination with other reasonably foreseeable future actions, would contribute incrementally to the permanent alteration of views and the existing visual character or quality of the project area, resulting in cumulative effects to visual resources. None of the projects presented in Appendix I (Related Projects) include the construction of new bridges, viaducts, or retaining walls within the portions of the project area where highly adverse visual changes are anticipated. Therefore, cumulative project contributions as a result of the Build Alternative to adverse visual impacts would be less than considerable.

Resource	Cumulative Effects
Agricultural Lands	The Build Alternative would result in the permanent conversion of approximately 6.2 acres of prime farmland and 5.5 acres of unique farmland due to the construction of Isabel Station and the permanent conversion of approximately 1.5 acres of prime farmland due to the construction of the Mountain House LF. These conversions would account for less than 1 percent of important farmland in Alameda County and less than 0.1 percent of important farmland in San Joaquin County. The total conversion of agricultural land would be small in the context of each county's entire agricultural land base and would not cause a substantial reduction in either county's total agricultural production. AMMs will be implemented to reduce the effects of this conversion (Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]). These measures include the restoration of important farmlands used for TCEs and the preservation of important farmlands to be acquired for the Build Alternative. Construction of the related projects listed in Appendix I (Related Projects) could result in the loss of agricultural lands for those listed projects outside of urban areas that contain agricultural lands, resulting in a cumulative loss of agricultural lands in combination with the Build Alternative. However, the Build Alternative's contribution to cumulative impacts related to the conversion of agricultural lands would be minor.
Air Quality	Implementation of the Build Alternative would result in construction-related and operational emissions. Construction would occur over approximately 4 years, and related emissions from earth disturbance and use of vehicles and heavy-duty equipment would therefore be temporary. A series of project-specific air quality AMMs (AMM AQ-1 through AMM AQ-4) will be implemented for the construction phase of the Build Alternative to reduce emissions and minimize fugitive dust generation. The construction schedules for the projects listed in Appendix I (Related Projects) are unknown. If any of these projects were constructed at the same time as the Build Alternative, cumulative impacts related to construction emissions could result. Operational emissions would originate from operation of transit stations and support facilities (area and energy sources); track alignment and facilities service equipment and vehicles (off-road vehicles); and employee vehicles, operations and maintenance vehicles, and haul trucks (on-road vehicles). Operation of the Build Alternative would provide a new passenger train service that would utilize zero-emission rail vehicles, thereby resulting in zero direct emissions from train operations along the new rail line and while idling at stations. Furthermore, the Build Alternative would provide an alternative mode of transportation that would cause some commuters to mode-shift from personal automobile use to rail use, thereby reducing single-occupancy vehicles from the transportation network and associated mobile source emissions. With the anticipated reduction in vehicle traffic, MSATs in the study area would be reduced as more people use the new transit system. While operation of the related projects listed in Appendix I (Related Projects) may result in a cumulative increase in operational emissions, the Build Alternative would result in a benefit to cumulative air quality.

Resource	Cumulative Effects
Biological Resources	The Build Alternative would result in permanent impacts to undeveloped and non-aquatic vegetation communities totaling approximately 352 acres (Agricultural – 199 acres; Ruderal – 51 acres; nonnative grassland – 102 acres; and scrub - less than 0.1 acre). Permanent impacts to developed vegetation communities would total approximately 104 acres, and permanent impacts to aquatic resources/vegetation communities would total approximately 13 acres. Additionally, based on habitat-based modeling, the Build Alternative would result in permanent impacts to habitat for the longhorn fairy shrimp (3 acres); vernal pool fairy shrimp (3 acres); California tiger salamander (112 acres); foothill yellow-legged frog (24 acres); California red-legged frog (101 acres); western spadefoot (231 acres); and northwestern pond turtle (106 acres). Permanent impacts to the monarch butterfly, San Joaquin kit fox, and palmate-bracted bird's beak would occur as a result of the Build Alternative. Even with the implementation of AMMs to avoid, minimize, and compensate for impacts to biological resources that are described in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures), the Build Alternative could result in cumulative effects to biological resources. Cumulative projects that would have an effect on vegetation communities, aquatic resources, general wildlife, and special status species include those that have both direct and indirect effects leading to an overall reduction in quantity and functionality of species habitat including vegetation communities and aquatic resources. Effects of construction and operation of related and other future projects would be assessed in their separate agency consultation and permitting processes and would be required to comply with local, state, and federal laws, plans, policies, and regulations specific to biological resources. However, the Build Alternative would contribute to cumulative impacts, and other projects would result in an overall cumulative loss of habitat and impacts to various species in the region.
Cultural Resources	The Build Alternative would result in permanent, direct effects to one NRHP-eligible resource within the project area. However, these direct effects would not result in adverse impacts to this resource. Construction activities associated with the Build Alternative have the potential to disturb archaeological resources; however, this potential is considered low for most of the project area. In addition, the AMMs described in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures) will be implemented to avoid adverse effects to archaeological resources. Continued development projected under the cumulative condition could result in damage to historic architectural resources and disturbance to archaeological resources. The projects listed in Appendix I (Related Projects) could contribute to the cumulative loss of cultural resources if these projects result in impacts to such resources. However, since the Build Alternative would not adversely affect cultural resources in the project area, the Build Alternative would not contribute to this potential cumulative loss of cultural resources.
Geology, Soils, and Paleontological Resources	Soil and geologic conditions are site-specific, and there is little, if any, cumulative relationship between the Build Alternative and related projects in surrounding areas. The design of the Build Alternative (as well as the related projects in the surrounding area) would be required to meet engineering standards that address seismic and other geologic hazard risks. There would be no cumulative effect to these resources as a result of the Build Alternative in combination with the related projects. Therefore, the Build Alternative would not contribute to adverse cumulative effects to soils and geologic conditions in the region. Ground-disturbing activities associated with construction of the Build Alternative could result in the disturbance of paleontological resources in areas of high sensitivity, including along the new rail line within the median of I-580 from the Dublin/Pleasanton Station to the Greenville Road viaduct, the Dublin/Pleasanton Station, Isabel Station, and Southfront Road Station. However, implementation of AMM GEO-1, the impact on paleontological resources due to construction of the Build Alternative would not be adverse. Similar to soil and geologic conditions, paleontological resources are site-specific. However, if the projects listed in Appendix I (Related Projects) were constructed in areas with high potential to contain fossils, the Build Alternative could contribute to adverse cumulative effects to paleontological resources in the region.

Resource	Cumulative Effects
Hazardous Materials	Construction of the Build Alternative could result in the disturbance of known and unknown hazardous materials in the project area. Construction and operation could also expose the public or the environment to hazardous materials due to the improper handling or use of hazardous materials or hazardous wastes. However, compliance with existing safety standards related to the handling, use, and storage of hazardous materials is mandated by applicable federal, state, and local laws and regulations. Therefore, potential adverse impacts would be minimized. A construction risk management plan will be implemented prior to construction that would avoid short-term and long-term adverse health effects. Mandatory compliance with existing safety standards related to the handling, use, and storage of hazardous materials would minimize the risk of releases and exposure to hazards, and would reduce potential impacts from related projects constructed and operated under the cumulative condition. Nevertheless, the Build Alternative, in conjunction with the related projects, could result in cumulative impacts related to hazardous materials.
Hydrology and Water Quality	Construction activities for the Build Alternative could introduce pollutants into stormwater runoff and nearby surface waters from soil erosion, equipment maintenance, and potential spills of hazardous materials, which could degrade water quality. However, implementation of a stormwater pollution prevention plan and compliance with the construction general permit for stormwater discharges would ensure minimal off-site impacts to water quality during construction. Build Alternative elements associated with station platforms, parking lots, and support facilities would increase the amount of impervious surface area due to new pavement and roofs, which can increase stormwater runoff and the potential for pollutants on the surfaces to enter nearby surface waters. Design and construction of stormwater controls and treatment systems would be in accordance with applicable municipal separate stormwater system permit requirements (e.g., use of infiltration features, vegetated swales, retention basins, biofiltration, and minimizing impermeable surfaces to manage stormwater to maintain predevelopment runoff rates, volumes, and quality) to ensure that stormwater runoff is properly treated before being discharged off-site. Water quality impacts from stormwater control and treatment systems during operations would be negligible. Potential construction and operational impacts under the cumulative condition resulting from changes to drainage, impervious surfaces, stormwater runoff, and water quality would be reduced through compliance with permits and the requirements of state and regional water quality control boards, as well as the AMMs listed in Appendix C (Permits and Avoidance, Minimization, and Mitigation Measures). However, even with the implementation of these AMMs, the Build Alternative could contribute to cumulative effects to water resources.
Noise and Vibration	Implementation of the Build Alternative would result in temporary construction-related noise and vibration impacts. However, vibration levels typically do not accumulate. AMMs to reduce construction-related noise and vibration impacts will be implemented to minimize construction noise and vibration impacts (see AMM NV-1 and AMM NV-2 in Appendix C [Permits and Avoidance, Minimization, and Mitigation Measures]). In addition, these noise and vibration impacts would cease at the end of the construction phase. The construction schedules for the projects listed in Appendix I (Related Projects) are unknown. However, if any of these projects were constructed at the same time as the Build Alternative, cumulative construction noise impacts could result. Operation of the Build Alternative would produce noise from supporting facilities, the proposed rail line, and changes in existing traffic noise resulting from the realignment of existing roadways. However, no severe noise impacts would occur. Operational vibration would be generated by train car wheels rolling on the rails, but no sensitive receivers would be exposed to perceptible vibrations, and no buildings would be exposed to possible structural effects. The related projects listed in Appendix I (Related Projects) would be regulated by local, state, and federal policies regarding minimization of noise and vibration impacts. Since the Build Alternative would not result in adverse noise or vibration effects, the Build Alternative would not contribute to adverse cumulative effects related to noise or vibration.

Resource	Cumulative Effects
Transportation and Traffic	Construction activities associated with the Build Alternative could have adverse effects on existing pedestrian, bicycle, and transit facilities as well as roadways in the project area due to construction activities, temporary road closures, and temporary detours. Implementation of AMMs TRA-1, TRA-2, and TRA-3 would minimize these effects. Construction-related impacts would cease at the end of the construction phase for the Build Alternative. The Build Alternative, in combination with other reasonably foreseeable transportation and development actions, would likely result in increased demand on the transportation system near the proposed stations. Appendix H (Traffic Technical Memorandum) included an analysis of 2040 traffic operations at key intersections in the project area with and without the Build Alternative using a growth factor to account for future development. The Traffic Technical Memorandum determined that operation of the Build Alternative, in combination with projected 2040 traffic, would not result in the failure of critical intersections that would be utilized for station access. In addition, by increasing regional transit access and connectivity, the Build Alternative would reduce VMT in the project area, which would be a community benefit. As a result, the Build Alternative in combination with cumulative projects would not result in adverse cumulative effects.

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Chapter 4:
Public and Agency Outreach

4 Public and Agency Outreach

4.1 Public Outreach

The Federal Transit Administration (FTA) and Tri-Valley – San Joaquin Valley Regional Rail Authority (Authority) are coordinating the environmental review process to meet both federal and state regulatory requirements under the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). The process builds upon a foundation of previous planning and environmental phases that included robust public, stakeholder, and agency engagement.

The Authority initially developed the Valley Link Project Feasibility Report (https://www.valleylinkrail.com/final-feasibility-report) published in October 2019 (Authority 2019), which included extensive public outreach and community engagement such as outreach meetings, pop-ups, advisory and steering committees, and one-on-one meetings throughout 2018 and 2019. The feasibility report culminated in a 45-day public review period and a final report responding to the comments received by key stakeholders and the public (Authority 2019).

The Authority then prepared an Environmental Impact Report (EIR) under CEQA, which also included a robust public, agency, and stakeholder outreach process, including scoping meetings, a public comment period, and 23 public outreach open houses, workshops, and pop-up events at various locations throughout the project area to engage the public and solicit community feedback (Authority 2020). The Draft EIR was released for a 50-day public review in late 2020 through early 2021 with three public open house meetings held during the period. The Final EIR was adopted by the Authority Board during their regular meeting on May 12, 2021 (Authority 2021a). The hearing, held as part of the Board meeting, was open to the public, and various members of the public provided comments that were addressed by project representatives and documented in the meeting materials.

Ongoing public and stakeholder engagement activities are being conducted in compliance with the Authority's Public Participation Plan (Authority 2021b), Language Assistance Plan for Individuals with Limited English Proficiency (Authority 2021c), and Sustainability Policy (Authority 2018)—all of which outline extensive engagement methods, guiding principles, and specific focus on disadvantaged communities and overall accessibility. These policies identify the following goals regarding equitable access:

- Encourage engagement in planning and decision-making for the project to ensure a meaningful level of participation from disadvantaged communities and low-income communities and households.
- Strive to maximize benefits to disadvantaged communities and low-income communities and households in project planning and design.

Dating back to the Authority's Project Feasibility Report in 2019, environmental justice– and equity-focused outreach has included pop-up meetings and community briefings at local events in potentially disadvantaged communities, a bilingual community survey in English and Spanish, and multi-lingual notifications and project materials during the 2021 EIR process (copies of these materials are available at www.getvalleylinked.com). Similar processes have been and will continue to be followed for project materials and engagement opportunities throughout the NEPA process. Key notifications about Proposed Project updates or publicly available materials will be translated to Spanish and will include information about how to obtain other translation or accessibility accommodations if needed.

In addition, the Authority is advancing an Equity Community Engagement program that will provide further definition of the Proposed Project's travel shed and communities of focus. This effort includes the distribution of a travel survey to better understand the travel needs of these communities and is available in all of the Authority's Safe Harbor languages. It will serve as the basis for an equity and inclusion analysis to further guide ongoing public engagement to communities of focus in the project area.

Also, as part of the CEQA process, the Authority has prepared a Subsequent EIR to cover the revised project described in this Environmental Assessment (EA). The Authority held a scoping period in December 2022 and public hearings on the Draft Subsequent EIR in May 2024. This public outreach meets the basic requirements of environmental scoping and early coordination for EAs under NEPA; FTA has not conducted separate public outreach specific to NEPA. FTA has considered public input to date in preparation of this document.

Public engagement activities related to both the NEPA and CEQA processes are ongoing, including updates to the Project website (www.getvalleylinked.com) at key milestones and maintenance of a stakeholder email list that is utilized for notable project announcements. In accordance with Title 23 of the Code of Federal Regulations (CFR) Section 771.119, the EA will be available for public review for 30 days prior to the final determination. A notice of availability of the EA will be published in local newspapers, sent by email and direct mailing, and announced through the Project webpage. The comments received on the EA will be documented, and substantive comments addressed, in revisions to the EA, as warranted, and will be considered when FTA makes a decision on the Build Alternative. Additionally, status of the federal environmental review process can be followed by all interested parties on the Permitting Dashboard at https://www.permits.performance.gov/permitting-project/dot-projects/valley-link-rail.

4.2 Agency and Tribal Consultation

Throughout the preliminary planning and environmental process for the 2021 EIR, the Authority conducted ongoing outreach activities with local agencies and stakeholders identified along the Project corridor, as well as regularly met with an Executive Steering Committee made up of executive staff from various transportation agencies and Metropolitan Planning Organizations. Coordination with this wide range of stakeholders and local agency representatives is ongoing through the NEPA/CEQA process. Materials related to this coordination are provided online at www.getvalleylinked.com.

Specific state and federal agency coordination related to the NEPA process is described in further detail in the following sections.

4.2.1 Cooperating Agency

FTA invited the California Department of Transportation (Caltrans) to participate as a cooperating agency in the NEPA process in October 2023. On March 7, 2024, Caltrans accepted the invitation to participate as a state cooperating agency for the NEPA process due to its jurisdiction over the I-580 corridor. In this role, Caltrans has been involved in coordinating with the Authority and FTA and reviewing the EA and supporting technical materials as they pertain to project components within the Caltrans right-of-way. Copies of the cooperating agency invitation letter and the Caltrans response letter are provided in Appendix D (Agency Correspondence).

4.2.2 Section 106 Consultation

4.2.2.1 State Historic Preservation Office

As the federal lead agency, FTA is conducting Section 106 consultation with the State Historic Preservation Office (SHPO) pursuant to Section 106 of the National Historic Preservation Act (NHPA). Copies of the Section 106 SHPO consultation letter and corresponding documentation are provided in Appendix F (Section 106 Documentation). This consultation process is ongoing during the public circulation of the EA. SHPO's response and information pertinent to the conclusion of the Section 106 consultation process will be documented in the decision document.

4.2.2.2 Native American Consultation and Interested Parties Outreach

On October 4 and 5, 2023, FTA sent letters describing the Proposed Project and area of potential effects to the following Native American tribes identified by the Native American Heritage Commission as having an interest in projects in the area. Outreach also included tribes who showed interest during previously initiated CEQA outreach by requesting any information or sharing concerns regarding the Proposed Project.

- Buena Vista Rancheria of Me-Wuk Indians
- Northern Valley Yokuts Tribe

- Confederated Villages of Lisjan Nation
- Wilton Rancheria
- California Valley Miwok Tribe (Sheep Rancheria of Me-Wuk Indians of California)
- Ione Band of Miwok Indians
- Tule River Indian Tribe

Additional emails and phone calls were conducted to confirm receipt of the request for consultation and any responses from the tribes. Three tribes responded to FTA's letters: Confederated Villages of Lisjan Nation, Northern Valley Yokuts Tribe, and Wilton Rancheria. FTA consulted further with the tribes, including holding requested follow-up meetings and providing additional information on the Proposed Project. The Northern Valley Yokuts Tribe indicated during those meetings there was cultural sensitivity in the areas of Isabel Station, Greenville/Altamont Pass, and the Mountain House/ Delta-Mendota Canal/California Aqueduct, and requested archaeological and Native American monitoring. An Archaeological Monitoring Plan is being prepared to address these areas of concern.

In October 2023, letters were also sent to the following interested parties, inviting them to participate in the Section 106 process:

- Alameda County Parks, Recreation and Historical Commission
- Alameda County Historical Society
- City of Livermore Community Development Department
- Lincoln Highway Association, California Chapter
- Museum on Main/Amador-Livermore Valley Historical Society
- San Joaquin County Historical Museum

None of the interested parties provided responses via letter. However, the Museum on Main/Amador-Livermore Valley Historical Society and San Joaquin County Historical Museum both provided verbal input on the Proposed Project when reached by phone.

4.2.3 U.S. Fish and Wildlife Service

As the federal lead agency, FTA is conducting consultation with the U.S. Fish and Wildlife Service (USFWS) in accordance with Section 7 of the Endangered Species Act of 1973. Copies of the Section 7 USFWS consultation letter and corresponding documentation are provided in Appendix E (Biological Assessment). This consultation process is ongoing during the public circulation of the EA. USFWS's response, to be documented in a Biological Opinion, and information pertinent to the conclusion of the Section 7 consultation process will be documented in the decision document.

4.2.4 U.S. Department of Agriculture Natural Resources Conservation Service

On behalf of FTA, the Authority's consultant coordinated with the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) to verify applicability of the Farmland Protection Policy Act of 1981 based on estimated farmland conversion impacts. NRCS confirmed that the Build Alternative is exempt from further review under the Act (see Appendix D [Agency Correspondence)].

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Chapter 5:
List of Preparers

5 List of Preparers

5.1 Lead Agency - Federal Transit Administration

Mary Nguyen	Director of Programming and Project Development
Nicholas Hernandez	Transportation Program Specialist
Kathleen Kelly	Environmental Protection Specialist

5.2 Support to Lead Agency - USDOT Volpe National Transportation Systems Center

Leslie Perry	Environmental Protection Specialist
Shauna Haas	Environmental Protection Specialist

5.3 Project Proponent - Tri-Valley – San Joaquin Valley Regional Rail Authority

Kevin Sheridan	Executive Director
William Ridder	Deputy Director, Financial Planning and Programming
Marianne Payne	Director of Policy and Planning
Bill O'Hair, PE	P.E. Director, Rail Engineering, Construction and Operations

5.4 Environmental Consultant - AECOM

Jen McNeil Dhadwal, AICP	Vice President, Transportation, Consultant Project Manager
Mark Lippert, AICP	Senior Transportation Planner V, Consultant Deputy Project Manager
Michael Kay	Senior Environmental Planner, Environmental Project Manager
Angie Bauer-Fellows	Senior Transportation/Environmental Planner, Deputy Environmental Lead
Diane Cowin	Senior Vice President, Senior NEPA Advisor
Melinda Jensen	Associate Vice President/Senior Environmental Program Manager, Senior NEPA Advisor
David DeRosa	Associate Vice President, Transportation Planning Manager, Environmental QC
Jaime Guzman	Senior Project Manager Transit, Environmental QC
Divya Gandhi	Transportation Planner III
Celia Miars, AICP	Transportation Planner III
Jenifer King	Senior Environmental Scientist

Suzanne McFerran	Environmental Planner IV
Kristi Lilly	Environmental Project Manager Biologist
Melissa Whittemore	Senior Environmental Planner
Paola Pena	Air Quality Scientist IV
Christopher Warren	Air Quality Scientist III
Mary Kaplan	Air Quality Scientist IV
Alexandra Haisley	Air Quality Scientist
Karin Beck, RPA, RPH	Archaeologist IV
Chandra Miller, MA	Senior Architectural Historian
Heather Miller, MA	Historian III
Chris Kaiser, INCE	Senior Acoustics & Noise Control Specialist
Issa Mahmodi	Traffic and Noise Analyst
George Hitterman	Acoustician II
Broden Farazmand	Environmental Scientist II
Wanda Farmer, REM	Project Manager II
Nikita Subramanian	Environmental Planner II
Corey Bishop	Transportation Planner II
Jason Green, AICP	Transit/Transportation Planner
Jennifer Oakley, CWB, MSc	Environmental Planning & Permitting Team Leader
Andrew Borcher	Senior Biologist
Michael P Anguiano	Senior Biologist
Andrew Fisher	Wildlife Biologist
Sam Young	Biologist IV
David Pecora	Biologist IV
Loren Merrill	Biologist
Andrew Jones	Visualization Manager
Hiroko Koike	Graphic Design Specialist III
Alexander Remar	GIS Supervisor
Stefan Voge	GIS Specialist II
Katie Brown	GIS Specialist III
Robin Marshall	Senior Technical Editor
Lynnae Jackson	Technical Editor/Writer
Katie DeSandro	Technical Editor/Writer

5.5 Air Quality Analysis Support Consultant - ICF

Keith Lay	Managing Director, Air Quality and Climate Change
Ryan Hallman	Air Quality & Climate Change Specialist
Darrin Trageser	Air Quality & Climate Change Specialist

5.6 General Engineering Consultant

Arash Monsefan, PE	PGH Wong Engineering, Inc., Consultant Project Manager
Ted Axt, PE	WSP, Consultant Deputy Project Manager

5.7 Program Management Support Services

Carl Haack, PE	Gray-Bowen-Scott, Principal Project Manager
Obaid Khan, PE	Gray-Bowen-Scott, Senior Project Manager
Sheena Patel, PE	Gray-Bowen-Scott, Senior Project Manager

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Chapter 6:
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6 References

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