Chapter 3

Description of Longer-Term Improvements

ACEforward is a phased improvement plan proposed by the San Joaquin Regional Rail Commission (SJRRC) to increase service reliability and frequency, enhance passenger facilities along the existing Altamont Corridor Express (ACE) service corridor from San Jose to Stockton, reduce travel time, and to extend ACE service to Modesto and Merced. This plan would provide the foundation for SJRRC’s near-term and longer-term vision of intercity and commuter passenger rail services.

The ACEforward plan contains both near-term and longer-term improvements that are analyzed in this EIR.1 In the near term, ACEforward proposes improvements, which could be implemented as early as 2019 to support ACE service of up to six daily roundtrips between San Jose and the San Joaquin Valley, a potential reroute of ACE service through downtown Tracy, and the extension of ACE service to Modesto. In the longer term, ACEforward proposes improvements to ultimately support ACE service of up to 10 daily roundtrips between San Jose and the San Joaquin Valley, a train-to-train ACE and Bay Area Rapid Transit (BART) connection, and the extension of ACE service to Ceres, Turlock and Merced.2

This EIR analyzes a “full build” suite of potential near-term and longer-term improvements that may ultimately be implemented to support increased and expanded service over time. However, infrastructure improvements and expanded and extended passenger service can be provided in an incremental phased approach over time that would include only some of the near-term or longer-term improvements.

Detailed descriptions of ACEforward’s near-term improvements are presented in Chapter 2, Description of Near-Term Improvements. This chapter focuses on the longer-term improvements and provides information regarding operational and maintenance activities, construction activities, potential right-of-way (ROW) and easement needs, costs and funding sources, and required permits and approval for the longer-term improvements. Figure 1-2 provides an overview of the longer-term improvements that are included in ACEforward.

3.1 Longer-Term Improvements Location and Limits

SJRRC manages and operates ACE service, which currently provides commuter rail service between San Jose and Stockton. The existing 86-mile ACE service corridor passes through Santa Clara, Alameda, and San Joaquin Counties, with 10 stations along the route. At the western end of the ACE corridor, ACE operates on an approximately 4-mile segment of track between San Jose and Santa

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1 Near-term improvements are analyzed at a project level of detail based on preliminary engineering analysis in this EIR, and no further environmental analysis under CEQA is anticipated. Longer-term improvements are analyzed at a programmatic, more conceptual level of detail in this EIR because only conceptual engineering has been completed at this time. Subsequent environmental documentation will be required for the longer-term improvements once further engineering is completed. For an explanation of the difference between project and program analyses, please refer to Chapter 1, Introduction, of this EIR and CEQA Guidelines Sections 15161 and 16168.

2 And possibly Livingston or Atwater depending on alternative selected for implementation.
Clara owned and operated by the Peninsula Corridor Joint Powers Board (PCJPB, also referred to as Caltrain). North of the Santa Clara Station to Stockton, ACE operates on approximately 82 miles of track owned by Union Pacific Railroad (UPRR). ACE operates on portions of UPRR’s Coast, Niles, Oakland, and Fresno subdivisions.3

The area for ACEforward's longer-term improvements consists of the existing ACE corridor between San Jose and Stockton in PCJPB and UPRR ROWs, the proposed ACE extension to Merced within the existing UPRR ROW, areas immediately adjacent to specific longer-term improvements, several areas outside of the existing UPRR ROW where new track alignments are proposed, and other nearby areas that may be used for construction staging or access. As shown in Figure 1-2, the limits of the longer-term improvements span Santa Clara, Alameda, San Joaquin, Stanislaus, and Merced Counties.

### 3.2 Background

As described in Section 2.2, Background, in Chapter 2, Description of Near-Term Improvements, SJRRC does not own the tracks on which ACE operates, but instead has entered into passenger rights agreements with both PCJPB and UPRR to operate on portions of their respective tracks. ACE shares tracks with freight trains dispatched by UPRR within the UPRR ROW and with freight trains dispatched by Caltrain in the Caltrain corridor. In addition, three other passenger train services also operate on PCJPB and UPRR tracks where ACE trains travel: Caltrain, Amtrak Coast Starlight, and Amtrak Capitol Corridor. Figure 2-1 depicts the existing levels of freight and passenger rail traffic that operate on tracks where ACE trains travel.

In the near term, SJRRC proposes to increase ACE service between San Jose and the San Joaquin Valley to six daily weekday roundtrips. UPRR has identified specific capacity expansion improvements to their rail corridor that are required to support additional ACE trains in the near term as well as other passenger train services that operate on UPRR tracks. These near-term improvements are described in detail in Chapter 2.

In the longer term, SJRRC proposes to increase ACE service between San Jose and the San Joaquin Valley to ten daily weekday roundtrips. In order to accommodate this service increase beyond near-term levels, UPRR has identified additional improvements to their rail corridor that are required to support additional ACE trains and other passenger train services that would operate on UPRR tracks in the longer term. Improvements such as adding new main or siding4 tracks or constructing new track alignments would expand capacity at rail choke points5 and relieve congestion in the rail network. These improvements would reduce ACE train travel time and improve service reliability. These capacity expansion improvements, along with SJRRC’s longer-term vision to enhance intercity and commuter rail service by establishing a train-to-train ACE/BART connection, and extending ACE service to Merced, are the basis for the longer-term improvements proposed in the ACEforward plan.

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3 A subdivision is a portion of railroad or railway that operates under a single timetable (authority for train movement in the area).

4 A siding is a section of track alongside the main track where a train can temporarily pull off the main track for maintenance, coupling up cars or locomotives, or to let other trains pass along the main track.

5 A choke point on a railroad or railway is an area of congestion.
3.3 Longer-Term Improvement Alternatives by Segment

For the analytical purpose of this EIR, the ACEforward corridor is divided into nine geographic segments. Not all geographic segments contain longer-term improvements. Longer-term improvements are proposed in the following geographic segments, listed west to east: San Jose to Fremont, Centerville to Union City, Tri-Valley, Altamont, Tracy to Lathrop, Lathrop to Stockton, Manteca to Modesto, and Modesto to Merced (Figure 1-2). Section 3.3.1, San Jose to Fremont, through Section 3.3.8, Modesto to Merced, provide descriptions of longer-term improvements by segment.

Specific longer-term improvements are illustrated in Figures 3-1 through 3-57. The environmental footprint associated with each longer-term improvement is illustrated in Appendix C, ACEforward Environmental Footprint. In addition, Appendix D, ACEforward 15% Preliminary Engineering Plans, contains track plans and section drawings, structure plans, roadway plans, utility plans, station plans, and ROW plans for these longer-term improvements.

The programmatic analysis of the longer-term improvements in this EIR will allow subsequent project-level clearance of individual longer-term improvements. This will allow prioritization and phasing of longer-term improvements. For example, given the recent approval of funding from Senate Bill 1 (2017), the extension of service to Ceres could be cleared through a focused project-level environmental document following certification of this EIR.

This EIR analyzes a “full build” suite of potential improvements that may ultimately be implemented to support increased expanded service over time. However, infrastructure improvements and passenger service can be increased and extended in a phased approach over time. Thus, the development of physical improvements and expanded service should be seen as a range over time:

- Minimal improvements: Addition of station, parking, and key track/infrastructure improvements and commencement of initial service or expansion of existing service (1 or more trains);
- Interim improvements: Construction of additional track improvements, such as double-tracking, at specific areas of train congestion, and possibly additional parking improvements necessary per ridership, which would allow further expansion of service beyond the initial service or expansion; and
- Full-build: Completion of all proposed improvements along existing and new corridors.

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6 The nine geographic segments consists of (from west to east): San Jose to Fremont, Centerville to Union City, Centerville/Niles/Sunol, Tri-Valley, Altamont, Tracy to Lathrop, Lathrop to Stockton, Manteca to Modesto, and Modesto to Merced.
7 The footprint is defined as the area covered by a facility or affected by construction activities.
3.3.1 San Jose to Fremont

The San Jose to Fremont segment is located in the northeastern portion of Santa Clara County and the southwestern portion of Alameda County. This segment crosses northern San Jose, Santa Clara, Alviso, Newark, and portions of Fremont. ACE operates on Caltrain tracks from south of the Caltrain Tamien Station\(^8\) to just north of the Santa Clara Station. North of the Santa Clara Station across the Alviso Baylands into Newark, ACE operates on the UPRR Coast Subdivision and transitions onto the UPRR Niles Subdivision at Newark Junction, traveling from Newark eastward to Fremont.

In addition to ACE, other passenger train services and freight dispatched by UPRR operate on the Caltrain tracks and UPRR Coast and Niles Subdivisions in this segment (see Figure 2-1 in Chapter 2). In order to support increased ACE service proposed in the longer term in conjunction with existing and likely increases for Capitol Corridor and freight rail service, improvements to expand the capacity on the Coast Subdivision is required. In addition, in order to support the increased ACE service proposed in the longer-term, improvements to storage capacity are required at the existing Tamien layover facility\(^9\) and passenger facility improvements are required at the existing Fremont Station.

There are six longer-term improvement alternatives in this segment.

- Alternative P-SJF-1: Tamien layover facility improvements
- Alternative P-SJF-2: Santa Clara to Newark double track with four design options for crossing the Alviso Baylands
  - Alternative P-SFJ-2a: Alviso Baylands crossing on expanded berm
  - Alternative P-SFJ-2b: Alviso Baylands crossing on raised berm
  - Alternative P-SFJ-2c: Alviso Baylands crossing on double trestle
  - Alternative P-SFJ-2d: Alviso Baylands crossing on raised berm and double trestle
- Alternative P-SJF-3: Fremont Station improvements

SJRRRC will only select one Santa Clara to Newark double track alternative for implementation, in addition to the Tamien layover facility improvements and the Fremont Station improvements.

An alternative that would avoid adding any track across the Alviso Baylands through construction of an additional track to the east of the Baylands was considered during project development, but was dismissed from further analysis. The alternative was dismissed due to out of way travel time that would hinder project objectives overall, logistical challenges of obtaining ROW and permissions from all public and private landowners along the alignment, and prohibitive costs for a longer and more complicated alignment that render this alternative infeasible. A description of this dismissed alternative is provided in Chapter 6, *No Project Alternative and Alternatives Considered and Dismissed*.

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*The San Jose Diridon Station is the last stop on the westbound ACE route. ACE trains operate on Caltrain tracks south of San Jose Diridon Station to access the Tamien layover facility, located south of the Caltrain Tamien Station.*

*Trains layover at the Tamien layover facility south of the Caltrain Tamien Station between morning and afternoon ACE service.*
3.3.1.1 Alternative P-SJF-1: Tamien Layover Facility Improvements

The Tamien layover facility was constructed by PCJPB for use by SJRRC, under a cooperative agreement between the two entities, and SJRRC pays for use of the yard. ACE trains currently layover at this yard between morning and afternoon ACE operations. As shown in Figure 3-1, improvements to the Tamien layover facility are as follows.

- Extension of four storage tracks (constructed in the near term) by 0.02 to 0.21 mile on the Caltrain corridor from milepost (MP) 49.87 to MP 50.08.
- Construction of a new three-track concrete bridge structure crossing over the Almaden Road underpass at MP 49.88 in the Caltrain corridor.
- Modification of the existing Almaden Road roadway profile at MP 49.88 in the Caltrain corridor.

As described in Section 2.3.1.1, Alternative SJF-1: Tamien Layover Facility Improvements, in the near term, four existing storage tracks would be extended approximately 0.11 to 0.27 mile from MP 49.38 to MP 49.65 and realigned for 0.22 mile from MP 49.65 to MP 49.87. From the southern terminus of these realigned storage tracks, the longer-term improvements would extend the storage tracks approximately 0.02 to 0.21 mile south from MP 49.87 to MP 50.08, for total storage track lengths ranging from 0.51 to 0.54 mile. The extended tracks would cross over the Almaden Road underpass via a three-track concrete bridge. The bridge would be approximately 55-foot wide and supported by two abutments on each end and one pier located in the median of Almaden Road. The roadway under the new three-track bridge would be lowered approximately 3 feet to meet the vertical clearance requirement for the roadway underpass.

All improvements for the Tamien layover facility would be located within the existing Caltrain ROW, and no new ROW would be acquired for this improvement.

3.3.1.2 Alternative P-SJF-2: Santa Clara to Newark Double Track with Alviso Baylands Crossing

The Santa Clara to Newark double track with Alviso Baylands crossing would construct a new 10.85-mile main track from Santa Clara to Newark on the Coast Subdivision. As shown in Figure 3-2, there are three segments that comprise this improvement:

- De La Cruz Boulevard to Gold Street Connector (MP 44.41 to MP 39.82 on the Coast Subdivision) in northern Santa Clara and San Jose;
- Alviso Baylands crossing (MP 39.82 to MP 34.75 on the Coast Subdivision), from Gold Street Connector to Auto Mall Parkway; and
- Auto Mall Parkway to Addition Road (MP 34.10 to MP 32.91 on the Coast Subdivision) in Newark.

There are four different design options for the second main track crossing the Alviso Baylands: on expanded berm (Alternative P-SJF-2a), on raised berm (Alternative P-SJF-2b), on double-trestle (Alternative P-SJF-2c), or a combination of raised berm and double trestle (Alternative P-SJF-2d). All four alternatives share the same improvements in the De La Cruz Boulevard to Gold Street Connector and Auto Mall Parkway to Addition Road segments.

All improvements for the Santa Clara to Newark double-track with Alviso Baylands crossing alternatives would be located within the existing UPRR ROW and no new ROW would be acquired,
although some temporary encroachment will likely be necessary for construction in certain locations.

**De La Cruz Boulevard to Gold Street Connector**

As shown in Figure 3-3, improvements that are part of the De La Cruz Boulevard to Gold Street Connector segment are as follows.

- Construction of a new 4.59-mile main track on the Coast Subdivision from MP 44.41 to MP 39.82.
- Modification of the existing Reed Street at-grade crossing at MP 44.30 on the Coast Subdivision.
- Realignment of 0.28 mile of the existing main tracks on the Coast Subdivision from MP 44.22 to MP 43.94.
- Modification of the existing Martin Avenue at-grade crossing at MP 43.82 on the Coast Subdivision.
- Realignment of 3.68 mile of the existing main track on the Coast Subdivision from MP 43.50 to MP 39.82.
- Construction of a new single-track concrete bridge structure crossing over the U.S. 101 underpass at MP 43.00 on the Coast Subdivision.
- Construction of a new single-track concrete bridge structure crossing over the Lafayette Street underpass at MP 42.77 on the Coast Subdivision.
- Modification of the existing Norman Avenue at-grade crossing at MP 42.36 on the Coast Subdivision.
- Modification of the existing Agnew Road at-grade crossing at MP 41.69 on the Coast Subdivision.
- Modification of the existing Great America Way at-grade crossing at MP 39.99 on the Coast Subdivision.
- Modification of the existing SR 237 undercrossing and construction of new crash walls at MP 39.93 on the Coast Subdivision.
- Modification of the existing Gold Street Connector at-grade crossing at MP 39.88 on the Coast Subdivision.

The new 4.59-mile second main track would be constructed between MP 44.41 to MP 39.82 on the Coast Subdivision. Because of the limited UPRR ROW (approximately 50 feet wide) in this segment, 0.28-mile of the existing main track between MP 44.22 to MP 43.94 and 3.68-mile of the existing main track between MP 43.50 to MP 39.82 on the Coast Subdivision would be shifted approximately five feet from its current alignment to provide space for the new main track. The new main track would follow the same alignment as the existing track and would cross Reed Street at grade at MP 44.30, Martin Avenue at grade at MP 43.82, over the Central Expressway underpass at MP 43.33, over the U.S. 101 underpass at MP 43.00, over the Lafayette Street underpass at MP 42.77, Norman Avenue at grade at MP 42.36, under the Montague Expressway overhead structure at MP 42.12, Agnew Road at grade at MP 41.69, under the Tasman Drive overhead structure at MP 40.78, under the Santa Clara Golf and Tennis Club pedestrian crossing structure at MP 40.48, Great America Way at grade at MP 39.99, under the SR 237 overhead structure at MP 39.93, and the Gold Street Connector at grade at MP 39.88.
All six at-grade crossings at Reed Street, Martin Avenue, Norman Avenue, Agnew Road, Great America Way, and Gold Street Connector would be modified to accommodate the new main track. Modifications to the at-grade crossings would include installing concrete crossing panels\(^{10}\) where the tracks cross the roadway, installing a stop bar,\(^{11}\) and relocating the existing railroad crossing signal, guard/gate, and signal house\(^{12}\) at approaches. New single-track bridge structures would be constructed over the U.S. 101 and Lafayette Street underpasses. The new bridges structures would be located directly adjacent to the bridge structures for the existing main track. The second main track would cross over the Central Expressway underpass on the existing bridge because the structure is wide enough to accommodate two tracks. The majority of crossings under overhead structures would not require modifications, with the exception of the SR 237 overhead structure undercrossing at MP 39.93. Crossing under the SR 237 overhead structure, two 300-foot long crash walls would be constructed on either side of the realigned and new main tracks.

**Alviso Baylands Crossing**

There are four different design options for the second main track crossing the Alviso Baylands: on expanded berm (Alternative P-SJF-2a), on raised berm (Alternative P-SJF-2b), on double-trestle (Alternative P-SJF-2c), or a combination of raised berm and double trestle (Alternative P-SJF-2d). The following descriptions summarize the common elements for the Alviso Baylands crossing.

- Construction of a new 5.07-mile main track on the Coast Subdivision from MP 39.82 to MP 34.75.
  - From MP 39.82 to MP 39.06, the new main track would be locate at grade, east of the existing main track.
  - From MP 39.06 to 34.75, there are four different design options for the placement of the second main track (descriptions below).
- Modification of the existing public roadway at-grade crossing at MP 39.62 on the Coast Subdivision.
- Construction of a new single-track concrete bridge structure crossing over Guadalupe River at MP 39.52 on the Coast Subdivision.
- Modification of the Guadalupe River Trail at-grade crossing at MP 39.45 on the Coast Subdivision.
- Modification of the existing North Taylor Street at-grade crossing at MP 39.27 on the Coast Subdivision.
- Modification of the existing Catherine Street at-grade crossing at MP 39.20 on the Coast Subdivision.
- Modification of the existing Elizabeth Street at-grade crossing at MP 39.13 on the Coast Subdivision.

\(^{10}\) *Crossing panels* are installed so that the tracks lie flush with the roadway.

\(^{11}\) A *stop bar* is placed near an at-grade crossing to warn drivers and pedestrians of an approaching railroad crossing.

\(^{12}\) A *signal house* stores the electrical devices used to operate the at-grade crossing signals.
Between MP 39.82 and MP 39.06, the new main track would be located at grade, east of the existing main track. Following the existing alignment, the new main track would cross a public roadway at grade at MP 39.62, over Guadalupe River at MP 39.52, Guadalupe River Trail at grade at MP 39.45, North Taylor Street at grade at MP 39.27, Catherine Street at grade at MP 39.20, and Elizabeth Street at grade at MP 39.13. All five at-grade crossings would be modified to accommodate the new main track. Modifications to the at grade crossings would include installing concrete crossing panels where the tracks cross the roadway, installing a stop bar, and relocating the existing railroad crossing signal, guard/gate, and signal house at approaches. A new 19 foot wide, single-track bridge structure would be constructed over Guadalupe River and would be located east of the bridge structure for the existing main track.

The four different design options for the placement of the second main track between MP 39.06 and MP 34.75 are described below.

**Alternative P-SJF-2a: Alviso Baylands Crossing on Expanded Berm**

This alternative would place the second main track on an expanded berm for the majority of the alignment though the Alviso Baylands. The expanded berm and the new main track would be at the grade of the existing berm and track, except at the crossings over Coyote Creek and Mud Slough. As shown in Figure 3-4a, improvements that are part of the Alviso Baylands crossing on expanded berm are as follows.

- Expansion of the existing berm from MP 39.06 to MP 34.96 on the Coast Subdivision to accommodate the second main track on the berm.
- Realignment of 0.13-mile of the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout at MP 38.50 on the Coast Subdivision (unless removed as mitigation).
- Construction of a new single-track trestle bridge structure over Coyote Creek at MP 36.91 on the Coast Subdivision.
- Construction of a new single-track bascule bridge structure over Mud Slough at MP 36.29 on the Coast Subdivision.

Between MP 39.06 and MP 34.96, the existing berm supporting the existing main track crossing the Alviso Baylands would be extended approximately 15 to 32 feet to the east to accommodate the second main track on the berm. Figure 3-5a depicts the typical section of the second main track on expanded berm. The expanded berm supporting the new second main track would be approximately the same height as the existing berm. In some locations, retaining walls up to 10 feet in height may be necessary to avoid encroachment into the adjacent Don Edwards San Francisco Bay National Wildlife Refuge. At MP 38.50, where the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout is located, the existing berm would not require expansion as there is sufficient berm to accommodate the second main track at this location. Approximately 0.13-mile of this existing spur turnout would be realigned, unless removed as mitigation. At MP 38.28, the location of the U.S. Army Corps of Engineers (USACE) flood control levee, USACE would be required to install a flood gate.

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13 A *bascule bridge* is a type of bridge that would allow for boat passage when raised.

14 The U.S. Army Corps of Engineers and Santa Clara Valley Water District have approved the South San Francisco Bay Shoreline Phase I Study project which proposes provide flood protection to the community of Alviso by installing a new flood control levee north and west of the town of Alviso (Santa Clara Valley Water District 2016). The levee crosses the UPRR ROW at approximately MP 38.28 on the Coast Subdivision. The levee would be installed...
that could be closed during high water events. This improvement was included in the South San Francisco Bay Shoreline Phase I Study (U.S. Army Corps of Engineers 2015) project as designed by USACE; however, USACE would prefer an option that avoids the need for a flood gate.

Crossing Coyote Creek at MP 36.91, the new main track would be located on a single-track trestle bridge east of the single-track bridge for the existing track. The bridge would be approximately 19 feet wide, supported by two abutments on each end of the bridge and 14 piers spaced approximately 30 feet apart for the length of the structure. The second main track would cross over Mud Slough at MP 36.29 via a single-track bascule bridge located east of the single-track bridge for the existing track. The bridge would be approximately 20 feet wide, supported by two abutments on each end of the bridge and four bascule piers where the bridge would open to provide clearance for boat traffic. The approaches south and north of Mud Slough would be on single-track trestle structure supported by 16 piers to the south and 6 piers to the north.

From MP 36.96 to MP 34.75, the second main track would be located at grade, east of the existing main track.

**Alternative P-SJF-2b: Alviso Baylands Crossing on Raised Berm**

This alternative would place the existing main track and second main track on a new double-track raised berm structure for the majority of the alignment through the Alviso Bayland. As shown in Figure 3-4b, improvements that are part of the Alviso Baylands crossing on raised berm are as follows.

- Expansion of the existing berm from MP 39.06 to MP 38.90 on the Coast Subdivision to accommodate the second main track on the berm.
- Construction of a new double-track berm from MP 38.90 to MP 36.96 on the Coast Subdivision for the existing and new main tracks.
- Realignment of 0.47-mile of the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout at MP 38.50 on the Coast Subdivision (unless removed as mitigation).
- Construction of a new double-track trestle bridge structure from MP 36.96 to MP 36.09 crossing Coyote Creek and Mud Slough.
- Construction of a new double-track berm from MP 36.09 to MP 34.96 on the Coast Subdivision for the existing and new main tracks.

Between MP 39.06 and MP 38.90, the existing berm supporting the existing main track crossing the Alviso Baylands would be extended approximately 15 to 32 feet to the east to accommodate the second main track on the berm. Figure 3-5a depicts the typical section of the second main track on expanded berm. The expanded berm supporting the new second main track would be approximately the same height as the existing berm.

From MP 38.90 to just south of Coyote Creek at MP 36.96, a new double-track berm would be constructed to support the existing and new main track. From the southern terminus of the new double track raised berm (MP 38.90) to the location of the USACE flood control levee at MP 38.82, the raised berm would be constructed to the proposed elevation (+15.2 feet NAVD 88) of the USACE flood control levee. At MP 38.82, the location of the USACE flood control levee, no flood gate would at an elevation of approximately +15.2 feet (NGVD 88) which accounts for a 100-year tide, projected sea level rise for the next 50 years (approximately 2067), and Federal Emergency Management Agency required freeboard.
be required as because the raised berm would be at the same design height as the flood control levee. From the USACE flood control levee (MP 38.82) to the northern terminus of the new double track raised berm (MP 36.96), the top of rail would be installed at an elevation of approximately 13.4 feet (NAVD 88) which accounts for a 100-year tide and approximately 50 years of sea level rise (to 2067). Figure 3-5b depicts the typical section of the new double track on raised berm, and as shown, the double-track raised berm would be approximately 80 feet wide and be installed in phases. Once the new track is operational, the existing berm would be raised to match the new track elevation. The raised berm would be slightly lower than the USACE flood control levee since the berm is only designed to protect the railroad bed itself, is not intended to be a certified flood control levee, and thus is not required to account for additional freeboard. In some locations, retaining walls up to 10 feet in height may be necessary in order to avoid encroachment into the adjacent Don Edwards San Francisco Bay National Wildlife Refuge. At MP 38.50, approximately 0.47-mile the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout would be realigned, unless removed as mitigation.

A new double-track trestle bridge structure would be installed between MP 36.96 and MP 36.09 to support the existing and new main track crossing Coyote Creek and Mud Slough. The new bridge would be located east of the existing single-track bridge. The bridge would be approximately 33 feet wide, and 3,800 feet long, with two abutments on each end and 121 piers spaced approximately 30 feet apart. Crossing Mud Slough, there would be four bascule piers where the bridge would open to provide clearance for boat traffic.

From north of Mud Slough at MP 36.09 to MP 34.96, the alignment would be placed on a new double track raised berm structure, as described above. From MP 36.96 to MP 34.75, the second main track would be located at grade, east of the existing main track.

**Alternative P-SJF-2c: Alviso Baylands Crossing on Double Trestle**

This alternative would place the existing main track and second main track on a new double trestle structure for the majority of the alignment through the Alviso Baylands. As shown in Figure 3-4c, improvements that are part of the Alviso Baylands crossing on double trestle are as follows.

- Expansion of the existing berm from MP 39.06 to MP 38.90 on the Coast Subdivision to accommodate the second main track on the berm.
- Construction of a new double-track berm from MP 38.90 to MP 38.02 on the Coast Subdivision for the existing and new main tracks.
- Realignment of 0.47-mile of the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout at MP 38.50 on the Coast Subdivision (unless removed as mitigation).
- Construction of a new double-track trestle bridge structure from MP 38.02 to MP 35.04 crossing Coyote Creek and Mud Slough.
- Removal of the existing berm and track between MP 38.02 to MP 35.04 on the Coast Subdivision.
- Construction of a new double-track berm from MP 35.04 to MP 34.85 on the Coast Subdivision for the existing and new main tracks.
Between MP 39.06 and MP 38.90, the existing berm supporting the existing main track crossing the Alviso Baylands would be extended approximately 15 to 32 feet to the east to accommodate the second main track on the berm. Figure 3-5a depicts the typical section of the second main track on expanded berm. The expanded berm supporting the second new main track would be approximately the same height as the existing berm.

From MP 38.90 to MP 38.02, a new double-track berm would be constructed to support the existing and new main track. From the southern terminus of the new double track raised berm (MP 38.90) to the location of the USACE flood control levee at MP 38.82, the raised berm would be constructed to the proposed elevation (+15.2 feet NAVD 88) of the USACE flood control levee. At MP 38.82, the location of the USACE flood control levee, no flood gate would be required as because the raised berm would be at the same design height as the flood control levee. From the USACE flood control levee (MP 38.82) to the northern terminus of the new double track raised berm (MP 38.02), the top of rail would be installed at an elevation of approximately 13.4 feet (NAVD 88) which accounts for a 100-year tide and approximately 50 years of sea level rise (to 2067). Figure 3-5b depicts the typical section of the new double track on raised berm, and the design of the double track raised berm would be the same as described for Alternative P-SJF-2b. At MP 38.50, approximately 0.47-mile the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout would be realigned, unless removed as mitigation.

Between MP 38.02 to MP 35.04, a new double-track trestle would be constructed at an elevation of approximately 13.4 feet (NAVD 88) which accounts for a 100-year tide and approximately 50 years of sea level rise (to 2067). Figure 3-5c depicts the typical section of the existing and second main track on double trestle, and as shown, the double-track trestle would be approximately 33 feet wide and supported by piers. The double-track trestle structure would be 3 miles in length and cross Coyote Creek and Mud Slough. Crossing Mud Slough, the double-trestle structure would be supported by bascule piers where the bridge would open to provide clearance for boat traffic.

The existing berm and track would be removed at locations where the double-track trestle is installed, between MP 38.02 to MP 35.04. The placement of the tracks on a double trestle and removal of the existing berm would allow for a hydraulic connection between the tidal salt marshes located to the west and east of the existing berm. This would promote a continuous marsh habitat in the Drawbridge and Triangle Marsh area and an improvement to this habitat over existing conditions. The existing berm would be removed after construction of the new double-trestle structure and would be coordinated with the San Francisco Bay National Wildlife Refuge to be consistent with long-term restoration for the salt marsh areas. Removal of the existing berm, in areas where the realigned main track and new main track would be placed on the double-trestle structure, and the restoration of tidal salt marshes may include temporary work within the Don Edwards San Francisco Bay National Wildlife Refuge.

From MP 35.04 to MP 34.85, the alignment would be placed on a new double track raised berm structure, as described above. From MP 36.85 to MP 34.75, the second main track would be located at grade, east of the existing main track.

**Alternative P-SJF-2d: Alviso Baylands Crossing on Raised Berm and Double Trestle**

This alternative would place the existing main track and second main track on a new double track raised berm structure (for the southern portion of the alignment) and on a new double trestle structure (for the northern portion of the alignment) through the Alviso Baylands. As shown in
Figure 3-4d, improvements that are part of the Alviso Baylands crossing on raised berm and double trestle are as follows.

- Expansion of the existing berm from MP 39.06 to MP 38.90 on the Coast Subdivision to accommodate the second main track on the berm.
- Construction of a new double-track berm from MP 38.90 to MP 36.96 on the Coast Subdivision for the existing and new main tracks.
- Realignment of 0.47-mile of the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout at MP 38.50 on the Coast Subdivision (unless removed as mitigation).
- Construction of a new double-track trestle bridge structure from MP 36.96 to MP 35.04 crossing Coyote Creek and Mud Slough.
- Removal of the existing berm and track between MP 36.96 to MP 35.04 on the Coast Subdivision.
- Construction of a new double-track berm from MP 35.04 to MP 34.85 on the Coast Subdivision for the existing and new main tracks.

Between MP 39.06 and MP 38.90, the existing berm supporting the existing main track crossing the Alviso Baylands would be extended approximately 15 to 32 feet to the east to accommodate the second main track on the berm. Figure 3-5a depicts the typical section of the second main track on expanded berm. The expanded berm supporting the new second main track would be approximately the same height as the existing berm.

From MP 38.90 to just south of Coyote Creek at MP 36.96, a new double-track berm would be constructed to support the existing and new main track. From the southern terminus of the new double track raised berm (MP 38.90) to the location of the USACE flood control levee at MP 38.82, the raised berm would be constructed to the proposed elevation (+15.2 feet NAVD 88) of the USACE flood control levee. At MP 38.82, the location of the USACE flood control levee, no flood gate would be required as because the raised berm would be at the same design height as the flood control levee. From the USACE flood control levee (MP 38.82) to the northern terminus of the new double track raised berm (MP 36.96), the top of rail would be installed at an elevation of approximately 13.4 feet (NAVD 88) which accounts for a 100-year tide and approximately 50 years of sea level rise (to 2067). Figure 3-5b depicts the typical section of the new double track on raised berm, and the design of the double track raised berm would be the same as described for Alternative P-SJF-2b. At MP 38.50, approximately 0.47-mile the existing San Jose-Santa Clara Regional Wastewater Facility spur turnout would be realigned, unless removed as mitigation.

From south of Coyote Creek at MP 36.96 to MP 35.04, a new double-track trestle would be constructed at an elevation of approximately 13.4 feet (NAVD 88) which accounts for a 100-year tide and approximately 50 years of sea level rise (to 2067). Figure 3-5c depicts the typical section of the existing and second main track on double trestle, and the design of the double trestle would be the same as described for Alternative P-SJF-2c. The existing berm and track would be removed at locations where the double-track trestle is installed, between MP 36.96 to MP 35.04. As noted above under the description for Alternative P-SJF-2c, the placement of the tracks on a double trestle and removal of the existing berm would allow for a hydraulic connection between the tidal salt marshes located to the west and east of the existing berm.
From MP 35.04 to MP 34.85, the alignment would be placed on a new double track raised berm structure, as described above. From MP 36.85 to MP 34.75, the second main track would be located at grade, east of the existing main track.

**Auto Mall Parkway to Addition Road**

As shown in Figure 3-6, improvements that are part of the Auto Mall Parkway to Gold Street Connector segment are as follows.

- Construction of a new 1.19-mile main track on the Coast Subdivision from MP 34.10 to MP 32.91.
- Construction of a new single-track concrete bridge structure crossing over a drainage canal at MP 33.91 on the Coast Subdivision.
- Modification of the existing Stevenson Boulevard at-grade crossing at MP 33.43 on the Coast Subdivision.
- Construction of a new 0.09-mile crossover track from the new main track and the existing main track between MP 33.16 and MP 33.07 on the Coast Subdivision.

From the northern terminus of an existing siding track, the new main track would extend 1.19 miles northward from MP 34.10 to MP 32.91. Following the same alignment as the existing main track, the new second main track would cross over a drainage canal at MP 33.91, and Stevenson Boulevard at-grade at MP 33.43. The second main track would cross over the drainage canal via a new single-track concrete bridge located west of the single-track bridge for the existing main track. Modifications to the Stevenson Boulevard grade crossing for the new main track may include installing concrete crossing panels where the tracks cross the roadway, stop bars, crossing signals, guard/gates, and a signal house. At the northern terminus, a short 0.09-mile crossover track would be constructed from the new main track to the existing track between MP 33.16 and MP 33.07 to allow trains to shift to and from the new main track.

### 3.3.1.3 Alternative P-SJF-3: Fremont Station Improvements

The Fremont Station is located at 37260 Fremont Boulevard, north of downtown Fremont. As shown in Figure 3-7, improvements at the Fremont Station are as follows.

- Expansion of the four-story parking structure (constructed in the near term), providing 436 parking spaces.

There is an existing surface parking lot (North Lot), located between Walton Avenue and the railroad tracks, that provides for 218 parking spaces at the Fremont Station. As described in Section 2.3.1.2, *Alternative SJF-2: Fremont Station Improvements*, a 150,000-square-foot, four-story parking structure would be constructed on a parcel between the railroad tracks and Peralta Boulevard/SR 84 (South Lot) and would provide a net increase of 358 parking spaces at the Fremont Station.¹⁵

To meet longer-term parking demands, all four stories of the parking structure would be expanded westward onto approximately 1.08-acres on the adjacent parcels, providing 436 additional parking spaces. The parking structure constructed in the near term would be expanded by approximately

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¹⁵ The near-term parking structure would provide 364 additional parking spaces at the South Lot; however, the pedestrian overcrossing also constructed in the near-term would result in the loss of 6 existing parking spaces at the North Lot.
145,000 square feet, for a total structure size of approximately 295,000 square feet. The expanded parking structure would remove 93 parking spaces, for a net increase of 343 parking spaces, resulting in a total of 701 parking spaces on the South Lot. Vehicle access to the expanded parking structure on the South Lot would be provided by a new entrance on Peralta Boulevard/SR 84.

As shown in Table 3-1, a total of 919 parking spaces would be provided at the Fremont Station with the parking improvements.

**Table 3-1. Fremont Station—Longer-Term Parking Improvements**

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parking with Near-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>North Lot</td>
<td>212</td>
</tr>
<tr>
<td>South Lot</td>
<td>364</td>
</tr>
<tr>
<td><strong>Parking Spaces with Near-Term Improvements</strong></td>
<td>576</td>
</tr>
<tr>
<td><strong>Proposed Parking with Longer-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>South Lot—Expansion of Parking Structure</td>
<td>436</td>
</tr>
<tr>
<td>South Lot—Existing Parking Spaces Removed</td>
<td>-93</td>
</tr>
<tr>
<td><strong>Total Parking Spaces</strong></td>
<td>919</td>
</tr>
</tbody>
</table>

The parking improvements at the Fremont Station would be located outside the UPRR ROW. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### 3.3.2 Centerville to Union City

The Centerville to Union City segment is located in Alameda County in the areas of northern Fremont and Union City. In this segment, ACE operates on the Centerville line of the Niles Subdivision from Newark to Niles Junction in Fremont. SJRRC is considering establishing a train-to-train ACE or Diesel Multiple Unit (DMU)\(^{16}\) connection from the Fremont Station to the BART Union City Station via a track connection between the Centerville line and the Oakland Subdivision. This track connection, known as the “Shinn connection,” was previously analyzed in the Union City Intermodal Station Passenger Rail project (City of Union City 2006). BART tracks run parallel to the west side of the Oakland Subdivision. ACE currently does not operate passenger rail services on the Oakland Subdivision in this area. There are four longer-term improvement alternatives in this segment.

- Alternative P-UC-1a: ACE to Union City
- Alternative P-UC-1b: ACE to Union City with Centerville line expansion
- Alternative P-UC-2a: DMU to Union City
- Alternative P-UC-2b: DMU to Union City with Centerville line expansion

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\(^{16}\) A diesel multiple unit (DMU) train is a multiple-unit train powered by on-board diesel engines that requires no separate locomotive.
Of the four BART connection alternative in this segment, one may be selected for implementation. The selected longer-term BART connection alternative would be contingent upon whether the Centerville line expansion\(^\text{17}\) would be implemented in the near term and which train technology is selected for this connection.

### 3.3.2.1 Alternative P-UC-1a: ACE to Union City

The ACE to Union City alternative would include a track connection between the Centerville line of the Niles Subdivision and the north-south segment of the Oakland Subdivision to allow for an ACE/BART train-to-train connection at the BART Union City Station. This alternative would allow for the use of standard ACE diesel locomotive trains. As shown in Figure 3-8, improvements that are part of the ACE to Union City alternative are as follows.

- Construction of a new 0.36-mile main track connecting the Niles Subdivision at MP 31.02 to the Oakland Subdivision at MP 29.27.
- Modification of the existing BART undercrossing and construction of new retaining wall at MP 30.92 on the Niles Subdivision.
- Construction of a new station platform between MP 26.43 and MP 26.53 on the Oakland Subdivision.
- Construction of a new pedestrian path between the ACE and BART Union City station platform areas.
- Realignment of 0.16 mile of four storage tracks at the Shinn Yard between MP 29.36 and MP 29.52 on the Oakland Subdivision.

The new 0.36-mile main track would turn out from the northern main track on the Niles Subdivision at MP 31.02 and connect to the Oakland Subdivision at MP 29.27, just before the existing main track crosses Alameda Creek. With this track connection, ACE trains traveling east on the Niles Subdivision (on the Centerville line) could connect to the north-south segment of the Oakland Subdivision and travel north on the subdivision approximately 2.3 miles to establish a train-to-train connection at the BART Union City Station.

This new track connection would remain at grade and would cross under the BART overhead structure at MP 30.92 on the Niles Subdivision. Crossing under the BART overhead structure, the new main track connection would be located north of the existing northern pier. Pier protection\(^\text{18}\) would be installed on the northern pier of the BART overhead structure. Because the new track connection would cut into the northern abutment slope for the BART overhead structure, a 160-foot-long retaining wall with cable railing at the top of the wall would be installed along the length of the existing abutment slope. The retaining wall would vary in height along the abutment slope, but would be approximately 20 feet tall at the highest point.

Approximately 2.3 miles north of the new track connection, an ACE Union City Station platform would be constructed between MP 26.43 and MP 26.53 on the Oakland Subdivision, adjacent to the

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\(^{17}\) The Centerville line expansion is described in Section 2.3.2.1, *Alternative CNS-1a: Alameda Creek Bridge, Sunol Double Track, and Hearst Siding Extension with and without Centerville Line Expansion*.

\(^{18}\) Overhead structures with a pier closer than 25 feet from the centerline of a new track require *pier protection* in the form of a crash wall. Pier protection is designed to resist impact and redirect equipment in case of derailment.
BART Union City Station platform to facilitate a train-to-train connection. A pedestrian path would be constructed to connect the ACE and BART station platform areas. Parking for ACE riders at the BART Union City Station is assumed to be shared and would be provided by existing BART facilities. Additionally, approximately 0.16 mile of four storage tracks at the Shinn Yard on the Oakland Subdivision between MP 29.36 and MP 29.52 would be realigned for the purposes of accommodating the new track connection.

At MP 26.48, where the ACE Union City Station platform would be constructed, the City of Union City plans to construct a new pedestrian at-grade crossing on the Oakland Subdivision. This new at-grade crossing would provide access between the ACE and BART Union City Station and the transit facilities and housing east of the station. The City has collaborated with UPRR, the California Public Utilities Commission (CPUC), and the Federal Railroad Administration (FRA) and has received approval from UPRR on the conceptual drawing for the at-grade crossing (City of Union City 2017). Per UPRR and CPUC requirements, the City would be required to provide pedestrian gates, self-closing emergency swing gates, fencing, signage and tactile warning strips for this new pedestrian at-grade crossing. No additional improvements would be required as part of ACEforward.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on existing industrial land uses along Von Euw Common and Copa Del Oro Drive. However, specific ROW and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

As described above, this Shinn connection was previously analyzed as part of the Union City Intermodal Station Passenger Rail project (City of Union City 2006). Union City approved the project in February 2006; however, there is no anticipated construction schedule for the project. This ACEforward EIR evaluates this alternative programatically based in part on Union City’s prior analysis and incorporates by reference the analysis presented in the project’s environmental documents.

### 3.3.2.2 Alternative P-UC-1b: ACE to Union City with Centerville Line Expansion

Under this alternative, the ACE improvements would be the same as described under Alternative P-UC-1a, except with a modification to the track connection on the southern end due to the third main track constructed under the Centerville line expansion. At the southern end of the new track connection, as shown in Figure 3-8, the new track connection would turn out from the third main track on the Niles Subdivision at MP 30.94 and connect to the Oakland Subdivision at MP 29.27, just before the existing main track crosses Alameda Creek. The new track connection under this alternative would be 0.29-mile in length, slightly shorter than the connection under Alternative P-UC-1a.

Additional improvements include modification of the BART overhead undercrossing, realignment of storage tracks at the Shinn Yard, and construction of an ACE Union City Station platform on the Oakland Subdivision to support the new track connection and train operations. For a detailed description of improvements for the ACE to Union City, please refer to Section 3.3.2.1, Alternative P-UC-1a: ACE to Union City.

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19 The ridership estimated for this alternative would transfer to and from BART and not generate substantial demand for additional parking spaces at the BART Union City Station.
3.3.2.3 Alternative P-UC-2a: DMU to Union City

The DMU to Union City alternative would consist of a track connection between the Centerville line of the Niles Subdivision and the north-south segment of the Oakland Subdivision to allow for a DMU/BART train-to-train connection at the BART Union City Station. This alternative would allow for the use of DMU trains. The responsible party for the operating the DMU has not been determined; ACE may choose not to operate such a service but this would not preclude another operator. As shown in Figure 3-9, improvements that are part of the DMU to Union City alternative are as follows.

- Construction of a new DMU station platform on the Niles Subdivision between MP 32.03 and MP 31.92.
- Construction of new 0.26-mile DMU station track from MP 32.01 to MP 31.75 on the Niles Subdivision.
- Construction of new 0.36-mile main track connecting the Niles Subdivision at MP 31.02 to the Oakland Subdivision at MP 29.27.
- Modification of the existing BART undercrossing and construction of new retaining wall at MP 30.92 on the Niles Subdivision.
- Construction of a new DMU station platform between MP 26.43 and MP 26.53 on the Oakland Subdivision.
- Construction of a new pedestrian platform between the DMU and BART Union City station platform areas.
- Realignment of 0.16 mile of four storage tracks at the Shinn Yard between MP 29.36 and MP 29.52 on the Oakland Subdivision.

A DMU platform would be constructed on the Niles Subdivision between MP 32.03 and MP 31.92, just east of the existing ACE Fremont Station platform. A 0.26-mile DMU station track would be constructed north of the existing main tracks from the western end of the DMU platform at MP 32.01 and join the northern main track of the Niles Subdivision at MP 31.75. This station platform and track would allow passengers to board the DMU train shuttle at the Fremont Station and the train to use the standard rail on the Niles Subdivision for travel eastward.

The new 0.36-mile main track would turn out from the northern track on the Niles Subdivision at MP 31.02 and connect to the Oakland Subdivision at MP 29.27, just before the existing main track crosses Alameda Creek. With this track connection, DMU trains departing the DMU station platform at the Fremont Station traveling east on the Niles Subdivision (on the Centerville line) could connect to the north-south segment of the Oakland Subdivision and travel north on the subdivision approximately 2.3 miles to establish a train-to-train connection at the BART Union City Station.

This new track connection would remain at grade and would cross under the BART overhead structure at MP 30.92 on the Niles Subdivision. Crossing under the BART overhead structure, the new main track connection would be located north of the existing northern pier. Pier protection would be installed on the northern pier of the BART overhead structure. Because the new track connection would cut into the northern abutment slope for the BART overhead structure, a 160-foot-long retaining wall with cable railing at the top of the wall would be installed along the length of the existing abutment slope. The retaining wall would vary in height along the abutment slope, but would be approximately 20 feet tall at the highest point.
Approximately 2.3 miles north of the new track connection, a DMU platform would be constructed between MP 26.43 and MP 26.53 on the Oakland Subdivision, adjacent to the BART Union City Station platform to facilitate a train-to-train connection. A pedestrian path would be constructed to connect the DMU and BART station platform areas. Parking for DMU riders at the BART Union City Station is assumed to be shared and would be provided by existing BART facilities. Additionally, approximately 0.16 mile of four storage tracks at the Shinn Yard on the Oakland Subdivision between MP 29.36 and MP 29.52 would be realigned for the purposes of accommodating the new track connection.

At MP 26.48, where the DMU platform would be constructed, the City of Union City plans to construct a new pedestrian at-grade crossing on the Oakland Subdivision. This new at-grade crossing would provide access between the DMU and BART Union City Station and the transit facilities and housing east of the station. The City has collaborated with UPRR, the California Public Utilities Commission (CPUC), and the Federal Railroad Administration (FRA) and has received approval from UPRR on the conceptual drawing for the at-grade crossing (City of Union City 2017). Per UPRR and CPUC requirements, the City would be required to provide pedestrian gates, self-closing emergency swing gates, fencing, signage and tactile warning strips for this new pedestrian at-grade crossing. No additional improvements would be required as part of ACE forward.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on existing industrial land uses along Von Euw Common and Copa Del Oro Drive. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

As described above, this Shinn connection was previously analyzed as part of the Union City Intermodal Station Passenger Rail project (City of Union City 2006). Union City approved the project in February 2006; however, there is no anticipated construction schedule for the project. This ACE forward EIR evaluates this alternative programatically, based in part on Union City’s prior analysis and incorporates by reference the analysis presented in that project’s environmental documents.

### 3.3.2.4 Alternative P-UC-2b: DMU to Union City with Centerville Line Expansion

Under this alternative, the DMU improvements would be the same as described under Alternative P-UC-2a, except with modifications to the DMU station track on the eastern end, and the track connection on the southern end, due to the third main track constructed under the Centerville line expansion. As noted above, the responsible party for the operating the DMU has not been determined; ACE may choose not to operate such a service but this would not preclude another operator.

At the eastern end of the new DMU station track, as shown in Figure 3-9, with the Centerville line expansion improvements, the new DMU station track in the vicinity of the ACE Fremont Station would join into the third main track on the Niles Subdivision at MP 31.77. The new DMU station track under this alternative would be 0.24-mile in length, slightly shorter than the DMU station track under Alternative P-UC-2a. In addition, at the southern end of the new track connection, the new

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20 The ridership estimated for this alternative would transfer to and from BART and not generate substantial demand for additional parking spaces at the BART Union City Station.
track connection would turn out from the third main track on the Niles Subdivision at MP 30.94 and connect to the Oakland Subdivision at MP 29.27, just before the existing main track crosses Alameda Creek. The new track connection under this alternative would be 0.29-mile in length, slightly shorter than the connection under Alternative P-UC-1a.

Additional improvements include construction of a DMU platform at the ACE Fremont Station, modification of the BART overhead undercrossing, realignment of storage tracks at the Shinn Yard, and construction of a DMU platform on the Oakland Subdivision to support the new track connection and train operations. For a detailed description of improvements for the DMU to Union City, please refer to Section 3.3.2.3, Alternative P-UC-2a: DMU to Union City.

3.3.3 Tri-Valley

The Tri-Valley segment is located in Alameda County and includes Pleasanton and Livermore, where ACE currently provides service. In this segment, ACE operates on the Oakland Subdivision from southern Pleasanton to eastern Livermore, to the western edge of the Altamont Pass, which is a mountain pass between Livermore to the west and Tracy to the east.

SJRRRC is considering establishing a train-to-train ACE, DMU or electric multiple unit (EMU) connection to BART in this segment through one of the various alignment and connection alternatives. BART has also evaluated several alignment and connection options to ACE in their BART to Livermore Extension Program EIR (BART PEIR) (San Francisco Bay Area Rapid Transit District 2009). The program was approved in June 2010 and BART is currently preparing a project-level environmental document for extension options east of the existing BART Dublin/Pleasanton Station, including a potential BART extension to Isabel Avenue (San Francisco Bay Area Rapid Transit District 2017). Through agency coordination, BART has provided SJRRRC with the preliminary footprint for the extension from BART Dublin/Pleasanton Station to Isabel Avenue. This ACEforward EIR evaluates options for an ACE and BART connection programmatic, based in part on BART’s prior programmatic environmental document and the preliminary footprint provided by BART. In addition, this ACEforward EIR provides a programmatic analysis of ACE or DMU/EMU connection to BART alternatives not included in the BART PEIR.

Figure 3-10 provides an overview of the alternatives in this segment. There are 11 ACE or DMU/EMU and BART connection alternatives evaluated in this segment—four potential ACE to BART alignments, two potential DMU/EMU to BART alignments, three potential BART to ACE alignments, and two bus shuttle routes.

- Alternative P-TV-1a: ACE to BART Isabel Avenue at grade
- Alternative P-TV-1b: ACE to BART Isabel Avenue on elevated structure
- Alternative P-TV-1c: DMU/EMU to BART Isabel Avenue

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21 An electric multiple unit (EMU) train is a multiple-unit train powered by electricity derived from an overhead contact system (OCS) that requires no separate locomotive.

22 BART’s preliminary project-level footprint (from BART Dublin/Pleasanton Station to Isabel Avenue) includes the Isabel Avenue Station area and identifies a maintenance facility northeast of the I-580/Isabel Avenue interchange. Beyond Isabel Avenue, SJRRRC applied assumptions based on BART’s preliminary footprint to create footprints for the extension of BART from Isabel Avenue to Greenville Road and from Isabel Avenue to Livermore and Vasco Road. SJRRRC applied the footprints identified in the BART PEIR for the Greenville Road, Livermore, and Vasco Road station areas and Greenville and Vasco yards.
- Alternative P-TV-1d: Bus shuttle from ACE Livermore to BART Isabel Avenue
- Alternative P-TV-2a: ACE to BART Dublin/Pleasanton at grade
- Alternative P-TV-2b: ACE to BART Dublin/Pleasanton on elevated structure
- Alternative P-TV-2c: DMU/EMU to BART Dublin/Pleasanton
- Alternative P-TV-2d: Existing bus shuttle from ACE Pleasanton to BART West Dublin/Pleasanton
- Alternative P-BART-1: BART to Greenville and ACE Greenville Road
- Alternative P-BART-2: BART to ACE Livermore intermodal and ACE Vasco Road
- Alternative P-BART-3: BART to ACE Livermore and ACE Vasco Road intermodal

In addition to the alignment options, there are three westbound standard rail connection options for the ACE to BART alignments (Alternatives P-TV-1a, P-TV-1b, P-TV-2a, and P-TV-2b) taking into account where westbound ACE trains would exit the Altamont segment. For the two DMU to BART alignments (Alternatives P-TV-1c and P-TV-2c), there are two options for the placement of operational facilities depending on where westbound ACE trains would exit the Altamont segment to connect with DMU/EMU service.

Of the eleven BART connection alternatives in this segment, one may be selected for implementation.

Separate from the BART connection alternatives, in order to support the increased ACE service proposed in the longer term, improvements to existing passenger facilities would also be required at the existing Pleasanton, Livermore, and Vasco Road Stations.

There are three longer-term station improvement alternatives in this segment.
- Alternative P-TV-3: Pleasanton Station improvements
- Alternative P-TV-4: Livermore Station improvements
- Alternative P-TV-5: Vasco Road Station improvements

All three longer-term station improvement alternatives in this segment would be selected for implementation.

### 3.3.3.1 Alternative P-TV-1a: ACE to BART Isabel Avenue at Grade

The ACE to BART Isabel Avenue at grade alternative would establish an ACE and BART train-to-train connection at a future Isabel Avenue Station. This alternative would allow the use of standard ACE diesel locomotive trains. As shown in Figure 3-11, improvements that are part of the ACE to BART Isabel Avenue at grade alternative are as follows.

- Replacement of 0.3 miles of existing track on the Oakland Subdivision from MP 52.94 to MP 53.24.
- Construction of a new 6.11-mile main track from MP 53.24 on the Oakland Subdivision to east of the I-580 and Isabel Avenue/SR 84 interchange.
- Construction of a new single-track concrete bridge structure crossing over Greenville Road and westbound I-580 to join the I-580 median.
• Widening of approximately 4.5 miles of I-580 where the new alignment is within the I-580 median.

• Reconstruction of the existing North Vasco Road/South Vasco Road crossing structure over I-580.

• Reconstruction of the existing First Street crossing structure over I-580.

• Reconstruction of the existing Las Colinas Road crossing structure over I-580.

• Reconstruction of the existing Portola Avenue crossing structure over I-580.

• Construction of a new station platform in the I-580 median at Isabel Avenue.

• Construction of a new main track connection for westbound trains exiting the Altamont.

• Extension of BART from Dublin/Pleasanton to Isabel Avenue.

A 0.3-mile portion of existing track between MP 52.94 and MP 53.24 on the Oakland Subdivision would be removed and replaced in place with a new main track to support longer-term service and new alignment options from the Altamont segment. At MP 53.24 on the Oakland Subdivision, the new 6.11-mile main track would turn out from the existing main track on the Oakland Subdivision, transition onto a 20-foot-wide single-track concrete bridge structure crossing over Greenville Road and westbound I-580, and join the I-580 median. Approximately 1.62 miles from the eastern terminus of the new alignment, the alignment would transition from the bridge structure to at-grade within the I-580 median.

The majority of the new single-track alignment within the I-580 median would be located at grade or within a retained cut. Figure 3-12 depicts the typical sections of the new alignment at-grade and within a retained cut. The new track alignment would require approximately 21 feet of new ROW within the I-580 median for the length of the alignment. Based on preliminary engineering, in order to accommodate the new alignment in the median, I-580 would be widened by 11 feet on each side of the freeway for the length of the alignment. Four interchange crossing structures at North Vasco Road/South Vasco Road, First Street, Las Colinas Road, and Portola Avenue along I-580 would be rebuilt to meet vertical clearance requirements. At the western terminus of the new alignment, the track would transition onto an elevated structure entering the future Isabel Avenue Station. As shown in Figure 3-13, the ACE station platform would be constructed east of the I-580 and Isabel Avenue/SR 84 interchange and would be located above the BART station platforms and tracks. Parking and supporting passenger facilities at the Isabel Avenue Station is assumed to be shared and would be provided by BART.

A new track connection would be constructed on the eastern terminus of the new alignment to allow westbound trains exiting the Altamont to join into the new alignment within the I-580 median and travel towards the future Isabel Avenue Station. There are three westbound track connection options. These connection options are from existing, Altamont Tunnel, or Long Tunnel alignments. The selected westbound connection option would be contingent upon which alignment would be implemented in the Altamont segment. For a detailed description of each westbound track connection option, please refer to Section 3.3.3.12, Standard Rail Track Connection Options.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on the California Department of Transportation (Caltrans) ROW, slivers of parcels adjacent to I-580 ROW, and open-space areas at the eastern end of the new alignment. Specific ROW
and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

**BART Extension to Isabel Avenue**

As part of this alternative, BART is presumed to construct an approximately 5.2-mile alignment extension within the I-580 median from the existing BART Dublin/Pleasanton Station to Isabel Avenue, as depicted in Figure 3-14. The BART extension to Isabel Avenue was analyzed in the BART PEIR as Alternative 4—Isabel/I-580. As detailed in the BART PEIR, approximately 5.2 miles of I-580 would require widening to provide the necessary 46-foot-wide corridor for BART operations and additional width would be required at the Isabel Avenue Station. In addition, several crossing structures would require modifications to their abutments, and portions of frontage roads would be relocated to north or south of the freeway: Croak Road, Freisman Road, Collier Canyon Road, Airway Boulevard, and Kitty Hawk Road.

The BART Isabel Avenue Station area would be situated on an approximately 51-acre site bisected by I-580 and the station platform would be located at-grade in the I-580 median, east of the I-580 and Isabel Avenue/SR 84 interchange. Surface parking lots, parking garages, and other BART facilities would be located north and south of I-580. Pedestrian bridges over I-580 would connect the north and south sides of the station by an elevated concourse to the at-grade station platform in the I-580 median.

As described above, BART is currently preparing project-level environmental document for the extension from BART Dublin/Pleasanton to Isabel Avenue and through agency coordination, BART has provided SJRRC with the preliminary footprint for this extension. Whereas the BART PEIR did not identify a new maintenance facility associated with Alternative 4—Isabel/I-580, the preliminary footprint for the BART extension to Isabel identifies an area northeast of the I-580/Isabel Avenue interchange that would serve as a maintenance yard. This ACEforward EIR evaluates the BART portion of this alternative programmatically based on the preliminary footprint provided by BART as well as BART’s prior analysis. This EIR incorporates by reference the analysis presented in the BART PEIR.

**3.3.3.2 Alternative P-TV-1b: ACE to BART Isabel Avenue on Elevated Structure**

The ACE to BART Isabel Avenue on elevated structure alternative would establish an ACE and BART train-to-train connection at a future Isabel Avenue Station. This alternative would allow for the use of standard ACE diesel locomotive trains. As shown in Figure 3-15, improvements that are part of the ACE to BART Isabel Avenue on elevated structure alternative are as follows.

- Replacement of 0.3 miles of existing track on the Oakland Subdivision from MP 52.94 to MP 53.24.
- Construction of a new 6.11-mile main track from MP 53.24 on the Oakland Subdivision to east of the I-580 and Isabel Avenue/SR 84 interchange.
- Construction of a new single-track concrete bridge structure crossing over Greenville Road and westbound I-580 to join the I-580 median.
- Construction of a new single-track concrete aerial structure within the I-580 median supporting the new alignment.
• Construction of a new station platform in the I-580 median at Isabel Avenue.
• Construction of a new main track connection for westbound trains exiting the Altamont.
• Extension of BART from Dublin/Pleasanton to Isabel Avenue.

Under this alternative, the new single-track alignment would be extended to the Isabel Avenue on the same horizontal alignment as described for Alternative P-TV-1a, except this alternative would be placed on an elevated structure. For a detailed description of improvements included in this alternative aside from its vertical alignment, please refer to Section 3.3.3.1, Alternative P-TV-1a: ACE to BART Isabel Avenue at Grade. This section provides a description of the new alignment on an elevated structure within the I-580 median.

Under Alternative P-TV-1b, the majority of the new alignment within the I-580 median would be located on an elevated structure. Figure 3-16 depicts the typical section of the new alignment on an elevated structure. The elevated structure would remain within the existing I-580 median ROW, and would not require widening of the I-580 or rebuilding of interchange crossing structures along I-580. Based on preliminary engineering, the aerial structure within the I-580 median would be a 20-foot-wide single-track concrete bridge at a height of approximately 30 to 40 feet.

A new track connection would be constructed on the eastern terminus of the new alignment to allow westbound trains exiting the Altamont to join into the new alignment within the I-580 median and travel towards the future Isabel Avenue Station. There are three westbound track connection options. These connection options are from existing, Altamont Tunnel, or Long Tunnel alignments. The selected westbound connection option would be contingent upon which alignment would be implemented in the Altamont segment. For a detailed description of each westbound track connection option, please refer to Section 3.3.3.12, Standard Rail Track Connection Options.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on Caltrans ROW and open-space areas at the eastern end of the new alignment. Specific ROW and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

As part of this alternative, BART is presumed to construct an approximately 5.2-mile alignment extension within the I-580 median from the existing BART Dublin/Pleasanton Station to Isabel Avenue, as depicted in Figure 3-14. For a detailed description of BART's extension to Isabel Avenue, please refer to Section 3.3.3.1, Alternative P-TV-1a: ACE to BART Isabel Avenue at Grade.

3.3.3.3 Alternative P-TV-1c: DMU/EMU to BART Isabel Avenue

The DMU/EMU to BART Isabel Avenue alternative would include ACE train-to-train connection with a DMU or EMU system at a Greenville Road Station and the DMU or EMU system would connect with a future BART Isabel Avenue Station. This alternative would allow for the use of DMU or EMU trains to connect ACE and BART. The responsible party for the operating the DMU or EMU has not been determined; ACE may choose not to operate such a service but this would not preclude another operator, including BART. There are two technology variants for this alternative (DMU or EMU) and only one would be selected for implementation. As shown in Figure 3-17, improvements that are part of the DMU/EMU to BART Isabel Avenue alternative are as follows.

• Construction of a new Greenville Road Station with a shared ACE and DMU/EMU station platform on the Oakland Subdivision at Greenville Road and supporting passenger and maintenance facilities.
- Construction of a new 6.17-mile main track (and overhead contact system (OCS) to support EMU technology in the EMU variant) from MP 52.99 on the Oakland Subdivision to east of the I-580 and Isabel Avenue/SR 84 interchange.
- Construction of a new single-track subway crossing under I-580.
- Construction of a new single-track concrete bridge structure crossing over Greenville Road and westbound I-580 to join the I-580 median.
- Widening of approximately 5 miles of I-580 where the new alignment is within the I-580 median.
- Construction of a new DMU/EMU station platform in the I-580 median at Isabel Avenue.
- Extension of BART from Dublin/Pleasanton to Isabel Avenue (by BART).

A station platform would be constructed to support an ACE and DMU/EMU train-to-train connection at the future Greenville Road Station. Station tracks, storage tracks, maintenance areas, and parking would also be constructed in the vicinity of the station platform. There are two potential station location options, depending on which alignment option is selected in the Altamont segment. These station locations take into account the existing or potential Altamont and Long Tunnel alignments. For a detailed description of station location options, please refer to Section 3.3.3.13, ACE and DMU/EMU Greenville Road Station Options. The station platform at the future Greenville Road Station would be shared between ACE and DMU/EMU services, and this station would replace the existing ACE Vasco Road Station. The future Greenville Road Station would function as a transfer station to allow transfers from ACE regular service to the DMU/EMU shuttle for travel west to the future Isabel Avenue Station.

At MP 52.99 on the Oakland Subdivision, the new 6.17-mile DMU/EMU alignment would turn out from the existing main track on Oakland Subdivision, cross under I-580 in a subway structure, transition onto a 20-foot-wide single-track concrete bridge structure crossing over Greenville Road and westbound I-580, and join into the I-580 median. Approximately 1.18 miles from the eastern terminus of the new alignment, the alignment would transition from the bridge structure to at-grade within the I-580 median.

The majority of the new single-track DMU/EMU alignment within the I-580 median would be located at grade. Figure 3-18 depicts the typical sections of the new DMU/EMU alignment at-grade. The new track alignment would require approximately 21 feet of new ROW within the I-580 median for the length of the alignment. Based on preliminary engineering, in order to accommodate the new DMU/EMU alignment in the median, I-580 would be widened by 11 feet on each side of the freeway for the length of the alignment. As shown in Figure 3-18, at interchange overcrossing structures, the new DMU/EMU alignment would travel around the existing center pier of the overcrossing structure. The DMU/EMU infrastructure would be compatible with the existing vertical clearances of the overcrossing structures and no reconstruction of these structures would be required. However, to accommodate the new DMU/EMU alignment traveling around the center pier of overcrossing structures, I-580 would be widened by 22 feet to the south at four overcrossing structure locations (North Vasco Road/South Vasco Road, First Street, Las Colinas Road, and Portola Avenue interchanges). At the western terminus of the new DMU/EMU alignment, the track would transition onto an elevated structure entering the future Isabel Avenue Station. As shown in Figure 3-13, the DMU/EMU station platform would be constructed east of the I-580 and Isabel Avenue/SR 84 interchange and would be located above the BART station platforms and tracks. Parking and
supporting passenger facilities at the Isabel Avenue Station is assumed to be shared and would be provided by BART. The DMU/EMU would operate as a shuttle between the future Greenville Road and Isabel Avenue Stations.

To support EMU technology, an overhead contact system (OCS) would be constructed along the length of the new alignment within the I-580 median. A mainline overhead contact system typically consists of two conductors (a messenger wire and contact wire) suspended above a track in a catenary configuration. On a straight section of track, the conductors are supported by poles ranging from 30 to 50 feet tall and typically spaced 180 to 200 feet apart. The poles are often set back approximately 10 to 12 feet from the track centerline. Crossing under interchange overcrossing structures where vertical height is constrained, the new alignment may be lowered to provide adequate vertical clearance for the facilities required to power EMU technology. The most common overhead systems are 25 kV alternating current (AC) systems, but there are a variety of AC and direct current (DC) systems that could conceptually be used.

The electrical infrastructure to support an EMU alternative has not yet been designed. In concept, a traction power substation could be constructed adjacent to the Greenville Road Station and tie into Pacific Gas & Electric’s (PG&E) power supply. The connection from the new substation would likely be to one of the following PG&E substations adjacent to I-580 or near Greenville: Lawrence Substation (south along Greenville Road), Las Positas Substation (on Preston Ave, south of I-580 between First Ave. and Vasco Road), or the Vasco Substation (on Southfront Rd. south of I-580 east of Vasco Rd). The connection could be via overhead power line or underground conduit. If the EMU alternative is advanced into project-level environmental clearance, then the traction power facilities will need to be identified and designed, including all necessary connections to the PG &E electrical system and any improvements necessary to the electrical distribution system.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on Caltrans ROW, slivers of parcels adjacent to I-580 ROW, and open-space areas at the eastern end of the new alignment. Specific ROW and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

As part of this alternative, BART is presumed to construct an approximately 5.2-mile alignment extension within the I-580 median from the existing BART Dublin/Pleasanton Station to Isabel Avenue, as depicted in Figure 3-14. For a detailed description of BART's extension to Isabel Avenue, please refer to Section 3.3.3.1, Alternative P-TV-1a: ACE to BART Isabel Avenue at Grade.

### 3.3.3.4 Alternative P-TV-1d: Bus Shuttle from ACE Livermore to BART Isabel Avenue

As shown in Figure 3-19, this alternative would consist of new bus service provided by the Livermore Amador Valley Transit Authority (LAVTA) from the existing ACE Livermore Station to the future BART Isabel Avenue Station. Under this alternative, an ACE or DMU and BART train-to-train connection or extension of ACE service would not occur. There would be no improvements undertaken by SJRRC for this alternative.

As part of this alternative, BART is presumed to construct an approximately 5.2-mile alignment extension within the I-580 median from the existing BART Dublin/Pleasanton Station to Isabel Avenue, as depicted in Figure 3-14. For a detailed description of BART's extension to Isabel Avenue, please refer to Section 3.3.3.1, Alternative P-TV-1a: ACE to BART Isabel Avenue at Grade.
3.3.3.5 Alternative P-TV-2a: ACE to BART Dublin/Pleasanton at Grade

The ACE to BART Dublin/Pleasanton at grade alternative would establish ACE and BART train-to-train connection at the existing BART Dublin/Pleasanton Station. This alternative would allow the use of standard ACE diesel locomotive trains. As shown in Figure 3-20, improvements that are part of the ACE to BART Dublin/Pleasanton at grade alternative are as follows:

- Replacement of 0.3 miles of existing track on the Oakland Subdivision from MP 52.94 to MP 53.24.
- Construction of a new 11.6-mile main track from MP 53.24 on the Oakland Subdivision to east of the I-580 and Dougherty Road/Hopyard Road interchange.
- Construction of a new single-track concrete bridge structure crossing over Greenville Road and westbound I-580 to join the I-580 median.
- Widening of approximately 10.5 miles of I-580 where the new alignment is within the I-580 median.
- Reconstruction of the existing North Vasco Road/South Vasco Road crossing structure over I-580.
- Reconstruction of the existing First Street crossing structure over I-580.
- Reconstruction of the existing Las Colinas Road crossing structure over I-580.
- Reconstruction of the existing Portola Avenue crossing structure over I-580.
- Reconstruction of the existing Isabel Avenue crossing structure over I-580.
- Construction of a new station platform in the I-580 median at Isabel Avenue and supporting passenger facilities.
- Reconstruction of the existing Airway Boulevard crossing structure over I-580.
- Reconstruction of the existing El Charro Road crossing structure over I-580.
- Reconstruction of the existing Tassajara Road crossing structure over I-580.
- Reconstruction of the existing Hacienda Drive crossing structure over I-580.
- Construction of a new station platform in the I-580 median at the BART Dublin/Pleasanton Station.
- Construction of a new main track connection for westbound trains exiting the Altamont.

A 0.3-mile portion of existing track between MP 52.94 and MP 53.24 on the Oakland Subdivision would be removed and replaced in place with a new main track to support longer-term service and new alignment options from the Altamont segment. At MP 53.24 on the Oakland Subdivision, the new 11.60-mile main track would turn out from the existing main track on the Oakland Subdivision, transition onto a 20-foot-wide single-track concrete bridge structure crossing over Greenville Road and westbound I-580, and join the I-580 median. Approximately 1.62 miles from the eastern terminus of the new alignment, the alignment would transition from the bridge structure to at-grade within the I-580 median.

The majority of the new single-track alignment within the I-580 median would be located at grade or within a retained cut. Figure 3-12 depicts the typical sections of the new alignment at-grade and
within a retained cut. The new track alignment would require approximately 21 feet of new ROW within the I-580 median for the length of the alignment. Based on preliminary engineering, in order to accommodate the new alignment in the median, I-580 would be widened by 11 feet on each side of the freeway for the length of the alignment. Nine interchange crossing structures at North Vasco Road/South Vasco Road, First Street, Las Colinas Road, Portola Avenue, Isabel Avenue, Airway Boulevard, El Charro Road, Tassajara Road, and Hacienda Drive along I-580 would be rebuilt to meet vertical clearance requirements. Approximately 3.5 miles east of the I-580 and Isabel Avenue/SR 84 interchange, the single-track alignment diverges westward and becomes a double track for approximately 0.44 mile before converging back into a single track. The ACE station platform would be constructed at-grade between the double tracks, just east of the I-580 and Isabel Avenue/SR 84 interchange. Parking for the Isabel Avenue Station would consist of 580 surface parking spaces and would be provided on a parcel located south of I-580. Pedestrian overcrossings would be constructed to provide access from the parking areas and areas north of I-580 to the station platform. At the western terminus of the new alignment, the track would enter the existing BART Dublin/Pleasanton Station at-grade. As shown in Figure 3-21, the ACE station platform would be constructed east of the I-580 and Dougherty Road/Hopyard Road interchange and would be located adjacent to the BART tracks and westbound I-580 lanes. Parking and supporting passenger facilities for ACE riders at the BART Dublin/Pleasanton Station is assumed to be shared and would be provided by existing BART facilities.

A new track connection would be constructed on the eastern terminus of the new alignment to allow westbound trains exiting the Altamont to join into the new alignment within the I-580 median and travel towards the existing BART Dublin/Pleasanton Station. There are three westbound track connection options. These connection options are from existing, Altamont Tunnel, or Long Tunnel alignments. The selected westbound connection option would be contingent upon which alignment would be implemented in the Altamont segment. For a detailed description of each westbound track connection option, please refer to Section 3.3.3.12, Standard Rail Track Connection Options.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on Caltrans ROW, slivers of parcels adjacent to I-580 ROW, and open-space areas at the eastern end of the new alignment. Specific ROW and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

As part of this alternative, BART is presumed not to extend BART service in the Tri-Valley. The ACE and BART train-to-train connection would be established at the existing BART Dublin/Pleasanton Station.

### 3.3.3.6 Alternative P-TV-2b: ACE to BART Dublin/Pleasanton on Elevated Structure

The ACE to BART Dublin/Pleasanton on elevated structure would establish an ACE and BART train-to-train connection at the existing BART Dublin/Pleasanton Station. This alternative would allow for the use of standard ACE diesel locomotive trains. As shown in Figure 3-22, improvements that are part of the ACE to BART Dublin/Pleasanton on elevated structure alternative are as follows.

- Replacement of 0.3 miles of existing track on the Oakland Subdivision from MP 52.94 to MP 53.24.
- Construction of a new 11.6-mile main track from MP 53.24 on the Oakland Subdivision to east of the I-580 and Dougherty Road/Hopyard Road interchange.
• Construction of a new single-track concrete bridge structure crossing over Greenville Road and westbound I-580 to join the I-580 median.
• Construction of a new single-track concrete aerial structure within the I-580 median supporting the new alignment.
• Construction of a new station platform in the I-580 median at Isabel Avenue and supporting passenger facilities.
• Construction of a new station platform in the I-580 median at the BART Dublin/Pleasanton Station.
• Construction of a new main track connection for westbound trains exiting the Altamont.

Under this alternative, the new single-track alignment would be extended to the existing BART Dublin/Pleasanton Station on the same horizontal alignment as described for Alternative P-TV-2a, except this alternative would be placed on an elevated structure. For a detailed description of improvements included in this alternative aside from its vertical alignment, please refer to Section 3.3.3.5, Alternative P-TV-2a: ACE to BART Dublin/Pleasanton at Grade. This section provides a description of the new alignment on an elevated structure within the I-580 median.

Under Alternative P-TV-2b, the majority of the new alignment within the I-580 median would be located on an elevated structure. Figure 3-16 depicts the typical section of the new alignment on an elevated structure. The elevated structure would remain with the existing I-580 median ROW, and would not require widening of the I-580 or rebuilding of interchange crossing structures along I-580. Based on preliminary engineering, the aerial structure within the I-580 median would be a 20-foot-wide single-track concrete bridge at a height of approximately 30 to 40 feet. The double track, station platform, and supporting passenger facilities at the Isabel Avenue Station would be as described above in Section 3.3.3.5. The station platform at Isabel Avenue would be at a height of approximately 50 feet.

A new track connection would be constructed on the eastern terminus of the new alignment to allow westbound trains exiting the Altamont to join into the new alignment within the I-580 median and travel towards the existing BART Dublin/Pleasanton Station. There are three westbound track connection options. These connection options are from existing, Altamont Tunnel, or Long Tunnel alignments. The selected westbound connection option would be contingent upon which alignment would be implemented in the Altamont segment. For a detailed description of each westbound track connection option, please refer to Section 3.3.3.12, Standard Rail Track Connection Options.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on Caltrans ROW and open-space areas at the eastern end of the new alignment. Specific ROW and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

As part of this alternative, BART is presumed not to extend BART service in the Tri-Valley. The ACE and BART train-to-train connection would be established at the existing BART Dublin/Pleasanton Station.
3.3.3.7 Alternative P-TV-2c: DMU/EMU to BART Dublin/Pleasanton

The DMU/EMU to BART Dublin/Pleasanton alternative would establish a DMU or EMU and ACE train-to-train connection at the future Greenville Road Station and a DMU or EMU and BART train-to-train connection at the existing BART Dublin/Pleasanton Station. This alternative would allow for the use of DMU or EMU trains to connect ACE and BART. The responsible party for the operating the DMU has not been determined; ACE may choose not to operate such a service but this would not preclude another operator. There are two technology variants for this alternative (DMU or EMU) and only one would be selected for implementation. As shown in Figure 3-23, improvements that are part of the DMU/EMU to BART Dublin/Pleasanton alternative are as follows.

- Construction of a new Greenville Road Station with a shared ACE and DMU/EMU station platform on the Oakland Subdivision and supporting passenger and maintenance facilities.
- Construction of a new 11.67-mile main track from MP 52.99 on the Oakland Subdivision to east of the I-580 and Dougherty Road/Hopyard Road interchange.
- Construction of a new single-track subway crossing under I-580.
- Construction of a new single-track concrete bridge structure crossing over Greenville Road and westbound I-580 to join the I-580 median.
- Widening of approximately 10.5 miles of I-580 where the new alignment is within the I-580 median.
- Construction of a new DMU/EMU station platform in the I-580 median at Isabel Avenue and supporting passenger facilities.
- Construction of a new DMU/EMU station platform in the I-580 median at the BART Dublin/Pleasanton Station.

A station platform would be constructed on the Oakland Subdivision to support an ACE and DMU/EMU train-to-train connection at the future Greenville Road Station. Station tracks, storage tracks, maintenance areas, and parking would also be constructed in the vicinity of the station platform. There are two potential station location options, depending on which alignment option is selected in the Altamont segment. These station locations take into account the existing or Altamont and Long Tunnel alignments. For a detailed description of station location options, please refer to Section 3.3.3.13, ACE and DMU/EMU Greenville Road Station Options. The station platform at the future Greenville Road Station would be shared between ACE and DMU/EMU services, and this station would replace the existing ACE Vasco Road Station. The future Greenville Road Station would function as a transfer station to allow transfers from ACE regular service to the DMU/EMU shuttle for travel east to the existing BART Dublin/Pleasanton Station.

At MP 52.99 on the Oakland Subdivision, the new 11.67-mile DMU/EMU alignment would turn out from the existing main track on Oakland Subdivision, cross under I-580 in a subway structure, transition onto a 20-foot-wide single-track concrete bridge structure crossing over Greenville Road and westbound I-580, and join into the I-580 median. Approximately 1.18 miles from the eastern terminus of the new alignment, the alignment would transition from the bridge structure to at-grade within the I-580 median.

The majority of the new single-track DMU/EMU alignment within the I-580 median would be located at grade. Figure 3-18 depicts the typical sections of the new DMU/EMU alignment at-grade. The new track alignment would require approximately 21 feet of new ROW within the I-580 median.
for the length of the alignment. Based on preliminary engineering, in order to accommodate the new DMU/EMU alignment in the median, I-580 would be widened by 11 feet on each side of the freeway for the length of the alignment. As shown in Figure 3-18, at interchange overcrossing structures, the new DMU/EMU alignment would travel around the existing center pier of the overcrossing structure. The DMU/EMU infrastructure would be compatible with the existing vertical clearances of the overcrossing structures and no reconstruction of these structures would be required. However, to accommodate the new DMU/EMU alignment traveling around the center pier of overcrossing structure, I-580 would be widened by 22 feet to the south at nine overcrossing structure locations (North Vasco Road/South Vasco Road, First Street, Las Colinas Road, Portola Avenue, Isabel Avenue, Airway Boulevard, El Charro Road, Tassajara Road, and Hacienda Drive interchanges). Approximately 3.5 miles east of the I-580 and Isabel Avenue/SR 84 interchange, the single-track alignment diverges westward and becomes a double track for approximately 0.44 mile before converging back into a single track. The DMU/EMU station platform at Isabel Avenue would be constructed at-grade between the double tracks, just east of the I-580 and Isabel Avenue/SR 84 interchange. Parking for the Isabel Avenue Station would be provided on a parcel located south of I-580, and pedestrian overcrossings would be constructed to provide access from the parking areas and areas north of I-580 to the station platform. At the western terminus of the new DMU/EMU alignment, the track would enter the existing BART Dublin/Pleasanton Station at grade. As shown in Figure 3-21, the DMU/EMU station platform would be constructed east of the I-580 and Dougherty Road/Hopyard Road interchange and would be located adjacent to the BART tracks and westbound I-580 lanes. Parking and supporting passenger facilities for DMU/EMU riders at the BART Dublin/Pleasanton Station is assumed to be shared and would be provided by existing BART facilities. The DMU/EMU would operate as a shuttle between the Greenville Road and BART Dublin/Pleasanton Stations.

To support EMU technology, an overhead contact system (OCS) would be constructed along the length of the new alignment within the I-580 median. A mainline overhead contact system typically consists of two conductors (a messenger wire and contact wire) suspended above a track in a catenary configuration. On a straight section of track, the conductors are supported by poles ranging from 30 to 50 feet tall and typically spaced 180 to 200 feet apart. The poles are often set back approximately 10 to 12 feet from the track centerline. Crossing under interchange overcrossing structures where vertical height is constrained, the new alignment may be lowered to provide adequate vertical clearance for the facilities required to power EMU technology. The most common overhead systems are 25 kV AC systems, but there are a variety of AC and direct current (DC) systems that could conceptually be used.

The electrical infrastructure to support an EMU alternative has not yet been designed. Traction power facilities would include at least one traction power substation and possibly one or more paralleling stations. In concept, a traction power substation could be constructed at/adjacent to the Greenville Road Station and tie into PG&E’s power supply. Paralleling stations, if required, would be built at suitable locations along I-580. The connection from the new substation would likely be to one of the following PG&E substations adjacent to I-580 or near Greenville: Lawrence Substation (south along Greenville Road), Las Positas Substation (on Preston Ave, south of I-580 between First Ave. and Vasco Road), or the Vasco Substation (on Southfront Rd. south of I-580 east of Vasco Rd). If the substation were instead built at the Dublin end of the system, then the connection to PG&E would likely be to the Parks Substation at Camp Parks in Dublin. The connection could be an overhead power line or an underground conduit. If the EMU alternative is advanced into project-level environmental clearance, then the traction power facilities will need to be identified and
designed, including all necessary connections to the PG &E electrical system and any improvements necessary to the electrical distribution system.

The majority of improvements for this alternative would be located outside the UPRR ROW, encroaching on Caltrans ROW, slivers of parcels adjacent to I-580 ROW, and open-space areas at the eastern end of the new alignment. Specific ROW and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

As part of this alternative, BART is presumed not to extend BART service in the Tri-Valley. The ACE and BART connection would be established via DMU service between the future Greenville Road Station and the existing BART Dublin/Pleasanton Station.

### 3.3.3.8 Alternative P-TV-2d: Existing Bus Shuttle from ACE Pleasanton to BART West Dublin/Pleasanton

As shown in Figure 3-24, this alternative would consist of the existing bus service provided by LAVTA. Route 53 provides service between BART West Dublin/Pleasanton and ACE Pleasanton stations and currently runs four buses in the morning period and four buses in the evening period on weekdays (Livermore Amador Valley Transit Authority 2017). It is assumed that Route 53 would complement the increase in ACE service in the longer term by running additional buses.

Under this alternative, an ACE or DMU and BART train-to-train connection or extension of ACE service would not occur. There would be no improvements undertaken by SJRRC for this alternative. Similarly, BART is presumed not to extend BART service in the Tri-Valley.

### 3.3.3.9 Alternative P-BART-1: BART to Greenville and ACE Greenville Road

The BART to Greenville and ACE Greenville Road alternative would establish an ACE and BART train-to-train connection at the future Greenville Road Station. The BART extension to Greenville Road was analyzed in the BART PEIR (San Francisco Bay Area Rapid Transit District 2009) as Alternative 1 – Greenville East. As part of this alternative, ACE would establish a station at Greenville Road and the existing Vasco Road Station would be discontinued.

#### BART Extension to Greenville

As shown in Figure 3-25, BART would construct an approximately 11.5 mile extension within the I-580 median from the existing BART Dublin/Pleasanton Station to the future Isabel Avenue and Greenville Road Stations.23 From the existing BART Dublin/Pleasanton Station, the alignment extension would proceed east at grade within the I-580 median for 9.8 miles. The alignment would then ascend on retained fill and transition onto an aerial structure at 10.1 miles east of the point of origin. At this point, the alignment would angle north away from the I-580 median and cross the westbound lanes of I-580 near the existing westbound I-580 Greenville Road off-ramp. At 10.3 miles east of the point of origin, the alignment would turn to the south and cross under I-580 in a box culvert or similar structure, where the alignment would parallel the existing UPRR alignment and continue to the Greenville Road Station. The BART station platform at Greenville Road would be 10.8 miles east of the point of origin. Tail tracks for the alignment would extend south from the station.

23 The Isabel Avenue Station is referred to as the Isabel/I-580 Station and the Greenville Road Station is referred to as the Greenville East Station in the BART PEIR.
platform along the west edge of the UPRR ROW. At 11 miles east of the point of origin, the aerial structure would transition to short segments of at-grade, retained cut, and fill before terminating 11.5 miles from the point of origin.

As detailed in the BART PEIR, approximately 10.7 miles of I-580 would require widening to provide the necessary 46-foot-wide corridor for BART operations and additional width would be required at the Isabel Avenue Station. Three crossing structures over I-580 would be rebuilt—Vasco Road, First Street, and Las Colinas Road. In addition, several crossing structures would require modifications to their abutments, and portions of frontage roads would be relocated to north or south of the freeway—Croak Road, Kitty Hawk Road, Las Colinas Road, Freisman Road, Collier Canyon Road, Airway Boulevard, and Southfront Road.

The BART extension to Greenville would establish two stations (Isabel Avenue and Greenville Road) and a maintenance yard (Greenville Yard) along the extension route. For a description of BART’s Isabel Avenue Station, please refer to Section 3.3.3.1, Alternative P-TV-1a: ACE to BART Isabel Avenue at Grade. The BART Greenville Road Station area would be situated on approximately 65-acres bounded by Greenville Road to the west and I-580 to the north, and the station platform would be located on an aerial structure with an at-grade station concourse. Parking, in the form of surface lots and a multi-story parking structure, would be located adjacent to the station platforms. This station would serve as a multi-modal transfer point between BART, ACE, and regional bus services.

To support the BART extension to Greenville, a new maintenance/storage facility would be constructed on an approximately 120-acre site north of I-580 and northwest of the Greenville Road Station. Two yard lead tracks would connect the Greenville Road Station to the Greenville Yard. The Greenville Yard may include a car wash building, control tower, inspection pit, blowdown facility, wheel truer, revenue vehicle maintenance facility, vehicle turn table, a possible non-revenue vehicle maintenance facility, a material storage area, and numerous transfer and storage tracks to support maintenance and operational activities.

As described above, BART is currently a preparing project-level environmental document for the extension from BART Dublin/Pleasanton to Isabel Avenue and through agency coordination, BART has provided SJRRC with the preliminary footprint for this extension. Beyond Isabel Avenue, SJRRC applied assumptions based on BART’s preliminary footprint to create footprints for the extension of BART from Isabel Avenue to Greenville Road.24 This ACE Forward EIR evaluates the BART portion of this alternative programmatic based on the preliminary footprint created by SJRRC as well as BART’s prior analysis. This EIR incorporates by reference the analysis presented in the BART PEIR.

**ACE and BART Greenville Road Station**

As part of this alternative, ACE would establish a station at Greenville Road and the existing Vasco Road Station would be discontinued. As shown in Figure 3-26, the ACE would construct a station platform, station track, and supporting passenger facilities at the Greenville Road Station. The station platform would be located on the Oakland Subdivision between MP 52.89 and MP 53.02, adjacent to the BART station platform, and a pedestrian bridge would be constructed between both station platform areas. A station track would be constructed east of the station platform and existing main track on the Oakland Subdivision. The length and layout of the station track varies depending

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24 BART’s preliminary project-level footprint (from BART Dublin/Pleasanton Station to Isabel Avenue) includes the Isabel Avenue Station area. SJRRC also applied the footprints identified in the BART PEIR for the Greenville Road Station area and Greenville Yard.
on which alignment (existing, Altamont Tunnel, or Long Tunnel alignments) would be implemented in the Altamont segment. A short connecting track would be constructed between the station track and the Altamont and Long tunnels, if those alignments are selected. In addition, parking improvements would include 529 parking spaces. The location of the parking would be located within Greenville Station area and would need to be integrated with the BART station design and thus has not been determined at this time.

The majority of improvements for this alternative would be located within the UPRR ROW, except for the parking improvements. Specific ROW and easement needs for this alternative have not been determined and would be identified in future project-level analysis.

### 3.3.3.10 Alternative P-BART-2: BART to Livermore Intermodal and ACE Vasco Road

The BART to ACE Livermore intermodal and ACE Vasco Road alternative would establish an ACE and BART train-to-train connection at both existing ACE Livermore and Vasco Road Stations. The BART extension to ACE Livermore and Vasco Road is a variation of two extension alternatives analyzed in the BART PEIR (San Francisco Bay Area Rapid Transit District 2009). The BART extension to downtown Livermore was analyzed as Alternative 3 – Portola and the extension from downtown Livermore to Vasco Road is the eastern portion of the alignment was analyzed as Alternative 2a—Downtown-Vasco.

As shown in Figure 3-27, BART would construct an approximately 10-mile extension from the existing BART Dublin/Pleasanton Station to the future Isabel Avenue Station, transition to a subway configuration under Portola Avenue and Junction Avenue towards the ACE Livermore Station, and transition to align with the existing UPRR ROW at-grade to terminate at the ACE Vasco Road Station. From the existing BART Dublin/Pleasanton Station, the alignment extension would proceed at-grade eastward for 4.6 miles within the I-580 median towards Isabel Avenue. The alignment would enter a retained cut approaching the Isabel Avenue Station. Departing the Isabel Avenue Station, the alignment would immediately proceed into a subway and pass under the eastbound lanes of I-580. At 4.8 miles from the point of origin, the track would angle south to align with Montecito Circle and would proceed underground beneath the intersection with Portola Avenue. The alignment would then proceed beneath Portola Avenue in subway, crossing to Junction Avenue to an underground station at downtown Livermore. This subway station would be accessed from street level, and the platform would be 6.7 miles from the point of origin. Beyond the station, the track would remain in a subway. The alignment would cross beneath the UPRR ROW and would angle sharply to the east to align with First Street near its intersection with Inman Street. The alignment would proceed east to align with the UPRR ROW, would pass underneath the UPRR, and would resurface on the north side of the UPRR tracks and within the UPRR ROW, just east of the First Street overcrossing structure.

From downtown Livermore to the ACE Vasco Road Station, the BART tracks would continue east along the UPRR tracks on a retained fill crossing beneath Mines Road. At 7.3 miles from the point of origin, the alignment would cross an existing spur track formerly operated by the Southern Pacific Railroad. At 7.6 miles from the point of origin, the alignment would transition to an aerial structure.

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25 The Isabel Avenue Station is referred to as the Isabel/I-580 Station, the ACE Livermore Station is referred to as the Downtown Livermore Station, and the ACE Vasco Road Station is referred to as the Vasco Road Station in the BART PEIR.
The aerial structure is required to permit BART tracks to move from the north side of UPRR track to the south side within the existing UPRR ROW. The aerial structure would end at 7.9 miles from the point of origin and then would return to retained fill. The track would cross beneath an existing roadway overpass at Vasco Road. Immediately east of Vasco Road, a station would be sited adjacent to the existing ACE platform within the UPRR ROW. Immediately east of the Vasco Road Station, the track would become a yard lead for a Vasco Yard situated along the southern edge of the UPRR track. Tail tracks would traverse the yard and parallel the existing UPRR track on retained cut and fill within the UPRR ROW, crossing Greenville Road and terminating approximately 2,100 feet farther east at 10 miles from the point of origin.

As detailed in the BART PEIR, approximately 4.9 miles of I-580 would require widening to provide the necessary 46-foot-wide corridor for BART operations and additional width would be required at the Isabel Avenue Station. In addition, several crossing structures would require modifications to their abutments, and portions of frontage roads would be relocated to north or south of the freeway: Croak Road, Freisman Road, Collier Canyon Road, Airway Boulevard, and Kitty Hawk Road. The subway alignment would also require boring activities.

The BART extension to ACE Livermore and Vasco Road stations would establish three stations (Isabel Avenue, Livermore, and Vasco Road) and a maintenance yard (Vasco Yard) along the extension route. For a description of BART’s Isabel Avenue Station, please refer to Section 3.3.3.1, Alternative P-TV-1a: ACE to BART Isabel Avenue at Grade. The BART Livermore Station area would be situated on an approximately 27-acre site encompassing the existing ACE Livermore Station/Livermore Transit Center. The BART station platform at Livermore Station would be located at grade adjacent to and north of the ACE station platform and parking would be provided by existing parking areas and new surface lots and parking structures. This station currently serves as a regionally significant transit hub that facilitates connections between ACE and multiple LAVTA routes and the addition of BART service would expand the station’s multimodal capacity. The BART Vasco Road Station area would be situated on an approximately 60-acre site encompassing the existing ACE Vasco Road Station. The BART station platform at Vasco Road Station would be located at grade adjacent to and south of the ACE station platform and parking would consist of new surface lots and parking structures. This station would serve as a multi-modal transfer point between BART, ACE, and regional bus services.

To support the BART extension to ACE Livermore and Vasco Road Stations, a new maintenance/storage facility would be constructed on an approximately 52-acre site east of the Vasco Road Station. Two yard lead tracks would connect the Vasco Road Station to the Vasco Yard. The Vasco Yard may include a car wash building, control tower, inspection pit, blowdown facility, wheel truer, revenue vehicle maintenance facility, vehicle turn table, a possible non-revenue vehicle maintenance facility, a material storage area, and numerous transfer and storage tracks to support maintenance and operational activities.

As described above, BART is currently preparing a project-level environmental document for the extension from BART Dublin/Pleasanton to Isabel Avenue and through agency coordination, BART has provided SJRRC with the preliminary footprint for this extension. Beyond Isabel Avenue, SJRRC applied assumptions based on BART’s preliminary footprint to create footprints for the extension of
BART from Isabel Avenue to Livermore and Vasco Road. This ACE Forward EIR evaluates the BART portion of this alternative programmatic based on the preliminary footprint created by SJRRC as well as BART's prior analysis. This EIR incorporates by reference the analysis presented in the BART PEIR.

Under this alternative, ACE would not extend ACE service in the Tri-Valley and would not construct a new alignment. The ACE and BART train-to-train connection would be established at the existing ACE Livermore and Vasco Road Stations. The main difference between Alternative P-BART-2 and Alternative P-BART-3 (described in Section 3.3.3.11) is which existing ACE station would have the optimized ACE and BART connection. For this alternative, the ACE and BART connection would be optimized at the ACE Livermore Station which would require construction of intermodal station features such as enhanced pedestrian connections between station platform areas. The design and location of these features would need to be integrated with the BART station design and thus has not been determined at this time.

### 3.3.3.11 Alternative P-BART-3: BART to ACE Livermore and ACE Vasco Road Intermodal

Under the BART to ACE Livermore and ACE Vasco Road intermodal alternative, ACE would not extend ACE service in the Tri-Valley and would not construct a new alignment. The ACE and BART train-to-train connection would be established at the existing ACE Livermore and Vasco Road Stations. As shown in Figure 3-27, BART would construct an approximately 10-mile extension from the existing BART Dublin/Pleasanton Station to the future Isabel Avenue Station, transition to a subway configuration under Portola Avenue and Junction Avenue towards the ACE Livermore Station, and transition to align with the existing UPRR ROW at-grade to terminate at the ACE Vasco Road Station. This alternative would be the same as described for Alternative P-BART-2, except the optimized ACE and BART train-to-train connection would be at the ACE Vasco Road Station instead of in downtown Livermore. For a detailed description of BART's extension to ACE Livermore and Vasco Road Stations aside from the intermodal connection, please refer to Section 3.3.3.10, Alternative P-BART-2: BART to ACE Livermore Intermodal and ACE Vasco Road.

For this alternative, the ACE and BART connection would be optimized at the ACE Vasco Road Station which would require construction of intermodal station features such as enhanced pedestrian connections between station platform areas. The design and location of these features would need to be integrated with the BART station design and thus has not been determined at this time.

### 3.3.3.12 Standard Rail Track Connection Options

There are three westbound standard track connection options that could be selected with Alternatives P-TV-1a, P-TV-1b, P-TV-2a, and P-TV-2b. All three track connection options would be constructed on the eastern terminus of these four alternatives to allow westbound trains exiting the Altamont to join into the new alignment within the I-580 median and travel towards Isabel Avenue and/or BART Dublin/Pleasanton Stations. The three westbound track connection options are from

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26 BART's preliminary project-level footprint (from BART Dublin/Pleasanton Station to Isabel Avenue) includes the Isabel Avenue Station area. SJRRC also applied the footprints identified in the BART PEIR for the ACE Livermore and Vasco Road station areas and Vasco Yard.
existing, Altamont Tunnel, or Long Tunnel alignments and the selected connection option would be contingent upon which alignment would be implemented in the Altamont segment.

The majority of improvements for these connection options would be located outside the UPRR ROW in open-space and active recreation areas. Specific ROW and easement needs for these connection options have not been determined and would be identified in future project-level analysis.

**Connection from Existing Alignment**

This rail connection would allow westbound ACE trains exiting the Altamont segment via the existing ACE route to turn west to join the new alignment within the I-580 median. As shown in Figure 3-28, this 0.58-mile track connection would turn out from MP 53.39 on the Oakland Subdivision, run parallel to westbound I-580, and join the new alignment prior to crossing over westbound I-580 and joining the I-580 median. The majority of this track connection would be placed on an aerial structure and would cross over Greenville Road. This track connection would require new UPRR ROW of approximately 50 feet on each side of the new track centerline for the length of the connection.

**Connection from Altamont Tunnel**

This at-grade rail connection would allow westbound ACE trains exiting the Altamont segment via the Altamont Tunnel to turn north onto the Oakland Subdivision and join the new alignment in the I-580 median. As shown in Figure 3-28, this 0.21-mile track connection would turn out from MP 52.58 on the Oakland Subdivision to connect to the northern main track entering the Altamont Tunnel. Approaching the bored tunnel, the track connection would be placed in a retained cut. This track connection would require new UPRR ROW of approximately 50 feet on each side of the new track centerline for the length of the connection.

**Connection from Long Tunnel**

This at-grade rail connection would allow westbound ACE trains exiting the Altamont segment via the Long Tunnel to turn north onto the Oakland Subdivision and join the new alignment within the I-580 median. As shown in Figure 3-28, this 0.37-mile track connection would turn out from MP 52.64 on the Oakland Subdivision to connect to the northern main track entering the Long Tunnel. Approaching the bored tunnel, the track connection would be placed in a retained cut. This track connection would require new UPRR ROW of approximately 50 feet on each side of the new track centerline for the length of the connection.

### 3.3.3.13 ACE and DMU/EMU Greenville Road Station Options

There are two Greenville Road Station location options that could be selected with Alternatives P-TV-1c and P-TV-2c. Both options would be constructed on the eastern terminus of the two alternatives to allow for an ACE and DMU train-to-train connection at the station. These station locations take into account the existing or Altamont and Long Tunnel alignments, and would be contingent upon which alignment would be implemented in the Altamont segment.
The majority of improvements at the Greenville Road Station location options would be located outside the UPRR ROW, particularly the parking improvements. Specific ROW and easement needs for these supporting operational facility options have not been determined and would be identified in future project-level analysis.

**Greenville Road Station with Existing Alignment**

The potential Greenville Road Station with the existing alignment through the Altamont segment would be constructed just south of I-580 and east of Greenville Road. As shown in Figure 3-29, improvements that are part this Greenville Road Station option are as follows.

- Construction of a new station track and station platform.
- Construction of a new storage track with inspection pit and light maintenance areas.
- Construction of a new surface parking lot, providing 736 parking spaces.
- Construction of a new pedestrian bridge crossing over the railroad tracks.

To provide ACE and DMU/EMU service at this potential station, a new station track and station platform would be constructed to allow trains to pull into the station and passengers to board and disembark the train. A new 0.38-mile DMU/EMU station track would turn out from the main track at MP 52.61 on the Oakland Subdivision and join into the DMU/EMU alignment at MP 52.99 on the Oakland Subdivision. This station track would be used by DMU/EMU trains, and the existing main track on the Oakland Subdivision would be used by ACE trains to board and disembark passengers. An approximately 15-foot-wide and 1,000-foot-long station platform would be constructed between MP 52.83 and MP 52.93, located between the DMU/EMU station track and the main track. Passenger amenities and safety features, such as patron shelters with benches and map boxes, ticket validation machines, street lamps, guardrails, security equipment, and emergency call box stations, would be installed on the station platform area. A 1,000-foot-long spur DMU/EMU storage track would be constructed west of the DMU/EMU station track. The storage track would include an inspection pit and areas for providing light DMU/EMU train maintenance.\(^{27}\)

As noted above in the description of Alternatives TV-1c and TV-2c, a traction power station may also be located at the Greenville maintenance yard (see description above).

To meet longer-term parking demands generated by ACE and DMU/EMU services at this potential station, a new surface parking (West Lot) would be constructed on approximately 12.5 acres, west of the station platform, and would provide 736 parking spaces.\(^{28}\) Vehicle access to the West Lot would be provided by an entrance on Greenville Road. A pedestrian overcrossing would be constructed between the West Lot and the station platform area, crossing over the railroad tracks.

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\(^{27}\) The responsible party for the operating the DMU/EMU has not been determined; ACE may choose not to operate such a service but this would not preclude another operator. If ACE is the operator of the DMU/EMU service, heavy maintenance for DMU/EMU trains would occur at the ACE Maintenance Facility in Stockton.

\(^{28}\) A total of 736 parking spaces would be provided to support the demand from both ACE service (535 parking spaces) and DMU/EMU service (201 parking spaces).
Greenville Road Station with Altamont Tunnel or Long Tunnel

The potential Greenville Road Station with the Altamont or Long tunnels through the Altamont segment would be constructed north of the Greenville Road underpass. As shown in Figure 3-29, improvements that are part this Greenville Road Station option are as follows.

- Construction of a new station track and station platform.
- Construction of a new 0.11-mile track connecting the main track at MP 52.88 to the new DMU alignment at MP 52.99 on the Oakland Subdivision.
- Construction of a new storage track with inspection pit and light maintenance areas.
- Construction of a new surface parking lot, providing 736 parking spaces.
- Construction of a new pedestrian bridge crossing over the railroad tracks.

To provide ACE and DMU service at this potential station, a new station track and station platform would be constructed to allow trains to pull into the station and passengers to board and disembark the train. A new 0.44-mile DMU station track would turn out from the main track at MP 52.11 on the Oakland Subdivision and join into the main track at MP 52.55 on the Oakland Subdivision. This station track would be used by DMU trains, and the existing main track on the Oakland Subdivision would be used by ACE trains to board and disembark passengers. An approximately 15-foot-wide and 1,000-foot-long station platform would be constructed between MP 52.19 and MP 52.29, located between the DMU station track and the main track. Passenger amenities and safety features, such as patron shelters with benches and map boxes, ticket validation machines, street lamps, guardrails, security equipment, and emergency call box stations, would be installed on the station platform area. To the north, a short 0.11-mile track connection would be constructed between MP 52.88 and MP 52.99 on the Oakland Subdivision to allow DMU trains traveling on the main track to connect onto the new DMU alignment. A 1,000-foot-long spur DMU storage track would be constructed west of the DMU station track. The storage track would include an inspection pit and areas for providing light DMU train maintenance.29

To meet longer-term parking demands generated by ACE and DMU services at this potential station, a new surface parking (West Lot) would be constructed on approximately 13 acres, west of the station platform, and would provide 736 parking spaces.30 Vehicle access to the West Lot would be provided by an entrance on Greenville Road. A pedestrian overcrossing would be constructed between the West Lot and the station platform area, crossing over the railroad tracks.

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29 The responsible party for the operating the DMU has not been determined; ACE may choose not to operate such a service but this would not preclude another operator. If ACE is the operator of the DMU service, heavy maintenance for DMU trains would occur at the ACE Maintenance Facility in Stockton.

30 A total of 736 parking spaces would be provided to support the demand from both ACE service (535 parking spaces) and DMU service (201 parking spaces).
### 3.3.3.14 Alternative P-TV-3: Pleasanton Station Improvements

The ACE Pleasanton Station is located at 4950 Pleasanton Avenue, north of the Bernal Avenue undercrossing, in downtown Pleasanton. As shown in Figure 3-30, improvements at the Pleasanton Station are as follows.

- Construction of a new five-story parking structure with one level below grade, providing 705 parking spaces.
- Construction of a new pedestrian bridge crossing over the railroad tracks.

There is an existing surface parking lot (North Lot), located between Pleasanton Avenue and the railroad tracks, that provides 450 parking spaces at the Pleasanton Station. As described in Section 2.3.3.1, *Alternative TV-1: Pleasanton Station Improvements*, in the near term a new surface parking lot located on a parcel between the railroad tracks and Old Bernal Avenue and would provide 392 additional surface parking spaces. In addition, an approximately 250,000-square-foot, four-story parking structure would be constructed on the southern portion of the existing North Lot and would provide 500 additional parking spaces at the Pleasanton Station.\(^{31}\)

To meet longer-term parking demands, a new approximately 350,000-square-foot, five-story parking structure with one level below grade would be constructed on the South Lot and would provide 1,097 additional parking spaces. The parking structure would replace 392 existing parking spaces on the South Lot, for a net increase of 705 parking spaces. Vehicle access to the parking structure on the South Lot would be provided by entrances on Old Bernal Avenue and Bernal Court. A permanent pedestrian overcrossing would be constructed between the South Lot and the parking structure on the North Lot, crossing over the railroad tracks.

As shown in Table 3-2, a total of 2,047 parking spaces would be provided at the Pleasanton Station with the parking improvements.

#### Table 3-2. Pleasanton Station—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parking with Near-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>North Lot</td>
<td>950</td>
</tr>
<tr>
<td>South Lot</td>
<td>392</td>
</tr>
<tr>
<td><em>Parking Spaces with Near-Term Improvements</em></td>
<td>1,342</td>
</tr>
<tr>
<td><strong>Proposed Parking with Longer-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>South Lot—Expansion of Parking Structure</td>
<td>1,097</td>
</tr>
<tr>
<td>South Lot—Existing Parking Spaces Removed</td>
<td>392</td>
</tr>
<tr>
<td><em>Proposed Parking Spaces</em></td>
<td>705</td>
</tr>
<tr>
<td><strong>Total Parking Spaces</strong></td>
<td>2,047</td>
</tr>
</tbody>
</table>

\(^{31}\) The near-term parking structure would provide 673 additional parking spaces at the North Lot; however, the parking structure constructed in the near-term would result in the loss of 173 existing parking spaces at the North Lot.
The parking improvements at the Pleasanton Station would be located outside the UPRR ROW. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### 3.3.3.15 Alternative P-TV-4: Livermore Station Improvements

The Livermore Station is located at 2418 Railroad Avenue, east of the North Livermore Avenue overcrossing, in the Livermore Transit Center near downtown Livermore. As shown in Figure 3-31, improvements at the Livermore Station are as follows.

- Construction of a new three-story parking structure, providing 317 parking spaces.

There is an existing parking structure (South Lot 1), located between Railroad Avenue and the railroad tracks, that provides 343 parking spaces at the Livermore Station. To meet longer-term demands, a new parking structure would be constructed at the station, west of the existing parking structure. A new, approximately 122,000-square-foot, three-story parking structure would be constructed on South Lot 2, east of the existing South Lot 1 and would provide 317 additional parking spaces. Construction of the parking structure on the South Lot 2 would require the demolition of four existing buildings on site. Vehicle access to the South Lot 2 would be provided by entrances on North I Street and Railroad Avenue.

As shown in Table 3-3, a total of 660 parking spaces would be provided at the Livermore Station with the parking improvements.

#### Table 3-3. Livermore Station—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Parking</strong></td>
<td></td>
</tr>
<tr>
<td>South Lot 1</td>
<td>343</td>
</tr>
<tr>
<td><strong>Existing Parking Spaces</strong></td>
<td>343</td>
</tr>
<tr>
<td><strong>Proposed Parking with Longer-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>South Lot 2</td>
<td>317</td>
</tr>
<tr>
<td><strong>Proposed Parking Spaces</strong></td>
<td>317</td>
</tr>
<tr>
<td><strong>Total Parking Spaces</strong></td>
<td>660</td>
</tr>
</tbody>
</table>

The majority of improvements at the Livermore Station would be located outside of the existing UPRR ROW, particularly the parking improvements. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### 3.3.3.16 Alternative P-TV-5: Vasco Road Station Improvements

The ACE Vasco Road Station is located at 575 South Vasco Road, in the eastern portion of Livermore near the western edge of the Altamont Pass. As shown in Figure 3-32, improvements at the Vasco Road Station are as follows.

- Expansion of the two-story parking structure (constructed in the near term as variant 1), providing 172 parking spaces.
There are two existing surface parking lots that provide 216 parking spaces at the Vasco Road Station. As described in Section 2.3.3.2, Alternative TV-2: Vasco Road Station Improvements, there are two near-term parking improvement variations at this station and only one variation would be implemented in the near term. A two-story or three-story parking structure would be constructed on the East Lot, provide 226 (under variant 1) or 398 (under variant 2) additional parking spaces at the Vasco Road Station.\(^{32}\) If variant 2 is implemented in the near term, no longer-term improvements would be required at the Vasco Road Station.

If variant 1 is implemented in the near term, to meet longer-term parking demands, the two-story parking structure constructed in the near term would be expanded one-level, providing 172 additional parking spaces. Vehicle access to the existing parking structure on the East Lot would be provided an existing driveway on Brisa Street.

As shown in Table 3-4, a total of 614 parking spaces would be provided at the Vasco Road Station with the parking improvements.

### Table 3-4. Vasco Road Station—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parking with Near-Term Improvements (Variant 1)</strong></td>
<td></td>
</tr>
<tr>
<td>West Lot</td>
<td>80</td>
</tr>
<tr>
<td>East Lot</td>
<td>362</td>
</tr>
<tr>
<td><strong>Parking Spaces with Near-Term Improvements</strong></td>
<td>442</td>
</tr>
<tr>
<td><strong>Proposed Parking with Longer-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>East Lot—Expansion of Parking Structure</td>
<td>172</td>
</tr>
<tr>
<td><strong>Proposed Parking Spaces</strong></td>
<td>172</td>
</tr>
<tr>
<td><strong>Total Parking Spaces</strong></td>
<td>614</td>
</tr>
</tbody>
</table>

The parking improvements at the Vasco Road Station would be located outside the UPRR ROW. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### 3.3.4 Altamont

The Altamont segment is located in Alameda County and includes the Altamont Pass, which is a mountain pass between Livermore to the west and Tracy to the east. In this segment, ACE operates on the Oakland Subdivision. At the western end of the Altamont hills, the Oakland Subdivision is located north of Altamont Pass Road and I-580. East of the crest of the pass, the Oakland Subdivision crosses Altamont Pass Road and I-580 and continues into Tracy.

In order to further reduce travel times for the increased ACE service, longer-term improvements to expand rail capacity in this segment with tunnels are under consideration. There are three longer-

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\(^{32}\) The near-term two-story parking structure would provide 286 additional parking spaces and the three-story parking structure would provide 458 additional parking spaces at the East Lot; however, the parking structure constructed would result in the loss of 60 existing parking spaces at the East Lot.
term tunnel alternatives in this segment that could be selected for implementation. The tunnels would allow for the following estimated savings in travel times.

- Alternative P-A-1: Altamont Tunnel (2 minutes in travel time savings)
- Alternative P-A-2: Top Tunnel (3 minutes in travel time savings)
- Alternative P-A-3: Long Tunnel (6 minutes in travel time savings)

A preliminary rough estimate is that the Long Tunnel could result in up to 4 percent increase in ridership compared to ridership for alternatives without the Long Tunnel. Based on the based and maximum ridership scenarios (without a tunnel; see Section 3.4.2, Ridership), this could mean an increased annual ridership of 331,000 to 558,000. The shorter tunnels would have lesser travel time savings and thus less positive effect on ridership. This preliminary rough estimate will be updated based on ridership modelling of the tunnel effect to be conducted prior completion of the Final EIR.

The tunnel alternatives in this segment may or may not be selected for implementation, and if selected, only one tunnel alternative would be implemented. If a tunnel alternative is not selected for implementation, ACE would continue to operate on existing alignment through the Altamont Pass.

### 3.3.4.1 Alternative P-A-1: Altamont Tunnel

As shown in Figure 3-33, this alternative consists of the following improvements.

- Construction of two new 1.7-mile main tracks on the same alignment between MP 52.30 and MP 54.89 on the Oakland Subdivision.

- Construction of a new 1.14-mile double-track tunnel.

- Placement of Altamont Pass Road above grade on overhead structure to allow the track alignment to pass underneath nominally at grade.

The new alignment consists of two 1.7-mile main tracks within a bored tunnel, bypassing the existing 2.59-mile right-angle alignment which contributes to increased travel times and poor operations in the Altamont. Both new main tracks would turn out from the Oakland Subdivision at MP 52.30 and join into the southern terminus of the Altamont track realignment and siding extension (constructed in the near term) at MP 54.89.33

The majority of this new alignment would be placed in a 50-foot-diameter, double-track bored tunnel. The western approach to the tunnel portal would be placed in retained cut and would be located east of existing industrial uses along Greenville Road. From west to east, the tunnel alignment would pass under existing industrial uses, a canal connected to the Patterson Reservoir, generally undisturbed lands, and I-580. A short 0.15-mile portion of the new track alignment would daylight34 from the tunnel and would be placed in retained cut. The eastern tunnel portal would be located north of I-580 and south of Altamont Pass Road and Carroll Road intersection.

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33 The Altamont track realignment and siding extension are described in Section 2.3.4.1, Alternative A-1: Altamont Track Realignment and Siding Extension.

34 Daylighting a tunnel is to remove the overlying rocks and soils, thus exposing the railway to daylight.
Exiting the eastern tunnel portal, the new alignment would cross under Altamont Pass Road. A new overhead structure would be constructed to elevate Altamont Pass Road, allowing the new track alignment to travel under the roadway and remain approximately at grade. The new two-lane road bridge for Altamont Pass Road would be approximately 50-foot-wide, 390-foot-long, and supported by two abutments on each end of the bridge and two bents. The soffit\(^{35}\) of the overhead structure supporting Altamont Pass Road would be approximately 26 feet above the tracks and existing ground. New retaining walls would be constructed on both western and eastern bridge approaches.

The majority of improvements for this alternative would be located outside the UPRR ROW, in areas below the surface for the tunnel or in grasslands for at-grade segments of the new alignment. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### 3.3.4.2 Alternative P-A-2: Top Tunnel

As shown in Figure 3-34, this alternative consists of the following improvements.

- Construction of two new 3.75-mile main tracks on the same alignment between MP 54.40 and MP 59.77 on the Oakland Subdivision.
- Placement of Altamont Pass Road above grade on overhead structure to allow the track alignment to pass underneath nominally at grade.
- Placement of Carroll Road above grade on overhead structure to allow the track alignment to pass underneath nominally at grade.
- Construction of a 2.86-mile double-track tunnel.
- Construction of a new double-track bridge structure supporting the new track alignment crossing the Altamont valley.

The new alignment consists of two 3.75-mile main tracks within a bored tunnel, bypassing the existing 5.39-mile curved alignment along the crest of the Altamont Pass. Both new main tracks would turn out from the Oakland Subdivision at MP 54.40 and rejoin the existing main track at MP 59.77.

At the western terminus, the new alignment would cross under Altamont Pass Road and Carroll Road. Two new overhead structures would be constructed to elevate Altamont Pass Road and Carroll Road, allowing the new track alignment to travel under the roadway and remain approximately at grade. The new two-lane roadway bridge for Altamont Pass Road, which would also be slightly realigned for 0.25 mile, would be approximately 50-foot-wide, 390-foot-long, and supported by two abutments on each end of the bridge and two bents. The soffit of the overhead structure supporting Altamont Pass Road would be approximately 27 feet above the tracks and existing ground. New retaining walls would be constructed on both western and eastern bridge approaches. The new two-lane roadway bridge for Carroll Road would be approximately 38-foot-wide, 93-foot-long, and supported by two abutments on each end of the bridge. The soffit of the overhead structure supporting Carroll Road would be approximately 28 feet above the tracks and existing ground.

---

\(^{35}\) A structure's *soffit* refers to the underside of the structure.
The majority of this new alignment would be placed in a 50-foot-diameter, double-track bored tunnel. The western approach to the tunnel portal would be placed in retained cut and would be located just east of Carroll Road, near the intersection with Altamont Pass Road. From west to east, the tunnel alignment would pass under generally undisturbed lands, areas with monopole wind turbines, and I-580. A short 0.28-mile portion of the new track alignment would daylight from the tunnel and would be placed in retained cut and on a bridge structure crossing low elevations of the Altamont Valley. The new double-track bridge structure would be approximately 39-foot-wide, 800-foot-long, and supported by two abutments on each end of the bridge and 7 piers. The eastern tunnel portal would be located south of I-580 and west of the Jess Ranch Road at-grade crossing.

The majority of improvements for this alternative would be located outside the UPRR ROW, in areas below the surface for the tunnel or in grasslands for at-grade segments of the new alignment. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### 3.3.4.3 Alternative P-A-3: Long Tunnel

As shown in Figure 3-35, this alternative consists of the following improvements.

- Construction of two new 4.68-mile main tracks on the same alignment between MP 52.30 and MP 59.77 on the Oakland Subdivision.
- Construction of a new 3.81-mile double-track tunnel.
- Construction of a new double-track bridge structure supporting the new track alignment crossing the Altamont valley and a drainage creek.

The new alignment consists of two 4.68-mile main tracks within a bored tunnel, bypassing the existing 7.47-mile right-angle alignment and curved alignment along the crest of Altamont Pass. Both new main tracks would turn out from the Oakland Subdivision at MP 52.30 and rejoin the existing main track at MP 59.77.

The majority of this new alignment would be placed in a 50-foot-diameter, double-track bored tunnel. The western approach to the tunnel portal would be placed in retained cut and would be located east of existing industrial uses along Greenville Road. From west to east, the tunnel alignment would pass under existing industrial uses, a canal connected to the Patterson Reservoir, generally undisturbed lands, Flynn Road North, and areas with monopole wind turbines. A 0.58-mile portion of the new track alignment would daylight from the tunnel and would be placed on a bridge structure crossing low elevations of the Altamont Valley and a drainage creek. The new double-track bridge structure would be approximately 39-foot-wide, 3,000-foot-long, and supported by two abutments on each end of the bridge and 29 piers. The eastern tunnel portal would be located south of I-580 and west of the Jess Ranch Road at-grade crossing.

The majority of improvements would be located outside the UPRR ROW, in areas below the surface for the tunnel or in grasslands for segments of the new alignment at grade. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.
3.3.5 **Tracy to Lathrop**

The Tracy to Lathrop segment is located at the eastern end of Alameda County and the southwestern portion of San Joaquin County. This segment passes through the eastern foothills of the Altamont Pass; Tracy; the unincorporated communities of Carbona, Lyoth, and Banta; and the southern portions of Lathrop. Exiting the eastern edge of the Altamont Pass, ACE operates on the Oakland Subdivision serving the existing Tracy and Lathrop/Manteca Stations.

As described in Section 2.3.5, *Tracy to Lathrop*, near-term improvements include options for operating new stations in this segment. In order to support the increased ACE service proposed in the longer term, improvements to existing passenger facilities would also be required at the stations considered for implementation in this segment.

There are 12 longer-term station improvement alternatives in this segment.

- Alternative P-TL-A1: West Tracy Station A-1 improvements
- Alternative P-TL-A2: West Tracy Station A-2 improvements
- Alternative P-TL-A3: West Tracy Station A-3 improvements
- Alternative P-TL-A4: West Tracy Station A-4 improvements
- Alternative P-TL-A5: West Tracy Station A-5 improvements
- Alternative P-TL-B1: West Tracy Station B-1 improvements
- Alternative P-TL-B2: West Tracy Station B-2 improvements
- Alternative P-TL-ET: Existing Tracy Station improvements
- Alternative P-TL-DT: Downtown Tracy Station improvements
- Alternative P-TL-RI: River Islands Station improvements
- Alternative P-TL-RLM: Relocated Lathrop/Manteca Station improvements
- Alternative P-TL-ELM: Existing Lathrop/Manteca Station improvements

Longer-term improvements at stations in this segment are contingent upon which stations are advanced in the near term. Only stations selected for implementation in the near term would undertake longer-term improvements.

### 3.3.5.1 **West of Tracy Station Options**

There are seven station options in the west of Tracy area: West Tracy Stations A-1, A-2, A-3, A-4, A-5, B-1, and B-2. As described in Section 2.3.5.7, *West of Tracy Station Options*, all west of Tracy station options, except for West Tracy Station A-5, could operate as an additional station to the Tracy station selected (Existing Tracy Station or Downtown Tracy Station), or as a replacement station for either the existing or Downtown Tracy station. West Tracy Station A-5 would operate only as a replacement station for the Existing Tracy Station. Accordingly, there are two operational scenarios that affect the amount of parking required at West Tracy Stations A-1, A-2, A-3, A-4, B-1, and B-2. Ridership at the west of Tracy station options would be higher if they operate as a replacement station, compared to operating as an additional station.
Table 3-5 presents a summary of additional parking spaces provided at each west of Tracy station option in the longer term, depending on whether the station is implemented as an additional or replacement station. The station footprints depicted in Figures 3-36 through 3-42 would accommodate the parking areas required at the stations for both operating as an additional station to the Tracy station selected or operating as the only Tracy station.

### Table 3-5. West Tracy Station Options—Summary of Longer-Term Parking Spaces Provided

<table>
<thead>
<tr>
<th>West Tracy Station Option</th>
<th>As Additional Station</th>
<th>As Replacement Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Tracy Station A-1</td>
<td>309</td>
<td>521</td>
</tr>
<tr>
<td>West Tracy Station A-2</td>
<td>345</td>
<td>507</td>
</tr>
<tr>
<td>West Tracy Station A-3</td>
<td>295</td>
<td>527</td>
</tr>
<tr>
<td>West Tracy Station A-4</td>
<td>297</td>
<td>553</td>
</tr>
<tr>
<td>West Tracy Station A-5</td>
<td>--a</td>
<td>399</td>
</tr>
<tr>
<td>West Tracy Station B-1</td>
<td>296</td>
<td>280</td>
</tr>
<tr>
<td>West Tracy Station B-2</td>
<td>274</td>
<td>435</td>
</tr>
</tbody>
</table>

**Notes:**

a West Tracy Station A-5 would operate only as a replacement station for the Existing Tracy Station.

### Alternative P-TL-A1: West Tracy Station A-1 Improvements

The potential West Tracy Station A-1 would be constructed at the eastern edge of the Altamont Pass, east of Midway Road. This is the westernmost station considered as a west of Tracy station option and is located in the existing ACE corridor on the Oakland Subdivision. As shown in Figure 3-36, improvements at West Tracy Station A-1 are as follows:

- Expansion of the surface parking lot (constructed in near-term), providing 309 (operating as an additional station) or 521 parking spaces (operating as replacement station).

West Tracy Station A-1 could operate as an additional station, to better serve the area along with the Tracy station selected, or as a replacement station. As described in Section 2.3.5.7, in the near term, a new surface parking lot (North Lot) would be constructed north of the station platform and provide 590 or 831 parking spaces at West Tracy Station A-1.

To meet longer-term parking demands, the surface parking lot would be expanded, providing an additional 309 or 521 parking spaces at West Tracy Station A-1. Vehicle access to the North Lot would continue to be provided by a driveway from West Patterson Pass Road.

As shown in Table 3-6, a total of 899 or 1,352 parking spaces would be provided at the West Tracy Station A-1 with the parking improvements.

The expanded surface parking lot at West Tracy Station A-1 would be located in areas developed in the near term and there would be no additional longer-term footprint associated with this improvement.
Table 3-6. West Tracy Station A-1—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As Additional Station</td>
<td>As Replacement Station</td>
</tr>
<tr>
<td>Parking with Near-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lot</td>
<td>590</td>
<td>831</td>
</tr>
<tr>
<td><em>Parking Spaces with Near-Term Improvements</em></td>
<td>590</td>
<td>831</td>
</tr>
<tr>
<td>Proposed Parking with Longer-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lot—Expansion of Surface Parking</td>
<td>309</td>
<td>521</td>
</tr>
<tr>
<td><em>Proposed Parking Spaces</em></td>
<td>309</td>
<td>521</td>
</tr>
<tr>
<td>Total Parking Spaces</td>
<td>899</td>
<td>1,352</td>
</tr>
</tbody>
</table>

Alternative P-TL-A2: West Tracy Station A-2 Improvements

The potential West Tracy Station A-2 would be constructed west of Tracy, south of I-580, and is located along the existing ACE route on the Oakland Subdivision. As shown in Figure 3-37, improvements at West Tracy Station A-2 are as follows:

- Expansion of the surface parking lot (constructed in near-term), providing 345 (operating as an additional station) or 507 parking spaces (operating as replacement station).

West Tracy Station A-2 could operate as an additional station, to better serve the area along with the Tracy station selected, or as a replacement station. As described in Section 2.3.5.7, in the near term, a new surface parking lot (North Lot) would be constructed north of the station platform and provide 603 or 757 parking spaces at West Tracy Station A-2.

To meet longer-term parking demands, the surface parking lot would be expanded, providing an additional 345 or 507 parking spaces at West Tracy Station A-2. Vehicle access to the North Lot would continue to be provided by a driveway from Hansen Road.

As shown in Table 3-7, a total of 948 or 1,264 parking spaces would be provided at the West Tracy Station A-2 with the parking improvements.

Table 3-7. West Tracy Station A-2—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As Additional Station</td>
<td>As Replacement Station</td>
</tr>
<tr>
<td>Parking with Near-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lot</td>
<td>603</td>
<td>757</td>
</tr>
<tr>
<td><em>Parking Spaces with Near-Term Improvements</em></td>
<td>603</td>
<td>757</td>
</tr>
<tr>
<td>Proposed Parking with Longer-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lot—Expansion of Surface Parking</td>
<td>345</td>
<td>507</td>
</tr>
<tr>
<td><em>Proposed Parking Spaces</em></td>
<td>345</td>
<td>507</td>
</tr>
<tr>
<td>Total Parking Spaces</td>
<td>948</td>
<td>1,264</td>
</tr>
</tbody>
</table>
The parking improvements at the West Tracy Station A-2 would be located outside the UPRR ROW and outside near-term improvement areas. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

**Alternative P-TL-A3: West Tracy Station A-3 Improvements**

The potential West Tracy Station A-3 would be constructed west of Tracy, between I-580 to the south and the California Aqueduct to the north, and is located along the existing ACE route on the Oakland Subdivision. As shown in Figure 3-38, improvements at West Tracy Station A-3 are as follows:

- Expansion of the surface parking lots (constructed in near-term), providing 295 (operating as an additional station) or 527 parking spaces (operating as replacement station).

West Tracy Station A-3 could operate as an additional station, to better serve the area along with the Tracy station selected, or as a replacement station. As described in Section 2.3.5.7, in the near term, two surface parking lots (North Lot and South Lot) would be constructed north and south of the station platform and provide 640 or 781 parking spaces at West Tracy Station A-3.

To meet longer-term parking demands, both surface parking lots would be expanded, providing an additional 295 or 527 parking spaces at West Tracy Station A-3. Vehicle access to the North Lot would continue to be provided by a driveway from Hansen Road. Vehicle from the South Lot would continue to be provided from roadways constructed as part of the adjacent Tracy Hills Specific Plan development.

As shown in Table 3-8, a total of 935 or 1,308 parking spaces would be provided at the West Tracy Station A-3 with the parking improvements.

**Table 3-8. West Tracy Station A-3—Longer-Term Parking Improvements**

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As Additional Station</td>
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<tr>
<td>Parking with Near-Term Improvements</td>
<td></td>
</tr>
<tr>
<td>North Lot</td>
<td>451</td>
</tr>
<tr>
<td>South Lot</td>
<td>189</td>
</tr>
<tr>
<td>Parking Spaces with Near-Term Improvements</td>
<td>640</td>
</tr>
<tr>
<td>Proposed Parking with Longer-Term Improvements</td>
<td></td>
</tr>
<tr>
<td>North Lot — Expansion of Surface Parking</td>
<td>295</td>
</tr>
<tr>
<td>South Lot — Expansion of Surface Parking</td>
<td>0</td>
</tr>
<tr>
<td>Proposed Parking Spaces</td>
<td>295</td>
</tr>
<tr>
<td>Total Parking Spaces</td>
<td>935</td>
</tr>
</tbody>
</table>

The parking improvements at the West Tracy Station A-3 would be located outside the UPRR ROW and outside near-term improvement areas. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.
Alternative P-TL-A4: West Tracy Station A-4 Improvements

The potential West Tracy Station A-4 would be constructed west of Tracy, just west of South Lammers Road between the Delta-Mendota Canal to the north and the California Aqueduct to the south. As shown in Figure 3-39, improvements at West Tracy Station A-4 are as follows:

- Expansion of the surface parking lot (constructed in near-term), providing 84 parking spaces (operating as replacement station).
- Construction of a new surface parking lot, providing 297 (operating as an additional station) or 469 parking spaces (operating as a replacement station).
- Construction of a new pedestrian bridge crossing over the railroad tracks.

West Tracy Station A-4 could operate as an additional station, to better serve the area along with the Tracy station selected, or as a replacement station. As described in Section 2.3.5.7, in the near term, a surface parking lot (North Lot) would be constructed north of the station platform and provide 601 or 751 parking spaces at West Tracy Station A-4.

To meet longer-term parking demands, the surface parking on the North Lot would be expanded, providing an 84 parking spaces (operating as replacement station) at West Tracy Station A-4. Vehicle access to the North Lot would continue to be provided by two entrances on South Lammers Road. A new surface parking lot (South Lot) would be constructed on approximately 4.8 acres, south of the station platform, providing 297 or 469 parking spaces. Vehicle access to the South Lot would be provided by two entrances on South Lammers Road. A pedestrian overcrossing would be constructed between the North Lot and South Lot, crossing over the railroad tracks.

As shown in Table 3-9, a total of 898 or 1,304 parking spaces would be provided at the West Tracy Station A-4 with the parking improvements.

Table 3-9. West Tracy Station A-4—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As Additional Station</td>
<td>As Replacement Station</td>
</tr>
<tr>
<td>Parking with Near-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lot</td>
<td>601</td>
<td>751</td>
</tr>
<tr>
<td>Parking Spaces with Near-Term Improvements</td>
<td>601</td>
<td>751</td>
</tr>
<tr>
<td>Proposed Parking with Longer-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lot — Expansion of Surface Parking</td>
<td>0</td>
<td>84</td>
</tr>
<tr>
<td>South Lot</td>
<td>297</td>
<td>469</td>
</tr>
<tr>
<td>Proposed Parking Spaces</td>
<td>297</td>
<td>553</td>
</tr>
<tr>
<td>Total Parking Spaces</td>
<td>898</td>
<td>1,304</td>
</tr>
</tbody>
</table>

The expanded and new surface parking lots at West Tracy Station A-4 would be located in areas developed in the near term and there would be no additional longer-term footprint associated with this improvement.
**Alternative P-TL-A5: West Tracy Station A-5 Improvements**

The potential West Tracy Station A-5 would be constructed in southern Tracy, just east of Corral Hollow Road and north of the Delta-Mendota Canal. As shown in Figure 3-40, improvements at West Tracy Station A-5 are as follows:

- Expansion of the surface parking lot (constructed in near-term), providing 399 parking spaces.

Due to its proximity to the Existing Tracy Station, West Tracy Station A-5 would only serve as a replacement station, and would not operate as an additional station to the Existing Tracy Station. As described in Section 2.3.5.7, in the near term, a new surface parking lot (South Lot) would be constructed south of the station platform and provide 862 parking spaces at West Tracy Station A-5.

To meet longer-term parking demands, the surface parking lot would be expanded, providing an additional 399 parking spaces at West Tracy Station A-5. Vehicle access to the South Lot would continue to be provided by two entrances on Corral Hollow Road. With longer-term improvements, a total of 1,261 parking spaces would be provided at the West Tracy Station A-5.

The expanded surface parking lot at West Tracy Station A-5 would be located in areas developed in the near term and there would be no additional longer-term footprint associated with this improvement.

**Alternative P-TL-B1: West Tracy Station B-1 Improvements**

The potential West Tracy Station B-1 would be constructed west of Tracy, just north of the California Aqueduct. As shown in Figure 3-41, improvements at West Tracy Station B-1 are as follows:

- Expansion of the surface parking lot (constructed in near-term), providing 296 (operating as an additional station) or 280 parking spaces (operating as replacement station).

West Tracy Station B-1 could operate as an additional station, to better serve the area along with the Tracy station selected, or as a replacement station. As described in Section 2.3.5.7, in the near term, a new surface parking lot (South Lot) would be constructed south of the station platform and provide 559 or 807 parking spaces at West Tracy Station B-1.

To meet longer-term parking demands, the surface parking lot would be expanded, providing an additional 296 or 280 parking spaces at West Tracy Station B-1. Vehicle access to the North Lot would continue to be provided an entrance on Hansen Road.

As shown in Table 3-10, a total of 855 or 1,087 parking spaces would be provided at the West Tracy Station B-1 with the parking improvements.
Table 3-10. West Tracy Station B-1—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided As Additional Station</th>
<th>Spaces Provided As Replacement Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking with Near-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Lot</td>
<td>559</td>
<td>807</td>
</tr>
<tr>
<td>Parking Spaces with Near-Term Improvements</td>
<td>559</td>
<td>807</td>
</tr>
<tr>
<td>Proposed Parking with Longer-Term Improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Lot — Expansion of Surface Parking</td>
<td>296</td>
<td>280</td>
</tr>
<tr>
<td>Proposed Parking Spaces</td>
<td>296</td>
<td>280</td>
</tr>
<tr>
<td>Total Parking Spaces</td>
<td>855</td>
<td>1,087</td>
</tr>
</tbody>
</table>

The parking improvements at the West Tracy Station B-1 would be located outside the UPRR ROW and outside near-term improvement areas. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

**Alternative P-TL-B2: West Tracy Station B-2 Improvements**

The potential West Tracy Station B-2 would be constructed west of Tracy, just east of South Lammers Road and south of West Schulte Road. As shown in Figure 3-42, improvements at West Tracy Station B-2 are as follows:

- Construction of a new surface parking lot, providing 274 (operating as an additional station) or 435 parking spaces (operating as a replacement station).

West Tracy Station B-2 could operate as an additional station, to better serve the area along with the Tracy station selected, or as a replacement station. As described in Section 2.3.5.7, in the near term, a new surface parking lot (South Lot 1) would be constructed south of the station platform and provide 548 or 736 parking spaces at West Tracy Station B-1.

To meet longer-term parking demands, a new surface parking lot (South Lot 2) would be constructed on approximately 8 acres, south of the station platform, providing 274 or 435 parking spaces. Vehicle access to the South Lot 2 would be provided by an entrance on South Lammers Road.

As shown in Table 3-11, a total of 822 or 1,171 parking spaces would be provided at the West Tracy Station B-2 with the parking improvements.
Table 3-11. West Tracy Station B-2—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As Additional Station</td>
<td>As Replacement Station</td>
</tr>
<tr>
<td>Parking with Near-Term Improvements</td>
<td>548</td>
<td>736</td>
</tr>
<tr>
<td>Parking Spaces with Near-Term Improvements</td>
<td>548</td>
<td>736</td>
</tr>
<tr>
<td>Proposed Parking with Longer-Term Improvements</td>
<td>274</td>
<td>435</td>
</tr>
<tr>
<td>Proposed Parking Spaces</td>
<td>274</td>
<td>435</td>
</tr>
<tr>
<td>Total Parking Spaces</td>
<td>822</td>
<td>1,171</td>
</tr>
</tbody>
</table>

The parking improvements at the West Tracy Station B-2 would be located outside the UPRR ROW and outside near-term improvement areas. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### 3.3.5.2 Tracy Station Options

There are two station options in the middle of Tracy: Existing Tracy Station and Downtown Tracy Station. As described in Section 2.3.5.8, Tracy Station Options, West Tracy Stations A-1, A-2, A-3, A-4, B-1, and B-2 could operate as an additional station to the Tracy station selected. Thus, the Tracy station selected (Existing Tracy Station or Downtown Tracy Station) could operate as the only station in the Tracy area, or with a west of Tracy station option as an additional station. Accordingly, there are two operational scenarios that affect the amount of parking required at the Existing Tracy Station and Downtown Tracy Station. Ridership at the Tracy station options would be higher operating as the only Tracy station, compared to operating with an additional west of Tracy station option.

Longer-term parking improvements identified at the Tracy station options account for both operational scenarios.

**Alternative P-TL-ET: Existing Tracy Station Parking Improvements**

The Existing Tracy Station is located at 4800 Tracy Boulevard in southern Tracy, west of the unincorporated community of Carbona. As shown in Figure 3-43, improvements at the Existing Tracy Station are as follows.

- Expansion of the surface parking lot (constructed in near-term), providing 340 parking spaces.

There is an existing surface parking lot (North Lot) located north of the station platform and railroad tracks that provides 521 parking spaces at the Existing Tracy Station. As described in Section 2.3.5.8, in the near term new surface parking lot (South Lot) would be constructed on approximately 4.1 acres south of the station platform across the railroad tracks and West Linne Road, providing an additional 396 parking spaces at the Existing Tracy Station if the station would operate as the only Tracy station.\(^{36}\)

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\(^{36}\) The existing parking supply at the Existing Tracy Station would be sufficient to accommodate parking needs if a west of Tracy station option is implemented as an additional station and no parking improvements would be required in the near-term for this operational scenario.
To meet longer-term parking demands in the scenario which the Existing Tracy Station would operate as the only Tracy station, the South Lot would be expanded, providing an additional 340 parking spaces at the Existing Tracy Station. Vehicle access to the South Lot would continue to be provided by a driveway from West Linne Road. With longer-term improvements, a total of 1,257 parking spaces would be provided at the Existing Tracy Station. No parking improvements would be required at the Existing Tracy Station if a west of Tracy station option is implemented as an additional station because the existing parking provided would be sufficient.

The expanded surface parking lot at the Existing Tracy Station would be located outside the UPRR ROW and outside near-term improvement areas. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

**Alternative P-TL-DT: Downtown Tracy Station Parking Improvements**

The potential Downtown Tracy Station would be constructed at the existing Tracy Transit Center located at 50 East Sixth Street in downtown Tracy. The existing transit center operates as a hub for local, commuter, and long-distance bus services provided by TRACER, San Joaquin Regional Transit District, and Greyhound Lines.

There are existing surface parking lots (East Lot and South Lot), located east and south of the existing transit center which provide a total of 219 parking spaces (104 at the East Lot and 115 at the South Lot). As described in Section 2.3.5.8, there are three near-term parking improvement variations at this station and only one variation would be implemented in the near term:

- **Near-term variant 1:** Construction of a surface parking lot, providing 484 (operating with an additional west Tracy station) or 789 parking spaces (operating as the only Tracy station).
- **Near-term variant 2:** Construction of a four-story parking structure, providing 522 (operating with an additional west Tracy station) or 746 parking spaces (operating as the only Tracy station).
- **Near-term variant 3:** Construction of a temporary surface parking lot, providing 789 parking spaces, pending the completion of a permanent parking structure.

There are associated longer-term parking improvements associated with each near-term variant. As shown in Figure 3-44, to meet longer-term parking demands, improvements at the Downtown Tracy Station are as follows.

- **Longer-term variant 1:** Expansion of the surface parking lot (constructed in near-term), providing 57 (operating with an additional west Tracy station) or 231 parking spaces (operating as the only Tracy station).
- **Longer-term variant 2:** Expansion of the four-story parking structure (constructed in near-term), providing 503 parking spaces (operating as the only Tracy station). No additional parking would be required with the operation of an additional west Tracy station.
- **Longer-term variant 3:** Construction of a five-story parking structure, providing 533 parking spaces.

Only one parking variation would be implemented in the longer term, which would be contingent on the variant advanced in the near term. Under longer-term variant 1, the surface parking constructed on the West Lot would be expanded, providing an additional 57 or 231 parking spaces at Downtown Tracy Station. Longer-term variant 2, with Downtown Tracy Station operating as the only Tracy
station, would expand the four-story parking structure constructed on the West Lot, providing 503 additional parking spaces. No longer-term improvements would be undertaken for variant 2 at Downtown Tracy Station if an additional west Tracy station is implemented. Vehicle access to the West Lot would continue to be provided by entrances on West Sixth Street.

With longer-term variant 3, the temporary surface parking lot constructed in the near term on the West Lot would be discontinued. A new approximately 355,000-square-foot, five-story parking structure would be constructed on the North Lot. The parking structure would occupy an approximately 1.6-acre site, north of West Sixth Street and between C Street and North Central Avenue. The new parking structure would provide 1,342 parking spaces. Construction of the parking structure on the North Lot would require the demolition of existing residential and commercial structures on site. Vehicle access to the parking structure on the South Lot would be provided by an entrance on C Street.

As shown in Table 3-12, a total of 741 or 761 would be provided at the Downtown Tracy Station with a west of Tracy station option implemented as an additional station, and a total of 741 to 1,561 parking spaces would be provided at the Downtown Tracy Station if operating as the only station in the Tracy area.

The parking improvements at the Downtown Tracy Station would be located outside the UPRR ROW and outside near-term improvement areas. Specific ROW and easement needs have not been determined and would be identified in future project-level analysis.

### Table 3-12. Downtown Tracy Station—Longer-Term Parking Improvements

<table>
<thead>
<tr>
<th>Parking Area</th>
<th>Spaces Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With a West Tracy Station Option</td>
</tr>
<tr>
<td><strong>Parking with Near-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>East Lot</td>
<td>104</td>
</tr>
<tr>
<td>South Lot</td>
<td>115</td>
</tr>
<tr>
<td>Variant 1—West Lot (Surface Parking)</td>
<td>484</td>
</tr>
<tr>
<td>Variant 2—West Lot (Parking Structure)</td>
<td>522</td>
</tr>
<tr>
<td>Variant 3—West Lot (Temporary Surface Parking)</td>
<td>-- a</td>
</tr>
<tr>
<td><strong>Parking Spaces with Near-Term Improvements</strong></td>
<td>703 – 741</td>
</tr>
<tr>
<td><strong>Proposed Parking with Longer-Term Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>Variant 1—West Lot (Expansion of Surface Parking)</td>
<td>57</td>
</tr>
<tr>
<td>Variant 2—West Lot (Expansion of Parking Structure)</td>
<td>0</td>
</tr>
<tr>
<td>Variant 3—North Lot (Parking Structure)</td>
<td>-- a</td>
</tr>
<tr>
<td>Variant 3—West Lot (Temporary Parking Spaces Removed)</td>
<td>--</td>
</tr>
<tr>
<td><strong>Proposed Parking Spaces</strong></td>
<td>0 – 57</td>
</tr>
<tr>
<td><strong>Total Parking Spaces</strong></td>
<td></td>
</tr>
<tr>
<td>Variant 1</td>
<td>760</td>
</tr>
<tr>
<td>Variant 2</td>
<td>741</td>
</tr>
<tr>
<td>Variant 3</td>
<td>-- a</td>
</tr>
</tbody>
</table>

Notes:

- The parking needs for variant 3 with a West Tracy Station option as an additional station would be less than variant 3 with the Downtown Tracy Station as the only station in the Tracy area.