Chapter 2
Revised Draft Second Supplemental Environmental Impact Report

In accordance with CEQA Guidelines Section 15088, this chapter includes revisions to the text in the body of the Draft Second Supplemental EIR (Revised Draft SEIR-2, including the revised *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* prepared by Hexagon Transportation Consultants, Inc. and the revised *EBRC – CELR Noise and Vibration Assessment* prepared by ATS Consulting). The Revised Draft SEIR-2 does not indicate additions and deletions to the text. Chapter 4, *Major Revisions to the Draft Second Supplemental Environmental Impact Report*, includes additions noted in *italics* and deletions noted in ~~strikeout~~ text. The additions and deletions to the revised *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* and the revised *EBRC – CELR Noise and Vibration Assessment* are not included in Chapter 4 to maintain the chapter's clarity.

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Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project

Draft Second Supplemental Environmental Impact Report Volume I of III: Text

State Clearinghouse #2001092014

Prepared by:

Santa Clara Valley Transportation Authority
Environmental Programs
3331 North First Street, Building B-2
San José, CA 95134-1927

Contact:

Christina Jaworski, Senior Environmental Planner
Phone: (408) 321-5789
Email: EBRC-CELR-Comments@VTA.org

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The Draft Second Supplemental EIR is divided into the following three volumes:

- **Volume I:** Draft SEIR-2 as well as Attachment A (Notice of Preparation and Public Scoping with Comments Received), Attachment B (Detailed Description of the Proposed Changes), and Attachment C (Detailed Plans for the Proposed Changes)
- **Volume II:** Draft SEIR-2 technical materials including Attachment D (Supplemental Transportation Analysis), Attachment E (Noise and Vibration Assessment), and Attachment F (Air Quality Modeling Assumptions)
- **Volume III:** Attachment G (Second Subsequent IS and all attachments)

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Chapter 1
Executive Summary

Section 1.1 Prior Environmental Documentation

The federal and state environmental process for the approved project was initiated in September 2001 with the publication of a Notice of Intent to prepare an Environmental Impact Statement (EIS) in the federal register and the filing of the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) with the State Clearinghouse. A Draft EIS/EIR was circulated in April 2004, but only a Final EIR was completed as a result of limited opportunities for securing federal funds.

In May 2005, the VTA Board of Directors certified the Final EIR (hereafter referred to as the "2005 Final EIR") and approved the Light Rail Alternative. As a result of preliminary engineering, the Light Rail Alternative was modified to address agency comments, improve operations, minimize right-of-way acquisition, and lower costs. To address these modifications, the VTA Board of Directors prepared and certified a Final Supplemental EIR (Final SEIR) and approved the modifications in August 2007 (hereafter referred to as the "2007 Final SEIR").

Due to unprecedented declines in revenues beginning in 2008, the implementation plan for the Light Rail Alternative was modified to construct the project in phases. An Addendum to the Final SEIR was approved in June 2010 that included the installation of pedestrian and bus improvements as Phase 1 and the extension of light rail along Capitol Expressway as Phase 2.

In addition to the state environmental process, VTA reinitiated the federal environmental process on September 9, 2009, with a Notice of Intent to prepare a Supplemental Draft EIS. The Supplemental Draft EIS was circulated on May 18, 2012, for 45 days with comments due on July 3, 2012. The federal environmental process under the National Environmental Policy Act (NEPA) was suspended in 2017 as a result of limited opportunities for securing federal funds.

A Subsequent Initial Study (IS)/Mitigated Negative Declaration (MND) was approved in March 2014 (hereafter referred to as the "2014 Subsequent IS/MND") that eliminated the

Ocala Station, eliminated sidewalk widening and sound wall relocation north of Ocala Avenue, and expanded the Eastridge Park-and-Ride lot.

This Second Supplemental EIR (SEIR-2) and the Second Subsequent IS (included in Attachment G of the SEIR-2 and discussed in Section 1.4, *Explanation for a Subsequent Initial Study and Second Supplemental EIR*) address changes to the project as well as incorporate changed circumstances and new information.

Section 1.2 Explanation for a Second Subsequent IS and Second Supplemental EIR

The California Environmental Quality Act (CEQA) recognizes that between the date projects are approved and the date they are constructed one or more of the following changes may occur: 1) the scope of the project may change, 2) the environmental setting in which the project is located may change, 3) certain environmental laws, regulations, or policies may change, and 4) previously unknown information can come to light. CEQA requires that lead agencies evaluate these changes to determine whether they are significant.

The mechanism for assessing the significance of these changes is found in CEQA Guidelines Sections 15162 to 15164. If the changes involve new significant environmental effects or a substantial increase in the severity of previously identified significant effects, further environmental review (in the form of a Subsequent or Supplemental EIR or IS/MND) would be warranted per CEQA Guidelines Section 15162 and 15163. If the changes do not meet these criteria, then an Addendum is prepared to document a decision that no subsequent or supplemental review is required.

The proposed changes to the approved project would result in new or more significant environmental impacts compared to what was disclosed in the 2005 Final EIR, the 2007 Final SEIR, and the 2014 Subsequent IS/MND. Thus, it has been determined through the analysis in the Second Subsequent IS that a SEIR-2 should be prepared for the proposed changes to the approved project.

The Second Subsequent IS serves to focus the analysis in the SEIR-2 on changes to the environmental impacts identified in the prior environmental documentation that would result from the proposed changes to the approved project. As such, the potential transportation, environmental justice, noise and vibration, air quality and climate change, and construction impacts associated with the proposed changes to the approved project require analysis in the SEIR-2. Other environmental resource areas, where there are no impacts or where impacts can be mitigated to a less than significant level, are analyzed in the Second Subsequent IS. These resource areas analyzed in the Second Subsequent IS include Biological Resources, Community Services, Cultural Resources, Electromagnetic Fields, Energy, Geology/Soils/Seismicity, Hazardous Materials, Hydrology & Water Quality, Land Use, Safety & Security, Socioeconomics, Utilities, and Visual Quality. Thus, the SEIR-2 is focused on the potential for new significant impacts or a substantial increase in the severity of previously identified significant effects related to transportation, environmental justice, noise and vibration, air quality, and construction.

Section 1.3 Approved Project

The approved project would consist of the extension of light rail along Capitol Expressway between the existing Alum Rock Light Rail Station and Eastridge Transit Center, a distance of approximately 2.4 miles. Light rail would operate primarily in the median of Capitol Expressway within exclusive and semi-exclusive rights-of-way. To provide the additional right-of-way to accommodate light rail, high-occupancy vehicle lanes would be removed between Capitol Avenue and Tully Road. The alignment would include an elevated section that would extend north of Capitol Avenue to south of Story Road, and an elevated crossing of Tully Road. The approved project would include new light rail stations at Story Road (aerial) and Eastridge Transit Center (at-grade). At Eastridge Mall, the Park-and-Ride lot would be expanded to accommodate the project. The approved project would also include traction power substations at Ocala Avenue and Eastridge Transit Center. Five 115-kilovolt electrical transmission towers and two tubular steel poles would require relocation from the median of Capitol Expressway to the east side of Capitol Expressway in order to accommodate the approved project.

Section 1.4 Proposed Changes to the Approved Project

As discussed in more detail in Chapter 3, *Changes to the Approved Project, Changes in Circumstances, and Introduction of New Information*, VTA is proposing changes to certain elements of the approved project, including the:

- Extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections
- Revisions to Capitol Expressway roadway lane configurations (including the conversion of the existing high-occupancy vehicle lanes to general purpose traffic lanes and maintaining eight lanes between Story Road and Capitol Avenue);
- Modifications to Eastridge Station platforms and track;
- Reduction in parking spaces at Eastridge Park-and-Ride lot;
- Minor shift in the location and straightening of the Story Station pedestrian overcrossing;
- Modification to Story Station pedestrian access;
- Relocation of a construction staging area;
- Relocation of Pacific Gas and Electric (PG&E) electrical transmission facilities; and
- Extension of construction duration and modification to the construction scenario.

Section 1.5 Project Ridership, Travel Time, Capital Costs and Funding, and Construction Schedule

The approved project with the proposed changes is anticipated to have 2,203 boardings in 2023 and 4,534 boardings in 2043. Travel time for the Light Rail Alternative between Alum Rock Station and Eastridge Transit Center is estimated to be 4.3 minutes. The capital cost of the approved project with the proposed changes is projected to be $453

million and will be funded by the 2000 Measure A, Regional Measure 3, and the Senate Bill 1 funds. Construction would begin in 2019 with utility relocation and end in 2024 or 2025 (depending on the construction methodology) with the beginning of revenue service.

Section 1.6 Summary of Environmental Impacts

Table 1-1 includes a summary of the significant environmental impacts resulting from the proposed changes to the approved project as compared to the 2005 Final EIR, 2007 Final SEIR, and 2014 Subsequent IS/MND. Table 1-1 also includes the mitigation measures to reduce the impacts and the level of significance if mitigation is reasonable and feasible.

Section 1.7 New and More Severe Significant and Unavoidable Impacts

In this SEIR-2, the following new significant and unavoidable impacts associated with the proposed changes to the approved project were identified:

Air Quality and Climate Change (Construction)

- **Cumulative air quality impacts during construction.** Cumulative PM2.5 concentrations would be elevated at the receptors located near the corners of Ocala Avenue and Capitol Expressway and Cunningham Avenue and Capitol Expressway due to substantial sources of pollutant concentrations that currently exist in the area where the approved project plus the proposed changes to the approved project would occur. Even without the contribution of emissions from construction, existing PM2.5 concentrations near these sensitive receptors are at or exceed the BAAQMD's threshold because Capitol Expressway and its cross streets are heavily traveled roadways, with residences located in close proximity to the roadway edge. The approved project plus the proposed changes to the approved project would cause further exceedances of existing pollutant concentrations, worsening the cumulative exposure of sensitive receptors to toxic air contaminant concentrations. Although the contribution of the approved project plus the proposed changes to the approved project to existing concentrations would not be substantial (approximately 6% at the locations where concentrations are at or exceed 0.8 µg/m^3), there would nevertheless be a worsening of an already cumulatively significant impact. The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment). In addition, Mitigation Measure AQ (CON)-3 would require that Tier 3 or Tier 4 equipment be used to further reduce construction-related emissions where possible. Even with inclusion of these mitigation measures, this impact would be "Significant and Unavoidable."

Environmental Justice

- The proposed changes to the approved project would result in new disproportionate and adverse impacts or a substantial increase in the severity of previously identified disproportionate and adverse impacts related to environmental justice. Thus, this impact would be "Significant and Unavoidable."

In this SEIR-2, the following significant and unavoidable impacts with increased severity associated with the proposed changes were identified:

Transportation (Operation and Construction)

- **Capitol Expressway and Story Road intersection.** The proposed changes to the approved project would result in a significant impact under existing (2017), year 2023, and year 2043 conditions, caused by the removal of the high-occupancy vehicle (HOV) lanes and the addition of HOV lane traffic into the remaining mixed flow lanes. No feasible mitigation was identified for these impacts.
- **Capitol Expressway and Ocala Avenue intersection.** The proposed changes to the approved project would result in a significant impact at this intersection under existing (2017), year 2023, and year 2043 conditions, caused by the removal of the HOV lanes, the removal of a northbound left-turn lane on Capitol Expressway, and the addition of HOV lane traffic into the remaining mixed flow lanes. No feasible mitigation was identified for these impacts.
- **Transportation impacts during construction.** The proposed changes to the approved project would require lane reductions on Capitol Expressway during construction, which may cause study intersections to temporarily operate at LOS F, impacting passenger vehicles, buses, and trucks. The proposed changes to the approved project may also result in the temporary closures of bikeways, bus stops, and sidewalks in the corridor during construction. The duration, times, and locations of temporary closures during construction cannot be predicted with certainty.

Noise and Vibration (Operation and Construction)

- **Nighttime exceedance (10:00 pm to 7:00 am) of the FTA vibration levels from light rail operations at homes within 100 feet of the proposed aerial guideway.** The proposed aerial guideway (direct fixation fasteners) and ballasted track on embankment sections would cause an exceedance of the nighttime impact criteria at 67 sensitive receiver locations during light rail operations. VTA identified tire derived aggregate (TDA), 5-Hertz floating slab track (FST) or bridge bearing vibration isolation system, and speed reductions from 55 mph to 35 mph as potential mitigation measures. VTA is recommending to include TDA on embankment sections to mitigate one impact. However, VTA is not recommending to include FST, bridge

bearing vibration isolation, or implement nighttime speed restrictions to eliminate the other 66 impacts.

VTA is not recommending to include FST or bridge bearing isolation systems as mitigation for several reasons. Future vibration levels, which include a +3 VdB safety factor, are at or slightly above the nighttime vibration impact criteria at many impacted locations, and may not actually exceed the threshold in operation. Many impacted locations are up to 100 feet from the aerial guideway, which is much farther than the typical distance at which nighttime vibration impacts are experienced. Most of the impacts are anticipated to occur between 6:00 am and 7:00 am when VTA would be operating at peak service levels.

In addition, it is VTA's understanding that FST has not been installed on any aerial guideways in the United States and bridge bearing isolations have only been recently installed on one aerial structure in the United States. VTA is only aware of one example of FST installed on an aerial guideway: Hong Kong's KCRC West Rail and of one example of a bridge bearing vibration isolation system installed on an aerial structure at Miami Central Station, on the All Aboard Florida-Brightline network. Thus, additional analysis of the effectiveness of FST and bridge bearing isolation systems on aerial structures would be needed to confirm the level of vibration reduction that would be achieved. Another reason that VTA is not proposing FST or bridge bearing isolation is that it would greatly complicate the track and structural design.

VTA is not recommending to reduce train speeds from 55 mph to 35 mph between 10:00 pm and 7:00 am because it would negatively affect travel time and operations during these time periods.

By not including FST, bridge bearing vibration isolation systems, or speed reductions as mitigation measures, this impact would be "Significant and Unavoidable."

- **Homes within 100 feet of impact piling activity may exceed FTA construction vibration criteria.** There are 64 predicted unmitigated construction vibration impacts, and 0 impacts with the use of non-impact piling methods. However, VTA is only recommending the use of non-impact piling methods in the vicinity of Capitol Avenue and Capitol Expressway. At this location, construction vibration levels are anticipated to be the highest. VTA is not recommending the use of non-impact piling methods at most locations for several reasons. Most locations are only slightly above the FTA Damage Criteria, and therefore may not experience any actual impacts. At the locations with the highest construction vibration levels, structural damage is not anticipated to occur. However, if any structural and cosmetic damage does occur due to construction vibration, the damage shall be repaired by VTA. In addition, non-impact piling methods would require extensive lane closures which would cause additional traffic impacts during construction. Non-impact piling methods are not

recommended at most locations. Thus, this impact would be "Significant and Unavoidable."

Section 1.8 New or Revised Mitigation Measures

In this SEIR-2 and the Second Supplemental IS, the following new or revised mitigation measures were identified:

The new or revised mitigation measures for Biological Resources can be found in Section 3.3 of the Second Subsequent IS, which is located in Volume III.

Mitigation Measure BIO-7: Conduct Preconstruction Surveys for Nesting and Wintering Western Burrowing Owls and Implement Measures to Avoid or Minimize Adverse Effects if Owls are Present

Preconstruction surveys for Western burrowing owls shall be conducted by a qualified ornithologist before any development within the habitat identified in Figure 3.3-1. These surveys, which shall include any potentially suitable habitat within 250 feet of construction areas, shall be conducted no more than 30 days before the start of site grading, regardless of the time of year in which grading occurs. If breeding owls are located on or immediately adjacent to the site, a construction-free buffer zone (typically 250 feet) around the active burrow must be established as determined by the ornithologist in consultation with CDFW. No activities, including grading or other construction work or relocation of owls, would proceed that may disturb breeding owls. If owls are resident within 250 feet of the Project Area during the nonbreeding season a qualified ornithologist, in consultation with CDFW, shall passively relocate (evict) the owls to avoid the loss of any individuals if the owls are close enough that they or their burrows could potentially be harmed by associated activities.

Mitigation Measure BIO-12: Conduct Preconstruction Surveys for Western Pond Turtles and Implement Measures to Avoid or Minimize Adverse Effects if Turtles are Present

Preconstruction surveys for western pond turtles shall be conducted by a qualified biologist just prior to (i.e., the day of) initiation of any construction in non-developed habitat that occurs within 100 feet of Thompson Creek. If any individual western pond turtles are detected within the project's impact areas, the individuals shall be moved to suitable habitat within the nearest creek, at least 300 feet outside the project area.

Mitigation Measure BIO-14a: Conduct a Preconstruction Survey for Nesting Raptors

Preconstruction surveys for nesting raptors will be conducted by a qualified ornithologist to ensure that no raptor nests will be disturbed during implementation of the Project. This survey shall be conducted within 48 hours of

construction activity during the breeding season. For nesting raptors, the breeding season is from January 1 to August 31. During this survey, the ornithologist would inspect all trees and suitable grassland habitat in and immediately adjacent to the affected areas for raptor nests. If the survey does not identify any nesting special-status raptor species in the area potentially affected by the proposed activity, no further mitigation is required.

Mitigation Measure BIO-15: Conduct Preconstruction Surveys for Nesting Migratory Birds

If construction activities are scheduled to occur during the migratory bird breeding season (February 1-August 31), a preconstruction survey for nesting migratory birds shall be conducted prior to commencement of construction activities. If an active nest is identified within the study area, construction activities will stop (only where a nest is located) until the young fledge or the nest is removed in accordance with CDFW approval.

The revised mitigation measures for Geology, Soils, and Seismicity can be found in Section 3.8 of the Second Subsequent IS, which is located in Volume III.

Mitigation Measure GEO-4: Incorporate Caltrans Seismic Design Criteria

During the design process, VTA shall design any and all proposed infrastructure in accordance with the appropriate Caltrans Seismic Design Criteria.

Mitigation Measure GEO-6: Minimize Risk of Lateral Spreading, Subsidence, and Collapse

Prior to implementation of the proposed transit improvement activities, the following construction methods shall be employed:

- construct edge containment structures such as berms, dikes, retaining structures, or compacted soil zones;
- remove or treat soils and geologic materials prone to lateral spreading and settling; and
- install drainage measures to lower the groundwater table below the level of settleable soils pursuant to the California Division of Mines and Geology's *Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A* (2008).

The revised mitigation measure for Hydrology and Water Quality can be found in Section 3.10 of the Second Subsequent IS, which is located in Volume III.

Mitigation Measure HYD-11: Comply with All Applicable Regulations and Subsequent Permit Programs Related to Water Quality Control

In implementing the project, VTA will comply with the Clean Water Act (CWA), including all National Pollution Discharge Elimination System (NPDES) permit requirements. VTA will require the construction contractor to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with State Water Resources Control Board (SWRCB) regulations and the NPDES Construction General Stormwater permit. VTA will obtain coverage under the State's General Construction Stormwater Permit, and will comply with applicable requirements relative to land grading and erosion control. VTA will comply with the Clean Water Act, including all NPDES permit requirements. VTA will obtain coverage under the State Water Resources Control Board's Construction General Permit for Storm Water, Order No. 2009-0009-DWQ (CGP), and contractors must meet the substantive requirements for discharge of storm water runoff associated with construction activity.

The SWPPP will identify the specific BMPs proposed for the project, including but not limited to erosion prevention, sediment control, waste management, spill prevention/housekeeping, good housekeeping, non-storm water management, and run-on/runoff control, inspection, maintenance, and BMP repair procedures; and certain monitoring requirements, as well as permanent water quality post construction BMPs.

For those areas in VTA right-of-way, VTA will implement water quality measures required pursuant to the Phase II General Permit for Stormwater Discharge from Small Municipal Separate Storm Sewer Systems (MS4), Order No. 2013-0001-DWQ, effective July 30, 2013. The stormwater treatment regulations under this MS4 require new projects that create 5,000 square feet or more of newly constructed or replaced and contiguous impervious surface to comply with post-construction stormwater treatment requirements. BMPs may include avoiding impervious surfaces, providing site controls to manage pollutant sources, and Low Impact Development features such as bioretention basins and vegetated swales. Roadway improvements will comply with the EPA's Greenstreets guidelines. In addition, a long-term maintenance plan (minimum of five years) will be developed in accordance with the Phase II MS4 requirements and will describe the procedures to ensure that the post-construction storm water management measures are adequately maintained.

For those areas in City or County right-of-way, VTA will implement water quality measures required pursuant to provision C.3 of the Municipal Regional Stormwater NPDES Permit (MRP) Order No. R2-2015-0049, overseen by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). This permit requires projects that result in the displacement of more than 43,560 square feet (1 acre) of impervious surface to implement treatment BMPs to the maximum extent practicable. BMPs may include detention/retention units,

infiltration structures, swales, sand filters, wetlands, or other low impact development measures that improve water quality.

Mitigation Measure HYD-12: Implement Measures to Maintain Operational Water Quality

In accordance with the Phase II MS4 permit, VTA will perform inspections and cleanings such that NPDES permit treatment requirements will be met, and will ensure that outlet structures provide for proper energy dissipation in accordance with standard specifications for storm drainage. VTA will ensure that regular maintenance of parking facilities includes a program to clean curbside pavement areas of litter, fuel, and oils spills. Storm drain inlet traps will be inspected at least annually and cleaned as required.

Pursuant to Provision C.3 of the MRP, those areas in City or County right-of-way that result in the displacement of more than 43,560 square feet (1 acre) of impervious surface must implement treatment BMPs to the maximum extent practicable. Sizing of these BMPs will be in accordance with the most recent guidelines in the MEP and/or issued by the SCVURPPP, and typically relate to volume- or flow-based treatment capacity.

Those BMPs whose primary mode of action to treat stormwater depends on volume capacity, such as detention/retention units or infiltration structures, will typically be designed to treat stormwater runoff equal to either the maximized stormwater quality capture volume for the area, based on historical rainfall records (URQM, 1998); or equal to the volume of annual runoff required to achieve 80% or more capture (CASQA, 1993).

Treatment BMPs such as swales, sand filters, wetlands, and others whose primary mode of action depends on flow capacity will typically be sized to treat 1) 10% of the 50-year peak flow; or 2) the flow of runoff produced by a rain event equal to at least two times the 85th-percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or 3) the flow of runoff resulting from a rain event equal to at least 0.2-inch-per-hour intensity.

The revised mitigation measures for Noise and Vibration can be found in Section 5.3 of the Draft SEIR-2, which is located in Volume I.

Mitigation Measure NV-1a: Construct Soundwalls

VTA shall construct soundwalls that are a minimum of 3 feet above top of rail on the aerial structure or in the median adjacent to the trackway at the following locations:

- NB/SB: Westboro Drive to Story Road (968+54 to 992+00);
- NB: Kollmar Drive to Cunningham Avenue (997+00 to 1051+00); and
- SB: Kollmar Drive to Ocala Avenue (997+00 to 1038+00).

All soundwall locations and heights are preliminary and are subject to change based on additional noise studies during final design.

Mitigation Measure NV-4b: Use Vibration-Dampening Track Construction Materials

VTA shall install a 12-inch layer of tire-derived aggregate beneath a subballast layer of 12 inches and a ballast layer of 12 inches between Wilbur Avenue and Westboro Drive (Sta. 966+50 to 971+50 NB/SB).

Mitigation Measure NV-1b: Noise Insulation

As a result of the aerial grade separation at Ocala Avenue, this mitigation measure is no longer required.

The revised mitigation measure for Visual Quality can be found in Section 3.16 of the Second Subsequent IS, which is located in Volume III.

Mitigation Measure VQ-4: Incorporate Landscaping

VTA will develop and implement a comprehensive landscaping plan to soften the massing, hardscape, and structural elements of the Project. The landscaping shall be designed to be consistent with vegetation types and patterns within the Capitol Expressway Corridor, and shall provide year-round aesthetic enhancement.

As part of this plan, VTA shall review project designs to ensure that the following elements are implemented in the Project landscaping plan to the extent feasible:

- 85 percent of the species composition of open space areas shall reflect species that are native to the Plan Area and California. The species list should include trees, shrubs, and an herbaceous understory of varying heights, as well as evergreen and deciduous types. Plant variety will increase diversity by providing multiple layers, seasonality, more diverse habitat, and reduced susceptibility to disease.
- 75 percent of the plant composition for landscaping in parks and public/quasi public and commercial areas shall be comprised of species that are native to the Plan Area and California. Use of native species promotes a visual character of California that is being lost through development and reliance on non-native ornamental plant species. Native plant species can be used to create attractive spaces, high in aesthetic quality, that are not only drought-tolerant but attract more wildlife than traditional landscape palettes.
- Under no circumstances will any invasive plant species be used at any location.
- Vegetation shall be planted within the first year following project completion.
- An irrigation and maintenance program shall be implemented during the plant establishment period and carried on an as needed basis, such as in a drought, as supplemental irrigation.

- Irrigation in public and commercial areas shall utilize a smart watering system that evaluates the existing site conditions and plant material against weather conditions to avoid overwatering of such areas. The irrigation system will be managed in such a manner that any broken spray head, pipes, or other components of the system are fixed within 1 to 2 days, or the zone or system will be shut down until it can be fixed to avoid unusually high water flows.

The new or revised mitigation measures for Air Quality can be found in Section 5.4, Air Quality and Climate Change, and Section 5.5, Construction, of this SEIR-2, which is located in Volume I.

Mitigation Measure AQ (CON)-1

In accordance with the BAAQMD's current CEQA guidelines (2017), the project applicant shall implement the following BAAQMD-recommended basic control measures to reduce particulate matter emissions from construction activities. Additional control measures (including watering, washing, and other control measures) as detailed in the 2017 BAAQMD CEQA guidelines (see Additional Construction Mitigation Measures), would further reduce particulate matter emissions and should be implemented when feasible.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and

take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ (CON)-2

The project applicant shall implement, to the extent feasible, the BAAQMD's BMPs to reduce GHG emissions from construction equipment. These BMPs are outlined in their 2010 CEQA Guidelines.

- Alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet;
- Local building materials of at least 10 percent; and
- Recycle at least 50 percent of construction waste or demolition materials.

Mitigation Measure AQ (CON)-3

Tier 3 or 4 equipment shall be used to further reduce construction-related emissions where possible.

The new or revised mitigation measures for Noise and Vibration can be found in Section 5.3, Noise and Vibration, and Chapter 5.5, Construction, of this SEIR-2, which is located in Volume I.

Mitigation Measure NV (CON)-1h: Use Impact Cushions

A suitable pile cap cushion could be effective at reducing the pile driving noise by up to 5 dB. The construction crew will initially use only burlap bags to reduce noise and then will also use the wood block when pile driving becomes more difficult**.**

Mitigation Measure NV (CON)-2

A combination of the following measures should be considered if reasonable and feasible to reduce noise and vibration impacts from pile driving:

1. Noise Shield: A pile driving noise shield could be effective at reducing the pile driving noise by a minimum 5 dB, depending on the size of the shield and how well it surrounds the pile and hammer. A portable shield/barrier could be implemented to provide a nominal 10 dB noise reduction.
2. Pre-Drilling Piles: Pre-drilling a portion of the hole may provide a means to reduce the duration of impact pile driving, and should be explored. Reducing the total impact time to an aggregate duration of no more than 2 hours per day will reduce the equivalent noise level by 6 dB to a range of 80 to 90 dBA (L_{eq}) at a distance of 100ft.
3. Non-Impact Piles or Cast in Drilled Hole (CIDH) piles: Using the Soil-Mix or CIDH method would reduce the vibration below the FTA Criteria. This

method is recommended for homes which would be within 75 ft of pile driving.

4. Reduced Impact Pile Driving Time: Limiting the hours per day of impact pile driving would reduce the equivalent noise level and would reduce potential work interference.
5. Excessive Vibration: If pile driving amplitudes exceed the building threshold criteria, cosmetic repair work may be required at nearby buildings. A detailed preconstruction crack survey will be conducted at homes and businesses where these criteria are expected to be exceeded. Vibration monitoring, crack monitors and photo documentation will be employed at these locations during pile driving activity.
6. Relocating Items on Shelves: Since items on shelves and walls may move during pile driving activity, nearby residents will be advised through the community outreach process that they should move fragile and precious items off of shelves and walls for the duration of the impact pile driving. Achievement of standards for building damage would not eliminate annoyance, since the vibration would still be quite perceptible.
7. Advance Notification (Work Interference): The impact pile driving vibration may cause interference with persons working at home or the office on their computers. Nearby residents and businesses will be advised in advance of times when piles would be driven, particularly piles within 160 ft of any occupied building, so that they may plan accordingly, if possible.
8. Notification of Pile Driving Schedule: Nearby residents and businesses will be notified of the expected pile driving schedule. In particular, these notifications should be made with home-bound residents, homes where there is day-time occupancy (e.g., work at home, stay-at-home parents) and offices/commercial businesses where extensive computer/video monitor work is conducted.
9. Hotel Accommodations: Residents at 660 South Capitol Avenue will be provided with hotel accommodations while pile driving activities occur adjacent to the residence.

Contractor Controls

In addition to the above list of specific noise and vibration control measures, the following are recommended for inclusion in the Contractor specifications for the Indicator and Production pile driving programs if reasonable and feasible:

- Comply with the equivalent noise levels (L_{eq}) limits specified on page 12-8 of FTA 2006 and a maximum noise level limits of 90 dBA (slow) or 125 dBC (fast) for residential buildings,
- Comply with the maximum vibration limits specified in Table 12-3 of FTA 2006,
- Perform a detailed survey and photo documentation prior to construction of all potentially affected wood-frame buildings within 135 ft of the piling activity,

- Coordinate and perform noise and vibration monitoring at a representative sampling of potentially affected buildings along the Project corridor,
- Install crack monitors where appropriate and provide photo documentation at all potentially affected buildings during pile driving activity and through construction,
- Community Notification and Involvement:
  - provide a minimum four-week advance notice of the start of piling operations to all affected receptors (e.g., internet, phone and fax), and regular, up-to-date communications. This includes education of the public on the expected noise and vibration,
  - provide a knowledgeable Community Liaison to respond to questions and complaints regarding pile driving noise and vibration, and
  - provide assistance as needed to nearby residents or offices who may require help relocating valuable items off shelves.

Section 1.9 Areas of Controversy

VTA issued a NOP for the Draft SEIR-2 on May 29, 2018 and held a scoping meeting on June 14, 2018. Pursuant to CEQA Guidelines 15123, this SEIR-2 acknowledges the areas of controversy that are known to VTA and/or were raised during the scoping process for the SEIR-2. The six comment letters received on the scope and content of SEIR-2 are included in Attachment A of the SEIR-2.

Comments regarding environmental impacts focused on the following areas:

- Planned construction scope.
- Disruption to nearby schools.
- Contribution to traffic.
- Commission rules and regulations in regards to rail safety.
- Consultation with California Native American tribes.
- Driveways, parking, bicycle parking.
- Motor vehicle, bicycle, and pedestrian transportation design and circulation.
- Bicycle lane design and improvement.
- Bus stop improvements.
- Emergency access.
- Travel time analysis.
- Complete street design for the roadway.
- Coordination with the Tully Road Vision Zero Safety Improvement Project.
- Right-of-way.
- Access to stations for pedestrians, and bicycles.
- Providing closed-circuit televisions.

Table 1-1 Summary of Significant Environmental Impacts and Mitigation Measures

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Transportation (SEIR-2)					
Impact TRN-2a (Traffic Impact at Capitol Expressway/ Story Road in 2018 (now 2023))	No mitigation is feasible	**Significant and Unavoidable**	**Significant and Unavoidable**	Less than Significant with Mitigation	**Significant and Unavoidable**
Impact TRN-2b (Traffic Impact at Capitol Expressway/Ocala Avenue in 2018 (now 2023))	No mitigation is feasible	**Significant and Unavoidable**	**Significant and Unavoidable**	**Significant and Unavoidable**	**Significant and Unavoidable**
Impact TRN-2c (Traffic Impact at Capitol Expressway/ Tully Road in 2018 (now 2023))	Mitigation Measure TRN-2c (Maintain eight lanes on Capitol Expressway at Tully Road Intersection	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	Not evaluated
Impact TRN-8b (Traffic Impact at Capitol Expressway/ Story road in 2025 (now 2043))	No mitigation is feasible	**Significant and Unavoidable**	**Significant and Unavoidable**	N/A	**Significant and Unavoidable**
Impact TRN-8c (Traffic Impact at Capitol Expressway/ Ocala Avenue in 2025 (now 2043))	No mitigation is feasible	**Significant and Unavoidable**	**Significant and Unavoidable**	**Significant and Unavoidable**	**Significant and Unavoidable**
Impact TRN-8d (Traffic Impact at Capitol Expressway/Tully Road in 2025 (now 2043))	Mitigation Measure TRN-2c (Maintain eight lanes on Capitol Expressway at Tully Road Intersection)	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	Not evaluated

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Impact TRN (CON) -1 (Long-Term Street or Lane Closure)	Mitigation Measures TRN (CON)-2a (Prepare Traffic Management Plan), TRN (CON)-2b (Inform Public of Traffic Detours), and TRN (CON)-2c (Inform Public of Transit Service Changes)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	**Significant and Unavoidable**
Impact TRN (CON)-2 (Long-Term Loss of Parking or Access Essential for Business Operations)	Mitigation Measures TRN (CON)-2a (Prepare Traffic Management Plan), TRN (CON)-2b (Inform Public of Traffic Detours), and TRN (CON)-2c (Inform Public of Transit Service Changes)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Air Quality and Climate Change (SEIR-2)					
Impact AQ (CON)-1 (Temporary Increase in Construction-Related Emissions during Grading and Construction Activities)	Mitigation Measures AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment) and AQ (CON)-3 use Tier 3 or Tier 4 equipment where possible.	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact AQ (CON)-3 (Cumulative PM2.5 Concentrations During Construction)	Mitigation Measures CON-1 (AQ) (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and CON-2 (AQ)	Not evaluated	Not evaluated	Not evaluated	Significant and Unavoidable

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
	(BAAQMD's BMPs to reduce GHG emissions from construction equipment) and AQ (CON)-3 (Use Tier 3 or Tier 4 equipment where possible).				
Biological Resources (Second Subsequent IS)					
Impact BIO-7 (Permanent Loss of Habitat and Disturbance to Species)	Mitigation Measure BIO-7 (Conduct Preconstruction Surveys for Western Burrowing Owls and Implement Measures to Avoid or Minimize Adverse Effects if Owls are Present)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact BIO-8 (Temporary Disturbance of Riparian Forest)	Mitigation Measures BIO-8a Conduct Preconstruction Surveys to Identify Environmentally Sensitive habitat areas) and BIO-8b (Compensate for Disturbed Riparian Forest)	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	N/A
Impact BIO-10 (Temporary Degradation of Water Quality)	Mitigation Measure BIO-10 (Implement Water Quality Measures)	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	N/A
Impact BIO-11 (Loss or Disturbance of California Red-Legged Frog Habitat)	Mitigation Measures BIO-11a (Avoid and Minimize Effects to California Red-Legged Frog) and BIO-11b (Compensate for Loss of Aquatic Habitat for	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	N/A

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
	California Red-Legged Frog)				
Impact BIO-12 (Permanent Loss of Aquatic Habitat, Temporary Disturbance of Riparian Habitat, and Temporary Disturbance of Southwestern Pond Turtle)	Mitigation Measure BIO-12 (Conduct Preconstruction Surveys for and Implement Measures to Avoid or Minimize Adverse Effects to Southwestern Pond Turtles if Present)	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	Less than Significant with Mitigation
Impact BIO-14 (Temporary Disturbance of Nesting Raptors)	Mitigation Measures BIO-14a (Conduct a Preconstruction Survey for Nesting Raptors) and BIO-14b (Avoid Active Raptor Nests)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact BIO-15 (Temporary Disturbance to Nesting Habitat for Migratory Birds)	Mitigation Measure BIO-15 (Conduct Preconstruction Surveys for Nesting Migratory Birds and Stop Construction until the Young have Fledged or the Nest is Removed in Accordance with CDFG)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact BIO-18 (Loss of Trees)	Mitigation Measure BIO-18a (Conduct a Tree Survey) and BIO-18b (Replace Trees)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Cultural Resources (Second Subsequent IS)					
Impact CR-5 (Direct or Indirect Impacts to an Archaeological Resource)	Mitigation Measure CR-5a (Develop and Implement a Historic Properties Treatment Plan Prior to Construction Activities)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	No Impact (with inclusion of standard practice procedures)
Energy (Second Subsequent IS)					
Impact E (CON)-1 (Consumption of Nonrenewable Energy Resources in a Wasteful, Inefficient, and/or Unnecessary Manner from Project Construction)	Mitigation Measure E (CON)-1 (Adopt Energy Conservation Measures)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Environmental Justice (SEIR-2)					
Impact EJ-1 (Environmental Justice)	No mitigation is feasible	No Impact	Significant and Unavoidable	N/A	**Significant and Unavoidable**
Geology, Soils, and Seismicity (Second Subsequent IS)					
Impact GEO-4 (Risk Caused by Strong Seismic Ground Shaking)	Mitigation Measure GEO-4 (Incorporate Caltrans Seismic Design Criteria)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact GEO-5 (Risk Caused by Seismic-Related Ground Failure, Including Liquefaction)	Mitigation Measure GEO-5 (Incorporate Liquefaction Minimization Methods	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact GEO-6 (Risks from Lateral Spreading,	Mitigation Measure GEO-6 (Minimize Risk of Lateral	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Subsidence, and Collapse)	Spreading, Subsidence, and Collapse)				
Impact GEO-7 (Risk Caused by Expansive Soil)	Mitigation Measure GEO-7 (Minimize Risk of Soil Expansivity)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Hazardous Materials (Second Subsequent IS)					
Impact HAZ-9 (Hazard to the Public or Environment through Reasonable Foreseeable Upset and Accident Conditions Caused by the Release of Hazardous Materials)	Mitigation Measures HAZ-9a/(CON)-1a (Conduct Subsurface Investigations in Areas of the Corridor That May Be Underlain by Contaminated Soil or Groundwater) and HAZ-9b (Control Contamination Resulting from Previously Unidentified Hazardous Waste Materials)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact HAZ (CON)-1 (Release of Hazardous materials into the Environment)	Mitigation Measures HAZ (CON)-1a (Conduct subsurface Investigations), HAZ (CON)-1b (Control Contamination), and HAZ (CON)-1c (Conduct Lead and Asbestos Surveys Prior to Building Demolition or Renovation),	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Hydrology and Water Quality (Second Subsequent IS)					
Impact HYD-11 (Violation of Water Quality Standards or	Mitigation Measure HYD-11 (Comply with All Applicable Regulations and	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Waste Discharge Requirements)	Subsequent Permit Programs Related to Water Quality Control)				
Impact HYD-12 (Creation of Additional Runoff)	Mitigation Measure HYD-12 (Maintain Operational Water Quality)	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	Less than Significant with Mitigation
Impact HYD-13 (Alterations in Existing Drainage Patterns)	Mitigation Measures HYD-11 (Comply with All Applicable Regulations and Subsequent Permit Programs Related to Water Quality Control) and HYD-14 (Construct Facilities to Minimize Flood Impacts)	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A	Less than Significant with Mitigation
Impact HYD-14 (Exposure to Flood Hazards)	Mitigation Measure HYD-14 (Minimize Flood Impacts)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A
Impact HYD (CON)-1 (Impair Water Quality)	Mitigation Measure HYD (CON)-1 (Implement Water Quality Control Measures)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact HYD (CON)-2 (Depletion of Groundwater Supplies)	Mitigation Measure HYD (CON)-2 (Use Non-Potable Water)	N/A	N/A	Less than Significant with Mitigation	Less than Significant with Mitigation
Noise and Vibration (SEIR-2)					
Impact NV-1 (Noise Levels from Transit Operations That Would Be Considered a Severe Impact by Federal Transit Administration Criteria)	Mitigation Measures NV-1a (Construct Soundwalls) and NV-1c (Provide Quiet Pavement)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Impact NV-4 (Vibration Levels in Buildings from Transit Operations That Exceed Federal Transit Administration Criteria)	Mitigation Measure NV-4b (Use Vibration-Dampening Track Construction Materials). No additional mitigation is recommended.	Less than Significant with Mitigation	**Significant and Unavoidable**	Less than Significant with Mitigation	**Significant and Unavoidable**
Impact NV (CON)-1: (Generation of Noise or Vibration That Substantially Affects Nearby Sensitive Receptors) (Noise)	Mitigation Measures NV (CON)-1a (Notify Residents of Construction Activities), NV (CON)-1b (Construct Temporary Noise Barriers During Construction), NV (CON)-1c (Restrict Pile Driving), NV (CON)-1d (Use Noise Suppression Devices), NV (CON)-1e (Locate Stationary Construction Equipment as Far as Possible from Sensitive Receptors), NV (CON)-1f (Reroute Construction-Related Truck Traffic), and NV (CON)-1g (Develop Construction Noise Mitigation Plan), NV (CON)-2, and NV (CON)-1h (Use Impact Cushions)	Less than Significant with Mitigation	**Significant and Unavoidable**	**Significant and Unavoidable**	Less than Significant with Mitigation
Impact NV (CON)-1: (Generation of Noise or Vibration That Substantially Affects	Mitigation Measures NV (CON)-1a (Notify Residents of Construction Activities), NV (CON)-1c (Restrict Pile Driving), NV (CON)-1e	Less than Significant with Mitigation	**Significant and Unavoidable**	**Significant and Unavoidable**	**Significant and Unavoidable**

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Nearby Sensitive Receptors) (Vibration)	(Locate Stationary Construction Equipment as Far as Possible from Sensitive Receptors), and NV (CON)-2				
Safety and Security (Second Subsequent IS)					
Impact SS-3 (Pedestrian and/or Bicycle Safety Risks at Gated Crossings)	Mitigation Measure SS-3 (Incorporate Pedestrian Friendly Features)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	N/A
Impact SS-4 (Inadequate Lighting or Visual Obstructions at Park-and-Ride Lots)	Mitigation Measures SS-4a (Implement Measures to Deter Crime), SS-4b (Use Lighting, Cameras, and Security Patrols to Enhance Safety), and SS-4c (Define Fire and Life Safety Procedures and Develop Evacuation Plans)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact SS (CON)-1 (Potential for Safety Risks during Construction)	Mitigation Measure SS (CON)-1 (Implement Construction BMPs to Protect Workers and the Public)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Socioeconomics (Second Subsequent IS)					
Impact SOC-16 (Displacement of Existing Businesses or Housing)	Mitigation Measures SOC-16a (Comply with Legislation for Acquisition and Relocation) and SOC-16b (Inform Residents and Businesses of Project Status)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Utilities (Second Subsequent IS)					
Impact UTL-3 (Require Construction of New Stormwater Drainage Facilities or Expansion of Existing Facilities)	Mitigation Measure HYD-14 (Maintain Operational Water Quality)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact UTL (CON)-1 (Disrupt a Utility Service for a Period of 24 Hours or More)	Mitigation Measure UTL (CON)-1 (Coordinate with Utility Service Providers Prior to Construction of Light Rail Facilities)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Visual Quality (Second Subsequent IS)					
Impact VQ (CON)-1 (Creation of a New Source of Substantial Light or Glare	Mitigation Measure VQ (CON)-1 (Direct Lighting toward Construction Areas)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact VQ-1 (Creation of Substantial Light or Glare)	Mitigation Measure VQ-1 (Minimize Light and Glare)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Impact VQ-3 (Degradation of Existing Visual Quality)	Mitigation Measures VQ-3 (Involve Public in Station Design) and VQ-4 (Incorporate Landscaping)	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Construction (SEIR-2)					
See construction-related impacts in the resource areas identified above.					

Significant Impact[1]	Mitigation Measures	Level of Significance[2]			
		2005 Final EIR	2007 SEIR	2014 Subsequent IS/MND	SEIR-2 or Second Subsequent IS
Cumulative Effects (SEIR-2)					
See Transportation, Air Quality and Climate Change, Environmental Justice, and Noise and Vibration.					
Impact E-Cum-9 (Increase Demand on Electricity Transmission Infrastructure)	No mitigation is feasible	No Impact	**Significant and Unavoidable**	N/A	N/A
Impacts NV-Cum-2 (Generate Noise from Pile Driving) and NV-Cum-3 (Generate Vibration from Pile Driving)	Mitigation Measures NV-Cum-2 and NV-Cum-3 (Coordinate activities with other construction projects where feasible and reasonable)	No Impact	Less than Significant with Mitigation	N/A	N/A

Notes:

[1] If an impact is not listed in this table, the approved project and the proposed changes to the approved project would result in no impact or a less-than-significant impact.

[2] Not Applicable = N/A. The mitigation measure is either not applicable (i.e., not required because there were no significant impacts identified for the approved project for the topic in the relevant environmental document) or the potential impact of the approved project was not analyzed in the relevant environmental document.

Source: ICF 2018.

Chapter 2
Introduction

Section 2.1 Overview of Proposed Changes to the Approved Project

The Santa Clara Valley Transportation Authority's (VTA's) Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project (approved project) is located in the City of San Jose. The approved project would be implemented in two distinct phases. The first phase consists of pedestrian and bus improvements, including sidewalk, landscaping, and lighting along Capitol Expressway; bus stop improvements at Story Road and Ocala Avenue; and the replacement of Eastridge Transit Center. Construction of the pedestrian and bus improvements was completed in 2012 and the replacement of Eastridge Transit Center was completed in 2015. The second phase consists of the extension of light rail along Capitol Expressway between the existing Alum Rock Light Rail Station and Eastridge Transit Center, a distance of approximately 2.4 miles.

As discussed in more detail in Chapter 3, *Changes to the Approved Project, Changes in Circumstances, and Introduction of New Information*, VTA is proposing changes to certain elements of the approved project, including the:

- Extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections;
- Revisions to Capitol Expressway roadway lane configurations (including the conversion of the existing high-occupancy vehicle lanes to general purpose traffic lanes and maintaining eight lanes between Story Road and Capitol Avenue);
- Modifications to Eastridge Station platforms and track;
- Reduction in parking spaces at Eastridge Park-and-Ride lot;
- Minor shift in the location and straightening of the Story Station pedestrian overcrossing;
- Modification to Story Station pedestrian access;
- Relocation of a construction staging area;
- Relocation of Pacific Gas and Electric (PG&E) electrical transmission facilities; and
- Extension of construction duration and modification to the construction scenario.

The location and overall elements of the proposed changes to the project are shown in Figure 2-1.

The approved project with the proposed changes is anticipated to have 2,203 boardings in 2023 and 4,534 boardings in 2043. Travel time for the Light Rail Alternative between Alum Rock Station and Eastridge Transit Center is estimated to be 4.3 minutes. The capital cost of the approved project with the proposed changes is projected to be $453 million and will be funded by the 2000 Measure A, Regional Measure 3, and the Senate Bill 1 funds. Construction would begin in 2019 with utility relocation and end in 2024 or 2025 (depending on the construction methodology) with the beginning of revenue service.

Section 2.2 Prior Environmental Documentation

The federal and state environmental process for the approved project was initiated in September 2001 with the publication of a Notice of Intent to prepare an Environmental Impact Statement (EIS) in the federal register and the filing of the Notice of Preparation of an Environmental Impact Report (EIR) with the State Clearinghouse. A Draft EIS/EIR was circulated in April 2004, but only a Final EIR was completed as a result of limited opportunities for securing federal funds.

In May 2005, the VTA Board of Directors certified the Final EIR (hereafter referred to as the "2005 Final EIR") and approved the Light Rail Alternative. As a result of preliminary engineering, the Light Rail Alternative was modified to address agency comments, improve operations, minimize right-of-way acquisition, and lower costs. To address these modifications, the VTA Board of Directors prepared and certified a Final Supplemental EIR (Final SEIR) and approved the modifications in August 2007 (hereafter referred to as the "2007 Final SEIR").

Due to unprecedented declines in revenues beginning in 2008, the implementation plan for the Light Rail Alternative was modified to construct the project in phases. An Addendum to the Final SEIR was approved in June 2010 that included the installation of pedestrian and bus improvements as Phase 1 and the extension of light rail along Capitol Expressway as Phase 2.

In addition to the state environmental process, VTA reinitiated the federal environmental process on September 9, 2009, with a Notice of Intent to prepare a Supplemental Draft EIS. The Supplemental Draft EIS was circulated on May 18, 2012, for 45 days with comments due on July 3, 2012. The federal environmental process under the National Environmental Policy Act (NEPA) was suspended in 2017 as a result of limited opportunities for securing federal funds.

A Subsequent Initial Study (IS)/Mitigated Negative Declaration (MND) was approved in March 2014 (hereafter referred to as the "2014 Subsequent IS/MND") that eliminated the Ocala Station, eliminated sidewalk widening and sound wall relocation north of Ocala Avenue, and expanded the Eastridge Park-and-Ride lot.

Source: Korve Engineering 2003; VTA 2016; revised by ICF 2019.

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Figure 2-1
Proposed Changes to Capitol Expressway Light Rail Project

This Second Supplemental EIR (SEIR-2) and the Second Subsequent IS (included in Attachment G of the SEIR-2) will address minor changes to the project as well as incorporate changed circumstances and new information.

Section 2.3 Scope of the SEIR-2

According to California Environmental Quality Act (CEQA) Guidelines 15163(b), the SEIR-2 need contain only the information necessary to make the previous EIR adequate for the proposed changes to the approved project. The SEIR-2 augments the previously certified EIR to the extent necessary to address the changed conditions and to examine environmental effects, mitigation measures, and design options accordingly. In preparing the SEIR-2, VTA referenced the 2005 Final EIR, 2007 Final SEIR, and 2014 Subsequent IS/MND and made use of those documents and their supporting administrative record as necessary and appropriate. As a result, the SEIR-2 is focused on providing new information on the environmental effects of the proposed changes to the approved project that is not included in the 2005 Final EIR, 2007 Final SEIR, or the 2014 Subsequent IS/MND. Where the information or analysis from the 2005 Final EIR, 2007 Final SEIR, or the 2014 Subsequent IS/MND applies, the SEIR-2 incorporates by reference the appropriate sections of those documents. In addition, the impact analysis in the SEIR-2 is focused on the potential transportation, environmental justice, noise and vibration, air quality and climate change, and construction impacts associated with the proposed changes to the approved project. All other environmental resource areas are scoped out from requiring further analysis in the Second Subsequent IS.

Section 2.4 Public Participation in the Environmental Review

As part of the environmental process, there will be several opportunities for the public and agencies to comment on the environmental document.

Notice of Preparation. VTA issued a NOP for the Draft SEIR-2 on May 29, 2018 and held a scoping meeting on June 14, 2018. The NOP was sent to over 100 agencies, community organizations, residents, and businesses. In addition, flyers were mailed to approximately 9,000 properties located within 1/2 mile of the corridor. Other outreach included a meeting announcement and reminder on Next Door; door-to-door deliveries of flyers to businesses; a blog post; a webpage announcement; advertisements in the Mercury News, El Observador, Viet Nam Daily, Philippines Today, and Sing Tao; notices at community centers and libraries; email to 751 stakeholder list; listings on Facebook, Twitter, and LinkedIn; and email to 50 organizations on the Title VI list. The six comment letters received on the scope and content of SEIR-2 are included in Attachment A of the SEIR-2.

Comments regarding environmental impacts focused on the following areas:

- Planned construction scope.
- Disruption to nearby schools.

- Contribution to traffic.
- Commission rules and regulations in regards to rail safety.
- Consultation with California Native American tribes.
- Motor vehicle, bicycle, and pedestrian transportation design and circulation.
- Bus stop improvements.
- Emergency access.
- Travel time and mode shift analysis.
- Access to stations for pedestrians, and bicycles.
- Providing closed-circuit televisions.

Draft SEIR-2. VTA requested comments from the public and agencies on the adequacy of the environmental analysis in the Draft SEIR-2. The Draft SEIR-2 was made available for public review for 45 days, from October 3, 2018, to November 19, 2018. The Notice of Availability (NOA) was posted with the Santa Clara County Clerk and sent to more than 100 agencies, community organizations, residents, and businesses. A public meeting notice, with links to the VTA's website to access the NOA, was mailed to more than 9,000 addresses, including residents, businesses, absentee property owners, and community organizations within 0.5 mile of the corridor. Print advertisements were placed in the Mercury News and translated for print in the *El Observador* (Spanish), *Viet Nam Daily* (Vietnamese), *Philippines Today* (Tagalog), and *Sing Tao* (Chinese) newspapers. A public meeting/open house was held on October 18, 2018, during the public review period, to discuss proposed changes to the project and the Draft SEIR-2 with the public and receive written comments. The NOA and a copy of the mailing list for the Draft SEIR-2 are included in Chapter 3 in Volume I. In addition, VTA responded to all comments in the Final SEIR-2 in Volume I.

Final SEIR-2. Prior to consideration by the VTA Board of Directors, all commenting agencies and individuals will receive a copy of the Final SEIR-2 with VTA's response to their comments. Any additional comments on the SEIR-2 can be provided in writing or in person at the VTA Board of Directors' meeting.

Section 2.5 Uses of the SEIR-2

It is anticipated that this SEIR-2 will be relied upon in issuing appropriate project-specific discretionary approvals necessary to implement the proposed changes to the approved project. The following agencies are considered responsible agencies under CEQA, because these agencies possess discretionary authority over the project or a portion of it, as specified.

- **San Francisco Bay Regional Water Quality Control Board:** National Pollutant Discharge Elimination System General Industrial/General Construction Storm Water Discharge Permits.
- **California Department of Fish and Game:** Migratory Bird Treaty Act and Burrowing Owl issues.

- **California Public Utilities Commission:** Construction and alteration of rail crossings and relocation of electrical transmission towers.
- **California Transportation Commission:** Allocation of funding.
- **Santa Clara County:** Encroachment Permit for use of Capitol Expressway right-of-way.
- **City of San Jose:** Encroachment Permit for use within the City right-of-way and discretionary review authority over temporary street closures, utility realignments, pavement repairs, and other related activities within the City right-of-way.
- **Santa Clara Valley Water District:** Encroachment Permit for use of District right-of-way and Construction Permit.

Section 2.6 Organization of the SEIR-2

The organization of the SEIR-2 and the Second Subsequent IS generally follow the organization of the 2005 Final EIR, 2007 Final SEIR, and 2014 Subsequent IS/MND, especially for the environmental analysis. The SEIR-2 and the Second Subsequent IS should be considered together with the prior documentation because, for the most part, the SEIR-2 and the Second Subsequent IS do not repeat information included in the prior environmental documentation that has not changed.

The Draft SEIR-2 includes the following sections.

- **Chapter 1: Executive Summary.** Briefly discusses the reasons for preparing the SEIR-2, generally describes the approved project, and summarizes the proposed changes to the approved project. This section identifies the impacts, mitigations, and the level of significance of the impacts after mitigation in table format.
- **Chapter 2: Introduction.** Describes the scope of the SEIR-2, public participation, the uses of the SEIR-2, the organization of the SEIR-2, and the certification process for the SEIR-2.
- **Chapter 3: Changes to the Approved Project, Changes in Circumstances, and Introduction of New Information.** Describes the approved project and the proposed changes to the approved project. Details the proposed changes to the approved project. Also discusses changes in circumstances and introduces new information since the approval of environmental documentation prepared for the project.
- **Chapter 4: Alternatives Considered.** States that no additional alternatives were considered in this SEIR-2.
- **Chapter 5: Environmental Setting, Impacts, and Mitigation.** Presents new information regarding the environmental setting, describes the effect of the project changes on the environment, identifies new significant impacts or an increase in severity of previously identified impacts, and recommends mitigation measures to reduce impacts so they are no longer significant. The impact analysis in the SEIR-2 is focused on the potential transportation, environmental justice, noise and vibration, air quality and climate change, and construction impacts associated with the proposed changes to the approved project. As discussed in the Second Subsequent IS, all other

environmental resource areas are scoped out from requiring further analysis in the SEIR-2.

- **Chapter 6: Other CEQA Considerations.** Discusses other environmental issues of importance to CEQA, including significant and irreversible environmental changes, cumulative impacts, and growth-inducing impacts.
- **Chapter 7: References.** Lists sources referenced in the SEIR-2.
- **Chapter 8: List of Preparers.** Lists key VTA staff and consultants who contributed to the preparation of the SEIR-2 and the Subsequent IS.

Section 2.7 Certification of the SEIR-2

The Draft SEIR-2, together with responses to comments on the Draft SEIR-2 and any modifications or corrections to the Draft SEIR-2, will constitute the Final SEIR-2. The VTA Board of Directors will review the Final SEIR-2 (including the Second Subsequent IS included as Attachment G of the SEIR-2), the 2005 Final EIR, the 2007 Final SEIR, and the 2014 Subsequent IS/MND, and any public testimony or comments. Based on that information and all other substantial evidence, the VTA Board of Directors will decide whether to certify the Final SEIR-2 and approve the proposed changes to the approved project. As CEQA Guideline Section 15163(e) requires, the VTA Board of Directors will make a finding for each potentially significant impact identified in the 2005 Final EIR as revised, as well as the Final SEIR-2.

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Chapter 3
Changes to the Approved Project, Changes in Circumstances, and Introduction of New Information

This section describes the approved project and discusses the Santa Clara Valley Transportation Authority's (VTA's) proposed changes to that project. In addition, this section discusses changes in circumstances and introduces new information since the approval of environmental documentation prepared for the project (i.e., the 2005 Final Environmental Impact Report, the 2007 Final Supplemental Environmental Impact Report, and the 2014 Subsequent Initial Study [IS]/Mitigated Negative Declaration [MND]).

Section 3.1 Approved Project

The approved project would consist of the extension of light rail along Capitol Expressway between the existing Alum Rock Light Rail Station and Eastridge Transit Center, a distance of approximately 2.4 miles. Light rail would operate primarily in the median of Capitol Expressway within exclusive and semi-exclusive rights-of-way. To provide the additional right-of-way to accommodate light rail, high-occupancy vehicle (carpool) lanes would be removed between Capitol Avenue and Tully Road. The alignment would include an elevated section that would extend north of Capitol Avenue to south of Story Road, and an elevated crossing of Tully Road. The approved project would include new light rail stations at Story Road (aerial) and Eastridge Transit Center (at-grade). At Eastridge Mall, the Park-and-Ride lot would be expanded to accommodate the project. The approved project would also include traction power substations at Ocala Avenue and Eastridge Transit Center. Five 115-kilovolt electrical transmission towers and two tubular steel poles would require relocation from the median of Capitol Expressway to the east side of Capitol Expressway in order to accommodate the approved project. Table 3-1 shows the rail crossings included in the approved project and the proposed changes to the approved project.

Figure 3-1 shows the general location of the approved project described in the 2014 Subsequent IS/MND.

Section 3.2 Changes to the Approved Project

VTA is proposing changes to certain elements of the approved project, which are discussed in detail in this section. The general location and overall elements of the proposed changes to the project are shown generally in Figure 1-1 in Chapter 1, Introduction, of the Second Subsequent IS. A detailed description of the proposed changes to the approved project is included in Attachment B of the SEIR-2.

Extension of the Aerial Guideway to Grade- Separate the Ocala Avenue and Cunningham Avenue Intersections. The proposed change to the project would replace the at-grade track alignment with approximately 1.25 miles of aerial guideway from south of Story Road to north of Tully Road. The aerial guideway would include concrete columns supported on pile foundations. The aerial guideway would also include aerial sound walls. The aerial guideway would typically be 20 to 35 feet at the top-of-rail with a maximum height of approximately 60 feet with the overhead catenary system and poles. Visual simulations of the aerial guideway are provided in Section 3.16, *Visual Quality*, of the Second Subsequent IS.

As a result of an additional left turn pocket (as discussed in detail under Revisions to Capitol Expressway Roadway Lane Configurations) on Capitol Expressway at Story Road, the alignment of the aerial guideway between Story Road and Foxdale Drive would be shifted slightly west by 3 feet.

Table 3-1 shows the rail crossings included in the approved project and the proposed changes to the approved project. As discussed in detail under Section 2.4, *Introduction of New Information*, Senate Bill (SB 215) affected how the California Public Utilities Commission (CPUC) processed formal crossing applications.

Source: Korve Engineering 2003; VTA 2016; revised by ICF 2019.

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Figure 3-1
Previously Approved Capitol Expressway Light Rail Project

Table 3-1 Rail Crossings for the Approved Project and the Proposed Changes to the Approved Project

Cross Street	Track Stationing	Number of Tracks	Pedestrians	Automobiles	Safety Risks	Proposed Crossing Type	Proposed Safety Devices (At Grade Crossings)
Wilbur Avenue/Nuestra Castillo Court	+965+00	2	1 Crosswalk	2 Lanes	VTA buses, Left turns from Wilbur to southbound Capitol Avenue	At-grade (existing crossing with t-signals)	T-signals, Traffic signals
Northbound Capitol Avenue	+974+00	2	2 Sidewalks	2 Lanes	High roadway traffic volumes	Grade separated, Aerial	n/a
Northbound Capitol Expressway	+978+00	2	1 Sidewalk	4 Lanes	High roadway traffic volumes	Grade separated, Aerial	n/a
Story Road	+995+00	2	2 Crosswalks	6 Through lanes, 4 turn lanes	High auto and pedestrian traffic volumes. Left turn movements	Grade separated, Aerial	n/a
Ocala Avenue	+1037+00	2	2 Crosswalks	4 Through lanes, 2 Turn lanes	School children, School buses, Heavy volume of LT movements	Grade separated, Aerial	n/a
Cunningham Avenue	+1050+00	2	2 Crosswalks	2 Lanes	Light traffic volumes, low risk	Grade separated, Aerial	n/a
SB Capitol Expressway	+1067+00	2	1 Sidewalk	3 Lanes	Heavy roadway traffic volumes	Grade separated, Aerial	n/a

Cross Street	Track Stationing	Number of Tracks	Pedestrians	Automobiles	Safety Risks	Proposed Crossing Type	Proposed Safety Devices (At Grade Crossings)
Swift Lane	+1073+00	2	2 Sidewalks	2 Lanes	Light traffic volumes, low risk	Grade separated, Aerial	n/a
Tully Road	+1078+00	2	2 Sidewalks	6 Lanes, 4 Turn lanes	Heavy roadway traffic volumes	Grade separated, Aerial	n/a
Northern Pedestrian Crossing to Platform	+1086+00	1	1 Crossing of SB track	None	Incoming and departing trains	At-grade	Crossing gates, Flashing Lights, and Bells
Southern Pedestrian Crossing to Platform	+1089+80	1	1 Crossing of SB track	None	Train movements in and out of tail track	At-grade	Crossing gates, Flashing Lights, and Bells

Notes:
Shaded rows indicate proposed rail crossing changes to the approved project.
Source: VTA, 2018.

Revisions to Capitol Expressway Roadway Lane Configurations. The Proposed change to the project would revise the roadway lane configurations along Capitol Expressway. In addition, the proposed change would include resurfacing Capitol Expressway with open-graded asphalt concrete (OGAC).[1] A center median between Story Road and Capitol Avenue would separate traffic. Detailed track plans and profiles showing the proposed geometric design changes for the proposed changes to the approved project are included in Attachment C of the SEIR-2. The proposed roadway lane configuration changes include the following.

- *Four traffic lanes in each direction north of Story Road.* Both of the existing high-occupancy vehicle lanes (one northbound and one southbound) would be converted to general purpose traffic lanes, resulting in a total of four general purpose lanes in each direction between Story Road and Capitol Avenue. One southbound inner general purpose lane would end at the introduction of the left turn pockets at Story Road. This proposed change would be accomplished by the widening of Capitol Expressway, a reduction of the median, the removal of landscaping, and the relocation of streetlights. In addition, this would be accomplished by the narrowing of South Capitol Avenue north of Story Road where there would be additional right-of-way requirements.

- *Right turn lanes.* Exclusive right turn lanes on Capitol Expressway would be added at Story Road, Cunningham Avenue, and Tully Road intersections.

- *Bicycle Slot.* At the locations where exclusive right turn lanes are added or maintained on Capitol Expressway, bicycle slots would be included to the left of the right turn lanes. Figure 3-2 includes pictures of a typical bicycle slot with bicycle detector.

- *Left turn lanes.* Longer left turn lanes on Capitol Expressway would be added at the following intersections: northbound and southbound at Story Road, northbound at Ocala Avenue, and southbound at Tully Road. At Ocala Avenue, one northbound left turn lane would be removed.

- *Left turn pocket.* A second left turn pocket would be maintained on northbound Capitol Expressway at Story Road.

[1] Recent studies by Caltrans indicate that OGAC produces noticeably less vehicle noise than other pavement types (i.e., concrete and conventional asphalt).

a. View of an example bike slot facing west at Lawrence Expressway and Cabrillo Avenue in the City of Santa Clara.

b. View of a bike detector embedded in a bike slot. The purpose of a bike detector is to detect a bicyclist approaching an intersection and communicate with the traffic signal cabinet to provide enough time for cyclists to safely cross an intersection.

Source: VTA and ICF 2018.

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Figure 3-2
Typical Bike Slot

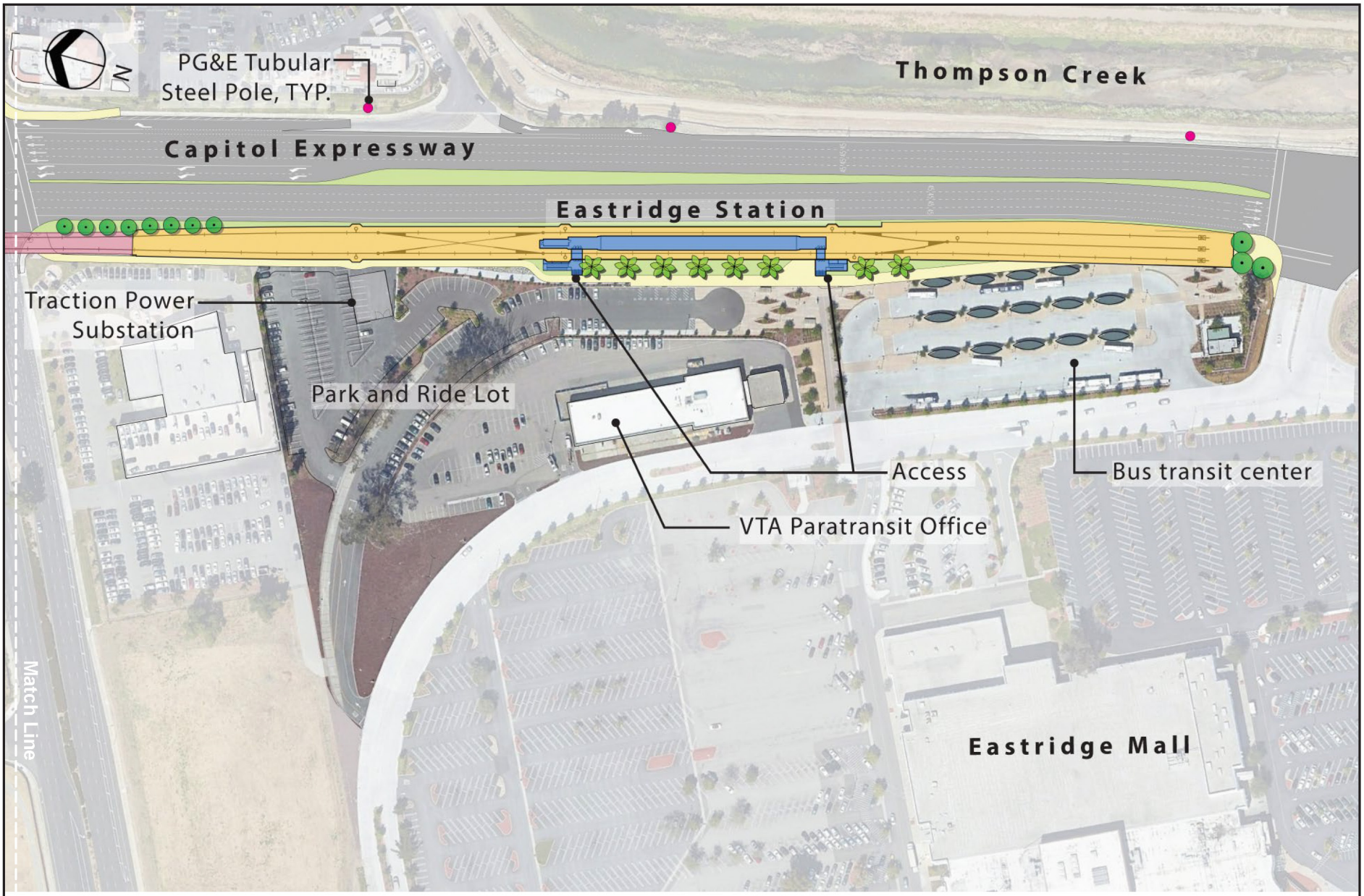
Modifications to Eastridge Station Platforms and Tracks. The approved project includes two platforms, additional tail tracks, and one traction power substation at the Eastridge Station. The proposed changes to the project include only one center platform at Eastridge Station, which would be adequate for the anticipated patronage.

Additional changes to the Eastridge Station include the following.

- Removal of the siding track.
- Reconfiguration of tail tracks, including the addition of a pocket track.
- Diamond crossover shifted from structure to ballast.
- Addition of passenger access at north end of station (adjacent to the Park-and-Ride Lot).
- Platform shifted north, which would eliminate reconstruction of Eastridge Loop/Capitol Expressway intersection.
- Platform raised on retained fill.
- Tully Road bridge crossing lowered.

Figure 3-3 shows the proposed changes to the Eastridge Station.

Reduction in Parking Spaces at Eastridge Park-and-Ride Lot. The Eastridge Park-and-Ride Lot currently includes approximately 180 parking spaces. The approved project increases the parking to 445 spaces at Eastridge Station to partially address the increased demand of 481 spaces from the project. As part of the proposed changes to the approved project, VTA is proposing to increase the parking to approximately 302 spaces through reconfiguration of the Eastridge Park-and-Ride lot. See Section 2.3, *Changes in Circumstances*, for a discussion of the changes to the existing VTA Paratransit Offices at the Eastridge Park-and-Ride Lot. As shown in Table 3-2, based on updated VTA forecasts, the proposed changes to the approved project would increase existing (2017) parking demand to 114 parking spaces. In years 2023 and 2043, the proposed changes to the approved project would increase parking demand to 293 vehicles and 374 vehicles, respectively.



Source: BKF Engineers 2018.

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Figure 3-3
Proposed Changes to the Eastridge Station

Table 3-2 Eastridge Park-and-Ride Lot Anticipated Parking Demand for the Approved Project and the Proposed Changes (Existing [2017] Year, Year 2023, Year 2035, and Year 2043)

	Existing (2009 or 2017)[1]	Year 2023[2]	Year 2035[3]	Year 2043[2]
Approved Project				
Demand	16	--	481	--
Supply	115	--	445	--
Proposed Changes to the Approved Project				
Demand	114	293	--	374
Supply	180	302	--	374

Notes:

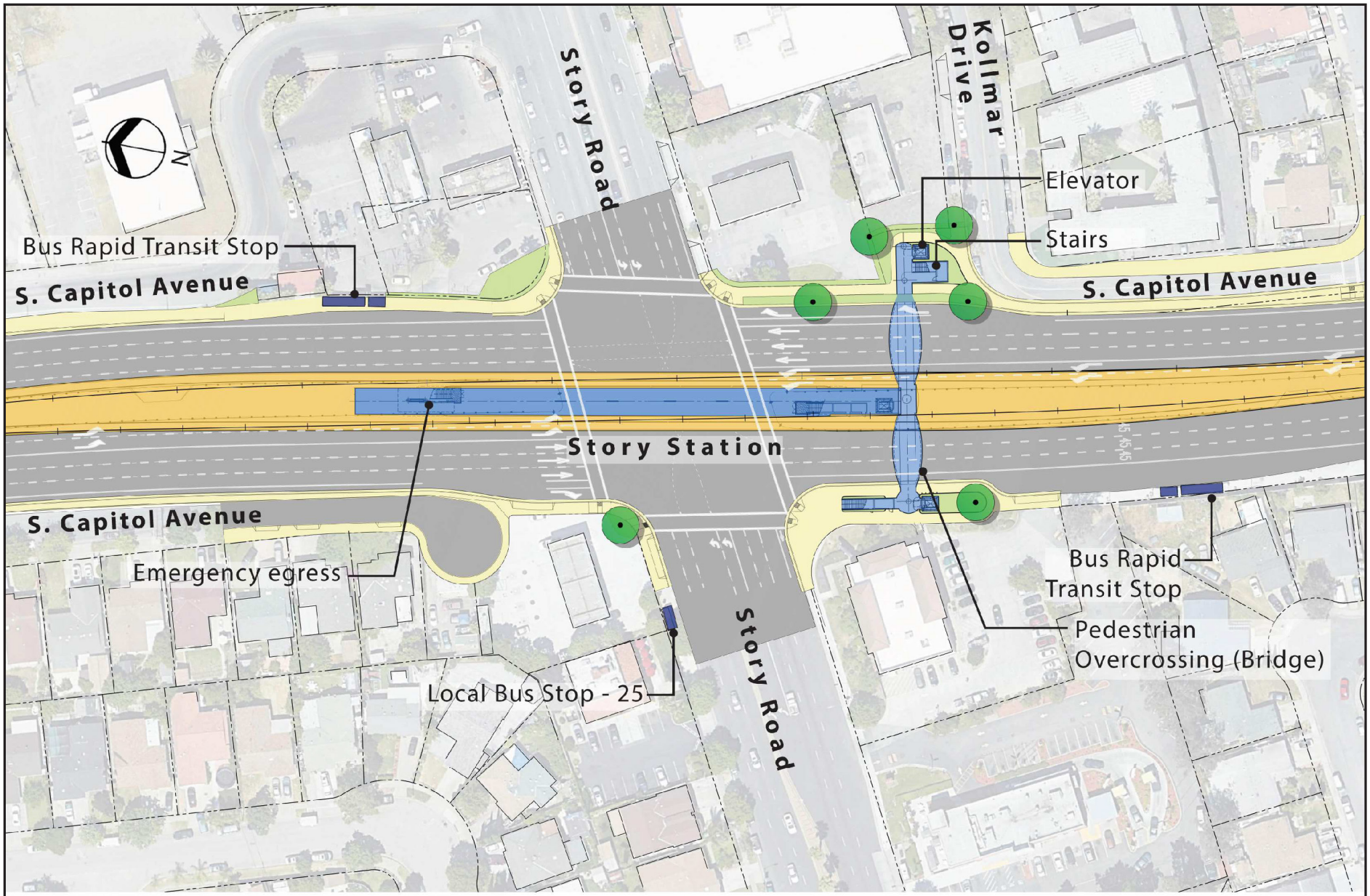
[1] Existing parking counts provided by VTA Operations on December 20, 2017.

[2] Future Parking estimates provided by VTA Modelling on May 31, 2018.

[3] Only parking forecasts for 2035 were provided in the 2014 Subsequent IS/MND. Updated parking forecasts were not provided for 2035 due to changes in the opening year and future year.

Source: Hexagon 2018.

Minor Shift in the Location and Straightening of the Story Station Pedestrian Overcrossing. The approved project includes a pedestrian overcrossing at the Story Station. The proposed change to the project would adjust the location of the eastern and western landings of the pedestrian overcrossing. On the east, this change will require the removal of an existing driveway along Capitol Expressway into the gas station located south of Story Road due to pedestrian safety and traffic operational concerns. On the west, this change provides for improved clearances at the bottom of the access stairs and the crosswalk ramps and waiting areas at the intersection. Figure 3-4 shows the proposed changes to the Story Station. The proposed change to the project would also straighten out the Story Station Pedestrian Overcrossing, which is currently designed to be curvilinear.



Source: BKF Engineers 2019.

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Figure 3-4
Proposed Changes to the Story Station

Modification to Story Station Pedestrian Access. The approved project also includes a pedestrian access point to Story Station at the median. The proposed change to the project would restrict pedestrian access to the Story Station at the median to emergency purposes only.

Relocation of a Construction Staging Area. The approved project includes a construction staging area at Capitol Expressway/Tully Road. The proposed change to the project would eliminate this construction staging area. Thus, the project will require additional areas for staging construction material and equipment. The actual locations and associated access remain to be identified, and it is expected that the laydown areas will be adjacent to the roadway in areas that are either vacant or available for use.

Relocation of Pacific Gas and Electric (PG&E) Electrical Transmission Facilities. As a result of the change in the vertical profile of the light rail from an at-grade alignment to the proposed aerial guideway, subsequent land use development, and revisions to design standards, Pacific Gas and Electric (PG&E) updated its design to relocate approximately 1.4 miles of its double-circuit Milpitas-Swift and McKee-Piercy 115 kilovolt (kV) power line electrical facilities (lines). There are currently six steel lattice towers and two tubular steel poles (TSPs) located along the Capitol Expressway between Ocala Avenue and Quimby Road in the City of San Jose. These eight structures would be replaced with a total of 10 TSPs as part of the proposed changes compared to the 8 TSPs that were included in the approved project. The relocation would start at an existing structure near the southwest intersection of Silverstone Place and Sunny Glen Drive. Progressing southbound, the lines would shift slightly along west side of Capitol Expressway, then south of Cunningham Avenue, the lines would shift from the median in Capitol Expressway to the east side of the road and continue southerly to the final existing structure located near the southeast intersection of Quimby Road and Capitol Expressway. The TSPs were proposed to be up to 105 feet in height under the approved project and it is now anticipated that the height of at least one TSP would need to be increased to up to approximately 121 feet in height to clear the proposed aerial guideway. As a result of the increase in height and relocation of the TSPs in the proximity to Reid-Hillview Airport, PG&E may need to install Federal Aviation Administration (FAA) obstruction lighting on some or all of the new poles in accordance with FAA requirements. These lights would be powered by either solar panels or local distribution electric lines. The two additional TSPs are a result of the replacement of No. 49 lattice tower with a TSP and the insertion of a new TSP (No. 53A) between Tully Road and Quimby Road. There would also be minor shifts in the location of the replacement TSPs. One of the TSPs (No. 54) may require new right-of-way from the Santa Clara Water District for placing the TSP and its foundation. The new TSPs would be mounted on a concrete foundation. Construction of the foundation for TSP No. 53A, TSP No. 54, and TSP No. 55 may require temporary closure of the Thompson Creek Trail for safety during drilling, and foundation installation. See Section 2.3, *Changes in Circumstances*, for a discussion of the Thompson Creek Trail. Figure 2-5 shows the proposed changes to the electrical transmission facilities.

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Figure 3-5

Proposed Changes to Electrical Transmission Facilities (sheet 1 of 2)

Figure 3-5

Proposed Changes to Electrical Transmission Facilities (sheet 2 of 2)

Extension of Construction Duration and Modification to the Construction Scenario. Under the approved project, construction activities were anticipated to periodically reduce the capacity of Capitol Expressway from three lanes to two in each direction during the mid-day off peak periods. However, during the peak of the construction phase, the proposed changes to the approved project may require reducing capacity of Capitol Expressway to two lanes in the northbound direction, and one lane in the southbound direction, periodically, during non-peak hours of travel. Three travel lanes in each direction are expected to stay open during peak hours of travel. One left turn lane in each travel direction may be closed at intersections temporarily during various construction events. Lane closures would be contingent on the requirements and restrictions from the County of Santa Clara and City of San Jose. If lane closures for construction activities are further restricted, an increase of approximately one year would be anticipated for the duration of project construction, moving the construction completion from 2024 to 2025 with the proposed changes.

In addition, the proposed changes to the approved project may cause construction work to be necessary during night and early morning periods and weekend periods to minimize traffic disruption. Construction activities at night would involve partial or complete intersection closures along Capitol Expressway at Capitol Avenue, Story Road, Ocala Avenue, Cunningham Avenue, Swift Lane and Tully Road. Complete roadway closures may occur in each travel direction (northbound and southbound) of Capitol Expressway for work on the proposed pedestrian overcrossing.

Section 3.3 Changes in Circumstances

There have been a number of changes in circumstances since the approval of prior environmental documentation. These changes pertain to changes to related projects.

VTA Paratransit Offices at the Eastridge Park-and-Ride Lot. In September 2017, VTA completed improvements to the vacant building located at the Eastridge Transit Center and moved its VTA Access Paratransit staff to the Eastridge Park-and-Ride Lot. At the VTA Access Paratransit Offices, VTA has a call center and performs minor maintenance on Paratransit vehicles. Approximately 124 parking spaces are designated for use by VTA Access Paratransit staff and visitors.

Thompson Creek Trail. Construction of the City of San Jose's Thompson Creek Trail began in 2016 and was completed in 2017. The 2.25-mile trail is a Class I facility that runs between Lake Cunningham Park and Abom Park and generally follows Thompson Creek (San Jose Trails 2018). Figure 3-6 provides views of Thompson Creek Trail near Capitol Expressway and Tully Road.

a. View of trail facing north toward the intersection of Capitol Expressway and Tully Road.

b. View of trail facing south toward the intersection of Capitol Expressway and Capitol Expressway Connector Road at Eastridge Mall.

Source: ICF 2018.

Figure 3-6
Thompson Creek Trail

Lower Silver Creek Flood Protection Project. Construction of the Santa Clara Valley Water District's Lower Silver Creek Flood Protection Project began in 2003. All flood protection components of the project are complete and the remaining work, which consists of plantings, is anticipated to be completed in 2019. The main benefits of the 5-mile flood protection project are protection from flood damage and reduction in channel bank failures along Lower Silver Creek from Cunningham Reservoir to Interstate 680.

VTA C17131F, Pedestrian Connection to Eastridge Transit Center: In March 2018, VTA completed a project to provide pedestrian safety improvements along Capitol Expressway next to Eastridge Mall and improve connections to the Eastridge Transit Center. This project consisted of construction of a new crosswalk, including curb ramps and enhanced traffic signals at the Eastridge Loop and Capitol Expressway intersection; installation of new street lighting along Capitol Expressway; installation of fencing along the Capitol Expressway median; and construction of a new crosswalk and curb ramp at the shopping center to provide access to the Thompson Creek Trail.

VTA C810, Capitol Expressway Pedestrian/Bus Improvements: In 2012, VTA completed a project that included a multi-use path for pedestrians and bicycles along both sides of Capitol Expressway between Capitol Avenue and Quimby Road, as allowed by available space. The project included landscaping and lighting. In addition, the project included new bus rapid transit stations at Story Road and Ocala Avenue.

VTA C811, Capitol Expressway Light-Rail Project/Eastridge Transit Center: In 2015, VTA replaced the Eastridge Transit Center with a new facility with better access to bus services and shopping at Eastridge Mall. The project included upgrades to security, lighting, signs, and other amenities.

Tully Road Vision Zero Safety Improvements: This project will install buffered bike lanes and LED streetlight retrofits between Monterey Road and Capitol Expressway. It will further evaluate safety issues and determine feasible improvements.

Section 3.4 Introduction of New Information

This document includes the following new information and new technical reports prepared for the proposed changes to the approved project.

- Updates to the California National Diversity Database (see Section 3.3, *Biological Resources*, of the Second Subsequent IS).
- March 28, 2017, *Capitol Expressway Corridor Project – Biological Resources Update prepared by H.T. Harvey & Associates* (see Section 3.3, *Biological Resources*, of the Second Subsequent IS).
- 2016 American Community Service demographic data (see Section 3.14, *Socioeconomics*, of the Second Subsequent IS and Section 5.2, *Environmental Justice*, of the SEIR-2).

- February 2018 *Capitol Expressway Light Rail - Environmental Data Resources (EDR) Radius Map Report with GeoCheck (*see Section 3.9, *Hazardous Materials,* of the Second Subsequent IS).
- Department of Parks and Recreation 523A (Primary Record) and 523B (Building, Structure, Object) forms prepared for 1091–1093 S. Capitol Avenue and 1148 S. Capitol Avenue (see Section 3.5, *Cultural Resources,* of the Second Subsequent IS).
- May 16, 2018, *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Final Cultural Resources Memorandum* (see Section 3.5, *Cultural Resources,* of the Second Subsequent IS).
- April 29, 2019, *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* (see Section 5.1, *Transportation*, of the SEIR-2).
- February 14, 2019, *EBRC- CELR Noise and Vibration Assessment* (see Section 5.3, *Noise and Vibration*, of the SEIR-2).

No other new technical reports specific to the changes to the approved project have been prepared since the 2014 Subsequent IS/MND.

Regulations that have gone into effect since the 2014 Subsequent IS/MND, and to which the proposed changes to the project are subject, include Assembly Bill (AB) 52, various stormwater regulations, case law regarding how existing environmental conditions will impact a project's future users or residents, various air quality regulations, the *2017 Clean Air Plan,* and Senate Bill (SB) 215.

Assembly Bill 52. Effective July 1, 2015, AB 52 formally established new requirements under the California Environmental Quality Act (CEQA) to protect tribal cultural resources. Specifically, the bill requires a lead agency to begin consultation with a California Native American tribe, if requested, and be informed of projects in the geographic area prior to determining if environmental documentation is required. Compliance with AB 52 is discussed in Section 3.5, *Cultural Resources,* of the Second Subsequent IS.

Stormwater Regulations. VTA was newly regulated as a Non-traditional MS4 under the Phase II General Permit for Stormwater Discharge from Small Municipal Separate Storm Sewer Systems (MS4), Order No. 2013-0001-DWQ, effective July 30, 2013. The stormwater treatment regulations under the MS4 permit require new road projects (including sidewalks and bicycle lanes) that create 5,000 square feet or more of newly constructed or replaced and contiguous impervious surface to comply with post-construction stormwater treatment requirements. These types of treatment measures, including avoiding impervious surfaces, providing site controls to manage pollutant sources, and Low Impact Development features such as bioretention basins and vegetated swales will comply with the United States Environmental Protection Agency's (EPA) Greenstreets guidelines (EPA's *Managing Wet Weather with Green Infrastructure Municipal Handbook Green Streets*) (Lukes & Kloss 2008).

Section 303(d) of the Clean Water Act establishes total maximum daily loads to guide the application of state water quality standards. The Clean Water Act requires each state to satisfy its 303(d) and 305(b) reporting obligations every 2 years, a requirement that the State Water Board fulfills by preparing the *California Integrated Report*. The 2002 *California Integrated Report* with 303(d) listings was most recently revised in 2017. For the current listing cycles, the State Water Board has combined its 303(d) List and the 305(b) Report into the 2014 and 2016 *California Integrated Report.*

The 1995 Basin Plan for the San Francisco Bay Basin (Basin Plan) was the master water quality control planning document for the approved project. The Basin Plan, which designates beneficial uses and water quality objectives for waters of the state and includes programs of implementation to achieve water quality objectives, is updated and reviewed every 3 years. The Basin Plan has been updated to reflect amendments adopted through May 4, 2017. Thus, beneficial uses for all water body segments and water quality objectives have been updated in the Basin Plan.

Effective June 30, 2015, VTA's *Stormwater and Landscaping Design Criteria Manual* was developed to assist engineers with incorporating post-construction stormwater treatment into VTA project designs. All roadway projects that create 5,000 square feet or more of newly constructed or replaced and contiguous impervious surface must comply with the post-construction stormwater requirements in the manual. The current State Water Board's Phase II Small MS4 Permit (Order No. 2013-0001-DWQ) was amended (Water Quality Orders 2015-0133-EXEC and 2016-0069-EXEC) to reflect changes to or removal of regulated small MS4 designations. Currently, the State Water Board is considering amending the Small MS4 Permit to incorporate new or revised total maximum daily load implementation language.

In November 2015, the Regional Water Board adopted a renewed San Francisco Bay Region Municipal Regional Stormwater Permit (MRP) (Order No. R2-2015-0049) overseen by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). The permit regulates Waste Discharge Requirements and the National Pollutant Discharge Elimination System for the discharge of stormwater runoff from MS4s from a number of jurisdictions and entities, including SCVURPPP, and applies to City of San Jose– or Santa Clara County–owned areas that may be impacted by the changes to the project.

The approved project includes both roadway and light rail improvements, and does not require stormwater treatment. The proposed changes to the project would add impervious and rework areas,[2] which would require stormwater treatment. The proposed stormwater treatment measures within VTA's operational limits would comply with the stormwater guidelines presented in VTA's *Stormwater and Landscaping Design Criteria Manual*, and the proposed stormwater treatment measures for roadway improvements situated outside of VTA's operational limits would comply with the SCVURRPP. Compliance

[2] Rework area is an area that is currently impervious and would undergo a change in use as a result of the proposed changes to the project. The size of the rework area, even if currently impervious, is included in the calculation of the changes to the project's total treatment area due to the change in usage.

with the stormwater regulations summarized above is discussed in Section 3.10, *Hydrology and Water Quality*, of the Second Subsequent IS.

California Building Industry Assoc. v. Bay Area Air Quality Management District Case Law. In December 2015, the California Supreme Court found that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents" unless the project "could exacerbate hazards that are already present." The Supreme Court identified several exceptions to this general rule in which CEQA could apply to impacts of the environment on the project, all of which are statutory provisions in CEQA that specifically require consideration of impacts of the environment, such as consideration of projects near airports, school construction projects, and statutory exemptions for housing and transit priority projects. None of these exceptions apply to the proposed changes to the approved project. (*California Building Industry Assoc. v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369).

Air Quality Regulations. Senate Bill (SB) 350 (Clean Energy and Pollution Reduction Act of 2015) was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions are to require the following by 2030: (1) a renewables portfolio standard of 50 percent and (2) a doubling of energy efficiency (electrical and natural gas) by 2030, including improvements to the efficiency of existing buildings. These mandates will be implemented by future actions of the California Public Utilities Commission and California Energy Commission.

SB 32 requires the California Air Resources Board (ARB) to ensure that statewide greenhouse gas (GHG) emissions are reduced to at least 40 percent below 1990 levels by 2030. The companion bill, AB 197, creates requirements to form a Joint Legislative Committee on Climate Change Policies, requires the ARB to prioritize direct emission reductions and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit, requires ARB to prepare reports on sources of GHGs and other pollutants, establishes 6-year terms for voting members of ARB, and adds two legislators as non-voting members of ARB. Pursuant to SB 32, ARB updated the prior AB 32 Scoping Plan to address implementation of GHG reduction strategies to meet the 2030 reduction target. The Final Plan was approved in December 2017. The 2017 plan continues the discussion from the original scoping plan and 2014 update of identifying scientifically backed policies to reduce GHGs within six of the state's economic sectors. The updated Scoping Plan includes various elements, including doubling energy efficiency savings, increasing the low carbon fuel standard from 10 to 18 percent, adding 4.2 million zero-emission vehicles on the road, implementing the Sustainable Freight Strategy, implementing a post-2020 Cap-and-Trade Program, creating walkable communities with expanded mass transit and other alternatives to traveling by car, and developing an Integrated Natural and Working Lands Action Plan to protect land-based carbon sinks. Compliance with the air quality regulations summarized above is discussed in Section 5.4, *Air Quality*, of the SEIR-2.

Bay Area Air Quality Management District 2017 CEQA Guidelines. In May 2017, the Bay Area Air Quality Management District updated their California Environmental Quality Act (CEQA) Guidelines (Bay Area Air Quality Management District 2017a).

While the 2014 Subsequent IS/MND used the BAAQMD's 2010 CEQA guidelines to determine significance, the current, 2017 CEQA Guidelines are discussed in Section 5.4, *Air Quality*, and Section 5.5, *Construction*, of the SEIR-2. There have been no substantial changes to any significance thresholds between the 2010 and 2017 guidelines, however.

Bay Area Air Quality Management District/2017 Clean Air Plan. On April 19, 2017, the Bay Area Air Quality Management District Board of Directors adopted an update to the *2010 Clean Air Plan* called the *2017 Clean Air Plan* (Bay Area Air Quality Management District 2017b). Both the *2010 Clean Air Plan* and *2017 Clean Air Plan* focus on protecting public health and protecting the climate, and contain control measures aimed at reducing air pollution in the region. Additionally, many of the control measures included in the *2010 Clean Air Plan* were carried forward into the *2017 Clean Air Plan*. Consistency with the *2017 Clean Air Plan* is discussed in Section 5.4, *Air Quality*, of the SEIR-2.

Senate Bill 215. Effective January 1, 2017, SB 215 amended the Public Utilities Code to change how the California Public Utilities Commission (CPUC) governs, particularly in regards to ex parte communication. Among other changes, SB 215 affected how the CPUC processes formal crossing applications by requiring a commissioner or administrative law judge to oversee each rail crossing application. Compliance with SB 215 is discussed in Section 3.13, *Safety and Security*, of the Second Subsequent IS.

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Chapter 4
Alternatives Considered

The 2005 Final EIR evaluated a range of alternatives to the approved project. No additional alignment alternatives are considered in the SEIR-2.

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Chapter 5
Environmental Setting, Impacts, and Mitigation

Together, this chapter and the Second Subsequent IS (included in Attachment G) describe substantial changes in the environmental setting, impacts, and mitigation measures for each of the environmental resource areas that were evaluated in the 2005 Final EIR, the 2007 Final SEIR, and the 2014 Subsequent IS/MND. Within each environmental resource area, only the proposed changes to the approved project that have the potential to result in an environmental effect or a change in adopted mitigation measures are discussed. For a detailed discussion of the existing setting at the time each prior environmental document was prepared, impacts (including the thresholds of significance), and mitigation measures, refer to Chapter 4 of the 2005 Final EIR, Chapter 5 of the 2007 Final SEIR, and Chapter 3 of the 2014 Subsequent IS/MND.

The SEIR-2 is focused on the potential for new significant impacts or a substantial increase in the severity of previously identified significant effects related to transportation, environmental justice, noise and vibration, air quality and climate change, and construction. Other environmental resource areas, where there are no impacts or where impacts can be mitigated to a less than significant level, are analyzed in the Second Subsequent IS. These resource areas analyzed in the Second Subsequent IS include Biological Resources, Community Services, Cultural Resources, Electromagnetic Fields, Energy, Geology/Soils/Seismicity, Hazardous Materials, Hydrology & Water Quality, Land Use, Safety & Security, Socioeconomics, Utilities, and Visual Quality.

The 2005 Final EIR evaluated three alternatives: No-Project, Baseline, and Light Rail Alternative. In the case of the Light Rail Alternative, numerous design options were reviewed for their environmental effects. Based on the project approved by the VTA Board of Directors in May 2005, the modifications to the project approved by the VTA Board of Directors in August 2007, and the modifications to the project approved by the VTA Board of Directors in March 2014, some of the environmental effects and mitigation measures described in the 2005 Final EIR, 2007 Final SEIR, and 2014 Subsequent IS/MND no longer apply to the proposed changes to the approved project. The 2005 Final EIR identified no adverse effects at Kollmar Drive, which would have been “cul-de-saced” and would have no longer connected to Capitol Avenue. Under the

proposed changes to the approved project, Kollmar Drive would not be "cul-de-saced" and would continue to be a two-way street, eliminating all adverse effects associated with the approved project. The impact and mitigation summary included for each section identifies the impacts and mitigation measures that are still relevant. Table 1-1 in Chapter 1, *Executive Summary*, lists the environmental impacts that apply to the approved project and the proposed changes to the approved project.

Section 5.1 Transportation

This section describes the potential transportation impacts associated with the proposed changes to the approved project. This section supplements Section 4.2 of the 2005 Final EIR, Section 5.1 of the 2007 Final SEIR, and Section 3.1 of the 2014 Subsequent IS/MND. This analysis is based on and supported by the April 29, 2019 *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* prepared by Hexagon Transportation Consultants, Inc. (included in Attachment D).

Environmental Setting

The following discussion describes the changes to the existing roadway operations; existing bicycle, pedestrian, and bus counts at Ocala Avenue; and existing parking demand at the Eastridge Park-and-Ride Lot since the preparation of the transportation analysis in the 2007 Final SEIR and the September 2012 *Capitol Expressway Light Rail Transportation Study for the EIS.* The September 2012 Transportation Study is based on 2009 traffic counts.

The applicable transportation regulations remain unchanged since the 2014 Subsequent IS/MND.

EXISTING TRAFFIC VOLUMES

Traffic counts were conducted at the following four study intersections in November 2017:

- Capitol Expressway and Capitol Avenue;
- Capitol Expressway and Story Road;
- Capitol Expressway and Ocala Avenue; and
- Capitol Expressway and Cunningham Avenue.

Other intersections in the project corridor were not included because the proposed changes were not expected to change future operations. Peak hour traffic counts at the study intersections may fluctuate up to 10 percent due to both random variation and changes in the upstream/downstream conditions. Table 5.1-1 shows the AM peak hour comparison where the 2017 traffic volumes are more than 10 percent different than the 2009 traffic volumes and where the individual movements have changes greater than or equal to 100 vehicles. As shown, differences in the AM peak hour were only within 10

percent of 6,078 total intersection volume for the Capitol Expressway and Capitol Avenue intersection. Table 5.1-2 shows the PM peak hour comparison where the 2016/2017 traffic volumes are more than 10 percent different than the 2009 traffic volumes and where the individual movements have changes greater than or equal to 100 vehicles. As shown, differences in the PM peak hour were within 10 percent for total intersection volume for all four intersections. Year 2016 PM peak hour traffic counts were used at Capitol Expressway's intersections with Capitol Avenue and Story Road because of minor construction near these locations during the 2017 counts.

Table 5.1-1 AM Peak Hour Historical Traffic Volume Count Comparisons (2009 and 2017)

Intersection	Individual Movement Volume (% Difference)[1]		Total 2009 Intersection Volume	Total 2017 Intersection Volume	Total Intersection Volume (% Difference)
Capitol Expressway & Capitol Avenue	Northbound through Northbound right: Southbound left: Westbound right:	- 21.6 + 308.6 + 53.4 + 55.8	6,077	6,078	0
Capitol Expressway & Story Road	Northbound right: Southbound through: Eastbound through: Eastbound right: Westbound left: Westbound right:	+ 105.6 + 30.1 + 34.6 + 368.9 + 87.9 - 15.3	6,770	7,878	+ 16
Capitol Expressway & Ocala Avenue	Northbound left: Southbound through:	+ 63.2 + 56.8	5,464	6,064	+ 11
Capitol Expressway & Cunningham Avenue	Northbound right: Southbound through:	+ 98.1 + 31.2	3,983	4,747	+ 19

Notes:

[1] Individual movement volumes are the total number of vehicles during the AM peak hour for all lanes of that movement. Only individual movements with changes greater than or equal to 100 vehicles and 10% difference in volume between 2009 and 2017 are shown in this table.

Source: Hexagon 2019.

Table 5.1-2 PM Peak Hour Historical Traffic Volume Count Comparisons (2009 and 2016/2017)

Intersection	Individual Movement Volume (% Difference)[1]		Total 2009 Intersection Volume	Total 2012 Intersection Volume	Total 2014 Intersection Volume	Total 2016 or 2017 Intersection Volume	Total Intersection Volume (% Difference)
Capitol Expressway & Capitol Avenue[2]	Westbound left:	+ 24.5	6,100	6,395	6,447	6,373	+ 4
Capitol Expressway & Story Road[2]	Southbound left: Eastbound through: Eastbound right:	- 26.6 + 50.8 + 49.1	7,333	8,025	7,524	7,848	+ 7
Capitol Expressway & Ocala Avenue	Northbound through: Eastbound right:	+ 24.5 - 38.4	5,662	N/A	N/A	5,758	+ 2
Capitol Expressway & Cunningham Avenue	Northbound through:	+ 26.0	4,147	N/A	N/A	4,496	+ 8

Notes:

N/A = Not Applicable

[1] Individual movement volumes are the total number of vehicles during the PM peak period for all lanes of that movement. Only individual movements with changes greater than or equal to 100 vehicles and 10 percent difference in volume between 2009 and 2016/2017 are shown in this table.

[2] 2016 counts were used at these intersections due to minor construction activities occurring in 2017.

Source: Hexagon 2019.

EXISTING HIGH-OCCUPANCY VEHICLE UTILIZATION

Generally, high-occupancy vehicle (HOV) volumes currently comprise between 9 and 25 percent of the total traffic volume on northbound and southbound Capitol Expressway.

EXISTING QUEUING OBSERVATIONS

Westbound left-turn queues from Ocala Avenue to southbound Capitol Expressway are not currently accommodated in the storage provided during the AM (7:00 am to 9:00 am), school PM (2:00 pm to 4:00 pm), or commute PM (4:00 pm to 6:00 pm) peak periods. For all other left-turn movements at the Capitol Expressway and Ocala Avenue intersection, the 95th percentile queues are accommodated during the AM, school PM, and commute PM peak periods.

EXISTING INTERSECTION LEVELS OF SERVICE

Table 5.1-3 shows the intersection LOS under existing conditions. The results of the intersection level of service analysis show that the intersection of Capitol Expressway and Story Road operates at LOS F. All other study intersections currently operate at acceptable levels of service (LOS E or better).

Table 5.1-3 Existing Intersection Level of Service

Intersection	Peak Hour	Average Delay (second/vehicle)	Level of Service
Capitol Expressway & Capitol Avenue[1]	AM	45.5	D
	PM	48.0	D
Capitol Expressway & Story Road[1]	AM	**82.5**	**F**
	PM	**62.5**	**E**
Capitol Expressway & Ocala Avenue	AM	61.8	E
	PM	52.0	D
Capitol Expressway & Cunningham Avenue	AM	28.9	C
	PM	13.9	B

Notes:
N/A = Not Applicable
[1] Denotes CMP intersection.
Bold indicates substandard Level of Service.
Source: Hexagon 2019.

EXISTING AUTOMOBILE TRAVEL TIME

Table 5.1-4 shows the average travel time of automobiles on Capitol Expressway between Interstate 680 and Tully Road that were computed using a Synchro SimTraffic simulation model supplied by Santa Clara County. The results of the analysis show that, on average, it currently takes between approximately 4 and 7 minutes to travel on Capitol Expressway between Tully Road and Capitol Avenue during commute hours depending on direction and peak hour.

Table 5.1-4 Existing (2017) and Existing Plus Project Travel Time on Capitol Expressway, Tully Road to Capitol Avenue

Direction	Peak Hour	Average Travel Time (min:sec)[1]		Average Speed (mph)	
		Existing	Existing Plus Project	Existing	Existing Plus Project
Northbound	AM	6:01	11:23	19	10
Northbound	PM	5:25	6:41	21	17
Southbound	AM	4:50	5:21	24	22
Southbound	PM	6:39	10:29	17	11

Notes:

LRT Speed and Travel time: Between Alum Rock Station and the Eastridge Station, the average speed of the LRT under the Existing Plus Project Scenario is projected to be 32 mph and the average travel time is 4.5 minutes.

[1] All travel times estimated from Synchro SimTraffic 10 on the Santa Clara County provided network. Reported travel time is average of 10 runs.

NB = northbound; SB = southbound

Source: Hexagon 2019.

EXISTING BICYCLE, PEDESTRIAN, AND BUS COUNTS AT OCALA AVENUE

Much of the pedestrian and bicycle traffic in the vicinity of the Capitol Expressway corridor currently occurs around Ocala Avenue due to the presence of Ocala Middle School, which is located approximately 1,000 feet east of Capitol Expressway on Ocala Avenue. Of particular concern are bicycle and pedestrian crossings of Capitol Expressway by children. On November 1, 2017, counts of after-school bicycle and pedestrian trips crossing the Capitol Expressway and Ocala Avenue intersection during the school PM (2:00 pm to 4:00 pm) peak period show that most bicycle and pedestrian crossings were children (131 of 162 crossings were children) and mostly occurred across Capitol Expressway (as opposed to Ocala Avenue).

In addition, school bus trips were counted at the Capitol Expressway and Ocala Avenue intersection during the AM (7:00 am to 9:00 am), school PM (2:00 pm to 4:00 pm), and commute PM (4:00 pm to 6:00 pm) peak periods on November 1, 2017. During the AM peak period, there were 50 total buses (18 of which crossed Capitol Expressway). During the school PM peak period, there were 44 total buses (14 of which crossed Capitol Expressway). There were only two buses during the commute PM peak period (both crossed Capitol Expressway).

EXISTING EASTRIDGE PARK-AND-RIDE LOT PARKING DEMAND

The Eastridge Park-and-Ride Lot and Transit Center are located at Eastridge Mall. This station provides access to VTA bus routes 12, 22, 26, 31, 39, 70, 71, 77, 103, 180, and 522. Historical parking demand at the Eastridge Park-and-Ride Lot indicates that parking demand has grown between 2011 and 2017 (from as low as 21 parked vehicles in January

2011 to as high as 148 parked vehicles in October 2017). The existing parking supply of 180 currently exceeds parking demand.

EXISTING STATION RIDERSHIP

Estimates of daily transit boardings by station were provided by VTA from the countywide travel demand forecasting model. The existing 2017 daily transit boardings by station, with and without the proposed changes to the approved project, are provided in Table 5.1-5. Daily transit boardings without the proposed changes to the approved project are highest at the Alum Rock Station and lowest at the Eastridge Station.

Table 5.1-5 Existing (2017) Station Boarding Estimates

Daily Boardings	Eastridge Station	Story Station	Alum Rock Station	Total
Light Rail Transit	0	0	781	781
Bus	209	263	359	831
Total	209	263	1,140	1,612

Source: Hexagon 2019.

The existing mode split data for all trips in east San Jose and Milpitas are shown in Table 5.1-6. These data show that "drive alone" and "carpool" mode share are the highest mode shares.

Table 5.1-6 Existing (2017) East San Jose/ Milpitas Trip Mode Split

Mode	Existing 2017
Drive Alone	54.21%
Carpool	35.71%
Transit	2.53%
Bike	1.17%
Walk	6.39%

Source: Hexagon 2019.

VEHICLE MILES TRAVELED

In 2013, the State of California passed Senate Bill (SB) 743, which calls for a shift away from measures based on automobile delay. This is commonly measured by LOS in transportation analysis under CEQA. Since 2013, the State has issued several rounds of guidelines to assist Lead Agencies in implementing SB 743. These guidelines generally recommend the use of a broader measure called vehicle miles traveled (VMT), which measures the total amount of driving over a given area.

In January 2018, the California Natural Resources Agency began a rule-making period for the official changes to the State CEQA Guidelines to implement SB 743. In the Natural Resources Agency's Proposed Regulatory Text, new Section 15064.3(b)2 states that "Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact." The proposed changes to the approved project would likely reduce VMT because it would create an enhanced transit service that connects to the regional BART system, which is anticipated to shift some automobile trips to transit. The proposed changes would also reduce roadway capacity for a portion of the corridor by eliminating the HOV lanes on Capitol Expressway between Story Road and Tully Road. According to the Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA dated April 2018, "reducing roadway capacity (for example, by removing or repurposing motor vehicle travel lanes) will generally reduce VMT and therefore is presumed to cause a less-than-significant impact on transportation." Generally, no transportation analysis is needed for such projects. Considering all of these factors, it is likely that the proposed changes to the approved project, similar to the approved project, would reduce VMT compared with the no project conditions.

Environmental Impacts and Mitigation

The impact discussion in this section primarily focuses on the proposed changes to the approved project that could result in new or more significant transportation impacts compared to the impacts previously identified and analyzed for the approved project. This discussion describes the near-term traffic conditions with the proposed changes to the approved project, including existing-plus-project conditions, year 2023 (opening year), and year 2043 (long-term) conditions. Future year (2023 and 2043) traffic conditions include existing traffic as well as expected growth between 2018 and the forecast year.

The majority of the proposed changes to the approved project (including the extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections; modifications to the Eastridge Station platforms and tracks; reduction in parking spaces at the Eastridge Park-and-Ride lot; minor shift in the location and straightening of the Story Station pedestrian overcrossing and access modification to Story Station pedestrian access; relocation of a construction staging area; and relocation of PG&E electrical transmission facilities) would not result in changes to the transportation impacts previously identified and analyzed for the approved project.

One of the proposed changes to the approved project (revision to Capitol Expressway roadway lane configurations) would affect intersection LOS. This proposed change to the approved project could result in new or more significant transportation impacts compared to the impacts previously identified for the approved project.

IMPACTS ON INTERSECTIONS

At the study intersections, the minimum acceptable LOS was defined as LOS E, and project impacts at signalized intersections occur when:

- The LOS at an intersection drops below its LOS standard when project traffic is added; or
- An intersection that is operating worse than its LOS standard under no project conditions has an increase in critical delay of four or more seconds AND the demand-to-capacity ratio (V/C) is increased by more than 0.01 when project traffic is added.

The exception to these criteria is when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e. the change in average stopped delay for critical movements is negative). In this case, the criteria is when the project increases the critical V/C value by 0.01 or more. These criteria have changed subsequent to the certification of the 2014 Subsequent IS/MND.

LOS results at the four study intersections under existing (2017), year 2023, and year 2043 conditions with and without the proposed changes to the approved project are shown in Tables 5.1-7, 5.1-8, and 5.1-9, respectively.

Table 5.1-7 Existing (2017) Intersection Level of Service

Intersection	Year 2017					
	No Project			With Proposed Changes to the Approved Project		
	Peak Hour	Avg. Delay (sec/veh)	Level of Service	Avg. Delay (sec/veh)	Level of Service	Increase in Crit. Delay (sec)
Capitol Expressway & Capitol Avenue	AM	45.5	D	46.2	D	-5.7
	PM	48.0	D	45.7	D	-12.4
Capitol Expressway & Story Road	AM[1]	**82.5**	**F**	**118.8**	**F**	77.6
	PM	**62.5**	**E**	**86.5**	**F**	32.0
Capitol Expressway & Ocala Avenue	AM	61.8	E	**88.1**	**F**	41.9
	PM	52.0	D	56.7	E	10.4
Capitol Expressway & Cunningham Avenue	AM	28.9	C	27.3	C	-6.2
	PM	13.9	B	13.8	B	0.3

Notes:
Bold indicates substandard Level of Service.
Shaded rows indicate significant project impact.
[1] Change in demand-to-capacity ratio from no project to project conditions is + 0.375.
Source: Hexagon 2019.

Table 5.1-8 Year 2023 Intersection Level of Service

Intersection	Year 2023					
	No Project			With Proposed Changes to the Approved Project		
	Peak Hour	Avg. Delay (sec/veh)	Level of Service	Avg. Delay (sec/veh)	Level of Service	Increase in Crit. Delay (sec)
Capitol Expressway & Capitol Avenue	AM	46.1	D	47.4	D	-4.7
	PM	46.5	D	45.3	D	-9.4
Capitol Expressway & Story Road	AM[1]	**94.8**	**F**	**128.7**	**F**	69.0
	PM	**69.3**	**F**	**101.3**	**F**	38.0
Capitol Expressway & Ocala Avenue	AM	75.2	E	**104.8**	**F**	24.1
	PM	58.1	E	66.2	E	17.0
Capitol Expressway & Cunningham Avenue	AM	55.1	E	47.0	D	-21.2
	PM	14.6	B	14.7	B	0.5

Notes:
Bold indicates substandard Level of Service.
Shaded rows indicate significant project impact.
[1] Change in demand-to-capacity ratio from no project to project conditions is + 0.357.
Source: Hexagon 2019.

Table 5.1-9 Year 2043 Intersection Level of Service

Intersection	Year 2043					
	No Project			With Proposed Changes to the Approved Project		
	Peak Hour	Avg. Delay (sec/veh)	Level of Service	Avg. Delay (sec/veh)	Level of Service	Increase in Crit. Delay (sec)
Capitol Expressway & Capitol Avenue	AM	63.6	E	67.5	E	-4.9
	PM	54.1	D	53.8	D	-9.3
Capitol Expressway & Story Road	AM[1]	**114.5**	**F**	**144.3**	**F**	65.3
	PM[2]	**122.6**	**F**	**188.6**	**F**	110.2
Capitol Expressway & Ocala Avenue	AM[3]	**100.5**	**F**	**131.8**	**F**	25.0
	PM	**67.2**	**E**	**97.4**	**F**	55.1
Capitol Expressway & Cunningham Avenue	AM	41.9	E	58.9	E	-12.4
	PM	14.7	B	16.1	B	0.3

Notes:
Bold indicates substandard Level of Service.
Shaded rows indicate significant project impact.
[1] Change in demand-to-capacity ratio from no project to project conditions is +0.348.
[2] Change in demand-to-capacity ratio from no project to project conditions is +0.191.
[3] Change in demand-to-capacity ratio from no project to project conditions is +0.041.
Source: Hexagon 2019.

Impact: The April 29, 2019 *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* indicates that the proposed changes to the approved project would result in a significant impact related to LOS at the Capitol Expressway and Story Road intersection under existing (2017), year 2023, and year 2043 conditions. This impact is due to the proposed removal of the HOV lanes and the addition of HOV lane traffic into the remaining mixed-flow lanes.

The following impacts from the 2005 Final EIR would still apply to the proposed changes to the approved project: TRN-2a (Traffic Impact at Capitol Expressway/Story Road in 2018 (now 2023)) and TRN-8b (Traffic Impact at Capitol Expressway/Story Road in 2025 (now 2043)).

Mitigation: In the 2005 Final EIR, no feasible mitigation was identified for impacts TRN-2a and TRN-8b. These significant and unavoidable impacts were included in a Statement of Overriding Considerations that was adopted by the VTA Board of Directors in May 2005.

The proposed changes to the approved project would need to include the restoration of the HOV lanes on Capitol Expressway in the northbound and southbound directions to reduce this impact to a less-than-significant level. However, there is currently insufficient right-of-way to restore the HOV lanes and additional right-of-way would require the removal of existing buildings and sidewalks along Capitol Expressway, which is infeasible. There is no feasible mitigation for this impact; thus, this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to LOS.

Significant and unavoidable impact. No feasible mitigation.

Impact: The April 29, 2019 *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* indicates that the proposed changes to the approved project would result in a significant impact related to LOS at the Capitol Expressway and Ocala Avenue intersection under existing (2017) year, year 2023, and year 2043 conditions. This impact is due to the proposed removal of the HOV lanes, the removal of a northbound left-turn lane on Capitol Expressway, and the addition of HOV lane traffic into the remaining mixed-flow lanes.

The following impacts from the 2005 Final EIR would still apply to the proposed changes to the approved project: TRN-2b (Traffic Impact

at Capitol Expressway/Ocala Avenue in 2018 (now 2023)) and TRN-8c (Traffic Impact at Capitol Expressway/Ocala Avenue in 2025 (now 2043)).

Mitigation: In the 2005 Final EIR, no feasible mitigation was identified for Impact TRN-8c. These significant and unavoidable impacts were included in a Statement of Overriding Considerations that was adopted by the VTA Board of Directors in May 2005.

The proposed changes to the approved project would need to include the restoration of the HOV lanes on Capitol Expressway in the northbound and southbound directions to reduce this impact to a less-than-significant level. There is currently insufficient right-of-way to replace the HOV lanes and additional right-of-way would require the removal of existing buildings and sidewalks along Capitol Expressway, which is infeasible. There is no feasible mitigation for this impact and this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to LOS.

Significant and unavoidable impact. No feasible mitigation.

IMPACTS ON PARKING AT EASTRIDGE PARK-AND-RIDE LOT

The Eastridge Park-and-Ride Lot currently includes 180 parking spaces provided by VTA. The approved project increases the parking to 445 spaces at Eastridge Station to partially address the anticipated increased demand of 481 spaces from the project. As part of the proposed changes to the approved project, VTA is proposing to increase the number of parking spots added at the Eastridge Park-and-Ride Lot to approximately 302 spaces through reconfiguration of the Eastridge Park-and-Ride lot. See Section 3.3, *Changes in Circumstances*, in Chapter 3 for a discussion of the changes to the existing VTA Paratransit Offices at the Eastridge Park-and-Ride Lot. Table 5.1-10 shows the peak park and ride demand with the proposed changes to the approved project at the Eastridge Park-and-Ride Lot under existing (2017), year 2023, and year 2043 conditions. Based on VTA's revised forecasts, the proposed changes to the approved project would continue to increase parking demand at the Eastridge Park-and-Ride Lot. VTA recognizes that there may be a shortfall in parking supply as a result of the proposed reduction in the additional parking spaces provided. As part of project operations, VTA would conduct regular monitoring and parking counts at the Eastridge Park-and-Ride lot to ensure that the parking supply provided would be adequate. Should parking demand exceed supply, VTA has at least 135 parking stalls that would be made available to accommodate the future parking demand. As a result of these measures to increase supply or reduce demand, no indirect traffic or air quality impacts would be caused by cars circling and looking for parking at this station.

Table 5.1-10 Eastridge Park-and-Ride Lot Anticipated Parking Demand and Supply (Existing [2017] Year, Year 2023, and Year 2043)

Existing (2017)[1]		Year 2023[2]		Year 2043[2]	
Scenario	**Parked Vehicles**	**Scenario**	**Parked Vehicles**	**Scenario**	**Parked Vehicles**
Demand	114	Demand	293	Demand	374
Supply	180	Supply	302	Supply	374

Notes:
[1] Existing parking counts provided by VTA Operations on December 20, 2017.
[2] Future parking estimates provided by VTA Modeling on May 31, 2018.
Source: Hexagon 2019.

IMPACTS ON STATION RIDERSHIP

The 2023 and 2043 daily transit boardings by station, with and without the proposed changes to the approved project, are provided in Table 5.1-11. With the proposed changes, total transit boardings at the Alum Rock Station would decrease, while the number of boardings at the Story Station and the Eastridge Station would increase in both 2023 and 2043. This is expected given that Alum Rock is currently an end of the line station and the addition of more stations would allow patrons to select the most convenient location. With the proposed changes to the approved project, the highest percentage of light rail transit boardings at the Eastridge Transit Center would arrive by way of bus transfer, while the highest percentage of boardings at the Story and Alum Rock Stations would arrive by walking.

Table 5.1-11 Station Boarding Estimates (Year 2023 and Year 2043)

	Eastridge Station		Story Station		Alum Rock Station		Total	
Daily Boardings	**No Project**	**With Project**	**No Project**	**With Project**	**No Project**	**With Project**	**No Project**	**With Project**
Year 2023								
Light Rail Transit	0	860	0	563	1,185	780	1,185	2,203
Bus	1,124	897	330	359	787	578	2,240	1,833
Total	1,124	1,757	330	922	1,972	1,358	3,425	4,036
Year 2043								
Light Rail Transit	0	2,287	0	1,040	2,322	1,207	2,322	4,534
Bus	966	518	472	401	1,036	659	2,474	1,578
Total	966	2,805	472	1,441	3,358	1,866	4,796	6,112

Source: Hexagon 2019.

The mode split data for all trips in east San Jose and Milpitas are shown in Table 5.1-12. These data show that, with the proposed changes to the approved project, there would be a small decrease in "drive alone" and "carpool" mode share and a small increase in transit mode share in both 2023 and 2043 compared to 2017 (shown in Table 5.1-6).

Table 5.1-12 East San Jose/ Milpitas Trip Mode Split (Year 2023 and Year 2043)

Mode	Year 2023		Year 2043	
	No Project	With Project	No Project	With Project
Drive Alone	53.85%	53.82%	50.77%	50.73%
Carpool	35.53%	35.52%	34.05%	34.03%
Transit	3.17%	3.21%	5.84%	5.91%
Bike	1.21%	1.21%	1.59%	1.59%
Walk	6.25%	6.25%	7.74%	7.74%

Source: Hexagon 2019.

IMPACTS ON PEDESTRIANS AND BICYCLISTS, TRAVEL TIME, AND VEHICLE MILES TRAVELED

An overview of the potential impacts of the proposed changes to the approved project on pedestrians, bicyclists, travel time, and VMT is provided below.

- The proposed aerial guideway would result in fewer conflicts between light rail vehicles and school buses, bicyclists, and pedestrians.
- The proposed removal of the existing HOV lanes would result in higher average automobile delays and higher automobile travel times on Capitol Expressway.
- The proposed changes would not materially change the approved project's construction impacts relative to the approved at-grade alignment. Long delays for traffic on Capitol Expressway would occur during construction. However, VTA would seek to minimize these delays to the greatest extent feasible and provide viable detour routes when appropriate.
- As with the approved project, it is anticipated that the proposed changes would reduce VMT by creating an enhanced transit service that would connect to the Bay Area Rapid Transit (BART) system. It is anticipated that the enhanced transit service would shift some automobile trips to transit. In addition, it is anticipated that the proposed reduction in roadway capacity on Capitol Expressway due to the removal of travel lanes would decrease automobile trips. Both of these effects of the proposed changes would generally reduce VMT.

IMPACTS DURING CONSTRUCTION

Construction-related traffic and equipment would be controlled by flagmen and subject to the procedures contained in a traffic management plan (TMP) prepared for the proposed changes to the approved project. Traffic that may attempt to use neighborhood streets to avoid construction areas would be confined by two characteristics of the existing roadway network adjacent to Capitol Expressway:

- First, there are no efficient, directly parallel detours around Capitol Expressway. However, some nearby arterials are capable of handling traffic diverted from Capitol Expressway: White Road, King Road, and US 101. Portable electronic variable message signs and other static signs would be strategically positioned at approaches of individual construction zones to warn motorists in advance of the construction and to direct traffic to use these alternative routes where feasible. Flagmen would be present at all major construction points to assist in the control of traffic and encourage the use of these roads as a detour.
- Second, there are very few paths of travel through neighborhood streets that offer parallel routes to Capitol Expressway. Therefore, neighborhood streets would be mostly protected from being used as cut-through streets by motorists.

Transit service on-time performance would be expected to drop during the construction period. Alternative bus stops would be located temporarily whenever existing bus stops are disrupted by construction.

Currently, bicyclists are able to use the shoulders of the project corridor. During construction of the proposed changes to the approved project, the shoulders of the project corridor would not be maintained to allow bicyclists to continue effective use of the corridor. Detour signs would be posted directing bicyclists to use alternative corridors during construction, where appropriate.

Several residential properties along the corridor would be affected by construction activities. During short periods of time, access may be restricted, and parking eliminated. VTA would coordinate the construction activities with the homeowners and tenants. Any adjustments to the construction schedule would be conveyed to the residents upon determination of the need to adjust the schedule. The construction duration and disruptions to residents would be kept to a minimum.

Several businesses along the corridor would be temporarily affected by construction. During short periods of time, access may be altered. However, overall access to the businesses would be maintained. Property owners and businesses would be notified in advance of construction and provided with a detailed construction schedule if their access would be restricted. Changes to the construction schedule would be conveyed as soon as possible. Construction duration would be kept to a minimum. Signs would be provided along Capitol Expressway indicating that the business is open during construction and that overall access is available.

Impact: The April 29, 2019 *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* indicates that the proposed lane reductions on Capitol Expressway during construction may cause study intersections to temporarily operate at LOS F, impacting passenger vehicles, buses, and trucks. The proposed changes to the approved project may also result in the temporary closures of bikeways, bus stops, and sidewalks in the corridor during construction. The duration, times, and locations of temporary closures during construction cannot be predicted with certainty.

The following impacts from the 2005 Final EIR would apply to the proposed changes to the approved project: TRN (CON)-1 (Long-Term Street or Lane Closure) and TRN (CON)-2 (Long-Term Loss of Parking or Access Essential for Business Operations).

Mitigation: The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: TRN (CON)-2a (Prepare Traffic Management Plan), TRN (CON)-2b (Inform Public of Traffic Detours), and TRN (CON)-2c (Inform Public of Transit Service Changes).

During construction, VTA will prepare traffic handling plans, employ traffic flaggers, and endeavor to minimize peak hour delays to all users. However, such measures cannot guarantee that construction activities would not cause temporary significant impacts to passenger vehicles, buses, trucks, bikes, and pedestrians. There is no feasible mitigation for this impact and this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant transportation impacts during construction. With inclusion of these mitigation measures, the proposed changes to the approved project would result "Less than Significant" impacts related to parking during construction.

Significant and unavoidable impact. No feasible mitigation.

Section 5.2 Environmental Justice

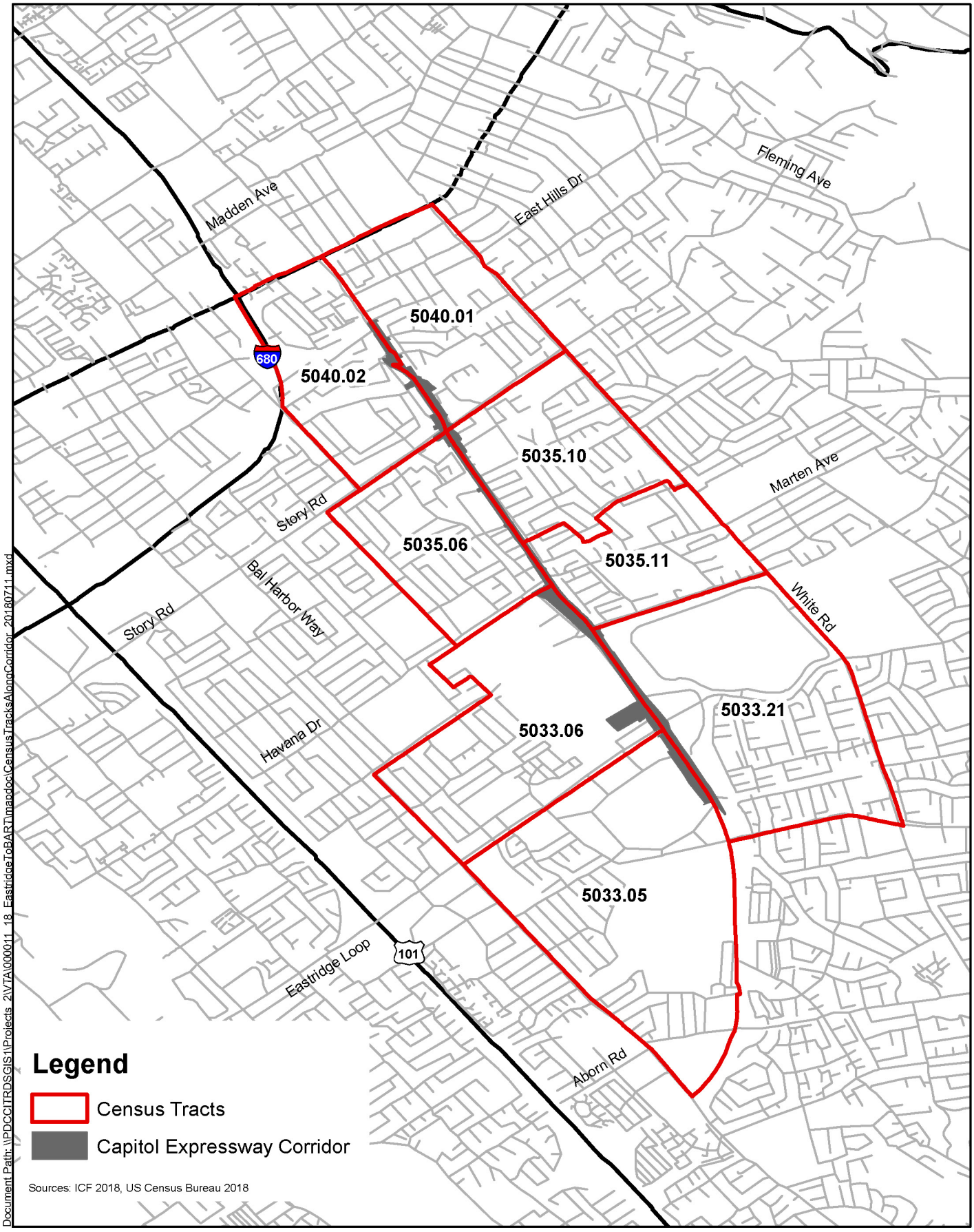
This section describes the potential of the proposed changes to the approved project to result in disproportionately high and adverse health or environmental effects on minority and low-income populations.

Environmental Setting

The following data was updated subsequent to the certification of the 2014 Subsequent IS/MND. The study area for the purposes of the environmental justice analysis includes the census tracts located adjacent to the Capitol Expressway corridor within the project limits (5033.05, 5033.06, 5033.21, 5035.06, 5035.10, 5035.11, 5040.01, and 5040.02), also shown in Figure 5.2-1 (US Census Bureau 2018). Information from the 2000 U.S. Census was used in the 2005 Final EIR to describe poverty, income, and demographic characteristics of the study area for the approved project and the City. For this section, 2016 American Community Survey data are used to describe existing (2017) poverty, income, and demographic characteristics of the study area for the proposed changes to the approved project and the City.

According to the 2005 Final EIR, the average income per capita of the City was $26,697, while the study area for the approved project averaged $19,912. Table 5.2-1 shows the existing (2017) poverty and income status and Table 5.2-2 shows the existing minority characteristics of the study area for the proposed changes to the approved project and of the City. The 2018 poverty guideline for a household of four is $25,100 annual income (U.S. Department of Health and Human Services 2018). As shown in Table 5.2-1, the study area has an existing median household income of $72,646, which is higher than the U.S. Census-defined poverty level for a household of four. However, the median household income in the City, $90,303, is higher than in the study area. In addition, the percentage of individuals living below the poverty threshold is higher in the study area (14%) than in the City as a whole (11%). There are four census tracts that meet the low income criteria for environmental justice.

According to the 2005 Final EIR, minorities represented approximately 63% of the total population of the City and approximately 82% of the study area for the approved project. As shown in Table 5.2-2, 2017 demographic data indicate that the existing proportion of the population composed of minority populations in the study area (Hispanic or Latino, Black or African American, Native American, Asian, or Native Hawaiian/ Pacific Islander) is substantially larger than for the City as a whole (94% and 70%, respectively) (Table 5.2-2). Because the percentage of minority populations in all the census tracts in the study area is greater than 50%, and is substantially greater than in the City, all the census tracts in the study area for the proposed changes to the approved project meets the minority criteria for environmental justice.



N

0 0.425 0.85 Miles

Figure 5.2-1
Census Tracts Along the Capitol Expressway Corridor

Transit dependency is characterized by the population under 18 and over 65 years of age (who are unlikely to drive their own vehicles and therefore more likely to be transit dependent), the number of workers using public transportation, and the number of persons below the poverty line. According to the 2005 Final EIR, the percentages of people under 18 and over 65 are similar in the study area for the approved project (29% and 7%, respectively) and the City (26% and 8%, respectively), although the study area had a slightly higher percentage of persons under 18 and a slightly lower percentage of persons over 65. Workers who use public transportation are also considered a transit-dependent group. The study area for the approved project and the City had the same percentage of workers that use public transportation (4%). Automobile ownership rates in the study area for the approved project were below the county average, according to the 2005 Final EIR.

Table 3.14-2 in Section 3.14, *Socioeconomics*, of the Second Subsequent IS shows the transit dependency characteristics of the City and the study area. The study area has similar percentages of the population that is under 18 (25%) or over 65 (10%) when compared to the City (23% and 11%, respectively). The percentage of the population that uses public transportation to get to work is the same in the study area as in the City (4%). The individual census tracts have varying percentages of workers that use public transportation, varying from 2 to 7%. The percentage of workers with no access to a vehicle is higher in the study area (2%) than in the City as a whole (1%).

Table 5.2-1 Existing (2017) Poverty and Income Status for the City of San Jose and the Study Area

Location/Census Tract	Total Population for Whom Poverty Status Determined	Percent Below Poverty Level	Median Household Income
City of San Jose	998,828	11%	$90,303
Study Area	**44,347**	**14%**	**$72,646**
5033.05	6,347	10%	$73,819
5033.06	4,253	11%	$63,636
5033.21	4,936	8%	$105,000
5035.06	6,124	19%	$60,733
5035.10	6,070	23%	$56,051
5035.11	3,810	9%	$97,862
5040.01	6,279	13%	$66,875
5040.02	6,528	16%	$57,188

Note: Shading indicates census tracts that meet the low income criteria.

Source: U.S. Census Bureau 2017b, 2017c.

Table 5.2-2 Existing (2017) Minority Status for the City of San Jose and the Study Area

Location/ Census Tract	Total Population	Percent White	Percent Black or African American	Percent American Indian and Alaska Native	Percent Asian	Percent Native Hawaiian and Other Pacific Islander	Percent Some Other Race	Percent Two or More Races	Percent Hispanic or Latino	Percent Minority
City of San Jose	1,009,363	27%	3%	<1%	34%	<1%	<1%	3%	33%	70%
Study Area	**44,505**	**5%**	**2%**	**<1%**	**35%**	**<1%**	**<1%**	**1%**	**56%**	**94%**
5033.05	6,378	3%	2%	0%	46%	<1%	0%	1%	47%	96%
5033.06	4,276	4%	3%	<1%	32%	0%	0%	0%	61%	96%
5033.21	4,942	4%	3%	0%	76%	0%	<1%	2%	15%	94%
5035.06	6,190	3%	1%	<1%	31%	0%	0%	3%	61%	94%
5035.10	6,079	7%	3%	0%	16%	<1%	<1%	2%	71%	90%
5035.11	3,810	9%	3%	<1%	42%	<1%	0%	0%	42%	91%
5040.01	6,302	5%	2%	0%	19%	0%	<1%	1%	75%	95%
5040.02	6,528	4%	2%	<1%	25%	<1%	<1%	1%	65%	94%

Note: Minority populations include Hispanic or Latino, Black or African American, Native American, Asian, or Native Hawaiian/Pacific Islander. In addition, shading indicates census tracts that meet the minority criteria.

Source: U.S. Census Bureau 2017a.

Environmental Impacts and Mitigation

This impact discussion primarily focuses on the proposed changes to the approved project that could result in new or more significant disproportionate and adverse environmental justice impacts compared to the impacts previously identified and analyzed for the approved project.

As discussed in Section 5.1, *Transportation*; Section 5.3, *Noise and Vibration*; and Section 5.4, *Air Quality and Climate Change;* in the SEIR-2, the proposed changes to the approved project would result in the following new significant and unavoidable impacts that could have a disproportionate and adverse impact on environmental justice populations.

Transportation (Operation and Construction)

- **Capitol Expressway and Story Road intersection.** The proposed changes to the approved project would result in a significant impact under existing (2017), year 2023, and year 2043 conditions, caused by the removal of the high-occupancy vehicle (HOV) lanes and the addition of HOV lane traffic into the remaining mixed flow lanes. No feasible mitigation was identified for these impacts.
- **Capitol Expressway and Ocala Avenue intersection.** The proposed changes to the approved project would result in a significant impact at this intersection under existing (2017), year 2023, and year 2043 conditions, caused by the removal of the HOV lanes, the removal of a northbound left-turn lane on Capitol Expressway, and the addition of HOV lane traffic into the remaining mixed flow lanes. No feasible mitigation was identified for these impacts.
- **Transportation impacts during construction.** The proposed changes to the approved project would require lane reductions on Capitol Expressway during construction, which may cause study intersections to temporarily operate at LOS F, impacting passenger vehicles, buses, and trucks. The proposed changes to the approved project may also result in the temporary closures of bikeways, bus stops, and sidewalks in the corridor during construction. The duration, times, and locations of temporary closures during construction cannot be predicted with certainty.

Noise and Vibration (Operation and Construction)

- **Nighttime exceedance (10:00 pm to 7:00 am) of the FTA vibration levels from light rail operations at homes within 100 feet of the proposed aerial guideway.** Most of the vibration impacts are anticipated to occur between 6:00 am and 7:00 am when VTA would be operating at peak service levels. The proposed aerial guideway (direct fixation fasteners) and ballasted track on embankment sections would cause an exceedance of the nighttime impact criteria at 67 sensitive receiver locations during light rail operations. VTA identified tire

derived aggregate (TDA), 5-Hertz floating slab track (FST) or a bridge bearing vibration isolation system, and speed reductions from 55 mph to 35 mph as potential mitigation measures. VTA is recommending to include TDA on embankment sections to mitigate one impact. However, VTA is not recommending to include FST, bridge bearing vibration isolation, or implement nighttime speed restrictions to eliminate the other 66 impacts.

VTA is not recommending to include FST or bridge bearing isolation systems as mitigation for several reasons. Future vibration levels, which include a +3 VdB safety factor, are at or slightly above the nighttime vibration impact criteria at many impacted locations, and may not actually exceed the threshold in operation. Many impacted locations are up to 100 feet from the aerial guideway, which is much farther than the typical distance at which nighttime vibration impacts are experienced. Most of the impacts are anticipated to occur between 6:00 am and 7:00 am when VTA would be operating at peak service levels.

In addition, it is VTA's understanding that FST has not been installed on any aerial guideways in the United States and bridge bearing isolations have only been recently installed on one aerial structure in the United States. VTA is only aware of one example of FST installed on an aerial guideway: Hong Kong's KCRC West Rail and of one example of a bridge bearing vibration isolation system installed on an aerial structure at Miami Central Station, on the All Aboard Florida-Brightline network. Thus, additional analysis of the effectiveness of FST and bridge bearing isolation systems on aerial structures would be needed to confirm the level of vibration reduction that would be achieved. Another reason that VTA is not proposing FST or bridge bearing isolation is that it would greatly complicate the track and structural design.

VTA is not recommending to reduce train speeds from 55 mph to 35 mph between 10:00 pm and 7:00 am because it would negatively affect travel time and operations during these time periods.

By not including FST, bridge bearing vibration isolation systems, or speed reductions as mitigation measures, this impact would be "Significant and Unavoidable."

- **Homes within 100 feet of impact piling activity may exceed FTA construction vibration criteria.** There are 64 predicted unmitigated construction vibration impacts, and 0 impacts with the use of non-impact piling methods. However, VTA is only recommending the use of non-impact piling methods in the vicinity of Capitol Avenue and Capitol Expressway. At this location, construction vibration levels are anticipated to be the highest. VTA is not recommending the use of non-impact piling methods at other locations for several reasons. Most locations are only slightly above the FTA Damage Criteria, and therefore may not experience any actual impacts. At the locations with the highest construction vibration levels, structural damage is not anticipated to occur. However, if any

structural and cosmetic damage does occur due to construction vibration, the damage shall be repaired by VTA. In addition, non-impact piling methods would require extensive land lane closures which would cause additional traffic impacts during construction. Non-impact piling methods are not recommended at most locations. Thus, this impact would be "Significant and Unavoidable."

Air Quality and Climate Change (Construction)

- **Cumulative air quality impacts during construction.** Cumulative PM2.5 concentrations would be elevated at the receptors located near the corners of Ocala Avenue and Capitol Expressway and Cunningham Avenue and Capitol Expressway due to substantial sources of pollutant concentrations that currently exist in the area where the approved project plus the proposed changes to the approved project would occur. Even without the contribution of emissions from construction, existing PM2.5 concentrations near these sensitive receptors are at or exceed the BAAQMD's threshold because Capitol Expressway and its cross streets are heavily traveled roadways, with residences located in close proximity to the roadway edge. The approved project plus the proposed changes to the approved project would cause further exceedances of existing pollutant concentrations, worsening the cumulative exposure of sensitive receptors to toxic air contaminant concentrations. Although the contribution of the approved project plus the proposed changes to the approved project to existing concentrations would not be substantial (approximately 6% at the locations where concentrations are at or exceed 0.8 $\mu g/m^3$), there would nevertheless be a worsening of an already cumulatively significant impact. The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment). In addition, Mitigation Measure AQ (CON)-3 would require that Tier 3 or Tier 4 equipment be used to further reduce construction-related emissions where possible. Even with inclusion of these mitigation measures, this impact would be "Significant and Unavoidable."

Environmental Justice

The significant and unavoidable impacts identified in this section would occur only within the Capitol Expressway corridor, where the study area population has a higher percentage of minorities than the City as a whole, and where four census tracts have a higher percentage of people below the poverty level than the City as a whole. Thus, the proposed changes to the approved project could result in a disproportionate and adverse impact on environmental justice populations, further discussed below.

The significant and unavoidable transportation impacts would occur only within the study area. However, users of the corridor within the study area would include both populations that reside within the study area (environmental justice populations), and populations that reside outside the study area (non-environmental justice populations) who are passing

through the area, visiting the area, or using the corridor as a regional transportation route. Because the significant and unavoidable transportation impacts would affect both environmental justice populations and non-environmental justice populations, these transportation impacts would not cause a disproportionate and adverse impact on environmental justice communities.

The significant and unavoidable noise and vibration impacts would also only occur within the study area, but would predominately affect environmental justice populations. This is because the impacts would only occur at residences within the study area, which are primarily environmental justice populations. Therefore, noise and vibration impacts would cause a disproportionate and adverse impact on environmental justice communities.

Similarly, the significant and unavoidable cumulative air quality impacts during construction would also only occur within the study area, and would predominately affect environmental justice populations. This is because the impacts would only occur at the receptors located near the corners of Ocala Avenue and Capitol Expressway and Cunningham Avenue and Capitol Expressway, which are primarily environmental justice populations. Therefore, cumulative air quality impacts during construction would cause a disproportionate and adverse impact on environmental justice communities.

Impact: The proposed changes to the approved project would result in new or more severe significant and unavoidable impacts to environmental justice populations related to transportation, noise and vibration, and cumulative air quality impacts during construction. However, disproportionate and adverse environmental effects to environmental justice populations would only result from noise and vibration, and cumulative air quality impacts during construction.

The following impact from the 2007 Final SEIR would still apply to the proposed changes to the approved project: EJ-1 (Environmental Justice).

Mitigation: Transportation (Operation and Construction). There are no feasible mitigation measures to reduce the transportation impacts associated with the proposed changes to the approved project. The project would need to restore the HOV lanes on Capitol Expressway in the northbound and southbound directions that would be removed by the project to provide space for the light rail tracks. However, there is currently insufficient right-of-way to replace the HOV lanes and additional right-of-way would require the removal of existing buildings and sidewalks along Capitol Expressway, which is infeasible. Therefore, the LOS impacts identified at the Capitol Expressway and Story Road intersection and at the Capitol Expressway and Ocala Avenue intersection would be "Significant and Unavoidable." Additionally, during construction, VTA will prepare traffic handling plans, employ traffic flaggers, and endeavor to

minimize peak hour delays to all users**.** However, such measures cannot guarantee that construction activities would not cause temporary significant impacts to passenger vehicles, buses, trucks, bikes, and pedestrians. Therefore, this impact is considered "Significant and Unavoidable." However, for the reasons described above, these transportation impacts would not cause a disproportionate and adverse impact on environmental justice populations.

Noise and Vibration (Operation and Construction). Regarding nighttime exceedance of operational FTA vibration levels at homes within 100 feet of the proposed aerial guideway, VTA identified tire derived aggregate (TDA), 5-Hertz floating slab track (FST) or bridge bearing vibration isolation system, and speed reduction as potential mitigation measures. By not including FST; a bridge bearing vibration isolation system; or implementing speed reductions as mitigation, and because TDA is the only feasible mitigation option to reduce vibration levels from operation, this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts related to vibration levels from transit operation. With inclusion of TDA, vibration impacts are expected to occur at 66 sensitive receivers under the proposed changes to the approved project. This is an increase of 14 sensitive receivers compared to the 2005 Final EIR, which concluded 52 sensitive receivers would be potentially exposed to vibration impacts during operation. Therefore, this impact is considered "Significant and Unavoidable" and would result in a disproportionate and adverse impact on environmental justice populations.

Regarding exceedance of FTA construction vibration criteria at homes within 100 feet of the proposed piling activity, VTA is only recommending the use of non-impact piling methods in the vicinity of Capitol Avenue and Capitol Expressway. At this location, construction vibration levels are anticipated to be the highest. VTA is not recommending the use of non-impact piling methods at most locations for several reasons. Most locations are only slightly above the FTA Damage Criteria, and therefore may not experience any actual impacts. At the locations with the highest construction vibration levels, structural damage is not anticipated to occur. However, if any structural and cosmetic damage does occur due to construction vibration, the damage shall be repaired by VTA. In addition, non-impact piling methods would require extensive lane closures which would cause additional traffic impacts during construction. Non-impact piling methods are not recommended at most locations. Thus, this impact would be "Significant and Unavoidable" and would result in a disproportionate and adverse impact on environmental justice populations.

Air Quality and Climate Change (Construction). With respect to cumulative air quality impacts during construction, the following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment). In addition, Mitigation Measure AQ (CON)-3 would require that Tier 3 or Tier 4 equipment be used to further reduce construction-related emissions where possible. Even with inclusion of these mitigation measures, this impact would be "Significant and Unavoidable", and would result in a disproportionate and adverse impact on environmental justice populations.

Based on the analysis above, the proposed changes to the approved project would result in new disproportionate and adverse impacts or a substantial increase in the severity of previously identified disproportionate and adverse impacts related to environmental justice.

Significant and unavoidable impact, even with mitigation.

Section 5.3 Noise and Vibration

This section describes the potential noise and vibration impacts associated with the proposed changes to the approved project. This section supplements Section 4.14 of the 2005 Final EIR, Section 5.13 of the 2007 Final SEIR, and Section 3.12 of the 2014 Subsequent IS/MND. This analysis is based on and supported by the February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* prepared by ATS Consulting (included in Attachment E). Mitigation measures are identified for impacts that exceed the significance thresholds included in the 2005 Final EIR.

Environmental Setting

The existing noise environment along the Capitol Expressway corridor is dominated by traffic. Capitol Expressway is an eight-lane facility with six mixed-flow lanes and two carpool lanes. The ambient noise environment within the corridor was measured at four locations in December 2017 to supplement previous noise surveys prepared for the approved project in 2001, 2006, and 2010. A Federal Highway Administration Traffic Noise Model was developed to accurately compare previous and current noise measurements and to estimate the noise at each sensitive receptor due to traffic noise along Capitol Expressway. The existing (2017) noise exposure level ranges from 66.3 to 74.1 L_{dn}, compared to a range of 65 to 73 L_{dn} in 2010, when the most recent noise survey was prepared for the approved project.

The applicable noise and vibration regulations remain unchanged since the 2014 Subsequent IS/MND.

Environmental Impacts and Mitigation

The impact discussion in this section primarily focuses on the proposed changes to the approved project that could result in new or more significant noise and vibration impacts compared to the impacts previously identified and analyzed for the approved project.

The majority of the proposed changes to the approved project (including the modifications to the Eastridge Station platforms and tracks; reduction in parking spaces at the Eastridge Park-and-Ride lot; minor shift in the location and straightening of the Story Station pedestrian overcrossing and access; modification to Story Station pedestrian access; relocation of a construction staging area; and relocation of PG&E electrical transmission facilities) would not result in changes to noise and vibration compared to the impacts previously identified and analyzed for the approved project.

Two proposed changes to the approved project (the extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections and revisions to Capitol Expressway roadway lane configurations) would affect noise and vibration levels at sensitive receivers (e.g., residences) located adjacent to the proposed changes to the approved project. As with the approved project, the proposed changes would involve the operation of light rail primarily within the median of Capitol Expressway. However, the

proposed change would replace the at-grade track alignment with approximately 1.25 miles of aerial guideway from south of Story Road to north of Tully Road. The aerial guideway would include concrete columns supported on pile foundations and aerial guideway sound walls. The proposed changes to the approved project would also include resurfacing Capitol Expressway with open-graded asphalt concrete (OGAC).[1] Both of the existing high-occupancy vehicle lanes (one northbound and one southbound) would be converted to general purpose traffic lanes, resulting in a total of four general purpose lanes in each direction between Story Road and Capitol Avenue as a result of the proposed revisions to Capitol Expressway roadway lane configurations. These proposed changes to the approved project could result in new or more significant noise and vibration impacts compared to the impacts previously identified for the approved project.

NOISE LEVELS FROM TRANSIT OPERATION

Table 5.3-1 summarizes the anticipated operational transit noise impacts generated by the proposed changes to the approved project in 2017 and 2043. The table indicates the number of impacts for both years under the following conditions:

- Without the proposed aerial guideway sound walls and without the proposed OGAC;
- With only the proposed aerial guideway sound walls; and
- With both the proposed aerial guideway sound walls and the proposed OGAC.

A more detailed list of anticipated operational noise impacts can be found in Table 9 of the February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* (included in Attachment E).

Impact: The February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* indicates that the proposed changes to the approved project would result in 78 moderate and 23 severe noise impacts in 2017 without the proposed aerial guideway sound walls and without the proposed OGAC. The proposed changes would result in 93 moderate and 59 severe noise impacts in 2043 without the proposed aerial guideway sound walls and without the proposed OGAC. The location of receivers where operational noise impacts are predicted are as follows:

- Twenty properties located east and west of the alignment between Wilbur Avenue and Mervyns Way would experience one severe and nineteen moderate noise impacts.
- Twenty-five properties located west of the alignment between Excalibur Drive and Story Road would experience moderate noise impacts.

[1] Recent studies by Caltrans indicate that OGAC produces noticeably less vehicle noise than other pavement types (i.e., concrete and conventional asphalt).

- Two commercial properties located west of the alignment near the intersection of Story Road and Expressway would experience moderate noise impacts.
- Forty-one properties located east of the alignment between Story Road and Ocala Avenue would experience thirty-eight moderate and three severe noise impacts.
- Seventeen properties located west of the alignment between Story Road and Foxdale Loop would experience four moderate and thirteen severe noise impacts.
- One commercial property located west of the alignment near the intersection of Foxdale Loop and Capitol Expressway would experience a moderate noise impact.
- Twenty-seven properties located east of the alignment between Ocala Avenue and Cunningham Avenue would experience severe noise impacts.
- Nineteen properties located west of the alignment between Foxdale Drive and Ocala Avenue would experience four moderate and fifteen severe noise impacts.

With only the proposed aerial sound walls, the proposed changes would result in 45 moderate and 0 severe noise impacts in 2017 as well as 116 moderate and 0 severe noise impacts in 2043. With both the proposed aerial guideway sound walls and the proposed OGAC, all moderate and severe impacts would be eliminated in 2017 and 2043. For sensitive receivers where a moderate impact is anticipated, VTA does not require mitigation measures under CEQA.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: NV-1 (Noise Levels from Transit Operations That Would Be Considered a Severe Impact by Federal Transit Administration Criteria).

Mitigation: The following mitigation measures identified in the 2005 Final EIR and the 2007 Final SEIR would still apply to the proposed changes to the approved project: NV-1a (Construct Soundwalls) and NV-1c (Provide Quiet Pavement). Mitigation Measure NV-1a has been revised. Mitigation Measure NV-1b is no longer needed as a result of project changes.

Mitigation Measure NV-1a: Construct Soundwalls

VTA shall construct soundwalls that are a minimum of 3 feet above top of rail on the aerial structure or in the median adjacent to the trackway at the following locations:

- NB/SB: Westboro Drive to Story Road (968+54 to 992+00);
- NB: Kollmar Drive to Cunningham Avenue (997+00 to 1051+00); and
- SB: Kollmar Drive to Ocala Avenue (997+00 to 1038+00).

All soundwall locations and heights are preliminary and are subject to change based on additional noise studies during final design.

Inclusion of these mitigation measures would reduce these impacts to "Less than Significant."

Less-than-significant impact with mitigation.

Table 5.3-1 Summary of Existing (2017) and Year 2043 Operational Transit Noise Impacts Associated with the Proposed Changes to the Approved Project

Segment of Capitol Expressway	Number – Type of Receivers[1]	Existing (2017) Noise (Ldn)[2]	Without Aerial Guideway Sound Wall & OGAC[3] Year 2043 (Year 2017)[4]		With Aerial Guideway Sound Wall Year 2043 (Year 2017)[4]		With Aerial Guideway Sound Wall & OGAC[3] Year 2043 (Year 2017)[4]	
			Moderate	Severe	Moderate	Severe	Moderate	Severe
NB 964+50 to 981+20 Wilbur Ave. to Mervyns Way	22 - SFR	70-78	17 (12)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)
NB 986+70 to 995+50 Mervyns Way to Story Road	5 – INST/COM	72-73	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
NB 998+50 to 1035+90 Story Road to Ocala Avenue	41 - SFR	68-75	38 (5)	3 (0)	28 (3)	0 (0)	0 (0)	0 (0)
NB 1037+60 to 1049+50 Ocala Avenue to Cunningham Avenue	27 - SFR	65-67	0 (6)	27 (21)	27 (27)	0 (0)	0 (0)	0 (0)
SB 967+50 to 970+50 S Capitol Avenue	5 - SFR	67-73	2 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)
SB 971+30 to 973+00 S Capitol Avenue	2 - COM	71-74	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
SB 978+00 to 992+70 Excalibur Drive to Story Road	25 - SFR	72-75	25 (21)	0 (0)	23 (14)	0 (0)	0 (0)	0 (0)
SB 993+10 to 996+50 Story Road	3 - COM	73-74	2 (0)	0 (0)	2 (0)	0 (0)	0 (0)	0 (0)

Segment of Capitol Expressway	Number – Type of Receivers[1]	Existing (2017) Noise (Ldn)[2]	Without Aerial Guideway Sound Wall & OGAC[3] Year 2043 (Year 2017)[4]		With Aerial Guideway Sound Wall Year 2043 (Year 2017)[4]		With Aerial Guideway Sound Wall & OGAC[3] Year 2043 (Year 2017)[4]	
			Moderate	Severe	Moderate	Severe	Moderate	Severe
SB 998+80 to 1007+20 Story Road to Foxdale Loop	17 - SFR	65-73	4 (16)	13 (1)	16 (0)	0 (0)	0 (0)	0 (0)
SB 1009+00 E. Capitol Expressway	1 - COM	74	1 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)
SB 1012+00 to 1018+00 Foxdale Loop	3 - MFR	69	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
SB 1021+00 to 1035+80 Foxdale Drive to Ocala Avenue	19 - SFR	65-67	4 (18)	15 (1)	18 (1)	0 (0)	0 (0)	0 (0)
Number of Impacts:			**93 (78)**	**59 (23)**	**116 (45)**	**0 (0)**	**0 (0)**	**0 (0)**

Notes:

[1] Receiver types include: Single-Family Residence (SFR), Multi-Family Residence (MFR), Commercial/Office Space (COM), and Institutional (INST).

[2] Day-Night Sound Level (Ldn) is the most common measure of total community noise over a 24-hour period and is used by the FTA to evaluate residential noise impacts from proposed transit projects.

[3] Open-graded asphalt concrete (OGAC) is a noise-reducing pavement surface.

[4] Moderate and severe impacts were determined according to FTA *Noise and Vibration Impact Assessment Guidance Manual* (2006).

Source: ATS Consulting, 2019.

VIBRATION LEVELS FROM TRANSIT OPERATION

Table 5.3-2 summarizes the anticipated operational transit vibration impacts generated by the proposed changes to the approved project. There is no distinction between the number of impacts anticipated in 2017 and 2043 because vibration criteria are not based on cumulative increases in vibration levels (as is the case with noise). The table indicates the number of impacts under the following conditions:

- Without any mitigation; and
- With inclusion of mitigation consisting of only tire derived aggregate (TDA).

Table 5.3-2 Summary of Operational Transit Vibration Impacts Associated with the Proposed Changes to the Approved Project

Direction/Segment of Capitol Expressway	Number – Type of Receivers[1]	Impact Criteria (VdB)[2]	Unmitigated[4]	With TDA[4,5]
NB 964+50 to 981+20 Wilbur Avenue to Mervyns Way	22 – SFR	72 - 78	10	10
NB 986+70 to 995+50 Mervyns Way to Story Road	5 – INST/COM	78-84[3]	0	0
NB 998+50 to 1035+90 Story Road to Ocala Avenue	41 – SFR	72 - 78	4	4
NB 1037+60 to 1049+50 Ocala Avenue to Cunningham Avenue	27 – SFR	72 - 78	21	21
SB 967+50 to 970+50 S. Capitol Avenue	5 – SFR	72 - 78	1	0
SB 971+30 to 973+00 S. Capitol Avenue	2 – COM	84[3]	0	0
SB 978+00 to 992+70 Excalibur Drive to Story Road	25 – SFR	72 - 78	2	2
SB 993+10 to 996+50 Story Road	3 – COM	84[3]	0	0
SB 998+80 to 1007+20 Story Road to Foxdale Loop	17 – SFR	72 - 78	15	15
SB 1009+00 E. Capitol Expressway	1 – COM	84[3]	0	0
SB 1012+00 to 1018+00 Foxdale Loop	3 – MFR	72 - 78	0	0
SB 1021+00 to 1035+80 Foxdale Drive to Ocala Avenue	19 – SFR	72 - 78	14	14
		Number of Impacts:	**67**	**66**

Notes:

[1] Receiver types include: Single-Family Residence (SFR), Multi-Family Residence (MFR), Commercial/Office Space (COM), and Institutional (INST).

[2] FTA nighttime impact criteria of 72 vibration decibels (VdB) and daytime of 78 VdB.

[3] Impact threshold for offices and non-sensitive areas.

[4] Impacts were determined according to FTA *Noise and Vibration Impact Assessment Guidance Manual* (2006).

[5] Tire derived aggregate (TDA) is a resilient underlayment for ballasted track that would only be located at the at-grade and embankment sections.

Source: ATS Consulting, 2019.

Impact: The February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* indicates that the proposed changes to the approved project would result in exceedances of the Federal Transit Administration (FTA) nighttime (10:00 pm to 7:00 am) vibration impact criteria at sensitive receivers located within 100 feet of the proposed aerial guideway. Most of the impacts are anticipated to occur between 6:00 am and 7:00 am when VTA would be operating at peak service levels. The proposed aerial guideway (direct fixation fasteners) and ballasted track on embankment sections would cause an exceedance of the nighttime impact criteria at 67 sensitive receiver locations. The location of receivers where operational vibration impacts are predicted are as follows:

- Eleven properties located east and west of the alignment, between Wilbur Avenue and Mervyns Way would experience operational vibration impacts. One home is within 33 feet of the closest support column.
- Two properties located west of the alignment on Capitol Expressway near Story Road would experience operational vibration impacts.
- Fifteen properties located west of the alignment along Brenford Drive would experience operational vibration impacts.
- Fourteen properties located west of the alignment between Foxdale Drive and Ocala Avenue would experience operational vibration impacts.
- Four properties located east of the alignment between South Capitol Avenue and Ocala Avenue would experience operational vibration impacts.
- Twenty-one properties located east of the alignment between Ocala Avenue and Cunningham Avenue would experience operational vibration impacts.

No daytime vibration impacts are anticipated under current train parameters, schedules, headways, and speeds.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: NV-4 (Vibration Levels in Buildings from Transit Operations That Exceed Federal Transit Administration Criteria).

Mitigation: The following mitigation measure identified in the 2005 Final EIR and 2007 Final SEIR would still apply to the proposed changes to the approved project: NV-4b (Use Vibration-Dampening Track Construction Materials). Mitigation Measure NV-4b has been revised. With inclusion of TDA, vibration would exceed the nighttime impact criteria at 66 sensitive receiver locations at the at-grade and embankment sections of the alignment.

If a 5-Hertz floating slab track (FST) or a bridge bearing vibration isolation system[2] is included as mitigation, the nighttime impact criteria would not be exceeded at any sensitive receptor locations. In addition, reducing train speed typically results in lower groundborne vibration levels. Specifically, if speeds are reduced from 55 mph to 35 mph between 10:00 pm and 7:00 am, the nighttime impact criteria would not be exceeded at any sensitive receptor locations.

VTA is not recommending to include FST or a bridge bearing isolation system as mitigation for several reasons. Future vibration levels, which include a +3 VdB safety factor, are at or slightly above the nighttime vibration impact criteria at many impacted locations, and may not actually exceed the threshold in operation. Many impacted locations are up to 100 feet from the aerial guideway, which is much farther than the typical distance at which nighttime vibration impacts are experienced. In addition, it is VTA's understanding that FST has not been installed on any aerial guideways in the United States and a bridge bearing isolation system has only been recently installed on one aerial structure in the United States. VTA is only aware of one example of FST installed on an aerial guideway on Hong Kong's KCRC West Rail and of one example of a bridge bearing vibration isolation system installed on an aerial structure at Miami Central Station, on the All Aboard Florida-Brightline network. Thus, there is limited information on the effectiveness of FST and bridge bearing isolation systems on aerial structures.

VTA is also not proposing to include speed reduction as mitigation because it would negatively affect travel time and operations between 10:00 pm and 7:00 am.

By not including FST; a bridge bearing vibration isolation system; or implementing speed reductions as mitigation, and because TDA is the

[2] A bridge bearing vibration isolation system is a system in which resilient bridge bearings are designed and function like the springs or rubber pads that support floating slab track.

only feasible mitigation option to reduce vibration levels from operation, this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts related to vibration levels from transit operation. With inclusion of TDA, vibration impacts are expected to occur at 66 sensitive receivers under the proposed changes to the approved project. This is an increase of 14 sensitive receivers compared to the 2005 Final EIR, which concluded 52 sensitive receivers would be potentially exposed to vibration impacts during operation.

Mitigation Measure NV-4b: Use Vibration-Dampening Track Construction Materials

VTA shall install a 12-inch layer of tire-derived aggregate beneath a subballast layer of 12 inches and a ballast layer of 12 inches between Wilbur Avenue and Westboro Drive (Sta. 966+50 to 971+50 NB/SB).

Significant and unavoidable impact, even with mitigation.

PILE DRIVING (AND ALL OTHER VIBRATORY CONSTRUCTION EQUIPMENT) NOISE IMPACTS DURING CONSTRUCTION

During construction, pile driving would be conducted to install foundation piles for the proposed aerial guideway. Although other vibratory construction equipment would also be used for the project, the anticipated noise levels from this equipment would not exceed the noise levels from pile driving. As a result, Table 5.3-3 focuses on the anticipated pile driving noise impacts generated by the proposed changes to the approved project during construction. The table indicates the number of impacts under the following conditions:

- Without any mitigation;
- With inclusion of mitigation consisting of impact cushions, which involves initially using burlap bags and then adding wood block when pile driving becomes more difficult;
- With inclusion of mitigation consisting of both impact cushions and pre-drilling, which involves pre-drilling 1/3 of a pile to reduce the total duration of impact time; and
- With inclusion of mitigation consisting of both impact cushions and noise shields around the pile equipment, which consists of a frame that secures acoustic blankets or paneling.

A more detailed list of anticipated pile driving noise impacts can be found in Table 14 of the February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* (included in Attachment E).

Table 5.3-3 Summary of Construction Pile Driving Noise Impacts Associated with the Proposed Changes to the Approved Project

Direction/Segment of Capitol Expressway	Number – Type of Receivers[1]	Federal Transit Administration Impact Criteria Leq (8-hr) dBA[2]	Unmitigated[3]	With Impact Cushions[3]	With Impact Cushions & Pre-Drilling[3,5]	With Impact Cushions[3] & Noise Shields[3,6]
NB 964+50 to 981+20 Wilbur Avenue to Mervyns Way	22 – SFR	80	12	9	9	0
NB 986+70 to 995+50 Mervyns Way to Story Road	5 – INST/COM	80/85	5	3	2	0
NB 998+50 to 1035+90 Story Road to Ocala Avenue	41 – SFR	80	41	40	25	0
NB 1037+60 to 1049+50 Ocala Avenue to Cunningham Avenue	27 – SFR	80	27	22	9	0
SB 967+50 to 970+50 S. Capitol Avenue	5 – SFR	80	0	0	0	0
SB 971+30 to 973+00 S. Capitol Avenue	2 – COM	85	0	0	0	0
SB 978+00 to 992+70 Excalibur Drive to Story Road	25 – SFR	80	21	21	21	0
SB 993+10 to 996+50 Story Road	3 – COM	85	3	1	0	0
SB 998+80 to 1007+20 Story Road to Foxdale Loop	17 – SFR	80	17	12	2	0
SB 1009+00 E. Capitol Expressway	1 – COM	85	1	1	0	0

Direction/Segment of Capitol Expressway	Number – Type of Receivers[1]	Federal Transit Administration Impact Criteria Leq (8-hr) dBA[2]	Unmitigated[3]	With Impact Cushions[3]	With Impact Cushions & Pre-Drilling[3,5]	With Impact Cushions[3] & Noise Shields[3,6]
SB 1012+00 to 1018+00 Foxdale Loop	3 – MFR	80	3	3	0	0
SB 1021+00 to 1035+80 Foxdale Drive to Ocala Avenue	19 – SFR	80	19	19	11	0
Number of Impacts:			**149**	**131**	**79**	**0**

Notes:

[1] Receiver types include: Single-Family Residence (SFR), Multi-Family Residence (MFR), Commercial/Office Space (COM), and Institutional (INST).

[2] Day-Night Sound Level (Ldn) is the most common measure of total community noise over a 24-hour period and is used by the Federal Transit Administration (FTA) to evaluate residential noise impacts from proposed transit projects.

[3] Impacts were determined according to FTA's *Noise and Vibration Impact Assessment Guidance Manual* (2006).

[4] An impact cushion is a type of mitigation that involves initially using burlap bags and then adding wood block when pile driving becomes more difficult.

[5] Pre-drilling is a type of mitigation that consists of pre-drilling 1/3 of a pile to reduce the total duration of impact time.

[6] A noise shield is a type of mitigation that consists of a frame that secures acoustic blankets or paneling.

Source: ATS Consulting, 2019.

Impact: The February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* indicates that the proposed changes to the approved project would result in exceedances of the FTA construction noise impact criteria at unobstructed homes and businesses (i.e., homes and businesses not shielded by other structures or sound walls) within 300 feet of pile driving activity. The noise impacts would have a duration of 8 to 15 days per sensitive receiver. Pile driving would exceed the construction noise impact criteria of 80 Leq (8-hour) dBA at residences and 85 Leq (8-hour) dBA at commercial properties at 149 sensitive receiver locations. The location of receivers where pile driving noise impacts are predicted are as follows:

- Twelve residential properties located east of the alignment between Wilbur Avenue and Mervyns Way would experience construction noise impacts. One home is within 25 feet of the closest pile.
- Five institutional/commercial properties located east of the alignment between Mervyns Way and Story Road would experience construction noise impacts.
- Forty-one residential properties located east of the alignment between Story Road and Ocala Avenue would experience construction noise impacts.
- Twenty-seven residential properties located east of the alignment between Ocala Avenue and Cunningham Avenue would experience construction noise impacts.
- Twenty-one residential properties located west of the alignment between Excalibur Drive and Story Road would experience construction noise impacts.
- Three commercial properties located west of the alignment near the intersection of Capitol Expressway and Story Road would experience construction noise impacts.
- Seventeen residential properties located west of the alignment between Story Road and Foxdale Loop would experience construction noise impacts.
- One commercial property located west of the alignment near the intersection of Capitol Expressway and Foxdale Loop would experience a construction noise impact.
- Three residential properties located west of the alignment along Foxdale Loop would experience construction noise impacts.
- Nineteen residential properties located west of the alignment between Foxdale Drive and Ocala Avenue would experience construction noise impacts.

The proposed changes to the approved project would result in an increase in the number of construction noise impacts compared to the 2007 Final SEIR due to an increase in the number of foundation piles associated with changing the at-grade track under the approved project to an aerial guideway under the proposed changes.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: NV (CON)-1: (Generation of Noise or Vibration That Substantially Affects Nearby Sensitive Receptors).

Mitigation: The following mitigation measures identified in the 2005 Final EIR and the 2007 Final SEIR would still apply to the proposed changes to the approved project: NV (CON)-1a (Notify Residents of Construction Activities), NV (CON)-1b (Construct Temporary Noise Barriers During Construction), NV (CON)-1c (Restrict Pile Driving)[3], NV (CON)-1d (Use Noise Suppression Devices), NV (CON)-1e (Locate Stationary Construction Equipment as Far as Possible from Sensitive Receptors), NV (CON)-1f (Reroute Construction-Related Truck Traffic), NV (CON)-1g (Develop Construction Noise Mitigation Plan) and NV (CON)–2.

Mitigation Measure NV (CON)-2 has been modified.

Mitigation Measure NV (CON)-2

A combination of the following measures should be considered if reasonable and feasible to reduce noise and vibration impacts from pile driving:

1. Noise Shield: A pile driving noise shield could be effective at reducing the pile driving noise by a minimum 5 dB, depending on the size of the shield and how well it surrounds the pile and hammer. A portable shield/barrier could be implemented to provide a nominal 10 dB noise reduction.
2. Pre-Drilling Piles: Pre-drilling a portion of the hole may provide a means to reduce the duration of impact pile driving, and should be explored. Reducing the total impact time to an aggregate duration of no more than 2 hours per day will reduce the equivalent noise level by 6 dB to a range of 80 to 90 dBA (L_{eq}) at a distance of 100ft.
3. Non-Impact Piles or Cast in Drilled Hole (CIDH) piles: Using the Soil-Mix or CIDH method would reduce the vibration below the

[3] In the 2005 Final EIR, this measure restricts pile driving to the hours of 8:00 am to 5:00 pm. To be consistent with the San Jose municipal code, these hours are revised to 7:00 am to 7:00 pm, Monday through Friday.

FTA Criteria. This method is recommended for homes which would be within 75 ft of pile driving.

4. Reduced Impact Pile Driving Time: Limiting the hours per day of impact pile driving would reduce the equivalent noise level and would reduce potential work interference.
5. Excessive Vibration: If pile driving amplitudes exceed the building threshold criteria, cosmetic repair work may be required at nearby buildings. A detailed preconstruction crack survey will be conducted at homes and businesses where these criteria are expected to be exceeded. Vibration monitoring, crack monitors and photo documentation will be employed at these locations during pile driving activity.
6. Relocating Items on Shelves: Since items on shelves and walls may move during pile driving activity, nearby residents will be advised through the community outreach process that they should move fragile and precious items off of shelves and walls for the duration of the impact pile driving. Achievement of standards for building damage would not eliminate annoyance, since the vibration would still be quite perceptible.
7. Advance Notification (Work Interference): The impact pile driving vibration may cause interference with persons working at home or the office on their computers. Nearby residents and businesses will be advised in advance of times when piles would be driven, particularly piles within 160 ft of any occupied building, so that they may plan accordingly, if possible.
8. Notification of Pile Driving Schedule: Nearby residents and businesses will be notified of the expected pile driving schedule. In particular, these notifications should be made with home-bound residents, homes where there is day-time occupancy (e.g., work at home, stay-at-home parents) and offices/commercial businesses where extensive computer/video monitor work is conducted.
9. Hotel Accommodations: Residents at 660 South Capitol Avenue will be provided with hotel accommodations while pile driving activities occur adjacent to the residence.

Contractor Controls

In addition to the above list of specific noise and vibration control measures, the following are recommended for inclusion in the Contractor specifications for the Indicator and Production pile driving programs if reasonable and feasible:

- Comply with the equivalent noise levels (L_{eq}) limits specified on page 12-8 of FTA 2006 and a maximum noise level limits of 90 dBA (slow) or 125 dBC (fast) for residential buildings,
- Comply with the maximum vibration limits specified in Table 12-3 of FTA 2006,
- Perform a detailed survey and photo documentation prior to construction of all potentially affected wood-frame buildings within 135 ft of the piling activity,
- Coordinate and perform noise and vibration monitoring at a representative sampling of potentially affected buildings along the Project corridor,
- Install crack monitors where appropriate and provide photo documentation at all potentially affected buildings during pile driving activity and through construction,
- Community Notification and Involvement:
  - provide a minimum four-week advance notice of the start of piling operations to all affected receptors (e.g., internet, phone and fax), and regular, up-to-date communications. This includes education of the public on the expected noise and vibration,
  - provide a knowledgeable Community Liaison to respond to questions and complaints regarding pile driving noise and vibration, and
  - provide assistance as needed to nearby residents or offices who may require help relocating valuable items off shelves.

Mitigation Measure NV (CON)-1h: Use Impact Cushions

A suitable pile cap cushion could be effective at reducing the pile driving noise by up to 5 dB. The construction crew will initially use only burlap bags to reduce noise and then will also use the wood block when pile driving becomes more difficult.

This new mitigation measure shall be implemented in addition to the measures identified in the Mitigation Monitoring and Reporting Plan (MMRP) prepared for the approved project.

Significant and unavoidable impact, even with mitigation.

PILE DRIVING (AND ALL OTHER VIBRATORY CONSTRUCTION EQUIPMENT) VIBRATION IMPACTS DURING CONSTRUCTION

As discussed above, pile driving would be conducted to install foundation piles for the proposed aerial guideway. Although other vibratory construction equipment would also be used for the project, the anticipated vibration levels from this equipment would not exceed the vibration levels from pile driving. As a result, Table 5.3-4 focuses on the anticipated pile driving vibration impacts generated by the proposed changes to the approved project during construction. The table indicates the number of impacts under the following conditions:

- Without any mitigation; and
- With inclusion of mitigation consisting of non-impact piling (e.g., vibratory piling or cast-in-drilled-hole piling).

A more detailed list of anticipated pile driving vibration impacts can be found in Table 14 of the February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* (included in Attachment E).

Table 5.3-4 Summary of Impact Pile Driving Vibration Impacts Associated with the Proposed Changes to the Approved Project

Direction/Segment of Capitol Expressway	Number – Type of Receivers[1]	Annoy. Criteria PPV[2, 3] (in/s)	Federal Transit Administration Damage Criteria PPV[2,4] (in/s)	Number of Anticipated Federal Transit Administration Impacts (Based on Damage Criteria)	
				Unmitigated	With CIDH Piling[5,6]
NB 964+50 to 981+20 Wilbur Avenue to Mervyns Way	22 - SFR	0.03	0.2	9	0
NB 986+70 to 995+50 Mervyns Way to Story Road	5 – INST/COM	0.06	0.5	0	0
NB 998+50 to 1035+90 Story Road to Ocala Avenue	41 - SFR	0.03	0.2	5	0
NB 1037+60 to 1049+50 Ocala Avenue to Cunningham Avenue	27 - SFR	0.03	0.2	21	0
SB 967+50 to 970+50 S. Capitol Avenue	5 - SFR	0.03	0.2	0	0
SB 971+30 to 973+00 S. Capitol Avenue	2 - COM	0.06	0.5	0	0

Direction/Segment of Capitol Expressway	Number – Type of Receivers[1]	Annoy. Criteria PPV[2, 3] (in/s)	Federal Transit Administration Damage Criteria PPV[2,4] (in/s)	Number of Anticipated Federal Transit Administration Impacts (Based on Damage Criteria)	
				Unmitigated	With CIDH Piling[5,6]
SB 978+00 to 992+70 Excalibur Drive to Story Road	25 - SFR	0.03	0.2	0	0
SB 993+10 to 996+50 Story Road	3 - COM	0.06	0.5	0	0
SB 998+80 to 1007+20 Story Road to Foxdale Loop	17 - SFR	0.03	0.2	15	0
SB 1009+00 E. Capitol Expressway	1 - COM	0.03	0.5	0	0
SB 1012+00 to 1018+00 Foxdale Loop	3 - MFR	0.03	0.2	0	0
SB 1021+00 to 1035+80 Foxdale Drive to Ocala Avenue	19 - SFR	0.03	0.2	14	0
			Number of Impacts:	**64**	**0**

Notes:

[1] Receiver types include: Single-Family Residence (SFR), Multi-Family Residence (MFR), Commercial/Office Space (COM), and Institutional (INST).

[2] Annoyance criteria based on an equivalent PPV to RMS value of 78 VdB for SFR/MFR and 84 VdB for COM, assuming a crest factor of 4.

[3] Peak particle velocity (PPV).

[4] Damage criteria based on FTA *Noise and Vibration Impact Assessment Guidance Manual* (2006).

[5] Cast in drilled hole piles (CIDH). If vibratory driven piles are used, one impact would remain at NB 977+70 (660 S. Capitol Ave.)

[6] The use of CIDH pile driving would theoretically reduce the total number of impacts to zero if used throughout construction; however, CIDH pile driving may not be feasible in all cases.

Source: ATS Consulting, 2019.

Impact: The February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* indicates that the proposed changes to the approved project would result in exceedances of the FTA nighttime construction vibration of 0.2 PPV impact criteria at homes within 100 feet of pile driving activity. Pile driving would exceed the construction vibration impact criteria at 64 sensitive receiver locations. The location of receivers where pile driving vibration impacts are predicted are as follows:

- Nine properties located east of the alignment between Wilbur Avenue and Mervyns Way would experience construction vibration impacts. One home is within 25 feet of the closest pile.

- Five properties located east of the alignment between Story Road and Ocala Avenue would experience construction vibration impacts.
- Twenty-one properties located east of the alignment between Ocala Avenue and Cunningham Avenue would experience construction vibration impacts.
- Fifteen properties located west of the alignment between Story Road and Foxdale Loop would experience construction vibration impacts.
- Fourteen properties located west of alignment between Foxdale Drive and Ocala Avenue would experience construction vibration impacts.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: NV (CON)-1: (Generation of Noise or Vibration That Substantially Affects Nearby Sensitive Receptors).

Mitigation: The following mitigation measures identified in the 2005 Final EIR and the 2007 Final SEIR would still apply to the proposed changes to the approved project: NV (CON)-1a (Notify Residents of Construction Activities), NV (CON)-1c (Restrict Pile Driving), NV (CON)-1e (Locate Stationary Construction Equipment as Far as Possible from Sensitive Receptors) and NV (CON)-2.

VTA is only recommending the use of non-impact piling methods in the vicinity of Capitol Avenue and Capitol Expressway. At this location, construction vibration levels are anticipated to be the highest. VTA is not recommending the use of non-impact piling methods at most locations for several reasons. Most locations are only slightly above the FTA Damage Criteria, and therefore may not experience any actual impacts. At the locations with the highest construction vibration levels, structural damage is not anticipated to occur. However, if any structural and cosmetic damage does occur due to construction vibration, the damage shall be repaired by VTA. In addition, non-impact piling methods would require extensive lane closures which would cause additional traffic impacts during construction. Non-impact piling methods are not recommended at most locations. Thus, this impact would be "Significant and Unavoidable."

No mitigation proposed. Significant and unavoidable impact.

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Section 5.4 Air Quality and Climate Change

This section describes the potential air quality and climate change impacts associated with the proposed changes to the approved project. This section supplements Section 4.3 of the 2005 Final EIR, Section 5.2 of the 2007 Final SEIR, and Section 3.2 of the 2014 Subsequent IS/MND. This analysis is based on and supported by new information and updated data from the California Air Resources Board (CARB), the U.S. Environmental Protection Agency, and the operational assumptions from VTA.

Environmental Setting

The following discussion describes the changes to the existing regional and local air quality and climate change conditions since the preparation of the air quality and climate change analysis in the 2005 Final EIR, 2007 Final SEIR, and 2014 Subsequent IS/MND. The basic environmental setting of the project area, in terms of climate and topography, existing pollutant concentrations in the Capitol Expressway corridor, and sensitive receptors, is unchanged from the 2005 Final EIR. Regional attainment status in the project area has changed, as discussed below.

Table 5.4-1 provides the most recent available data (2015–2017 time period). The nearest air quality monitoring station to the project corridor is the San Jose-Knox Avenue Station. However, this station does not measure all pollutants, and supplemental data from the next closest station, San Jose-Jackson Street station, are included for ozone and particulate matter less than or equal to 10 microns (PM10). As indicated in Table 5.4-1, the San Jose-Knox Avenue and San Jose-Jackson Street stations experienced violations of 8-hour ozone, PM10, and particulate matter less than or equal to 2.5 microns (PM2.5) standards between 2015 and 2017.

Table 5.4-1 Ambient Criteria Air Pollutant Monitoring Data (2015-2017)

Pollutant Standards	**2015**	**2016**	**2017**
Ozone (O_3) (San Jose – Jackson Street)			
Maximum 1-hour concentration (ppm)	0.094	0.087	0.121
Maximum 8-hour concentration (ppm)	0.081	0.066	0.098
Number of days standard exceeded[1]			
CAAQS 1-hour (>0.09 ppm)	0	0	3
CAAQS 8-hour (>0.070 ppm)	2	0	4
NAAQS 8-hour 2008 Standard (>0.075 ppm)	2	0	3
NAAQS 8-hour 2015 Standard (>0.070 ppm)	2	0	4
Carbon Monoxide (CO) (San Jose – Knox Avenue)			
Maximum 8-hour concentration (ppm)	2.0	1.4	2.6
Maximum 1-hour concentration (ppm)	2.7	1.9	1.8

Pollutant Standards	**2015**	**2016**	**2017**
***Number of days standard exceeded:*[1]**			
NAAQS 8-hour (≥9 ppm)	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0
Nitrogen Dioxide (NO_2) (San Jose – Knox Avenue)			
State maximum 1-hour concentration (ppb)	61	52	76
State second-highest 1-hour concentration (ppb)	58	51	71
Annual average concentration (ppb)	17	15	17
Number of days standard exceeded:			
CAAQS 1-hour (180 ppb)	0	0	0
Particulate Matter (PM10)[2] (San Jose – Jackson Street)			
National[3] maximum 24-hour concentration (g/m^3)	58.8	40.0	69.4
National[3] second-highest 24-hour concentration (g/m^3)	47.2	35.2	67.3
State[4] maximum 24-hour concentration (g/m^3)	58.0	41.0	69.8
State[4] second-highest 24-hour concentration (g/m^3)	49.3	37.5	67.6
National annual average concentration (g/m^3)	21.3	17.5	20.7
State annual average concentration (g/m^3)[5]	21.9	18.3	21.3
***Number of days standard exceeded:*[1]**			
NAAQS 24-hour (>150 g/m^3)[6]	0	0	0
CAAQS 24-hour (>50 g/m^3)[6]	1	0	6
Particulate Matter (PM2.5) (San Jose – Knox Avenue)			
National[3] maximum 24-hour concentration (g/m^3)	46.9	26.5	48.4
National[3] second-highest 24-hour concentration (g/m^3)	31.6	24.4	47.4
State[4] maximum 24-hour concentration (g/m^3)	46.9	26.5	48.4
State[4] second-highest 24-hour concentration (g/m^3)	31.6	24.4	47.4
National annual average concentration (g/m^3)	8.4	9.1	10.7
State annual average concentration (g/m^3)[5]	8.4	9.1	10.8
***Number of days standard exceeded:*[1,6]**			
NAAQS 24-hour (>35 g/m^3)	1	0	8

Notes:
ppm = parts per million
NAAQS = National Ambient Air Quality Standards
CAAQS = California Ambient Air Quality Standards
g/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
- = data not available

[1] An exceedance is not necessarily a violation.
[2] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.
[3] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California approved samplers.
[4] Measurements usually are collected every 6 days.
[5] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
[6] Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.
Source: California Air Resources Board 2018a; U.S. Environmental Protection Agency 2018a.

Local monitoring data (Table 5.4-1) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The most recent attainment status for Santa Clara County, which is current as of 2018, is shown in Table 5.4-2 for each applicable pollutant.

Table 5.4-2 Federal and State Attainment Status for Santa Clara County (2018)

Criteria Pollutant	Federal Designation	State Designation
O_3 (8-hour)	Marginal Nonattainment	Nonattainment
CO	Maintenance	Attainment
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No Federal Standard)	Attainment
Hydrogen Sulfide	(No Federal Standard)	Unclassified
Visibility Reducing Particles	(No Federal Standard)	Unclassified

Notes:
O_3 = ozone
CO = carbon monoxide
PM10 = particulate matter less than or equal to 10 microns
PM2.5 = particulate matter less than or equal to 2.5 microns
NO_2 = nitrogen dioxide
SO_2 = sulfur dioxide
Source: California Air Resources Board 2017; U.S. Environmental Protection Agency 2018b.

As discussed in Chapter 2, *Changes to the Approved Project, Changes in Circumstances, and Introduction of New Information*, Senate Bill 350 was signed by Governor Brown in October 2015 and its key provisions establish benchmarks for renewable energy that electric utilities must meet. In addition, SB 32 requires CARB to ensure that statewide greenhouse gas (GHG) emissions are reduced to at least 40% below 1990 levels by 2030. Pursuant to SB 32, CARB updated the prior AB 32 Scoping Plan to address implementation of GHG reduction strategies to meet the 2030 reduction target. The Final

Plan was approved in December 2017. Furthermore, on April 19, 2017, the BAAQMD Board of Directors adopted an update to the 2010 Clean Air Plan, the *2017 Clean Air Plan*.

Environmental Impacts and Mitigation

The impact discussion in this section primarily focuses on the proposed changes to the approved project that could result in new or more significant air quality impacts compared to the impacts previously identified and analyzed for the approved project.

IMPACTS ON AIR QUALITY EMISSIONS DURING OPERATION

Many of the proposed changes to the approved project (including the revision to Capitol Expressway roadway lane configurations; modifications to the Eastridge Station platforms and tracks; reduction in parking spaces at the Eastridge Park-and-Ride lot; minor shift in the location and straightening of the Story Station pedestrian overcrossing and access; modification to Story Station pedestrian access; relocation of a construction staging area; and relocation of PG&E electrical transmission facilities) would not result in any exceedances of the federal or state ambient air quality standards related to the generation of emissions of reactive organic gases, oxides of nitrogen, and particulate matter from the light rail or on-road vehicles during operation. Thus, these proposed changes to the approved project would not result in changes to the conclusions of the air quality impacts previously identified and analyzed for the approved project.

For this analysis, long-term air quality impacts are those associated with motor vehicles operating on the roadway network, predominantly those operating in the project area on Capitol Expressway and the cross streets along the project corridor. One of the proposed changes to the approved project (the extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections) could result in changes to air quality during operation. The rate of emissions of reactive organic gases (ROG), nitrogen dioxide (NO_X), carbon monoxide (CO), PM10, PM2.5, and GHGs from motor vehicles could be increased or decreased based on changes to vehicle miles traveled (VMT) and vehicle speeds that would result from the proposed changes to the approved project. Criteria pollutant emissions associated with the proposed changes to the approved project were quantified using emission factors from the CARB's EMFAC2017 emission factor database and VMT data prepared for the proposed changes by VTA (Santa Clara Valley Transportation Authority 2018). Changes in VMT at the regional level (i.e., the nine-county Bay Area region) that would result from implementation of the proposed changes to the approved project were modeled for an existing conditions scenario in 2017, a project scenario relative to a no project scenario in 2023, and a project scenario relative to a no project scenario in 2043. Emission factors from EMFAC2017 were selected for each analysis year and for the MTC region[1] for an accurate representation of the profile of vehicles that would be affected by the proposed changes to the approved project (i.e., the

[1] MTC refers to the Metropolitan Transportation Commission, which is the regional transportation planning agency for the nine-county Bay Area region.

percentage of vehicles in the MTC region that are light duty, heavy duty, etc.). The VMT data and emission factor assumptions used for the analysis are included in Attachment F.

Under the existing plus project scenario, the proposed changes to the approved project would result in fewer VMT and better intersection performance as compared to the approved project (Black pers. comm.). The proposed changes include an aerial guideway rather than the at-grade alignment included in the approved project. Thus, light rail vehicles could travel at increased speeds as a result of the proposed changes. The aerial guideway would remove the possibility of traffic signal delay that could occur for the approved project's at-grade alignment, and speeds for light rail vehicles could be increased. The increased speeds would likely result in better system performance and could result in increased ridership, which would lead to lower VMT than with the approved project. Emissions associated with the existing plus project scenario for the proposed changes to the approved project are shown in Table 5.4-3.

Table 5.4-3 Operational Criteria Pollutant Emissions Increases (Existing [2017] Year, Year 2023, and Year 2043)

Daily/Annual Emissions	**ROG**	**NO_X**	**CO**	**PM10**	**PM2.5**
Project Scenario Relative to Existing Conditions in 2017					
Maximum Daily Emissions (lbs/day)	-0.1	-0.6	-2.1	-0.01	-0.01
Annual Emissions (tons/year) [1]	-0.02	-0.11	0.37	> -0.01	> -0.01
Project Scenario Relative to No Project in 2023					
Maximum Daily Emissions (lbs/day)	1.9	12.5	52.3	0.18	0.16
Annual Emissions (tons/year) [1]	0.3	2.2	9.1	0.03	0.03
Project Scenario Relative to No Project in 2043					
Maximum Daily Emissions (lbs/day)	-11.0	-87.6	-311.3	-1.0	-1.0
Annual Emissions (tons/year) [1]	-1.9	-15.2	-54.0	-0.2	-0.2
BAAQMD Daily Thresholds[2] (lbs/day)	**54**	**54**	***CAAQS***	**82**	**54**
BAAQMD Annual Thresholds[2] (tons/year)	**10**	**10**	***CAAQS***	**15**	**10**

Notes:

CAAQS = violation of a CAAQS (see impact Carbon Monoxide Hot Spot discussion)

[1] Daily emissions were converted into annual emissions by multiplying by a standard factor of 347 days per year, to account for reduced volumes on weekends.

[2] Bay Area Air Quality Management District 2017a.

Sources: Vehicle miles traveled data from VTA (2018). Emission factors from EMFAC2017 (California Air Resources Board 2018b) are included in Attachment F.

Existing (2017) Conditions. As shown in Table 5.4-3, criteria pollutant emissions during operation of the proposed changes to the approved project would decrease emissions relative to existing conditions, resulting in a net benefit to regional air quality. With net negative reductions relative to the existing conditions, emissions would not increase as a result of the proposed changes, and there would be no exceedances of the BAAQMD's thresholds of significance for any pollutant. For carbon monoxide (CO), there is no mass emissions threshold, and localized CO concentrations are evaluated with respect to the CAAQS. Localized CO concentrations are evaluated in a separate impact discussion below.

2023 Conditions. The proposed changes to the approved project would result in a slight increase in net VMT relative to the no project conditions in 2023. Although light rail ridership would likely increase for the reasons discussed above, there could be an offset effect from drivers seeking alternative routes, resulting in slightly greater travel distances. This effect is anticipated to be minor but would result in increases of criteria pollutant emissions, as shown in Table 5.4-3. The increases in emissions for all pollutants would be below the BAAQMD's thresholds of significance by a substantial margin. The largest increase in a pollutant relative to no project conditions in 2023 would occur for NO_X, but emissions would be approximately 12.5 pounds per day, which is approximately 41.5 pounds per day less than the BAAMQD's NO_X threshold of 54 pounds per day.

2043 Conditions. The effect of alternative travel routes that would cause VMT and emissions increases in 2023 would be relatively minor; VMT reductions would be experienced by 2043 from increasing light rail ridership, decreasing on-road vehicle travel, and a cleaner, lower-emitting region-wide vehicle fleet in 2043. As shown in Table 5.4-3, criteria pollutant emissions from implementation of the proposed changes to the approved project would decrease emissions of all pollutants relative to no project conditions in 2043, resulting in a net benefit to air quality.

The 2005 Final EIR determined that the approved project would result in decreases to regional criteria pollutants (i.e., a net benefit to air quality) because there would be a decrease in single-occupant vehicle use. The 2014 Subsequent IS/MND determined that the No Ocala Station option could increase VMT slightly (i.e., by less than 0.1%) relative to the Light Rail Alternative with the median Ocala Station, but this minor increase would not be expected to result in exceedances of the federal or state ambient air quality standards. The analysis for the proposed changes to the approved project has determined that, while criteria pollutant emissions would slightly increase in one of the analysis years (2023), the increase would be below the BAAQMD thresholds and there would be a net benefit to air quality in the existing conditions scenario and a long-term, on-going benefit to air quality by 2043 for the proposed changes to the approved project. Thus, the proposed changes to the approved project would not result in any criteria pollutant emissions exceedances nor would the proposed changes result in any exceedances of the federal or state ambient air quality standards beyond the impacts previously identified and analyzed for the approved project.

Impact: The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ-6 (Potential Net Increase in Emissions of Reactive Organic Gases, Oxides of Nitrogen, and PM10).

Mitigation: None required. This impact is "Less than Significant."

Less-than-significant impact. No mitigation required.

IMPACTS ON CARBON MONOXIDE HOT SPOTS

With respect to localized CO impacts at intersections along the Capitol Expressway corridor, the proposed changes to the approved project would result in improved intersection performance compared to the approved project. CO dispersion modeling was conducted in the 2005 Final EIR for the existing year (2001), 2010, and 2025, and no exceedances of the CAAQS were identified. Dispersion modeling was not conducted in the 2007 Final SEIR or the 2014 Subsequent IS/MND. Because the proposed changes to the approved project would result in changes to intersection volumes at four intersections relative to the approved project and no project conditions in 2017, 2023, and 2043, which are years not previously analyzed with respect to CO hot spots, the potential for the proposed changes to the approved project to affect CO hot spots is evaluated in this analysis. Intersection volumes at all four intersections are well below the screening volumes established by the BAAQMD to determine whether a project could result in exceedances of the CAAQS (i.e., generate CO hot spots).[2] However, because two intersections, Capitol Expressway/Capitol Avenue and Capitol Expressway/Story Road, are considered to be Congestion Management Program intersections, further scrutiny is warranted at these intersections. As concluded in Section 5.1, *Transportation*, the proposed changes to the approved project would result in a significant impact with respect to level of service and delay at the Capitol Expressway/Story Road intersection for the existing plus project scenario, 2023 plus project scenario, and 2043 plus project scenario. No significant level of service or delay impacts are identified at the Capitol Expressway/Capitol Avenue intersection in Section 5.1, *Transportation*.

Because the Capitol Expressway/Story Road intersection is considered a Congestion Management Program intersection and would have a significant impact, the BAAQMD screening methodology for CO hot spots is not used. As such, CO dispersion modeling at

[2] Heavy traffic congestion can contribute to high levels of CO, and individuals exposed to such hot spots may have a greater likelihood of developing adverse health effects. BAAQMD has adopted screening criteria that provide a conservative indication of whether project-generated traffic would cause a potential CO hot spot. The BAAQMD's CO screening criteria require that (1) the project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; (2) the project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway); and (3) the project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

this intersection was conducted for the proposed changes to the approved project in the existing (2017), 2023, and 2043 scenarios using peak hour traffic volumes from the April 29, 2019 *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* prepared by Hexagon Transportation Consultants, Inc. The Capitol Expressway/Story Road intersection analysis is a worst-case analysis because it has the highest volumes among the four intersections that would be modified by the proposed changes to the approved project. In addition, the higher of the AM or PM peak hour volumes for each year were used for the dispersion modeling to further represent a worst-case analysis.

The results of the CO hot spot analysis for the Capitol Expressway/Story Road intersection are provided in Table 5.4-4. As shown in Table 5.4-4, the proposed changes to the approved project would result in lower CO concentrations for all years at the Capitol Expressway/Story Road intersection than the concentrations modeled in the 2005 Final EIR for the intersection. In addition, there would be no exceedances of the CAAQS at the worst-case intersection of Capitol Expressway/Story Road intersection, and the proposed changes to the approved project would not result in any CO hot spots at any of the intersections modified by the proposed changes. Thus, the proposed changes to the approved project would not result in CO hot spot impacts beyond the impacts previously identified and analyzed for the approved project.

Table 5.4-4 CO Modeling Concentration Results at Capitol Expressway and Story Road (Existing [2016] Year, Year 2023, and Year 2043)

	Worst Case Concentrations (parts per million)	
	Capitol Expressway and Story Road	
Year	**1-hr CO[1]**	**8-hr CO[2]**
Existing (2016[3]) + Project	4.9	3.4
With Project (2023)	5.0	3.5
With Project (2043)	3.7	2.6
CAAQS Threshold[4]	20.0	9.0
NAAQS Threshold	35.0	9.0

Notes:

[1] Average 1-hour background concentration between 2015 and 2017 was 2.6 ppm at the Knox Avenue Station in San Jose (U.S. Environmental Protection Agency 2018).

[2] Average 8-hour background concentration between 2015 and 2017 was 1.8 ppm at the Knox Avenue Station in San Jose (U.S. Environmental Protection Agency 2018).

[3] At the Capitol Expressway & Story Road intersection, 2016 volumes were used instead of 2017 volumes, because minor construction activities were occurring in 2017. Thus, the existing year at this intersection is 2016.

[4] The BAAQMD's threshold of significance for CO impacts is the CAAQS.

Sources: Hourly Roadway segment volumes are included in Attachment F; emission factors from EMFAC2017 (California Air Resources Board 2018b) are included in Attachment F; and dispersion modeling conducted with CALRoads View (Lakes Environmental 2016).

Impact: The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ-5 (Violation of State Carbon Monoxide Standards as Determined by Modeling of Carbon Monoxide Emissions).

Mitigation: None required. This impact is "Less than Significant."

Less-than-significant impact. No mitigation required.

CONSISTENCY WITH THE APPLICABLE AIR QUALITY PLAN

Impacts of the approved project related to consistency with the applicable air quality plan were not previously analyzed in the 2005 Final EIR, the 2007 Final SEIR, or the 2014 Subsequent IS/MND. The most recent air quality plan applicable to the proposed changes to the approved project is the BAAQMD's *2017 Clean Air Plan*, which provides an integrated strategy to control ozone, PM, TACs, and GHG emissions (Bay Area Air Quality Management District 2017b). The primary goals of the *2017 Clean Air Plan* are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate.

A project is generally considered to be inconsistent with an air quality plan if the project would result in population and/or employment growth that exceeds the estimates used to develop the plan. The proposed changes to the approved project are not considered a land use development project and would not directly result in any population or employment increases in the region.

Furthermore, because the proposed changes to the approved project would increase the efficiency of light rail by changing the at-grade alignment of the approved project to an elevated guideway, the proposed changes to the approved project would be consistent with the overall goals of the *2017 Clean Air Plan*. Specifically, the proposed changes to the approved project would be consistent with Transportation Control Measure TR-4 of the *2017 Clean Air Plan*, Local and Regional Rail Service. As previously discussed, the proposed changes to the approved project would likely result in increased light rail ridership relative to the approved project due to the improvements in vehicle speed. Thus, the proposed changes to the approved project would complement, not conflict with, the BAAQMD's *2017 Clean Air Plan* and this impact would be less than significant.

IMPACTS ON SUBSTANTIAL POLLUTANT CONCENTRATIONS

The potential pollutant concentration impacts of the approved project were not previously analyzed in the 2005 Final EIR, the 2007 Final SEIR, or the 2014 Subsequent IS/MND. Based on the results of the daily traffic volume analysis, the operational phase of the proposed changes to the approved project would not result in any major sources of toxic air contaminants that could adversely affect sensitive receptors (e.g., a gas station, or a project that would add a substantial amount of diesel truck or bus traffic). The proposed changes to the approved project would involve light rail vehicles traveling on the proposed aerial guideway and changes to on-road vehicle volumes on Capitol

Expressway and the cross streets. The light rail vehicles would be electrically powered and would not directly generate any exhaust emissions. Because the vast majority of onroad vehicles are gasoline-powered, on-road vehicles are not considered to be appreciable sources of diesel particulate matter. Other toxic air contaminants (e.g., benzene and 1,3-Butadiene) are present in gasoline exhaust emissions and can pose health risks to sensitive receptors.

Table 5.4-5 shows the changes in on-road vehicle traffic volumes that are expected on roadways in the immediate vicinity of the Capitol Expressway corridor as a result of the proposed changes to the project. On nearly all roadways in the vicinity of the corridor, the proposed changes to the approved project would result in a net decrease in traffic volumes in the existing year (2017), 2023, and 2043. On these roadways, the proposed changes to the approved project would result in decreases in pollutant concentrations that are currently affecting sensitive receptors because there would likely be higher light rail ridership and fewer on-road vehicles. Thus, on nearly all roadways, the proposed changes to the approved project would not contribute to existing pollutant concentrations and would not worsen exposure of sensitive receptors to those pollutants concentrations. However, in 2043 on Ocala Avenue, vehicle volumes would increase by approximately 5,109 vehicles per day west of Capitol Expressway and by approximately 1,574 vehicles east of Capitol Avenue. The presence of approximately 5,109 vehicles per day alone would not generate substantial toxic air contaminant emissions and thus would not lead to significant health impacts that exceed the BAAQMD's health risk thresholds. As such, the incremental effect of the proposed changes to the approved project on Ocala Avenue would not lead to substantial pollutant concentrations and this impact would be less than significant.

Table 5.4-5 Daily[1] Traffic Volume Changes Relative to No Project Conditions (Existing [2017] Year, Year 2023, and Year 2043)[2]

Roadway	2017 + Project	2023 + Project	2043 + Project
Capitol Avenue Segments			
North of Capitol Avenue[3]	-669	-703	-747
Between Capitol Expressway and Story Road[3]	-733	-873	-975
Between Story Road and Ocala Avenue	-1,023	-1,012	-1,321
Between Ocala Avenue and Cunningham Avenue	-1,702	-1,710	-854
South of Cunningham Avenue	-1,676	-1,731	-3,274
Cross Street Segments			
Excalibur - West of Capitol Expressway[3]	-54	-61	-63
Capitol Avenue - East of Capitol Expressway[3]	-393	-568	-628
Story Road - West of Capitol Expressway[3]	-580	-300	-1,193
Story Road - East of Capitol Expressway[3]	-855	-315	-668
Ocala Avenue - West of Capitol Expressway	-581	-87	**5,109**

Roadway	2017 + Project	2023 + Project	2043 + Project
Ocala Avenue - East of Capitol Expressway	-993	-478	**1,574**
Cunningham Avenue - West of Capitol Expressway	-43	-49	-97
Cunningham Avenue - East of Capitol Expressway	-108	-155	-271

Notes:

[1] AM & PM peak-hour intersection volumes were provided by Hexagon Transportation Consultants, Inc. (hourly volumes provided in Attachment F). Hourly volumes were converted into daily volumes by multiplying the PM peak-hour volumes by 10, based on consultation with Hexagon Transportation Consultants, Inc.

[2] Volume increases are shown in **bold** font.

[3] On these roadway segments, 2016 data were used, because minor construction activities were occurring in 2017.

Source: Tse, pers. comm.

IMPACTS ON GHG EMISSIONS

In addition to emissions changes from on-road vehicles, the proposed changes to the approved project would result in the use of electricity and natural gas during its operational phase. Electricity would be used to provide power to the light rail vehicles and lighting, while natural gas would be used to heat the facility where light rail vehicles are maintained.

The GHG emissions associated with consumption of electricity and natural gas were quantified in the 2014 Subsequent IS/MND, which concluded that the net effect of the approved project would be a benefit with respect to climate change in 2035, because the reduction in single-occupancy vehicle-related GHG emissions would be greater than any increases in energy consumption-related GHG emissions. The 2014 Subsequent IS/MND also concluded that for the No Ocala Station option in analysis year 2018, there would be a net increase in GHG emissions, but by 2035 the net effect would be negative GHG emissions. The largest increase in electricity- and natural gas-related emissions from the approved project relative to no-build conditions was 2,029 metric tons of CO2e per year.[3]

The proposed aerial guideway would allow the light rail vehicles to avoid traffic signal delay that would occur at intersections for an at-grade alignment. Thus, the proposed changes would eliminate the need for additional energy required for light vehicle acceleration at intersections and would operate more efficiently and with lower energy consumption. Although the acceleration effect is anticipated to be minor, the proposed changes to the approved project would likely result in lower energy consumption and lower GHG emissions than the approved project.

Changes in criteria pollutant emissions from on-road vehicles from construction of the proposed changes to the approved project were quantified using VMT data and the EMFAC2017 database of emission factors. Annual changes in GHG emissions from on-

[3] From Table 3.2-2 in the 2014 Subsequent IS/MND, 1,888 metric tons of electricity-related emissions plus 141 metric tons of natural gas-related emissions equals 2,029 metric tons.

road vehicles shown in Table 5.4-6 were quantified using the same method,[4] and the results follow the same trend as the criteria pollutant emissions (net decrease in GHG emissions from the proposed changes to the approved project in 2017, net increase in 2023, and net decrease in 2043). Table 5.4-6 also shows the total GHG emissions including electricity and natural gas-related emissions.

Table 5.4-6 Summary of Operational GHG Emissions (Existing [2017] Year, Year 2023, and Year 2043)

	On-Road Emissions				Total with Energy Emissions[1]
Year	**CO_2**	**CH_4**	**N_2O**	**CO_2e**	**CO_2e**
Existing Plus Project Scenario (2017)					
Annual Emissions (metric tons/year) [2]	-96	> -0.01	-0.01	-97	1,932
Project Scenario Relative to No Project in 2023					
Annual Emissions (metric tons/year) [2]	3,680	0.1	0.2	3,733	5,762
Project Scenario Relative to No Project in 2043					
Annual Emissions (metric tons/year) [2]	-26,568	-0.3	-1.3	-26,964	-24,935

Notes:

[1] From Table 3.2-2 in the 2014 Subsequent IS/MND, 1,888 metric tons of electricity-related emissions plus 141 metric tons of natural gas-related emissions equals 2,029 metric tons CO2e. This amount of emissions is the highest value for any of the alternatives for the approved project. As discussed above, the elevated guideway (i.e. a proposed change to the approved project) would likely result in less energy consumption than the approved project's partial-elevated alternatives. Thus, these energy-related GHG emissions represent a worst-case estimate.

[2] Daily GHG emissions were converted into annual emissions by multiplying by a standard factor of 347 days per year, to account for reduced volumes on weekends.

CO_2 = carbon dioxide
CH_4 = methane
N_2O = nitrous oxide
CO_2e = carbon dioxide equivalent

Sources: Vehicle miles traveled data: Hexagon 2018. Emission factors from EMFAC2017 (California Air Resources Board 2018b) are included in Attachment F.

As shown in Table 5.4-6, the proposed changes to the approved project would result in an initial decrease in traffic-related GHG emissions, but with the addition of the energy consumption emissions (as a worst-case scenario, energy-related GHG emissions are assumed to be equal to the 2014 Subsequent IS/MND energy-related GHG emissions: 2,029 metric tons of CO2e per year), the net effect of the proposed changes to the approved project would result in a total GHG emission increase in 2017 relative to existing conditions. GHG emissions were not quantified in the 2005 Final EIR and 2007 Final SEIR, because those documents were prepared before it had become a necessity and common practice to evaluate GHG emissions quantitatively. In the 2014 Subsequent IS/MND, GHG emissions were quantified for two alternatives, the at-grade Light Rail

[4] Emissions of CH_4 were quantified using emission factors from a separate module of EMFAC2017, for Santa Clara County only. Due to model-processing time, running the separate CH_4 module for the whole nine-county region was not feasible.

Alternative and the at-grade Light Rail Alternative with the No Ocala Station option. Compared to the options analyzed in the 2014 Subsequent IS/MND, in 2017, the proposed changes to the approved project would result in more GHG emissions than for the at-grade Light Rail Alternative in 2018, but less GHG emissions than the at-grade Light Rail Alternative with the No Ocala Station option in 2018.

Similarly, in 2023, VMT would increase (for the reasons discussed for criteria pollutants), and there would be an additional increase from energy-related GHG emissions. However, in 2043, VMT and GHG emissions would be net negative by a substantial amount (negative reductions greater than 24,000 metric tons), and the proposed changes to the approved project would result in a net benefit to GHG emissions. This result is consistent with both the at-grade and No Ocala Station options, but the proposed changes to the approved project would result in much larger negative reductions than the options in the 2014 Subsequent IS/MND.

Additionally, over 90% of the energy consumption-related GHG emissions are expected to result from electricity consumption. Any electricity supplied for the proposed changes to the approved project would be subject to Senate Bill (SB) 350, which requires that publicly- and investor-owned utilities procure 33% and 50% of electricity from qualified renewable energy sources by 2020 and 2030, respectively. One of the primary purposes of SB 350 is to support the state's climate change goals as codified in SB 32, which requires a statewide reduction in GHG emissions of 40% below 1990 levels by 2030. As such, the proposed changes to the approved project's energy consumption would become less carbon intensive in the future as utilities increase their renewable energy portfolios, and thus the proposed changes would be considered consistent with the state's plans and goals with respect to reducing GHG emissions (i.e., SB 32). Similarly, the net increase in GHG emissions in 2017 and 2023 would be reduced in future years by the Low Carbon Fuel Standard and other state regulations that have been adopted to support the goals of SB 32.

Overall, the proposed changes to the approved project would result in a net benefit to GHG emissions by 2043, because of the net decreases from reduced single-occupancy vehicle trips, and would result in a substantially greater net reduction in GHG emissions than identified in the 2014 Subsequent MND for the approved project in 2035. A net benefit to GHG emissions would support and be directly consistent with the state's overarching GHG emissions reduction goal to reduce emissions by 80% below 1990 levels by 2050. Thus, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to air quality and climate change.

IMPACTS ON AIR QUALITY EMISSIONS DURING CONSTRUCTION

The impact discussion below focuses on the proposed changes to the approved project in conjunction with the components of the approved project, because air quality and GHG impacts are inherently cumulative. The effects of air quality and GHG emissions do not occur in isolation from individual project components; as such, a comprehensive analysis of all activity that would occur is appropriate.

With respect to construction of the proposed changes to the approved project, the replacement of the at-grade track alignment with an aerial guideway between south of Story Road and north of Tully Road would include concrete columns supported on pile foundations. It is anticipated that construction of the aerial guideway sections between Capitol Avenue and Tully Road would require a traditional percussive or impact hammer to drive the foundation piles at each column location to support a cast-in-place pilecap. It is anticipated that about 6 to 12 piles would be driven per day for 3 to 6 days at each column site. The approximately 76 column sites would be spaced approximately 130 to 150 feet apart. The piles would require subsurface ground disturbance with a depth of up to approximately 100 feet. This depth is similar to the anticipated ground disturbance previously analyzed for the approved project. Overall, construction of the approved project with the proposed changes to the approved project would last for approximately five years. In addition, revisions to the Capitol Expressway roadway configuration could result in construction impacts.

Emissions of Criteria Pollutants and Greenhouse Gases (GHGs). For construction emissions, the 2005 Final EIR and the 2007 Final SEIR relied on BAAQMD's 1999 CEQA Thresholds. At that time, the BAAQMD's approach to CEQA analyses of construction impacts was to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions. As a result, the 2005 Final EIR and the 2007 Final SEIR did not quantify construction emissions. Subsequently, the BAAQMD adopted thresholds of significance on June 2, 2010 that included thresholds for construction emissions. Thus, the 2014 Subsequent IS/MND estimated construction emissions for the approved project, as summarized in Table 5.4-7. The analysis of the proposed changes to the approved project includes the emissions anticipated from the construction of approximately 2.4 miles of aerial guideway included in the approved project and the proposed change to the approved project, which would replace the at-grade track alignment with approximately 1.25 miles of aerial guideway from south of Story Road to north of Tully Road (hereafter referred to as "approved project plus proposed changes to the approved project"). All other construction work on the non-guideway components of the approved project, such as roadway widening, intersection curb work, utility relocation, station construction, and paving, are also included in the analysis. In other words, the impacts summarized in this analysis are inclusive of the activities that would occur for the approved project, in addition to the activities required to construct the proposed changes to the approved project.

Table 5.4-7 Summary of Maximum Daily Construction Criteria Pollutant Emissions (Year 2019 - 2023)[1]

Maximum Daily Emissions	ROG	NO_x	CO	PM10		PM2.5	
				Dust	Exhaust	Dust	Exhaust
Approved Project (As of the 2014 Subsequent IS/MND)							
Light Rail Alternative[2]	5.6	34.1	33.3	450.0	1.8	93.6	1.4
Light Rail Alternative, No Ocala Station Option[2]	5.6	34.1	33.3	450.0	1.8	93.6	1.4

Maximum Daily Emissions	ROG	NO_x	CO	PM10		PM2.5	
				Dust	Exhaust	Dust	Exhaust
Approved Project (Including the Proposed Extension of the Aerial Guideway to Grade-Separate the Ocala Avenue and Cunningham Avenue Intersections)[3]							
Year 2019	1.6	18.5	22.2	0.3	0.6	0.1	0.5
Year 2020	2.4	27.2	32.1	1.0	0.8	0.3	0.7
Year 2021	2.3	24.5	31.7	0.8	0.7	0.2	0.7
Year 2022	2.1	21.6	31.2	1.2	0.6	0.3	0.6
Year 2023	0.4	2.1	19.3	0.3	< 0.1	0.1	< 0.1
Maximum Daily Emissions (lbs/day)	2.4	27.2	32.1	1.2	0.8	0.3	0.7
BAAQMD Daily Thresholds (lbs/day)	54	54	-	BMPs[4]	82	BMPs[4]	54
Exceed Thresholds?	No	No	No	N/A	No	N/A	No

Notes:

[1] Construction is expected to occur for approximately five years, beginning in 2019; however, it is possible that the construction period could be extended by one year, depending on whether lane closure restrictions during construction limit the amount of activity that can occur. Emissions for the five year construction period, as reflected in this table, would be a worst-case scenario, because an extended construction schedule would likely result in less daily activity. Thus, although it is possible that construction activity could occur in 2024 or 2025, daily emissions in those years would not exceed the worst-case daily emissions in this table.

[2] Maximum emissions that would occur for any individual construction phase (i.e., the drainage/utilities/sub-grade phase), as presented in Table 3.18-1 in the 2014 Subsequent IS/MND.

[3] This analysis includes the emissions anticipated from the construction of approximately 2.4 miles of aerial guideway included in the approved project and the proposed change to the approved project, which would replace the at-grade track alignment with approximately 1.25 miles of aerial guideway from south of Story Road to north of Tully Road. It also includes other, non-guideway construction work, such as roadway widening, intersection curb work, utility relocation, station construction, and paving,[4] BMPs = best management practices

Source: ICF, 2018. Construction modeling conducted with CalEEMod and project-specific construction information. See Attachment F for construction assumptions and CalEEMod outputs.

Construction of the aerial guideway would result in changes to the construction equipment and activity that were evaluated for the approved project. As such, the criteria pollutants and GHG emissions that would occur from construction of the proposed changes to the approved project were quantified and evaluated relative to the applicable thresholds adopted by BAAQMD. Construction emissions were modeled using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 and detailed construction equipment and activity data provided by VTA. According to VTA, construction equipment with engine horsepower less than 175 would be equipped with engines that meet Tier 4 engine standards.[5] All other equipment with engine horsepower 175 or greater were modeled using fleet averages for each engine tier as programmed in CalEEMod. VTA construction specifications will require Tier 4 engine standards in equipment less than 175 horsepower; however, in the event that this requirement cannot be met (e.g., for feasibility or constructability reasons), construction emissions and the

[5] Tier 4 engine standards are the most stringent emissions standards set by the U.S. Environmental Protection Agency and must be met in new off-road equipment. Older equipment may have engines that are equal to less stringent, more emissions permissive requirements (i.e. Tier 3, Tier 2, etc.).

corresponding impacts would need to be reevaluated inclusive of the actual equipment that would be used. If emissions are higher than modeled in this SEIR-2 such that applicable thresholds may be exceeded, then remedial measures may be necessary, which could include but are not limited to the following: use of different pollution controls, scheduling of work, use of alternative fuels (biofuels, electricity, and/or purchase of air quality offsets). Construction phasing and activity assumptions used to evaluate emissions of construction criteria air pollutants and GHG are included in Attachment F.

Table 5.4-7 shows the maximum daily emissions of criteria pollutants from on-road vehicles (e.g., haul trucks, pick-up trucks, construction worker commute vehicles), off-road equipment (e.g., excavators, pile drivers), and fugitive dust from grading during construction of the approved project including the proposed extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections as well as BAAQMD thresholds. As shown in Table 5.4-7, construction activities would not exceed BAAQMD's thresholds for any pollutants in any year. Overall, emissions of ROG, NOx, CO, and exhaust PM10 and PM2.5 as quantified in the 2014 Subsequent IS/MND are similar to the emissions estimates for the approved project plus the proposed changes to the approved project shown in Table 5.4-7. Emissions for the approved project plus the proposed changes to the approved project are lower than the emissions estimated in the 2014 Subsequent IS/MND and are below the BAAQMD threshold.[6]

The estimates of maximum daily emissions were developed using assumptions provided by VTA regarding the types of construction activities that could occur within a 'worst-case' day and the types of activities that could occur on a typical day, and the number of 'worst-case' days and typical days that would occur in one year of construction. A worst-case day involves the most emissions intensive activity, concrete pouring, occurring simultaneously with three other non-concrete pouring activities. The assumptions used to develop the worst-case day scenario are included in Attachment F.

Emissions of PM10 and PM2.5 fugitive dust are substantially lower for the approved project plus the proposed changes to the approved project than for the approved project in the 2014 Subsequent IS/MND, however, BAAQMD does not have quantitative thresholds for fugitive dust. Instead, the threshold is based on compliance with best management practices (BMPs). Unmitigated fugitive dust could adversely affect local and regional PM10 and PM2.5 levels, which would result in health impairment due to the inhalation of dust. BAAQMD considers fugitive dust emissions to be significant without implementation of BMPs. Thus, the approved project plus the proposed changes to the approved project could result in fugitive dust emissions impacts.

Table 5.4-8 shows the GHG emissions associated with construction of the approved project plus the proposed changes to the approved project. As shown in Table 5.4-8, construction emissions for the approved project were estimated to be between 4,006 and

[6] The reason for the differences in estimated emissions in the results between the analysis performed for the SEIR-2 and the analysis performed for the 2014 Subsequent IS/MND is due to changes in the methodologies used for each analysis. The analysis in the SEIR-2 uses construction data specific to the proposed changes to the approved project, whereas the analysis in the 2014 Subsequent IS/MND used a more generalized approach and largely model-default assumptions.

4,146 total metric tons of CO_2 per year depending on the alternative,[7] and construction of the approved project plus proposed changes to the approved project would emit 2,302 metric tons of CO_2e during the entire construction period. As discussed above, there are methodology differences between the previous estimate of emissions for the approved project and the current estimate for the approved project plus the proposed changes. As such, the approved project plus the proposed changes to the approved project would result in a smaller amount of GHG emissions than the previous estimate of GHG emissions for the approved project. BAAQMD's 2017 CEQA Guidelines do not identify a GHG emission threshold for construction-related emissions. However, the CEQA Guidelines do recommend implementation of BMPs to help control and reduce GHG emissions.

Table 5.4-8 Summary of Annual Construction GHG Emissions (Year 2019 – 2023)

Annual Emissions	**CO_e[2]**	**Other[3]**	**CO_2e[4]**
Approved Project (As of the 2014 Subsequent IS/MND)			
Light Rail Alternative[5]	4,146	-	-
Light Rail Alternative, No Ocala Station Option[5]	4,006	-	-
Approved Project (Including the Proposed Extension of the Aerial Guideway to Grade-Separate the Ocala Avenue and Cunningham Avenue Intersections)[6]			
2019	300	< 1	302
2020	565	< 1	568
2021	788	< 1	791
2022	414	< 1	416
2023	223	< 1	225
Total Combined Emissions	2,290	< 1	2,302

Notes:

[1] Construction is expected to occur for approximately five years, beginning in 2019; however, it is possible that the construction period could be extended by one year, depending on whether lane closure restrictions during construction limit the amount of activity that can occur. Emissions for the five year construction period, as reflected in this table, would be a worst-case scenario, because an extended construction schedule would likely result in less daily activity. Thus, although it is possible that construction activity could occur in 2024 or 2025, daily emissions in those years would not exceed the worst-case daily emissions in this table.

[2] Carbon dioxide

[3] Includes CH_4 and N_2O emissions.

[4] Carbon dioxide equivalent

[7] The model used to estimate GHG emissions in the 2014 Subsequent IS/MND, the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model (RCEM), only calculated emissions in terms of CO_2, not CO_2e. The RCEM is a spreadsheet-based model designed for road construction and linear projects and estimates criteria pollutant and GHG emissions based on a project's length and area, the type of project, and other generalized information. The RCEM is best suited for projects when the availability of detailed construction information is limited.

[5] Total CO2 that would occur for the approved project, as presented in Table 3.18-1 in the 2014 Subsequent IS/MND. The model used to estimate GHG emissions in the 2014 Subsequent IS/MND only calculated emissions in terms of CO2, not CO2e.

[6] This analysis includes the emissions anticipated from the construction of approximately 2.4 miles of aerial guideway included in the approved project and the proposed change to the approved project, which would replace the at-grade track alignment with approximately 1.25 miles of aerial guideway from south of Story Road to north of Tully Road. It also includes other, non-guideway construction work, such as roadway widening, intersection curb work, utility relocation, station construction, and paving,

Sources: ICF, 2018. Construction modeling conducted with CalEEMod and project-specific construction information for the proposed changes to the approved project. See Attachment F for construction assumptions and CalEEMod outputs.

Impact: The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ (CON)-1: (Temporary Increase in Construction-Related Emissions during Grading and Construction Activities).

Mitigation: The following mitigation measures identified in the 2005 Final EIR and 2014 Subsequent IS/MND would still apply to the proposed changes to the approved project: AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment). Mitigation Measure AQ (CON)-1 has been revised to be consistent with the BMPs in the 2017 CEQA Guidelines:

Mitigation Measure AQ (CON)-1

In accordance with the BAAQMD's current CEQA guidelines (2017), the project applicant shall implement the following BAAQMD-recommended basic control measures to reduce particulate matter emissions from construction activities. Additional control measures (including watering, washing, and other control measures) as detailed in the 2017 BAAQMD CEQA guidelines (see Additional Construction Mitigation Measures), would further reduce particulate matter emissions and should be implemented when feasible.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.

- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ (CON)-2

The project applicant shall implement, to the extent feasible, the BAAQMD's BMPs to reduce GHG emissions from construction equipment. These BMPs are outlined in their 2010 CEQA Guidelines.

- Alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet;
- Local building materials of at least 10 percent; and
- Recycle at least 50 percent of construction waste or demolition materials.

Inclusion of these mitigation measures would reduce this impact to "Less than Significant."

Mitigation Measure AQ (CON)-3

Tier 3 or 4 equipment shall be used to further reduce construction-related emissions where possible.

Less-than-significant impact with mitigation.

Exposure of Sensitive Receptors to Substantial Pollutant Concentrations. An evaluation of pollutant concentration exposure on sensitive receptors was not conducted in the 2005 Final EIR, 2007 Final SEIR, or the 2014 Subsequent IS/MND.

Construction of the approved project plus the proposed changes to the approved project would emit PM2.5 and diesel particulate matter (DPM), resulting in the exposure of nearby existing sensitive receptors to increased pollutant concentrations and health risks associated with DPM. As such, a health risk assessment (HRA) was conducted to evaluate the potential health effects associated with the approved project plus the proposed changes to the approved project.[8] EPA's AERMOD dispersion model was used to predict hourly PM2.5 and exhaust DPM concentrations at sensitive land uses; DPM is assumed to be PM2.5 exhaust from diesel equipment only. Estimates of project-level cancer risk, non-cancer hazard index, and annual PM2.5 concentrations were based on the annual concentrations from AERMOD, anticipated construction durations, and accepted OEHHA and BAAQMD default values (California Office of Environmental Health Hazard Assessment 2015 & Bay Area Air Quality Management District 2017). The risk calculations incorporate OEHHA's recent guidance update, which includes age-specific factors to take into account the increased sensitivity to carcinogens during early-in-life exposure.

There are many sensitive receptors located along Capitol Expressway near where construction would occur, most of which are single- or multi-family residences. The sensitive receptors that were estimated to experience the highest pollutant concentrations are the various single-family residences located near the intersection of South Capitol Avenue and Capitol Expressway (specifically the residences along Highwood Drive) and the residences near the intersection of Ocala Avenue and Capitol Expressway (specifically the residences along the western portion of Home Gate Drive). Other residential receptors that are directly adjacent to Capitol Expressway would be exposed to pollutant concentrations from construction; however, the maximum risk is expected at residences along Highwood Drive. Exposures of pollutant concentrations on other types of sensitive receptors, including recreational receptors and school receptors, were also modeled.

Table 5.4-9 shows the PM2.5 concentration, non-cancer hazard index, and increased cancer risk values modeled for construction of the approved project plus the proposed changes to the approved project. The exposure of all receptor types to pollutant concentrations during construction was assessed by modeling PM2.5 and DPM concentrations at the sensitive receptor locations based on the construction emissions generated by the approved project plus the proposed changes to the approved project (see Table 5.4-7). Construction of the approved project plus the proposed changes to the approved project would not result in PM2.5 concentrations, hazard index or increased cancer risk values in excess of BAAQMD's threshold. As such, there would be no unacceptable increase in risks or pollutant concentrations based on BAAQMD's criteria.

[8] An HRA is an analysis in which human exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances to provide quantitative estimates of health risks.

Table 5.4-9 PM2.5 Concentration, Non-Cancer Hazard Index, and Increased Cancer Risk from Construction

Sensitive Receptor	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)	Non-Cancer Hazard Index	Increased Cancer Risk (per million)
Residential	< 0.1	< 0.1	4.9
School	< 0.1	< 0.1	0.3
Recreational	< 0.1	< 0.1	0.1
BAAQMD Project-Level Threshold	0.3	1.0	10.0

Source: Dispersion and health risk modeling conducted with AERMOD. See Attachment F for further calculation details.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to substantial pollutant concentrations.

Mitigation: None required. This impact is "Less than Significant."

Less-than-significant construction impact. No mitigation required.

CUMULATIVE IMPACTS

This cumulative analysis examines the effects of the proposed changes to the approved project, in combination with other current projects, probable future projects, and projected future growth within the region.

Operational Criteria Pollutant Emissions. With respect to the emissions of criteria air pollutants, BAAQMD has identified project-level thresholds to evaluate criteria pollutant impacts. In developing these thresholds, BAAQMD considered levels at which project emissions would be cumulatively considerable. As noted in the district's CEQA Guidelines (Bay Air Quality Management District 2017a):

> *In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary.*

Therefore, the criteria pollutant thresholds presented in Table 5.4-3 represent the maximum emissions the proposed changes to the approved project may generate before

contributing to a cumulative impact on regional air quality. Consequently, because operational emissions associated with the proposed changes to the approved project are expected to be net negative in 2017 and 2043, and below the applicable thresholds in 2023, operational emissions would not be cumulatively significant. Criteria pollutant emissions for the approved project were estimated to be below the BAAQMD's thresholds in the 2014 Subsequent IS/MND. The proposed changes to the approved project would not result in any impacts related to cumulative criteria pollutant emissions beyond the impacts previously identified and analyzed for the approved project.

CO Hot Spots. The project-level analysis above includes both project and non-project related traffic volumes and thus represents a cumulative CO hot spot analysis. The proposed changes to the approved project would result in lower CO concentrations than the approved project for all years at the Capitol Expressway and Story Road intersection. Additionally, there would be no exceedances of the CAAQS.

GHG Emissions. GHG emissions are fundamentally a cumulative impact issue because no single project would result in sufficient GHG emissions to affect global warming or climate change in isolation. As such, the project-level discussion of GHG emissions is a cumulative impact analysis, and cumulative impacts are not discussed further here.

Operational Pollutant Concentrations/Toxic Air Contaminants. The potential cumulative pollutant concentrations/toxic air contaminants impacts of the approved project were not previously analyzed in the 2005 Final EIR, the 2007 Final SEIR, or the 2014 Subsequent IS/MND. Because there are non-project-related traffic volumes on the roadways that would also contribute to pollutant concentrations, the combined effect of the 5,109 vehicle increase plus the background, non-project related traffic volumes on Ocala Avenue and Capitol Expressway are evaluated as a cumulative impact.

As discussed previously, in 2043 on Ocala Avenue, vehicle volumes would increase by approximately 5,109 vehicles per day west of Capitol Expressway and by approximately 1,574 vehicles east of Capitol Expressway. While the increase in traffic volumes associated with the proposed changes to the approved project would be comparatively small and would not result in substantial toxic air contaminant concentrations, the cumulative effect of the increases plus non-project related traffic volumes could result in health risks or PM2.5 concentrations that exceed the BAAQMD's cumulative risk thresholds.

To evaluate the health risks associated with on-road traffic, the BAAQMD recommends the use of their roadway screening calculator. The roadway screening calculator quantifies cancer risk and PM2.5 concentrations based on basic details about the roadway (including the roadway directional orientation, direction and distance of the nearest sensitive receptor to the roadway, and the average daily traffic volumes). The roadway screening calculator uses exhaust emissions factor from an older version of CARB's emission factor database, EMFAC2011, for an analysis year of 2014.

To evaluate the health risks associated with the traffic volume increases associated with the proposed changes to the approved project in 2043, a scaling factor of 0.29 is

appropriate to apply to the screening calculator values to account for the substantially cleaner vehicles that will be present in 2043 relative to the calculator's baseline year of 2014.[9] The scaling factor also takes into account the increased number of vehicles that will be present in 2043. Finally, a second scaling factor of 1.3744 is appropriate to apply to the cancer risk values (not the PM2.5 concentrations) from the screening calculator to account for updates to age-specific exposure factors not included in the calculator from the California Office of Environmental Health Hazard Assessment's updated 2015 health risk assessment guidance (California Office of Environmental Health Hazard Assessment 2015).

Table 5.4-10 shows the cancer risk and PM2.5 concentration values for a maximally exposed sensitive receptor located at 1756 Home Gate Drive. The residence at this address is considered maximally exposed because it would be exposed to pollutant concentrations from increased traffic on Ocala Avenue due to the proposed changes to the approved project. The residence is also exposed to traffic on Capitol Expressway. Although the proposed changes to the approved project would reduce traffic volumes on Capitol Expressway relative to no project conditions, pollutant concentrations from traffic on Capitol Expressway would contribute cumulatively to the increased concentrations on Ocala Avenue. As such, Table 5.4-10 shows the cumulative sources of roadway-related concentration that could affect the maximally exposed receptor.

As shown in the Table 5.4-10, the maximally exposed sensitive receptor would not be exposed to cancer risks or PM2.5 concentrations that exceed the cumulative thresholds set by BAAQMD. As such, the cumulative effect of the proposed changes to the approved project plus background sources would not lead to substantial pollutant concentrations and would not result in a significant cumulative impact.

Table 5.4-10 Cancer Risk and PM2.5 Concentrations from Roadway Sources with the Proposed Changes to the Approved Project

Roadway	Average Daily Traffic with Proposed Changes to Approved Project	Cancer Risk (per million)[1]	PM2.5 Concentration (µg/m^3)[1]
Ocala Avenue - East of Capitol Expressway[2]	26,063	6.89	0.1
Capitol Expressway at Ocala Avenue[3]	63,796	22.94	0.4
Combined Cumulative Exposure	**-**	**29.83**	**0.5**
BAAQMD Cumulative Threshold[4]		100	0.8

[9] Two separate scaling factors were applied to the cancer risk values. The first scaling factor of 0.29, is a weighted-scaling factor of PM2.5 exhaust emission rates that accounts for lower-emitting vehicles in future years and increased number of vehicles in future years. The second scaling factor of 1.3744 was applied to account for updated 2015 California Office of Environmental Health Hazard Assessment guidance that was published subsequent to the BAAQMD screening calculator. Only the first scaling factor was applied to PM2.5 concentrations.

Notes:

[1] Two separate scaling factors were applied to the cancer risk values. The first scaling factor of 0.29, is a weighted-scaling factor of PM2.5 exhaust emission rates that accounts for lower-emitting vehicles in future years and increased number of vehicles in future years. The second scaling factor of 1.3744 was applied to account for updated 2015 California Office of Environmental Health Hazard Assessment guidance that was published subsequent to the BAAQMD screening calculator. Only the first scaling factor was applied to PM2.5 concentrations.

[2] This roadway was inputted into the BAAQMD screening calculator as an east-west oriented roadway, with the nearest sensitive receptor (1756 Home Gate Drive) located approximately 20 feet south of the roadway.

[3] This roadway was inputted into the BAAQMD screening calculator as north-south oriented roadway, with the nearest sensitive receptor (1756 Home Gate Drive) located approximately 20 feet east of the roadway.

[4] Bay Area Air Quality Management District 2017.

Sources:

Intersection volume data – Tse pers. comm.

Emission factors from EMFAC2017 (California Air Resources Board 2018b) are included in Attachment F.

BAAQMD Roadway Screening Calculator – Bay Area Air Quality Management District 2015.

Construction Criteria Pollutant Emissions. As discussed for cumulative operational criteria pollutant emissions, BAAQMD has identified project-level thresholds to evaluate criteria pollutant impacts that are also considered cumulative thresholds. Because construction criteria pollutant emissions associated with the proposed changes to the approved project are expected to be below the applicable thresholds in all years of construction, construction emissions would not be cumulatively significant. Criteria pollutant emissions for the approved project were estimated to be below the BAAQMD's thresholds in the 2014 Subsequent IS/MND. The proposed changes to the approved project would not result in any impacts related to cumulative criteria pollutant emissions beyond the impacts previously identified and analyzed for the approved project.

Cumulative Air Quality Impacts During Construction. A cumulative evaluation of pollutant concentration exposure on sensitive receptors was not conducted in the 2005 Final EIR, 2007 Final SEIR, or the 2014 Subsequent IS/MND.

In addition to project-level impacts, BAAQMD recommends that projects evaluate the cumulative effect of project impacts plus all background sources of emissions. BAAQMD identified separate cumulative-level risk thresholds for cumulative analyses. For a cumulative analysis of construction of the approved project plus proposed changes to the approved project, background sources of toxic air contaminants were identified using resources from BAAQMD.[10] As previously discussed, the sensitive receptors that would experience the maximum pollutant concentrations from the approved project plus the proposed changes to the approved project are located near the intersection of South Capitol Avenue and Capitol Expressway as well as the intersection of Ocala Avenue and Capitol Expressway. Residences in these locations are directly adjacent to Capitol Expressway, with the closest residential locations (which are the backyards) as close as 15 feet from the edge of Capitol Expressway. Some residences along the eastern side of

[10] The resources used from BAAQMD include the Roadway Screening Analysis Calculator (for evaluating all roadway risks and PM2.5 concentrations), and the Stationary Source Screening Analysis Tool (for evaluating all existing stationary sources of TACs the corresponding risks and PM2.5 concentrations). These tools can be found at the following link: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

Capitol Expressway are located as close as 20 feet to the roadway edge and also located as close as 20 feet to the edge of a second roadway (i.e., Ocala Avenue, Cunningham Avenue); these sensitive receptors may be exposed to elevated background concentrations of pollutants from roadway traffic. Thus, for the cumulative analysis, four residential sensitive receptors were evaluated:

- Various residences within the area near Ocala Avenue and Capitol Expressway, which would experience a contribution from the approved project plus proposed changes to the approved project and elevated background concentrations of pollutants from roadway traffic);
- Residential exposure near the corner of Story Road and Capitol Expressway (which would experience a contribution from the approved project plus proposed changes to the approved project and elevated background concentrations of pollutants from roadway traffic);
- Residential exposure near the corner of Cunningham Avenue and Capitol Expressway (which would experience a contribution from the approved project plus proposed changes to the approved project and elevated background concentrations of pollutants from roadway traffic); and
- Residential exposure near the corner of South Capitol Avenue and Capitol Expressway, including the maximally exposed receptor location along Highwood Drive (which would experience a contribution from the approved project plus proposed changes to the approved project and elevated background concentrations of pollutants from roadway traffic).

Table 5.4-11 shows the cumulative PM2.5 concentration, non-cancer hazard index, and increased cancer risk values evaluated at the four residential sensitive receptors.

Table 5.4-11 Cumulative PM2.5 Concentration, Non-Cancer Hazard Index, and Increased Cancer Risk from Construction

Sensitive Receptor	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)	Non-Cancer Hazard Index	Increased Cancer Risk (per million)
1. Contribution from Existing Sources[1]			
Residential (Corner of Story Road and Capitol Expressway)	0.57	0.01	38.83
Residential (Corner of Ocala Avenue and Capitol Expressway)	**0.80**	< 0.01	47.67
Residential (Corner of Cunningham Avenue and Capitol Expressway)	**0.94**	< 0.01	53.63

Sensitive Receptor	Maximum Annual PM2.5 Concentration (µg/m^3)	Non-Cancer Hazard Index	Increased Cancer Risk (per million)
Residential (Corner of South Capitol Avenue and Capitol Expressway	0.49	< 0.01	28.69
2. Contribution from Construction of Approved Project Plus Proposed Changes			
Residential (Corner of Story Road and Capitol Expressway)	0.02	< 0.01	4.58
Residential (Corner of Ocala Avenue and Capitol Expressway)	0.02	< 0.01	4.86
Residential (Corner of Cunningham Avenue and Capitol Expressway)	0.01	< 0.01	3.90
Residential (Corner of South Capitol Avenue and Capitol Expressway	0.02	< 0.01	4.94
3. Cumulative Totals (Sum of 1 and 2 above)			
Residential (Corner of Story Road and Capitol Expressway)	0.59	0.01	43.41
Residential (Corner of Ocala Avenue and Capitol Expressway)	**0.81**	< 0.01	52.53
Residential (Corner of Cunningham Avenue and Capitol Expressway)	**0.95**	< 0.01	57.53
Residential (Corner of South Capitol Avenue and Capitol Expressway	0.51	< 0.01	33.63
BAAQMD Cumulative Threshold	0.8	10.0	100

Notes:

Exceedances of the thresholds shown in bold

Source: Existing contributions of toxic air contaminants include stationary sources and roadway traffic in the vicinity of the receptors. Stationary source data were obtained from the BAAQMD's stationary sources tool. Roadway risks were calculated using the BAAQMD's Roadway Screening Analysis tool (BAAQMD 2012 and 2015). Because the Roadway Screening Analysis tool uses 2014 vehicle emission factors, risk values were scaled by 65% to account for cleaner vehicles in 2020 (when construction will occur) and higher vehicle volumes in 2020. For more detail on the background risks, refer to Attachment F.

As shown in Table 5.4-11, the cumulative hazard index and increased cancer risk values at all sensitive receptors would be below the BAAQMD's threshold. However, cumulative PM2.5 concentrations would be elevated at the receptors located near the corners of Ocala Avenue and Capitol Expressway and Cunningham Avenue and Capitol Expressway due to substantial sources of pollutant concentrations that currently exist in the area where the approved project plus the proposed changes to the approved project would occur. Even without the contribution of emissions from construction, existing PM2.5 concentrations near these sensitive receptors are at or exceed the BAAQMD's threshold because Capitol Expressway and its cross streets are heavily traveled roadways, with residences located in close proximity to the roadway edge. The approved project

plus the proposed changes to the approved project would cause further exceedances of existing pollutant concentrations, worsening the cumulative exposure of sensitive receptors to toxic air contaminant concentrations. Although the contribution of the approved project plus the proposed changes to the approved project to existing concentrations would not be substantial (approximately 6% at the locations where concentrations are at or exceed 0.8 µg/m^3), there would nevertheless be a worsening of an already cumulatively significant impact. The approved project plus the proposed changes to the approved project would result in temporarily worsened concentrations of pollutants; however, the proposed changes would also result in lower vehicle volumes in future years on nearby all roadways. Thus, after construction is completed, the approved project plus the proposed changes to the approved project would likely result in reduced pollutant concentrations from existing roadway traffic due to increased light rail usage. Nevertheless, the approved project plus the proposed changes to the approved project would result in a cumulatively significant contribution during the temporary construction period.

Impact: Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant cumulative impacts related to pollutant concentration exposure on sensitive receptors during construction. This new impact is referred to as AQ (CON)-3 (Cumulative PM2.5 Concentrations During Construction).

Mitigation: The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment). In addition, Mitigation Measure AQ (CON)-3 would require that Tier 3 or Tier 4 equipment be used to further reduce construction-related emissions where possible. Even with inclusion of these mitigation measures, this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant cumulative impacts related to pollutant concentration exposure on sensitive receptors during construction.

Significant and unavoidable cumulative impact, even with mitigation.

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Section 5.5 Construction

This section describes the potential construction impacts associated with the proposed changes to the approved project. This section supplements Section 4.19 of the 2005 Final EIR, Section 5.18 of the 2007 Final SEIR, and Section 3.18 of the 2014 Subsequent IS/MND. Mitigation measures are identified for impacts that exceed the significance thresholds included in the 2005 Final EIR.

Environmental Setting

The 2014 Subsequent IS/MND used the 2010 Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines. As discussed in Chapter 3, *Proposed Design Changes*, the BAAQMD updated their CEQA Guidelines in May 2017. The 2017 CEQA Guidelines are used below to update best management practices (BMPs) for air quality; there have been no substantial changes to any air quality significance thresholds between the 2010 and 2017 guidelines.

The environmental setting for the other environmental topics remain unchanged since the 2014 Subsequent IS/MND.

Construction Duration and Scenario

Details regarding the proposed extension of the construction duration and modification to the construction scenario are included in Chapter 3, *Changes to the Approved Project, Changes in Circumstances, and Introduction of New Information.* Details regarding the nighttime construction scenario are provided below.

Noise-generating construction activities would be conducted during the allowable hours of construction as identified by the City of San Jose, where feasible. However, construction work may be necessary during night and early morning periods to minimize traffic disruption. The most disruptive construction activities that may take place during these periods are as follows:

- Cranes would be used to lift materials up to superstructure levels.
- Partial or complete intersection closures may take place where Capitol Expressway intersects Capitol Avenue, Story Road, Ocala Avenue, and Cunningham Avenue.
- The complete closure of one or more lanes in each travel direction (northbound and southbound) on Capitol Expressway may be needed for various construction activities.
- The Tully Road intersection may be closed for major lift work for the aerial structure.
- Construction activities for the pedestrian overcrossing at Story Road may take place over northbound and southbound Capitol Expressway.
- Other nighttime work may include bridge construction activities, roadway striping, startup and testing of equipment, and trenching for underground utilities.

Construction equipment that could be used during nighttime work includes cranes, backhoes, concrete trucks, concrete pumpers flatbed trucks, and other trucks and equipment. Nighttime lighting, engine noise, and truck back-up alarms could disrupt adjacent properties. Lane and intersection closures may cause roadway traffic disruptions; however, a traffic management plan (TMP) would be prepared to address traffic disruptions from project construction (Mitigation Measure TRN [CON]-2a). The TMP would include outreach to inform the public of the times and locations of upcoming construction, construction signage near and within the project area, and traffic control in the vicinity of construction activities. Temporary detours would be provided and access for emergency response vehicles would be maintained. In addition, should construction activities for the proposed project be limited to non-commuting hours, an increase of approximately one year would be anticipated for the duration of construction.

Environmental Impacts and Mitigation

AIR QUALITY AND GREENHOUSE GAS IMPACTS

Emissions of Criteria Pollutants and Greenhouse Gases (GHGs). For construction emissions, the 2005 Final EIR and the 2007 Final SEIR relied on the Bay Area Air Quality Management District's (BAAQMD) 1999 CEQA Thresholds. At that time, the BAAQMD's approach to CEQA analyses of construction impacts was to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions. As a result, the 2005 Final EIR and the 2007 Final SEIR did not quantify construction emissions. Subsequently, the BAAQMD adopted thresholds of significance on June 2, 2010 that included thresholds for construction emissions. Thus, the 2014 Subsequent IS/MND estimated construction emissions for the approved project, as summarized in Table 5.4-7 in Section 5.4, *Air Quality and Climate Change*, of the SEIR-2.

Table 5.4-7 shows the maximum daily emissions of criteria pollutants from on-road vehicles (e.g., haul trucks, pick-up trucks, construction worker commute vehicles), off-road equipment (e.g., excavators, pile drivers), and fugitive dust from grading during construction of the approved project including the proposed extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections as well as BAAQMD thresholds. As shown in Table 5.4-7, construction activities would not exceed BAAQMD's thresholds for any pollutants in any year. Overall, emissions of ROG, NOx, CO, and exhaust PM10 and PM2.5 as quantified in the 2014 Subsequent IS/MND are similar to the emissions estimates for the approved project plus the proposed changes to the approved project shown in Table 5.4-7. Emissions for the approved project plus the proposed changes to the approved project are lower than the emissions estimated in the 2014 Subsequent IS/MND and are below the BAAQMD threshold.[1]

[1] The reason for the differences in estimated emissions in the results between the analysis performed for the SEIR-2 and the analysis performed for the 2014 Subsequent IS/MND is due to changes in the methodologies used for each analysis. The analysis in the SEIR-2 uses construction data specific to the proposed changes to the approved project,

Emissions of PM10 and PM2.5 fugitive dust are substantially lower for the approved project plus the proposed changes to the approved project than for the approved project in the 2014 Subsequent IS/MND, however, BAAQMD does not have quantitative thresholds for fugitive dust. Instead, the threshold is based on compliance with best management practices (BMPs). Unmitigated fugitive dust could adversely affect local and regional PM10 and PM2.5 levels, which would result in health impairment due to the inhalation of dust. BAAQMD considers fugitive dust emissions to be significant without implementation of BMPs. Thus, the approved project plus the proposed changes to the approved project could result in fugitive dust emissions impacts.

Table 5.4-8 in Section 5.4, *Air Quality and Climate Change*, of the SEIR-2 shows the GHG emissions associated with construction of the approved project plus the proposed changes to the approved project. As shown in Table 5.4-8, construction emissions for the approved project were estimated to be between 4,006 and 4,146 total metric tons of CO_2 per year depending on the alternative, [2] and construction of the approved project plus proposed changes to the approved project would emit 2,302 metric tons of CO_2e during the entire construction period. The approved project plus the proposed changes to the approved project would result in a smaller amount of GHG emissions than the previous estimate of GHG emissions for the approved project. BAAQMD's 2017 CEQA Guidelines do not identify a GHG emission threshold for construction-related emissions. However, the CEQA Guidelines do recommend implementation of BMPs to help control and reduce GHG emissions.

Impact: The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ (CON)-1: (Temporary Increase in Construction-Related Emissions during Grading and Construction Activities).

Mitigation: The following mitigation measures identified in the 2005 Final EIR and the 2014 Subsequent IS/MND would still apply to the proposed changes to the approved project: AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment). Mitigation Measure AQ (CON)-1 has been revised to be consistent with the BMPs in the 2017 CEQA Guidelines:

Mitigation Measure AQ (CON)-1

In accordance with the BAAQMD's current CEQA guidelines (2017), the project applicant shall implement the following BAAQMD-recommended basic control measures to reduce particulate matter emissions from construction activities. Additional control measures (including watering, washing, and other control measures) as detailed

whereas the analysis in the 2014 Subsequent IS/MND used a more generalized approach and largely model-default assumptions.

[2] The model used to estimate GHG emissions in the 2014 Subsequent IS/MND only calculated emissions in terms of CO_2, not CO_2e.

in the 2017 BAAQMD CEQA guidelines (see Additional Construction Mitigation Measures), would further reduce particulate matter emissions and should be implemented when feasible.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ (CON)-2

The project applicant shall implement, to the extent feasible, the BAAQMD's BMPs to reduce GHG emissions from construction equipment. These BMPs are outlined in their 2010 CEQA Guidelines.

- Alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet;
- Local building materials of at least 10 percent; and

- Recycle at least 50 percent of construction waste or demolition materials.

Inclusion of these mitigation measures would reduce this impact to "Less than Significant."

Mitigation Measure AQ (CON)-3

Tier 3 or 4 equipment shall be used to further reduce construction-related emissions where possible.

Less-than-significant construction impact with mitigation.

Exposure of Sensitive Receptors to Substantial Pollutant Concentrations. An evaluation of pollutant concentration exposure on sensitive receptors was not conducted in the 2005 Final EIR, 2007 Final SEIR, or the 2014 Subsequent IS/MND.

Table 5.4-9 in Section 5.4, *Air Quality and Climate Change*, of the SEIR-2 shows the PM2.5 concentration, non-cancer hazard index, and increased cancer risk values modeled for construction of the approved project plus the proposed changes to the approved project. The exposure of all receptor types to pollutant concentrations during construction was assessed by modeling PM2.5 and DPM concentrations at the sensitive receptor locations based on the construction emissions generated by the approved project plus the proposed changes to the approved project (see Table 5.4-7). Construction of the approved project plus the proposed changes to the approved project would not result in PM2.5 concentrations, hazard index or increased cancer risk values in excess of BAAQMD's threshold. As such, there would be no unacceptable increase in risks or pollutant concentrations based on BAAQMD's criteria.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to substantial pollutant concentrations. This impact is referred to as AQ (CON)-2.

Mitigation: None required. This impact is "Less than Significant."

Less-than-significant construction impact. No mitigation required.

Cumulative Air Quality Impacts During Construction. A cumulative evaluation of pollutant concentration exposure on sensitive receptors was not conducted in the 2005 Final EIR, 2007 Final SEIR, or the 2014 Subsequent IS/MND.

Table 5.4-11 in Section 5.4, *Air Quality and Climate Change*, of the SEIR-2 shows the cumulative PM2.5 concentration, non-cancer hazard index, and increased cancer risk values evaluated at four residential sensitive receptors.

As shown in Table 5.4-11, the cumulative hazard index and increased cancer risk values at all sensitive receptors would be below the BAAQMD's threshold. However, cumulative PM2.5 concentrations would be elevated at the receptors located near the corners of Ocala Avenue and Capitol Expressway and Cunningham Avenue and Capitol Expressway due to substantial sources of pollutant concentrations that currently exist in the area where the approved project plus the proposed changes to the approved project would occur. Even without the contribution of emissions from construction, existing PM2.5 concentrations near these sensitive receptors are at or exceed the BAAQMD's threshold because Capitol Expressway and its cross streets are heavily traveled roadways, with residences located in close proximity to the roadway edge. The approved project plus the proposed changes to the approved project would cause further exceedances of existing pollutant concentrations, worsening the cumulative exposure of sensitive receptors to toxic air contaminant concentrations. Although the contribution of the approved project plus the proposed changes to the approved project to existing concentrations would not be substantial (approximately 6% at the locations where concentrations are at or exceed 0.8 µg/m3), there would nevertheless be a worsening of an already cumulatively significant impact. The approved project plus the proposed changes to the approved project would result in temporarily worsened concentrations of pollutants; however, the proposed changes would also result in lower vehicle volumes in future years on nearby all roadways. Thus, after construction is completed, the approved project plus the proposed changes to the approved project would likely result in reduced pollutant concentrations from existing roadway traffic due to increased light rail usage. Nevertheless, the approved project plus the proposed changes to the approved project would result in a cumulatively significant contribution during the temporary construction period.

Impact: Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant cumulative impacts related to pollutant concentration exposure on sensitive receptors during construction. This new impact is referred to as AQ (CON)-3 (Cumulative PM2.5 Concentrations During Construction).

Mitigation: The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: AQ (CON)-1 (BAAQMD's BMPs to reduce particulate matter emissions from construction activities) and AQ (CON)-2 (BAAQMD's BMPs to reduce GHG emissions from construction equipment). In addition, Mitigation Measure AQ (CON)-3 would require that Tier 3 or Tier 4 equipment be used to further reduce construction-related emissions where possible. Even with inclusion of these mitigation measures, this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant cumulative impacts related to pollutant concentration exposure on sensitive receptors during construction.

Significant and unavoidable cumulative construction impact, even with mitigation.

BIOLOGICAL RESOURCES IMPACTS

With inclusion of the mitigation measures identified below, impacts related biological resources during construction of the approved project would be less than significant.

Similar to the approved project, the vast majority of the impacts to biological resources that would result from the proposed changes to the approved project would be short-term and construction-related, especially the temporary disturbance of species and their habitats. The construction-related impacts on biological resources and the associated mitigation measures are summarized below and discussed in detail in Section 3.3, *Biological Resources*, of the Second Subsequent IS.

Impact: The following impacts from the 2005 Final EIR would still apply to the proposed changes to the approved project:

- BIO-7 (Permanent Loss of Biological Habitats or Disturbance to Inhabiting Species),
- BIO-14 (Temporary Disturbance of Nesting Raptors during Construction, Including Swallows),
- BIO-15 (Temporary Disturbance of Nesting Habitat for Migratory Birds, Including Swallows), and
- BIO-18 (Loss of Urban Trees).

The March 28, 2017 *Capitol Expressway Corridor Project – Biological Resources Update* determined that burrowing owls do not currently nest on or near the project corridor, and have not nested in the vicinity in three or more years. Thus, it is assumed that breeding burrowing owls are currently absent from the study area. As a result, the proposed changes to the approved project would not result in a significant impact on burrowing owl habitat. Ruderal habitat impacted by the proposed changes to the approved project is ostensibly suitable for the species, and it is possible that occasional migrant or wintering owls may roost or forage on the site. However, because burrowing owls are more abundant and widespread in the South Bay in winter than during the breeding season, suitable habitat for migrants and wintering owls is unlikely to limit South Bay burrowing owl populations. Therefore, impacts on potential, but unoccupied, burrowing owl habitat resulting from the proposed changes to the approved project would not adversely affect baseline regional burrowing owl populations. Thus, the compensatory mitigation for habitat impacts described in the 2005 Final EIR as part of Mitigation Measure BIO-7 is not necessary and the mitigation measure has been revised below accordingly. Nevertheless, ostensibly suitable habitat is

present within the project corridor, and there is some potential for burrowing owls to occur in the project corridor, at least as occasional migrants or winter visitors.

The 2005 Final EIR includes the western pond turtle in the discussion of special-status species that could occur in aquatic habitat, but indicates that the potential for its occurrence on the site is low. The Santa Clara Valley Habitat Plan maps the reach of Thompson Creek south and west of Lake Cunningham as "primary habitat" for the western pond turtle, however biologists did not observe any western pond turtles in either Thompson Creek or Silver Creek during surveys. Nevertheless, this species has the potential to occur in either creek. Western pond turtles are known to occur in permanent or ephemeral aquatic habitats such as rivers, streams, lakes, ponds, lagoons, and marshes, as well as artificial aquatic habitats such as reservoirs, stock ponds, gravel pits, and sewage treatment plants. Turtles use these aquatic habitats for both foraging and dispersing, with known dispersal distances along stream corridors of over 3.1 miles. Stagnant or slack-water relatively deep pools within these aquatic habitats that contain suitable basking and hiding spots (such as exposed and subsurface woody debris, exposed rocks, rooted or undercut banks, emergent vegetation, and branches at the water surface) are important habitat elements for this species, and western pond turtles seem to avoid aquatic habitats that lack these habitat elements. Although neither creek currently contains optimal habitat for the western pond turtle, some of the habitat elements preferred by western pond turtles are present and thus this species could occur here, at least in low numbers. The magnitude of anticipated impacts on this species due to the proposed changes to the approved project would be very low, if at all, given the low number of western pond turtles that may be present in or near the project area. Nevertheless, Mitigation Measure BIO-12 would ensure that impacts to individual western pond turtles do not occur during project construction.

Mitigation: The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project:

- BIO-7 (Conduct Preconstruction Surveys for Nesting and Wintering Western Burrowing Owls and Implement Measures to Avoid or Minimize Adverse Effects if Owls Are Present),
- BIO-12 (Conduct Preconstruction Surveys for Western Pond Turtles and Implement Measures to Avoid or Minimize Adverse Effects if Turtles are Present),
- BIO-14a (Conduct a Preconstruction Survey for Nesting Raptors),
- BIO-14b (Avoid Active Raptor Nests during the Nesting Season),

- Mitigation Measure BIO-15 (Conduct Preconstruction Surveys for Nesting Migratory Birds),
- BIO-18a (Conduct a Tree Survey to Assess Tree Resources Impacted), and
- BIO-18b (Replace Trees).

Mitigation Measure BIO-7 has been revised based on the recommendations in the March 28, 2017 *Capitol Expressway Corridor Project – Biological Resources Update*. In addition, Mitigation Measures BIO-12, BIO-14a, and BIO-15 have been modified to reflect current conditions as well as current biological resources standards and recommendations by the California Department of Fish and Wildlife (CDFW).

Mitigation Measure BIO-7

Preconstruction surveys for Western burrowing owls shall be conducted by a qualified ornithologist before any development within the habitat identified in Figure 3.3-1. These surveys, which shall include any potentially suitable habitat within 250 feet of construction areas, shall be conducted no more than 30 days before the start of site grading, regardless of the time of year in which grading occurs. If breeding owls are located on or immediately adjacent to the site, a construction-free buffer zone (typically 250 feet) around the active burrow must be established as determined by the ornithologist in consultation with CDFW. No activities, including grading or other construction work or relocation of owls, would proceed that may disturb breeding owls. If owls are resident within 250 feet of the Project Area during the nonbreeding season a qualified ornithologist, in consultation with CDFW, shall passively relocate (evict) the owls to avoid the loss of any individuals if the owls are close enough that they or their burrows could potentially be harmed by associated activities.

Mitigation Measure BIO-12

Preconstruction surveys for western pond turtles shall be conducted by a qualified biologist just prior to (i.e., the day of) initiation of any construction in non-developed habitat that occurs within 100 feet of Thompson Creek. If any individual western pond turtles are detected within the project's impact areas, the individuals shall be moved to suitable habitat within the nearest creek, at least 300 feet outside the project area.

Mitigation Measure BIO-14a

Preconstruction surveys for nesting raptors will be conducted by a qualified ornithologist to ensure that no raptor nests will be disturbed during implementation of the light rail alternative. This survey shall be conducted within 48 hours of construction activity during the breeding season. For nesting raptors, the breeding season is from January 1 to August 31. During this survey, the ornithologist would inspect all trees and suitable grassland habitat in and immediately adjacent to the affected areas for raptor nests. If the survey does not identify any nesting special-status raptor species in the area potentially affected by the proposed activity, no further mitigation is required.

Mitigation Measure BIO-15

If construction activities are scheduled to occur during the migratory bird breeding season (February 1-August 31), a preconstruction survey for nesting migratory birds shall be conducted prior to commencement of construction activities. If an active nest is identified within the study area, construction activities will stop (only where a nest is located) until the young fledge or the nest is removed in accordance with CDFW approval.

Inclusion of these mitigation measures would reduce these impacts to "Less than Significant."

Less-than-significant construction impact with mitigation.

COMMUNITY SERVICES IMPACTS

With inclusion of the mitigation measures identified below, impacts related to community services during construction of the approved project would be less than significant.

Similar to the approved project, construction activities associated with the proposed changes to the approved project could have short-term and construction-related impacts to police and fire services. The construction-related impacts on community services and the associated mitigation measures are summarized below and discussed in detail in Section 3.4, *Community Services*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to community services.

The following impact from the 2005 Final EIR would apply to the proposed changes to the approved project: CS (Construction)-1 (Temporary Disruption of Emergency Access).

Mitigation: The following mitigation measure identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: Mitigation Measure CS (CON)-1 (Coordinate with Emergency Service Providers). Inclusion of this mitigation measure would reduce this impact to "Less than Significant."

Less-than-significant construction impact with mitigation.

CULTURAL RESOURCES IMPACTS

With inclusion of the mitigation measures identified below, impacts related to cultural resources during construction of the approved project would be less than significant.

There are no known archaeological resources within the project footprint. However, there is one prehistoric resource outside the project footprint but within 0.25 mile of the southern end of the project footprint. Similarly, there are no isolated human remains, cemeteries, or archaeological resources that contain human remains identified within the project corridor. The horizontal and vertical extent of ground disturbing activities associated with some of the proposed changes to the approved project would be different than those analyzed for the approved project. Thus, the proposed changes to the approved project could result in impacts on unknown archaeological resources. The construction-related impacts on cultural resources and the associated mitigation measures are summarized below and discussed in detail in Section 3.5, *Cultural Resources*, of the Second Subsequent IS.

Impact: The May 16, 2018 *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Final Cultural Resources Memorandum* indicates that the total amount of ground disturbance from the instances where the proposed changes to the approved project (0.06 acre) would account for a very small percentage (0.7 percent) of the 9-acre project footprint. Therefore, the conclusions of the prior archaeological reports have not changed, and the potential for the proposed changes to the approved project to affect as-yet undocumented archaeological resources would be minimal.

The following procedures represent standard practice that would be followed in the case of inadvertent discovery of buried cultural resources and human remains:

- **Stop work immediately if buried cultural deposits are encountered during construction activities.** Should any cultural and/or archaeological resources be discovered (such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains) during construction activities, VTA shall suspend work in the immediate vicinity, and VTA's construction inspector shall contact VTA's Environmental Programs Department to coordinate site investigations by a

qualified archaeologist to assess the materials and determine their significance.

- **Stop work immediately if human remains are encountered during construction activities:** If human remains are unearthed during construction, pursuant to Section 50977.98 of the Public Resources Code and Section 7050.5 of the State Health and Safety Code, VTA and Contractor shall immediately suspend work in the immediate vicinity and contact the Santa Clara County coroner. If the Santa Clara County coroner determines the remains are Native American in origin, VTA will contact the Native American Heritage Commission to request a Most Likely Descendent to coordinate the disposition of the remains.
- **Native American monitoring during construction:** VTA shall retain the services of a Native American monitor during construction involving subsurface excavation between Cunningham Avenue and Quimby Avenue.

Based on the analysis above, the proposed changes to the approved project would not result in new significance impacts or a substantial increase in the severity of previously identified significant impacts related to archaeological resources (including human remains).

Mitigation: None required. Inclusion of the standard procedures would reduce this impact to "Less than Significant

Less-than-significant impact. No mitigation required.

ENERGY IMPACTS

With inclusion of the mitigation measure identified below, impacts related to energy during construction of the approved project would be less than significant.

Similar to the approved project, construction-related energy consumption would result from construction of the proposed changes to the approved project and secondary facilities. Energy consumed for construction of the proposed changes would be used for the construction of trackway and support facilities, and for the transportation of materials and equipment to and from the work sites. A secondary facility is a facility (e.g., a factory), that produces construction materials and machinery that would be used in the construction and maintenance of the structures and attendant facilities. The construction-related impacts on energy and the associated mitigation measures are summarized below and discussed in detail in Section 3.7, *Energy*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial

increase in the severity of previously identified significant impacts related to energy.

The following impacts from the 2005 Final EIR would still apply to the proposed changes to the approved project: E (Construction)-1 (Consumption of Nonrenewable Energy Resources in a Wasteful, Inefficient, and/or Unnecessary Manner from Project Construction), E (Construction)-2 (Consumption of Nonrenewable Energy Resources in a Wasteful, Inefficient, and Unnecessary Manner from Secondary Facilities Activities).

Mitigation: The following mitigation measure identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: Mitigation Measure E (CON)-1 (Adopt Energy Conservation Measures). Inclusion of this mitigation measure would reduce this impact to "Less than Significant."

Less-than-significant construction impact with mitigation.

GEOLOGY, SOILS, AND SEISMICITY IMPACTS

With inclusion of the mitigation measure identified below, impacts related to geology, soils, and seismicity during construction of the approved project would be less than significant.

Similar to the approved project, the proposed changes to the approved project would be located in an area that may be susceptible to lateral spreading, subsidence, collapse, and expansive soils. Soils and underlying geologic materials that are susceptible to lateral spreading, subsidence, and collapse, or that have expansive properties, could increase the risk of structural loss, injury, or death. The construction-related impacts on geology, soils, and seismicity and the associated mitigation measures are summarized below and discussed in detail in Section 3.8, *Geology, Soils, and Seismicity*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to geology, soils, and seismicity impacts.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: GEO (CON)-1 (Lateral Spreading, Subsidence, and Collapse), and GEO (CON)-2 (Presence of Expansive Soils).

Mitigation: The following mitigation measure identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: Mitigation Measure GEO (CON)-1 (Minimize Lateral Spreading,

Subsidence, and collapse), and GEO (CON)-2 (Minimize Risk of Soil Expansivity). Inclusion of this mitigation measure would reduce this impact to "Less than Significant."

Less-than-significant construction impact with mitigation.

HAZARDOUS MATERIALS IMPACTS

With inclusion of the mitigation measures identified below, impacts related to hazardous materials during construction of the approved project would be less than significant.

Similar to the approved project, the proposed extensive pile driving required for construction of the proposed aerial guideway included in the proposed changes to the approved project would in some cases require dewatering. Dewatering could cause construction workers to encounter and be exposed to hazardous materials and could expose the surrounding environment to contaminated soils and groundwater from historic hazardous materials handling in the area. The construction-related impacts on hazardous materials and the associated mitigation measures are summarized below and discussed in detail in Section 3.9, *Hazardous Materials*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to hazardous materials.

The following impacts from the 2005 Final EIR would still apply to the proposed changes to the approved project: HAZ (CON)-1 (Release of Hazardous materials into the Environment).

Mitigation: The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: Mitigation Measure HAZ (CON)-1a (Conduct subsurface Investigations), HAZ (CON)-1b (Control Contamination), and HAZ (CON)-1c (Conduct Lead and Asbestos Surveys Prior to Building Demolition or Renovation). Inclusion of these mitigation measures would reduce this impact to "Less than Significant."

Less-than-significant construction impact with mitigation.

HYDROLOGY IMPACTS

With inclusion of the mitigation measures identified below, impacts related to hydrology during construction of the approved project would be less than significant.

Similar to the approved project, construction activities associated with the proposed changes to the approved project involving soil disturbance, excavation, cutting/filling, stockpiling, and grading activities could result in increased erosion and sedimentation to surface waters. In addition, construction activities could result in depletion of water

supplies/interference with groundwater recharge. The construction-related impacts on hydrology and water quality and the associated mitigation measures are summarized below and discussed in detail in Section 3.10, *Hydrology and Water Quality*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to hydrology and water quality.

The following impacts from the 2005 Final EIR would apply to the proposed changes to the approved project: HYD (CON)-1 (Impair Water Quality) and HYD (CON)-2 (Depletion of Groundwater Supplies).

Mitigation: The following mitigation measures identified in the Final EIR would still apply to the proposed changes to the approved project: HYD (CON)-1 (Implement Water Quality Control Measures), HYD (CON)-2 (Use Non-Potable Water). Inclusion of these mitigation measures would reduce this impact to "Less than Significant."

Less-than-significant construction impact with mitigation.

LAND USE IMPACTS

Impacts related to land use during construction of the approved project would be less than significant.

Similar to the approved project, construction activities associated with the proposed changes to the approved project would temporarily result in lane and street closures, and detours would occur. As with the approved project, a Traffic Management Plan would be implemented to restore traffic capacity and access to local businesses during construction. In addition, signs would be posted to direct pedestrians to intersections where they may cross to proceed along the project corridor and to avoid construction areas. The construction-related impacts on hydrology and water quality and the associated mitigation measures are summarized below and discussed in detail in Section 3.11, *Land Use*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to land use.

The following impact from the 2005 Final EIR would apply to the proposed changes to the approved project: LU (Construction)-1 (Disruption of Local Businesses).

Mitigation: None required. This impact is "Less than Significant."

Less-than-significant construction impact. No mitigation required.

NOISE IMPACTS

With inclusion of the mitigation measures identified below, impacts related to noise during construction of the approved project would be less than significant.

Similar to the approved project, pile driving would occur during construction of the proposed changes. The construction-related impacts on noise and vibration and the associated mitigation measures are summarized below and discussed in detail in Section 5.3, *Noise and Vibration*, of the SEIR-2.

Impact: The February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* indicates that the proposed changes to the approved project would result in exceedances of the FTA construction noise impact criteria at unobstructed homes and businesses (i.e., homes and businesses not shielded by other structures or sound walls) within 300 feet of pile driving activity. The noise impacts would have a duration of 8 to 15 days per sensitive receiver. Pile driving would exceed the construction noise impact criteria of 80 Leq (8-hour) dBA at residences and 85 Leq (8-hour) dBA at commercial properties at 149 sensitive receiver locations. The location of receivers where pile driving noise impacts are predicted are as follows:

- Twelve residential properties located east of the alignment between Wilbur Avenue and Mervyns Way would experience construction noise impacts. One home is within 25 feet of the closest pile.
- Five institutional/commercial properties located east of the alignment between Mervyns Way and Story Road would experience construction noise impacts.
- Forty-one residential properties located east of the alignment between Story Road and Ocala Avenue would experience construction noise impacts.
- Twenty-seven residential properties located east of the alignment between Ocala Avenue and Cunningham Avenue would experience construction noise impacts.
- Twenty-one residential properties located west of the alignment between Excalibur Drive and Story Road would experience construction noise impacts.
- Three commercial properties located west of the alignment near the intersection of Capitol Expressway and Story Road would experience construction noise impacts.

- Seventeen residential properties located west of the alignment between Story Road and Foxdale Loop would experience construction noise impacts.
- One commercial property located west of the alignment near the intersection of Capitol Expressway and Foxdale Loop would experience a construction noise impact.
- Three residential properties located west of the alignment along Foxdale Loop would experience construction noise impacts.
- Nineteen residential properties located west of the alignment between Foxdale Drive and Ocala Avenue would experience construction noise impacts.

The proposed changes to the approved project would result in an increase in the number of construction noise impacts compared to the 2007 Final SEIR due to an increase in the number of foundation piles associated with changing the at-grade track under the approved project to an aerial guideway under the proposed changes.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: NV (Construction)-1: (Generation of Noise or Vibration That Substantially Affects Nearby Sensitive Receptors).

Mitigation: The following mitigation measures identified in the 2005 Final EIR and the 2007 Final SEIR would still apply to the proposed changes to the approved project: NV (CON)-1a (Notify Residents of Construction Activities), NV (CON)-1b (Construct Temporary Noise Barriers During Construction), NV (CON)-1c (Restrict Pile Driving)[3], NV (CON)-1d (Use Noise Suppression Devices), NV (CON)-1e (Locate Stationary Construction Equipment as Far as Possible from Sensitive Receptors), NV (CON)-1f (Reroute Construction-Related Truck Traffic), NV (CON)-1g (Develop Construction Noise Mitigation Plan) and NV (CON)–2.

Mitigation Measure NV (CON)-2 has been modified.

Mitigation Measure NV (CON)-2

A combination of the following measures should be considered if reasonable and feasible to reduce noise and vibration impacts from pile driving:

1. Noise Shield: A pile driving noise shield could be effective at reducing the pile driving noise by a minimum 5 dB, depending on

[3] In the 2005 Final EIR, this measure restricts pile driving to the hours of 8:00 am to 5:00 pm. To be consistent with the San Jose municipal code, these hours are revised to 7:00 am to 7:00 pm, Monday through Friday.

the size of the shield and how well it surrounds the pile and hammer. A portable shield/barrier could be implemented to provide a nominal 10 dB noise reduction.

2. Pre-Drilling Piles: Pre-drilling a portion of the hole may provide a means to reduce the duration of impact pile driving, and should be explored. Reducing the total impact time to an aggregate duration of no more than 2 hours per day will reduce the equivalent noise level by 6 dB to a range of 80 to 90 dBA (L_{eq}) at a distance of 100ft.
3. Non-Impact Piles or Cast in Drilled Hole (CIDH) piles: Using the Soil-Mix or CIDH method would reduce the vibration below the FTA Criteria. This method is recommended for homes which would be within 75 ft of pile driving.
4. Reduced Impact Pile Driving Time: Limiting the hours per day of impact pile driving would reduce the equivalent noise level and would reduce potential work interference.
5. Excessive Vibration: If pile driving amplitudes exceed the building threshold criteria, cosmetic repair work may be required at nearby buildings. A detailed preconstruction crack survey will be conducted at homes and businesses where these criteria are expected to be exceeded. Vibration monitoring, crack monitors and photo documentation will be employed at these locations during pile driving activity.
6. Relocating Items on Shelves: Since items on shelves and walls may move during pile driving activity, nearby residents will be advised through the community outreach process that they should move fragile and precious items off of shelves and walls for the duration of the impact pile driving. Achievement of standards for building damage would not eliminate annoyance, since the vibration would still be quite perceptible.
7. Advance Notification (Work Interference): The impact pile driving vibration may cause interference with persons working at home or the office on their computers. Nearby residents and businesses will be advised in advance of times when piles would be driven, particularly piles within 160 ft of any occupied building, so that they may plan accordingly, if possible.
8. Notification of Pile Driving Schedule: Nearby residents and businesses will be notified of the expected pile driving schedule. In particular, these notifications should be made with home-bound residents, homes where there is day-time occupancy (e.g., work at home, stay-at-home parents) and offices/commercial businesses where extensive computer/video monitor work is conducted.

9. Hotel Accommodations: Residents at 660 South Capitol Avenue will be provided with hotel accommodations while pile driving activities occur adjacent to the residence.

Contractor Controls

In addition to the above list of specific noise and vibration control measures, the following are recommended for inclusion in the Contractor specifications for the Indicator and Production pile driving programs if reasonable and feasible:

- Comply with the equivalent noise levels (L_{eq}) limits specified on page 12-8 of FTA 2006 and a maximum noise level limits of 90 dBA (slow) or 125 dBC (fast) for residential buildings,
- Comply with the maximum vibration limits specified in Table 12-3 of FTA 2006,
- Perform a detailed survey and photo documentation prior to construction of all potentially affected wood-frame buildings within 135 ft of the piling activity,
- Coordinate and perform noise and vibration monitoring at a representative sampling of potentially affected buildings along the Project corridor,
- Install crack monitors where appropriate and provide photo documentation at all potentially affected buildings during pile driving activity and through construction,
- Community Notification and Involvement:
  - provide a minimum four-week advance notice of the start of piling operations to all affected receptors (e.g., internet, phone and fax), and regular, up-to-date communications. This includes education of the public on the expected noise and vibration,
  - provide a knowledgeable Community Liaison to respond to questions and complaints regarding pile driving noise and vibration, and
  - provide assistance as needed to nearby residents or offices who may require help relocating valuable items off shelves.

Mitigation Measure NV (CON)-1h: Use Impact Cushions

A suitable pile cap cushion could be effective at reducing the pile driving noise by up to 5 dB. The construction crew will initially use only burlap bags to reduce noise and then will also use the wood block when pile driving becomes more difficult.

This new mitigation measure shall be implemented in addition to the measures identified in the Mitigation Monitoring and Reporting Plan (MMRP) prepared for the approved project.

Significant and unavoidable construction impact, even with mitigation.

Impact: The February 14, 2019 *EBRC – CELR Noise and Vibration Assessment* indicates that the proposed changes to the approved project would result in exceedances of the FTA nighttime construction vibration of 0.2 PPV impact criteria at homes within 100 feet of pile driving activity. Pile driving would exceed the construction vibration impact criteria at 56 sensitive receiver locations. The location of receivers where pile driving vibration impacts are predicted are as follows:

- One property located east of the alignment between Wilbur Avenue and Mervyns Way would experience construction vibration impacts. One home is within 25 feet of the closest pile.
- Five properties located east of the alignment between Story Road and Ocala Avenue would experience construction vibration impacts.
- Twenty-one properties located east of the alignment between Ocala Avenue and Cunningham Avenue would experience construction vibration impacts.
- Fifteen properties located west of the alignment between Story Road and Foxdale Loop would experience construction vibration impacts.
- Fourteen properties located west of alignment between Foxdale Drive and Ocala Avenue would experience construction vibration impacts.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: NV (Construction)-1: (Generation of Noise or Vibration That Substantially Affects Nearby Sensitive Receptors).

Mitigation: The following mitigation measures identified in the 2005 Final EIR and the 2007 Final SEIR would still apply to the proposed changes to the approved project: NV-1a (Notify Residents of Construction Activities), NV-1c (Restrict Pile Driving), NV-1e (Locate Stationary Construction Equipment as Far as Possible from Sensitive Receptors) and NV (Construction)-2.

VTA is not recommending the use of non-impact piling methods at most locations for a couple of reasons. Most locations are only slightly above the FTA Damage Criteria, and therefore may not experience any actual impacts due to predictions that are based on a high reference level for pile drivers, given uncertainties in the specific equipment that would be used in practice. It is anticipated that the pile drivers that would be used during construction would create lower levels of vibration than estimated in the analysis. At the locations with the highest construction vibration levels, structural damage is not anticipated to occur. However, if any structural and cosmetic damage does occur due to construction vibration, the damage shall be repaired by VTA. As a result, VTA is not recommending to use non-impact piling methods at most locations. Thus, this impact would be "Significant and Unavoidable."

No mitigation proposed. Significant and unavoidable construction impact.

SAFETY & SECURITY IMPACTS

With inclusion of the mitigation measure identified below, impacts related to safety and security during construction of the approved project would be less than significant.

Similar to the approved project, construction of the proposed changes could result in safety and security impacts. The construction-related impacts on safety and security and the associated mitigation measures are summarized below and discussed in detail in Section 3.13, *Safety and Security*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to safety and security.

The following impact from the 2005 Final EIR would apply to the proposed changes to the approved project: SS (CON)-1 (Potential for Safety Risks during Construction).

Mitigation: The following mitigation measure identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: Mitigation Measure SS (CON)-1 (Implement Construction BMPs to Protect Workers and the Public). Inclusion of this mitigation measure would reduce this impact to "Less than Significant."

Less-than-significant construction impact with mitigation.

TRANSPORTATION IMPACTS

With inclusion of the mitigation measures identified below, impacts related to transportation during construction of the approved project would be less than significant.

Similar to the approved project, lane and street closures, traffic delays, and detours would occur along the project corridor during construction of the proposed changes. Under the approved project, construction activities were anticipated to periodically reduce the capacity of Capitol Expressway from three lanes to two in each direction during the mid-day off peak periods. However, the proposed changes to the approved project would require lane closures to additionally take place during peak periods of travel. VTA would seek to minimize these delays to the greatest extent feasible and provide viable detour routes as appropriate. The construction-related impacts on noise and vibration and the associated mitigation measures are summarized below and discussed in detail in Section 5.1, *Transportation*, of the SEIR-2.

Impact: The April 29, 2019 *Eastridge to BART Regional Connector: Capitol Expressway Light Rail Project Supplemental Transportation Analysis* indicates that the proposed lane reductions on Capitol Expressway during construction may cause study intersections to temporarily operate at LOS F, impacting passenger vehicles, buses, and trucks. The proposed changes to the approved project may also result in the temporary closures of bikeways, bus stops, and sidewalks in the corridor during construction. The duration, times, and locations of temporary closures during construction cannot be predicted with certainty.

The following impact from the 2005 Final EIR would apply to the proposed changes to the approved project: TRN (CON)-1 (Long-Term Street or Lane Closure) and TRN (CON)-2 (Long-Term Loss of Parking or Access Essential for Business Operations).

Mitigation: The following mitigation measures identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: TRN (CON)-2a (Prepare Traffic Management Plan), TRN (CON)-2b (Inform Public of Traffic Detours), and TRN (CON)-2c (Inform Public of Transit Service Changes).

During construction, VTA will prepare traffic handling plans, employ traffic flaggers, and endeavor to minimize peak hour delays to all users. However, such measures cannot guarantee that construction activities would not cause temporary significant impacts to passenger vehicles, buses, trucks, bikes, and pedestrians. There is no feasible mitigation for this impact and this impact would be "Significant and Unavoidable." Based on the analysis above, the proposed changes to the approved project would result in new significant impacts or a substantial increase in the severity of previously identified significant

transportation impacts during construction. With inclusion of these mitigation measures, the proposed changes to the approved project would result "Less than Significant" impacts related to parking during construction.

Significant and unavoidable construction impact. No feasible mitigation.

UTILITIES IMPACTS

With inclusion of the mitigation measure identified below, impacts related to utilities during construction of the approved project would be less than significant.

Similar to the approved project, the proposed changes to the approved project would require the relocation of utilities during construction, which requires disruption of service. The proposed changes to the project would require the relocation of a 3-inch high pressure natural gas line under Cunningham Avenue. The construction-related impacts on utilities and the associated mitigation measures are summarized below and discussed in detail in Section 3.14, *Utilities*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant effects or a substantial increase in the severity of previously identified significant impacts related to utilities.

The following impact from the 2005 Final EIR would apply to the proposed changes to the approved project: UTL (CON)-1 (Disrupt a Utility Service for a Period of 24 Hours or More).

Mitigation: The following mitigation measure identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: UTL (CON)-1 (Coordinate with Utility Service Providers Prior to Construction of Light Rail Facilities). Inclusion of this mitigation measure would reduce this impact to "Less than Significant."

Less-than-significant construction impact with mitigation.

VISUAL QUALITY IMPACTS

With inclusion of the mitigation measure identified below, impacts related to visual quality during construction of the approved project would be less than significant.

Similar to the approved project, nighttime construction activities associated with the proposed changes would involve the use of lighting equipment that could cause glare, potentially affecting the residents adjacent to the project corridor.

In addition, construction activities associated with the proposed changes would involve the use of heavy equipment, transport of soils and material, and other visual signs of

construction would occur along the Capitol Expressway corridor and at construction staging areas, similar to the approved project. These activities would be most visible to pedestrians along the corridor and residents of adjacent homes. The construction-related impacts on visual quality and the associated mitigation measures are summarized below and discussed in detail in Section 3.16, *Visual Quality*, of the Second Subsequent IS.

Impact: Based on the analysis above, the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts related to light and glare.

The following impact from the 2005 Final EIR would apply to the proposed changes to the approved project: VQ (CON)-1 (Creation of a New Source of Substantial Light or Glare).

Mitigation: The following mitigation measure identified in the 2005 Final EIR would still apply to the proposed changes to the approved project: VQ (CON)-1 (Direct Lighting toward Construction Areas). Inclusion of this mitigation measure would reduce these impacts to "Less than Significant."

Less-than-significant construction impact with mitigation.

Chapter 6
Other CEQA Considerations

This section presents other environmental issues that are of particular significance to CEQA. It includes a discussion of significant impacts and irreversible environmental changes, cumulative effects, and growth-inducing impacts.

Section 6.1 Significant and Irreversible Environmental Changes

This section supplements Section 5.4 of the 2005 Final EIR, Section 6.1 of the 2007 Final SEIR, and Section 4.1of the 2014 Subsequent IS/MND. It generally evaluates the effect of the project on nonrenewable resources. The proposed changes to the approved project would not affect the conclusions of the 2005 Final EIR and the 2007 Final SEIR on the potential for significant and irreversible environmental changes.

A commitment of a resource is considered irreversible when its use limits the future options for its use. Irreversible changes may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. In accordance with CEQA Guidelines Section 15126.2(c), this section evalutes the effect of the proposed changes to the approved project associated with three distinct categories of significant irreversible changes: changes in land use that would commit future generations to specific uses, consumption of nonrenewable resources, and irreversible changes from environmental actions.

The approved project and the proposed changes to the approved project would commit a similar amount of land resources due to the right-of-way needs within the corridor. The commitment of long-term land resources for the light rail system is consistent with Envision San José 2040 General Plan, as discussed in Section 3.11, *Land Use*, of the Second Subsequent IS. The proposed changes would not commit future generations to or introduce changes in land use that would vary from the existing conditions or planned development by the City of San Jose.

Non-renewable energy is the primary resource that would be irreversibly affected by the proposed changes. As discussed in Section 3.7, *Energy*, of the Second Subsequent IS, it is anticipated that the proposed replacement of the at-grade track alignment with an aerial

guideway would result in slightly less energy consumption compared to the approved project because the elevated guideway would allow light rail vehicles to avoid traffic signal delay that would occur at intersections for an at-grade alignment. By avoiding traffic signal delay, this proposed change to the project would eliminate the need for additional energy required for light rail vehicle accelerations at intersections. Thus, the system would operate more efficiently, which would lead to lower energy consumption. Although the acceleration effect is anticipated to be minor, this proposed change to the approved project would result in lower energy consumption compared to the impacts previously identified and analyzed for the approved project.

Similar to the approved project, the construction and operation of the proposed changes would entail the irreversible and irretrievable commitment of energy and human resources, including labor required for planning, design, construction, and operations.

The use of these resources would be irrecoverable; however, they are not in short supply, and their use would not affect the continued availability and supply of these resources.

Based on the analysis above, no new significant and irreversible effects or a substantial increase in the severity of previously identified significant and irreversible effects would occur.

Section 6.2 Analysis of Cumulative Effects

This section supplements Section 5.5 of the 2005 Final EIR, Section 6.2 of the 2007 Final SEIR, and Section 4.2 of the 2014 Subsequent IS/MND. It generally evaluates the incremental effect of the proposed changes to the approved project on the environment when considered in conjunction with closely related past, present, and reasonably foreseeable future projects.

The 2005 Final EIR and the 2007 Final SEIR identified significant and unavoidable cumulative effects to transportation at the intersections of Capitol Expressway and Story Road (TRN-2a and TRN-8b), Ocala Avenue (TRN-2b and TRN-8c), Capitol Avenue (TRN-8a), and Quimby Road (TRN-8e). According to the transportation analysis in the 2014 Subsequent IS/MND, the approved project would not result in cumulative effects to transportation at the intersections of Capitol Expressway and Story Road (TRN-2a and TRN-8b) and Quimby Road (TRN-8e), and would result in a reduction in the effect to less than significant with mitigation at Capitol Avenue. As discussed in Section 5.1, *Transportation*, of the SEIR-2, the proposed changes to the approved project would result in significant and unavoidable cumulative effects to transportation at the Capitol Expressway and Story Road (TRN-2a and TRN-8b) and Capitol Expressway and Ocala Avenue (TRN-2b and TRN-8c). Due to recent geometric changes at the intersection of Capitol Expressway and Capitol Avenue, the SEIR-2 no longer identifies a less than significant effect with mitigation at this location.

The 2007 Final SEIR also identified new significant and unavoidable impacts to energy and environmental justice. The 2014 Subsequent IS/MND determined that no new

significant cumulative effects or a substantial increase in the severity of previously identified significant cumulative effects would occur to energy and environmental justice.

In the SEIR-2, new significant and unavoidable impacts associated with the proposed changes to the approved project were identified for air quality and climate change (construction) as well as environmental justice. In addition, in the SEIR-2, significant and unavoidable impacts with increased severity associated with the proposed changes to the approved project were identified for transportation (operation and construction) as well as noise and vibration (operation and construction).

A cumulative analysis evaluates the incremental effect of the project on the environment when considered in conjunction with closely related past, present, and reasonably foreseeable future projects. Cumulative impacts related to transportation, noise, and air quality (during operation and construction), are described and evaluated in Section 5.1, *Transportation*; Section 5.3, *Noise and Vibration*; and Section 5.4; *Air Quality and Climate Change*; of the SEIR-2, respectively. Based on the analysis in the sections, the proposed changes to the approved project would disproportionately affect minority and low-income populations. Thus, the proposed changes would have a cumulative impact on environmental justice (EJ-1). This impact is "Significant and Unavoidable."

Section 6.3 Growth-Inducing Impacts

This section supplements Section 5.6 of the 2005 Final EIR, Section 6.3 of the 2007 Final SEIR, and Section 4.3 of the 2014 Subsequent IS/MND. It generally evaluates the potential of the proposed changes to the approved project to directly or indirectly foster economic or population growth, or the construction of new housing.

The 2005 Final EIR concluded that the approved project is generally consistent with projected and planned growth in the region and in the project area. However, the 2005 Final EIR did acknowledge that the approved project could have an indirect growth-inducing effect by accelerating planned growth in a more compact, transit-oriented form, particularly in and around planned light rail stations.

The proposed changes to the approved project would not affect the conclusions of the 2005 Final SEIR, 2007 Final SEIR, or the 2014 Subsequent IS/MND regarding the potential for growth-inducing impacts.

Similar to the approved project, the proposed changes to the approved project are consistent with the project and planned growth in the vicinity of the project corridor. The proposed changes would not directly or indirectly induce economic, population, or housing growth in the surrounding environment. As a result, no new significant growth-inducing impacts or increase in the severity of previously identified significant growth-inducing impacts would occur as a result of the proposed changes to the approved project.

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Chapter 8
List of Preparers

Section 8.1 Lead Agency

Ann Calnan	Environmental Resources Planning Manager
Ven Prasad	Engineering Group Manager/Project Manager
Christina Jaworski	Senior Environmental Planner
Leana Sossikian	Environmental Planner
Hassan Basma	Transportation Engineering Manager
Harry Yip	Assistant Transportation Engineer

Section 8.2 Environmental Consultants

ICF

Mike Davis	Project Director
Jessica Viramontes	Project Manager
Shilpa Trisal	Senior Advisor
Donna McCormick	Senior Advisor
Jessie Shen	Environmental Planner
Jennifer Andersen	Environmental Planner
Lizetta Quick	Environmental Planner
Cory Matsui	Air Quality Specialist
Seth Hartley	Air Quality Specialist
Matt McFalls	Air Quality Specialist
Jason Volk	Noise Specialist
Katrina Sukola	Hydrologist
Laura Rocha	Hydrologist
Ross Wilming	Biologist
Gretchen Hilyard-Boyce	Cultural Resources Specialist
Tait Elder	Cultural Resources Specialist
Andrea Dumovich	Cultural Resources Specialist
Lily Arias	Cultural Resources Specialist
Devan Atteberry	Analyst

Caroline Vurlumis	Analyst
Ariana Marquis	Editor
Anthony Ha	Publications Specialist

ATS Consulting

Christopher Layman	Senior Associate
Roberto Della Neve	Associate

Callander Associates

David Rubin	Project Manager

Hexagon Transportation Consultants, Inc.

Gary Black	President

Section 8.3 General Design Consultant

BKF Engineers

Natalina Bernardi	Principal and Vice President
Luis Garcia	Project Manager/Associate
Chris Adams	Project Manager