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, and would be limited to temporary short-term periods at any one location. 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.
- One complete roadway lane may be closed in each travel direction (northbound and southbound) on Capitol Expressway where the proposed aerial guideway crosses over the roadway.
- 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]

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:

[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, 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.

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 will 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."

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.

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.

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). 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 will 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 September 21, 2018 *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 at residences and 85 Leq at commercial properties at 156 sensitive receiver locations. The location of receivers where pile driving noise impacts are predicted are as follows:

- Fifteen 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.
- Two residential properties located west of the alignment along South Capitol Avenue would experience construction noise impacts.
- Two commercial properties located west of the alignment along South Capitol 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.

[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.

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 dBA, 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 dBA 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 dBA 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.

With inclusion of impact cushions, pile driving would exceed the construction noise impact criteria at 135 sensitive receiver locations. With inclusion of impact cushions and pre-drilling, pile driving would exceed the construction noise impact criteria at 80 sensitive receiver locations. With inclusion of impact cushions and noise shields around the pile equipment, pile driving would exceed the construction noise impact criteria at 2 sensitive receiver locations. VTA is recommending to mitigate this impact with noise cushions and temporary noise barriers. Even with inclusion of these mitigation measures, this impact would be "Significant and Unavoidable" at 2 residences. Based on the analysis above, the proposed changes to the approved project would result in new significant impacts related to pile driving noise impacts during construction.

Significant and unavoidable construction impact, even with mitigation.

Impact: The September 21, 2018 *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 (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 any 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 the +3 VdB safety factor included to estimate construction vibration levels. At the locations with the highest construction vibration levels, structural damage is not anticipated to occur. As a result, VTA is not recommending to use non-impact piling methods at any 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 August 23, 2018 *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.