3.6 Electromagnetic Fields

This section describes the potential for health effects from electromagnetic fields (EMF) associated with the proposed changes to the approved project. EMF are invisible, non-ionizing, low-frequency radiation. Concerns about EMF exposure pertains to its ability to interfere with other electrical systems and have adverse biological effects. Examples of sources of EMF generation include traction power systems and substations, communications, and electrically powered light rail vehicles.

Environmental Setting

The existing EMF conditions and applicable regulations remain unchanged since the 2014 Subsequent IS/MND.

Environmental Impacts and Mitigation

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

The majority of proposed changes to the approved project (including the revisions 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 modification to Story Station pedestrian access) would involve modifications to existing or approved project structures. Thus, these proposed changes would not result in additional sources of EMF generation or exposure to EMF beyond the level of exposure previously identified and analyzed for the approved project. In addition, the proposed relocation of a construction staging area would not result in additional sources of EMF generation. Furthermore, the proposed extension of the aerial guideway to grade-separate the Ocala Avenue and Cunningham Avenue intersections would result in an elevation change associated with the overhead contact system (OCS), which transmits electrical energy to light rail vehicles. In the vicinity of Cunningham Avenue, where PG&E wirelines crossing Capitol Expressway would overlap with the proposed aerial guideway, there may be potential for inductance, which is the property of an electric circulate by which a varying current produces a varying magnetic field that induces voltage in the same circuit or a nearby circuit. However, it is not anticipated that an increase in exposure to EMF would occur beyond what was previously identified and analyzed for the approved project. In addition, the proximity of the OCS, traction power, and control equipment under the floor of a light rail vehicle (sources of EMF generation) to light rail vehicles and stations (where passengers and train operators are located) would not change compared to the approved project. Finally, 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. This change would not substantially increase

the proximity of TSPs (sources of EMF generation) to light rail vehicles and stations. Thus, these proposed changes to the approved project would not increase the level of exposure to EMF previously identified and analyzed for the approved project. Typical EMF levels experienced within a light rail car would remain the same as presented in the 2005 Final EIR, which would be approximately 50 percent below ACGIH's threshold.

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 EMF.

The following impact from the 2005 Final EIR would still apply to the proposed changes to the approved project: EMF-2 (Effects from Direct Current Magnetic Fields that Exceed the Guidelines of ACGIH).

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

Less-than-significant impact. No mitigation required.