

**Technical Memorandum**

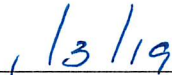
**To:** File

**From:** Johnnie Chamberlin and Laura Prickett

**Date:** November 16, 2018

**Re:** **Santa Cruz Route 1 Tier I/Tier II Project  
Energy Memorandum to File**

**Approved:**   
Lara Bertaina, Senior Environmental Planner  
Caltrans

  
Date Signed

**Purpose and Organization of this Memorandum**

This memorandum documents decisions made by Caltrans District 5 regarding the preparation of Section 2.2.8, Energy, of the Final Environmental Impact Report/Environmental Assessment (EIR/EA) for the Santa Cruz Route 1 Tier I/Tier II Project. The information in this memorandum is presented according to the order in which topics are organized in Section 2.2.8 of the Final EIR/EA.

**Decisions Regarding Section 2.2.8, Energy, of the Final EIR/EA**

Affected Environment

- Operational energy calculations and a quantitative analysis were added. Operational energy consumption was quantified based on the CO2 estimates in the *Addendum to the Air Quality Study Report* (Caltrans 2018).
- The former discussion regarding the level of service in the project area was removed and a table of vehicle miles traveled by alternative was added, consistent with Senate Bill 743.

Environmental Consequences

- The discussions of energy use under the Tier I Build Alternatives and No Build Alternative were updated to include quantitative information derived from the *Addendum to the Air Quality Study Report* and the *2016/2017 Traffic Analysis Update Technical Memorandum* (Caltrans 2017).

Avoidance, Minimization, and/or Mitigation Measures

- Language describing the potential range of effects of the project alternatives was modified to provide a comparison of the quantified projections of energy consumption for the Tier I Build Alternatives and the No Build Alternative.

Comparison of Findings and Conclusions in Section 2.2.8 Energy and the 2011 Technical Memorandum on Energy Impacts

While the overall findings and conclusions presented in Section 2.2.8, Energy are substantially similar to those of the *Technical Memorandum on Energy Impacts* (Caltrans 2011), the following differences resulted from updating the section with a quantitative analysis of energy use derived from data presented in the *Addendum to the Air Quality Study Report* and the *2016/2017 Traffic Analysis Update Technical Memorandum*:

- The impact of the Tier I Corridor HOV Lane Alternative was updated from being “likely to reduce vehicle energy use” to a more quantitative, but similar conclusion of “a reduction in energy use of 7 billion BTUs per year compared to the No Build Alternative.”
- When compared to the No Build Alternative, the impact of the Tier I Corridor TSM Alternative was updated from “a minimal effect in reducing energy consumption” to an increase in “energy consumption by 35 billion BTUs” since it would result in an increase in VMT, but not significantly improve vehicle speeds or congestion.
- The No Build Alternative impacts were updated to reflect the information discussed above. Additionally, the No Build Alternative was updated to show an anticipated improvement in energy consumption compared with existing conditions, due to expected improvements in vehicle fuel economy.

References

California Department of Transportation (Caltrans). *Technical Memorandum on Energy Impacts*, for the Santa Cruz Route 1 HOV Tier I and Tier II Project.

\_\_\_\_\_. 2017. *2016/2017 Traffic Analysis Update Technical Memorandum*, for the Santa Cruz Route 1 HOV Tier I and Tier II Project.

\_\_\_\_\_. 2018. *Addendum to the Air Quality Study Report*, for the Santa Cruz Route 1 HOV Tier I and Tier II Project.