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June 6, 2014

Mr. Richard Corey, Executive Officer
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

RE: SLOCOG 2014 RTP/SCS: Modeling Overview

Mr. Richard Corey:

SLOCOG is submitting our GHG emission modeling methodology to ARB as required by SB 375 and seeking your acceptance of this methodology in advance of the draft SCS completion. We have been working with your staff members, Dennis Wade and Nesamani Kalandiyur, and appreciate their insights and suggestions.

SLOCOG is developing its 2014 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS) for adoption later this calendar year and has developed a 2010 Base Year model. A separate letter has been sent covering the development of the 2005 Baseline Emission Levels. We are in the process of developing future (2020 and 2035) land use scenarios and a fiscally-constrained project list for testing purposes. Final results for future scenarios are not yet available.

Attachment A, the Executive Summary of the SLOCOG Modeling Report for the 2014 RTP/SCS, provides a high-level overview of SLOCOG's modeling tools and their operation to estimate emission levels for the key analysis years. Three modeling tools are used in order to generate and compare results of land use and transportation scenarios.

- CommunityViz: A regional land use model
- TransCAD: A regional traffic model
- EMFAC2011-SG: A regional air quality model

The Regional Land Use Model (RLUM) utilizes detailed land use information and socioeconomic data from the 2010 decennial census to develop a 2010 Base Year, with land use, housing, employment, and population information available or estimated at the parcel and aggregated parcel level.

Housing information is available for 10 housing types, aggregated to 5 housing types; employment information is available for 24 employment industries, aggregated to 9 employment types; household population and group quarters is available at the census block level; and socioeconomic metrics (including persons per household and vacancy rate) are available at the RLUM Analysis Area level, 55 geographic areas that include cities, county communities, and rural areas of the county.

A "generalized land use classification" ("GLUC") system was developed for the region and assigned to properties across all eight jurisdictions and the state university based on general plan or zoning designation.

Land use information is then aggregated to the 1,746 TAZs (Traffic Analysis Zones) level for use in the Regional Traffic Model (RTM).

The Regional Traffic Model (RTM) was validated and calibrated and is much improved over its previous version. The RTM utilizes base and future year information from the RLUM and blends it with the model network (which is comprised of base and future spatial features and attributes). The land use information - in terms of population, households, and employment - serves as key components to "produce" and "attract" trips in the Trip Generation Step.

The RTM "Generates" trips based on the RLUM>RTM Data, "Distributes" trips between Traffic Analysis Zones, splits trips into appropriate "Mode" shares, and then the vehicle trips are "Assigned' through the street network (which is comprised of spatial features and attributes). A feedback loop redistributes trips if levels of congestion are too high.

EMFAC2011-SG is then applied to integrate its default data with that of SLOCOG's RTM information – which is a result based on SLOCOG's RLUM. Present and future information (VMT, fuel standards, vehicle mix and emissions) generate air quality results of ozone precursors and carbon dioxide.

If you have any questions or concerns, please contact James Worthley of my staff at 805-788-2002 or jworthley@slocog.org.

Sincerely,

Ronald L. De Carli
SLOCOG Executive Director
805-781-4219

e-copy:
Dennis Wade
Terry Roberts
Nesamani Kalandiyur