

Impacts of Vehicle Activity on Airborne Particle Deposition to Lake Tahoe

Principal Investigator: Hampden Kuhns

Annual Accomplishments Update (October 1, 2008-September 30, 2009)[†]:

The United States Forest Service (USFS) Pacific Southwest Research Station, as the federal sponsor of this project, established a cooperative agreement with the Desert Research Institute in July. Co-PI Alan Gertler met with stakeholders on July 30, described the project, and sought input from the participants. The investigators have begun compiling available data and summarizing road emission factors. This project will build upon research presented in a new publication (Zhu, D., Kuhns, H., Brown, S., Gillies, J., Etyemezian, V., Gertler, A., et al. (2009). Fugitive Dust Emissions from Paved Road Travel in the Lake Tahoe Basin. *Journal of the Air & Waste Management Association*, 59(10), 1219-1229), which concluded that urban roads with higher traffic volume are the highest emitters of road dust in the basin and should be the target of mitigation to maximize reductions in emissions of fine particulates (≤ 10 microns or “PM10”).

Progress Report: October 1 to December 31, 2009

Work in this quarter has focused on compiling data from relevant studies into the database, and further classifying them to fulfill Objectives 2 and 3. The database is about 85% completed: work from Gillies (2010) and Engelbrecht (2010) is ongoing and will be included in the database upon completion. TRANSCAD data has yet to be included into the database. Additional relevant studies are included in the database as they become available (Dosilager et al. 2009a and 2009b).

In the upcoming quarter, we will focus on adding layers into a GIS database to fulfill Objectives 2, 3 and 4. The road dust emission factors (Kuhns et al., 2004; Gertler et al., 2006; and Kuhns et al., 2007) have been summarized in the database in fulfillment of Objective 2, and vehicle class distribution from Kuhns et al., 2004 has been summarized for Objective 3. However, TRANSCAD data will be included in the database in the upcoming quarter so that appropriate GIS layers can be created.

[†] This document is an intermediate progress report, not a final report; consequently, any results should be considered preliminary and should not be cited. Please contact the principal investigators or the Tahoe SNPLMA Science Program Coordinator if you have questions.