Title

Evaluating Air Quality Benefits of Proposed Network Improvements on Interstate 10 Freeway Coachella Valley

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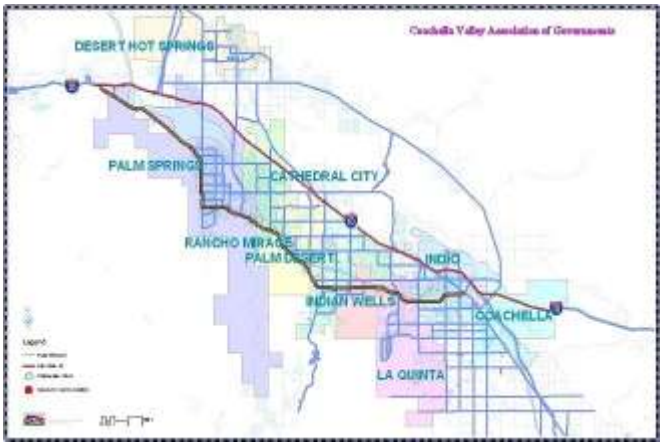
Evaluating Air Quality Benefits of Proposed Network Improvements on Interstate 10 in the Coachella Valley

Coachella Valley is located in the center of Riverside County, California. The population in the area has increased by almost 60% in the last 15 years. This has resulted in significantly increasing travel demand on its transportation network. The Interstate 10 (I-10) freeway is one of the major highways in the area. Basically, it is the main East-West transportation corridor between Southern California, Arizona, New Mexico, and other states to the East. Additionally, this highway is a major commerce route used by trailer trucks.



There are several network improvement projects on I-10 that are currently underway in different phases (planning, designing, and construction). These projects include both improvements to existing interchanges and construction of new interchanges as well as the expansion of freeway lanes at certain locations. These projects are expected to help alleviate traffic congestion on the freeway. In addition, they are expected to help decrease on-road emissions as the congestion is relieved. The objective of this study is to evaluate air quality benefits of the transportation network improvement projects along the I-10 corridor in the Coachella Valley. Using state-of-the-art integrated PARAMICS/CMEM modeling tool, this study simulates the traffic in the corridor with and without the improvements and quantifies the amount of emissions reduced in future years. With traffic conditions being simulated, the CMEM plug-in for PARAMICS was simultaneously executed to calculate emissions from simulated traffic during a 3-hour morning peak period for each scenario. In addition, with a unique capability of CMEM, the study takes into account the fact that future vehicle models will be cleaner as a result of new stricter emission standards. Thus, the quantified emissions reduction is differentiated between reduction as a result of the new interchanges and reduction as a result of a cleaner fleet.