

Caltrans Air Quality Research – Division of Research and Innovation

Overview

The Caltrans Division of Research, Innovation, and System Information (DRISI) (Division of Research and Innovation [DRI] - before 2012) manages most formal research for the Department, and is the official descendant of the research program formerly carried out by the Transportation Laboratory. DRISI's research is usually done through University Transportation Centers, national engagement processes, contracts, and other programs.

Several air quality-related projects have been done since about 2006 through DRISI, with the University of California, Riverside (UCR) and several other groups. The main [DRISI website](#) provides access to status information for ongoing studies and published products from past studies.

Work done by DRISI related to air quality may be sponsored by a variety of sources. However, most recent work has been sponsored by either the Transportation Planning or Environmental Analysis Divisions. Work listed here is primarily from those two sources.

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Selected Air Quality Studies Done Through DRISI

- [Preliminary Investigations](#)
 - [Transportation-Related Use of Health Impact Assessments and Similar Tools](#) - August 2011, 6.0 MB
 - [Quantifying the Effectiveness of Air Quality Mitigation Measures](#) - April 2011, 328 kB
- Recent [Research Reports](#) (since 2007)
 - [Development of an Exposure Model for Diesel Locomotive Emissions Near the Alameda Corridor](#) - February 2008, 5.9 MB
 - [Measuring and Modeling Particulate Matter \(PM\) Emissions from Heavy-Duty Construction Equipment](#) - January 2012, 11.4 MB
 - [Evaluation of the In-Field Emissions Impacts of Biodiesel fuels in Construction Equipment and Applications Under Actual In-use Conditions](#) - March 2010, 546 kB
 - [Achieving California's Land Use and Transportation Greenhouse Gas Emission Targets Under Assembly Bill \(AB\) 32: An Exploration of Potential Policy Processes and Mechanism](#) - June 2009, 22 MB
 - [Evaluating the Emissions from Heavy-Duty Construction Equipment](#) - December 2008, 9.2 MB
- Older Research Reports
 - The Early Years - Translab (before 1997) - see the [Translab](#) page

- Transition Years - 1997-2001
 - No air quality research is listed in the DRISI archive for these years. Air quality work during this period was done directly with the University of California, Davis by the [Division of Environmental Analysis](#).
- The earlier DRISI Era - 2002-2007
 - Minetta Transportation Institute Report No. [07-01: Beyond Uncertainty: Modeling Transportation, Land Use, and Air Quality in Planning](#) - Oct. 2007, 730 kB
 - U.C. Riverside: [Modeling the Effectiveness of High Occupancy Vehicle \(HOV\) Lanes at Improving Air Quality](#) - Dec. 2006 2.51 MB

As with the transition years, most air quality research was done using direct contracts by Transportation Planning and Environmental Analysis. As the UCD-Caltrans Air Quality Project wound down, some air quality work began to be done through the DRISI process yielding the two studies noted above.

- Selected Reports from Other Organizations working with DRISI

Note: [Division of Environmental Analysis \(DEA\)](#) and [Division of Transportation Planning \(DOTP\)](#) had minor on no involvement in these studies, but they are presented for general information about air quality research sponsored by Caltrans. This list of products and research centers is almost certainly not complete.

 - University Transportation Centers
 - Minetta Transportation Institute: [Beyond Uncertainty: Modeling Transportation, Land Use, and Air Quality in Planning](#) - Oct. 2007
 - Minetta Transportation Institute: [Verifying the Accuracy of Land Use Models Used in Transportation and Air Quality Planning: A Case Study in the Sacramento, CA Region](#) - October 2005
 - METRANS: [Freight Shipments, Greenhouse Gases and Polluting Emissions: Implications for California and the U.S.](#) - Dec. 2012
 - METRANS: [The Effects of Distortion on Trajectory of Diesel Particulate Matter \(PM\) from Mobile Sources](#) - April 2012
 - METRANS: [Optimize Pollutant Emissions through Adaptive Highway Management](#) - Sept 2011
 - METRANS: [Measurement and Toxicological Assessment of Population Exposures to Airborne Particulate Matter \(PM\) in Subways and Light Rail Trains](#) - August 2011
 - METRANS: [Toxicological Assessment of Particulate Emissions From the Exhaust of Old and New Model Heavy- and Light-Duty Vehicles](#) - June 2011
 - METRANS: [Development of a Portable Remote Sensing System for Measurement of Diesel Emissions from Passing Diesel Trucks](#) - April 2011
 - METRANS: [The Impact of Truck Repositioning on Congestion and Pollution in the LA Basin](#) - March 2011
 - METRANS: [Assessment of Ring Injectors for Reducing Nitrogen Oxides \(NO_x\) and PM Emissions of Diesel Engines](#) - August 2010

- METRANS: [Combustion and Emission Characteristics of Biofuels Used for Transportation](#) - December 2009
- METRANS: [Transient Plasma Ignition for Clean, Fuel-Efficient Transportation Vehicle Engines](#) - August 2008
- METRANS: [Reducing Diesel NO_x and PM Emissions of Diesel Buses and Trucks](#) - July 2008
- METRANS: [Reducing Pollutants from Mobile Sources](#) - June 2004