

# Research Proposals

December 6, 2012

California Environmental Protection Agency

 **Air Resources Board**

# Overview

- Nine proposals developed in response to 2012-2013 Annual Research Plan
- Reviewed by ARB's Research Screening Committee
- Discussed with other funding agencies to avoid duplication and identify co-funding

# Program Areas

- State Implementation Plans
- Diesel
- Passenger Vehicles
- Sustainable Communities

# Improving Chemical Mechanisms in Air Quality Models

- Improve model representation of ozone and PM formation
- Improve prediction of secondary organic PM
- Assess impact of nitrogen and carbon chemistry on secondary PM formation



Contractor: University of California, Davis

Funding: \$450,024

# Real-World Emissions from On-Road Heavy-Duty Trucks

- Quantify real-world benefits of the Truck and Bus Rule
- Assess durability of exhaust aftertreatment over time



Contractor: University of California, Berkeley

Funding: \$450,000

# New Car Buyers' Valuation of Zero-Emission Vehicles

- Identify obstacles and motivations for the purchase of ZEVs
- Provide insight into policies, incentives, outreach to encourage ZEV purchases
- \$325,000 in co-funding from SCAQMD and other states



Contractor: University of California, Davis

Funding: \$575,000

# Advanced Plug-in Electric Vehicle Travel and Charging Behavior



Chevy Volt Dash Display

- Quantify household-level emissions benefits of EVs
- Improve emissions estimates for light-duty fleet

Contractor: University of California, Davis

Funding: \$650,000

# Improving Measurement of PM Emissions from Advanced Clean Cars

- Demonstrate that PM can be reliably measured at 1 milligram per mile level
- Augments \$336,558 funding from CRC



Augment Coordinating Research Council Project  
Funding: \$100,000

# Real-World Emissions from On-Road Passenger Cars



- Quantify benefits of ARB's Low Emission Vehicle Program
- Characterize contribution of high-emitters

Contractor: University of Denver

Funding: \$75,000

# Urban Designs and Traffic Management Strategies that Reduce Air Pollution Exposure



- Quantify air pollution exposures in various Los Angeles street environments
- Inform community design to minimize air pollution exposure

Contractor: University of California, Los Angeles

Funding: \$388,001

# Evaluating Benefits for New Light Rail Transit Lines



- Evaluate travel demand impact of a new light rail line in Los Angeles
- Improve estimates of emission impacts of sustainable communities strategies
- Leverages \$177,000 in other funding to study the Expo Line

Contractor: University of California, Irvine

Funding: \$200,000

# Life Cycle Assessment and Co-Benefits of Cool Pavements



- Determine life cycle climate and air quality impacts of traditional and cool pavements
- Resulting tool will allow decision-makers to “model” local impacts of cool pavements
- \$100,000 co-funding from CalTrans

Contractor: Lawrence Berkeley National Laboratory

Funding: \$550,000

# Co-Funding and Coordination

- Nearly \$1 million in co-funding and prior research
- More than \$5 million of research by others (e.g., NASA, NIST, U.S. EPA, CRC) directly supports ARB needs
- Coordinating with other State Agencies

# Recommended Board Action

Approve 9 research  
proposals