BOARD MEETING DATE: March 6, 2020 AGENDA NO. 5

PROPOSAL: Execute Contract to Conduct Airborne Measurements of NOx Emissions in the South Coast Air Basin

SYNOPSIS: Emission inventories are a critical component of South Coast AQMD's air quality modeling and control strategy development. The University of California, Berkeley (UC Berkeley) has proposed to conduct airborne flux measurements by aircraft, offering a robust method to evaluate NOx emission inventories. CARB has committed $700,000 for the parallel measurement of VOC fluxes during this field effort. This action is to execute a contract with the UC Berkeley to conduct airborne measurements of NOx emissions in the South Coast Air Basin at a cost not to exceed $300,000 from the Clean Fuels Program Fund (31).

COMMITTEE: Technology, February 21, 2020; Less than a quorum was present; a concurrence of the staff recommendation will be forwarded to the Board

RECOMMENDED ACTION:
Authorize the Chairman to execute a contract with The Regents of the University of California, on behalf of its Berkeley Campus, to conduct airborne measurements of NOx emissions in the South Coast Air Basin in an amount not to exceed $300,000 from the Clean Fuels Program Fund (31).

Wayne Nastri
Executive Officer

PF:SR:ZP:SML

Background

Emission inventories are critical components of South Coast AQMD's air quality modeling and control strategy development to improve air quality in the South Coast Air Basin (Basin). Volatile organic compounds (VOCs), nitrogen oxides (NOx) and diesel particulate matter (PM) from various sources such as area/consumer products, mobile sources, diesel combustion sources and vegetation contribute to ozone and PM pollution.

During development of the 2016 AQMP, uncertainties in emissions inventory and air quality modeling were one of the main comments raised by stakeholders. While the emissions inventory and regional modeling employed in the 2016 AQMP were state-of-the science, emissions inventories require constant improvement and updates. The University of California, Berkeley (UC Berkeley) has proposed to conduct airborne measurements by aircraft, offering a robust method to evaluate these inventories. CARB has committed $700,000 for the parallel measurement of VOC emissions during this field effort.

Proposal
UC Berkeley will conduct airborne NOx and VOC emissions measurements over the Basin in the summer of 2021 to evaluate NOx emissions and over 100 VOC species during approximately 40 flight hours. The instrumentation on-board the Naval Postgraduate School's Twin Otter aircraft represents a substantial improvement compared to previous airborne emission measurements conducted over California. UC Berkeley will plan the flights, perform the measurements, analyze the data and prepare a final report. UC Berkeley will work in close collaboration with CARB and South Coast AQMD staff during the entire process to ensure the data collected is suitable for the evaluation of emission inventories.

Sole Source Justification
Section VIII.B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for a sole source award is made under provisions B.2.c. and B.2.d. Specifically, provision B.2.c.(1): The desired services are available from only the sole-source based upon the unique experience and capabilities of the proposed contractor or contractor team. And provision B.2.d.(8): Other circumstances exist which in the determination of the Executive Officer requirement such waiver in the best interests of the AQMD, including research and development efforts with educational institutions and nonprofit organizations. Dr. Cohen and his team at UC Berkeley possess the unique knowledge and instrumental capabilities needed for this project. Dr. Cohen's group has published extensively in the field of NOx observations and associated air quality impacts and has experience conducting similar airborne measurements elsewhere.

Benefits to South Coast AQMD
This proposed project will provide a unique set of NOx and VOC data that can improve the emissions inventories to be used in the upcoming 2022 AQMP. The data will assist in understanding of the full photochemical spectrum involved in ozone production in the Basin. Additionally, the knowledge to be acquired through this project will assist in identifying pathways in the formation of VOC and NOx and the benefits of using clean fuels to lower these emissions. Emissions studies are included in the *Technology Advancement Office Clean Fuels Program 2019 Plan Update* under the category of "Fuel/Emissions Studies."

Resource Impacts
The contract with UC Berkeley will not exceed $300,000 from the Clean Fuels Program Fund (31).

Sufficient funds are available in the Clean Fuels Program Fund (31), which was established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.