

BOARD MEETING DATE: October 4, 2019

AGENDA NO. 7

PROPOSAL: Transfer and Appropriate Funds and Execute Purchase Orders and Contracts for Air Monitoring Programs

SYNOPSIS: In October 2016, the Board recognized revenue from the U.S. EPA through its Science to Achieve Results (STAR) research grant program to engage, educate and empower California communities on the use and application of low-cost air monitoring sensors. In January, June and December 2018, the Board recognized revenue from CARB to implement AB 617. These actions are to transfer funds between Major Objects for the STAR program, appropriate funds to reallocate expenditures for the AB 617 program, and to execute purchase orders and contracts for equipment and services for the AB 617 program.

COMMITTEE: Administrative, September 13, 2019; Recommended for Approval

RECOMMENDED ACTIONS:

1. Transfer up to \$71,800 from the General Fund Services & Supplies Major Object to the Capital Outlays Major Object in Science & Technology Advancement's FY 2019-20 Budget (Org 43) to reclassify expenditures for the U.S. EPA STAR Program.
2. Appropriate funds up to \$240,000 from the General Fund Undesignated (Unassigned) Fund Balance into Science & Technology Advancement's FYs 2019-20 and/or 2020-21 Budgets, Capital Outlays and Services and Supplies Major Objects, for AB 617 expenditures as set forth in Table 1 to reallocate expenditures from a previous Board action.
3. Authorize the Procurement Manager, in accordance with South Coast AQMD Procurement Policy and Procedure, to execute the following:
 - a. A purchase order in an amount up to \$105,000 for up to seven microAeth® Model MA350 black carbon analyzers from AethLabs, as listed in Table 2; and
 - b. A purchase order in an amount up to \$85,000 for replacement parts from Aeroqual, Ltd. (New Zealand) to upgrade up to 110 Aeroqual AQY sensors, as listed in Table 3.

4. Authorize the Executive Officer to execute the following, as listed in Table 4:
 - a. A contract with Aeroqual, Inc., (United States) in an amount up to \$50,000 to develop and validate calibration procedures for low-cost sensor networks to be deployed in AB 617 communities; and
 - b. A contract with RJ Lee Group, Inc., in an amount up to \$900,000 to develop an environmental chamber for initiating a sensor performance verification program and develop a pilot program for a sensor library for communities.

Wayne Natri
Executive Officer

MMM:JCL:AP:VP:PP

Background

Science to Achieve Results (STAR) Program

On June 9, 2014, U.S. EPA, as part of its STAR Program, solicited applications proposing research on empowering communities and individuals to take action to avoid air pollution exposure, using low-cost portable air pollution sensors. South Coast AQMD's proposal to provide California communities with the knowledge necessary to appropriately select, use and maintain sensors and interpret sensor data was awarded one of these research grants. On October 7, 2016, the Board recognized and appropriated \$749,820 from the U.S. EPA for this study. As part of this program, the South Coast AQMD contracted with Mazama Science for \$71,800 to develop a suite of open-source tools to support data access, data analysis and data visualization of air quality information by communities and citizen scientists. Upon review, it was determined that this software contract for \$71,800 needs to be re-classified as a capital outlay rather than a professional services contract.

AB 617 Program

Staff has also been collaborating with Aeroqual to deploy 110 AQY sensors for measuring PM2.5, ozone and NO2 in Southern California communities and developing algorithms and calibration procedures to ensure the reliability of the data from the sensor network. As part of this collaboration, which has already resulted in a journal publication, Aeroqual has agreed to provide all 110 AQY sensors to continue this work and conduct community monitoring. After almost two years of operation, critical parts and components of these sensors need to be replaced and upgraded before these sensors can be used to conduct monitoring in AB 617 communities.

In January, June and December 2018, the Board recognized revenue from CARB for AB 617 expenditures and approved adding new positions and funding allocations for contracts, equipment purchases (capital outlays) and other services and supplies for AB 617 work. In July 2018, the Board approved a list of four communities for CARB's

consideration for first-year AB 617 communities. In September 2018, the CARB Board selected 10 communities statewide for emissions monitoring and/or community emissions reduction plans, including three communities for the South Coast Air Basin (Basin): Wilmington/West Long Beach/Carson; East Los Angeles/Boyle Heights/West Commerce; and San Bernardino/Muscoy. All three communities have Community Air Monitoring Plans and draft Community Emission Reduction Plans (CAMPs and CERPs, respectively). Community Steering Committees have been formed for each area, and South Coast AQMD has been working with these Community Steering Committees to gather input and feedback for developing CAMPs and CERPs for each community. The December 2018 Board action included approval to purchase initial monitoring equipment using first-year AB 617 funding including three aethalometers. Community air monitoring began before the July 1, 2019 implementation deadline.

AQ-SPEC

Since 2014, when AQ-SPEC was created, staff has been conducting field and laboratory evaluation of commercially available low-cost sensors using state-of-the-art equipment including a characterization chamber. In addition, staff has begun deploying sensor networks in Southern California communities and has developed calibration procedures to improve the quality of the collected sensor data. In December 2018, the Board appropriated \$450,000 for development of the first half of an environmental chamber for initiating a sensor performance verification program and developing a pilot program for a sensor library for communities. In April 2019, the Board appropriated an additional \$450,000 for the remaining estimated costs to develop the chamber system and approved release of RFP #P2019-20 to solicit proposals for the chamber development, but the Board letter inadvertently did not seek authority to execute a contract up to the revised amount of \$900,000.

Outreach

AQ-SPEC

In accordance with South Coast AQMD Procurement Policy and Procedure, a public notice advertising RFP #P2019-20 for the development of a fully-integrated characterization chamber system for testing air monitoring sensor devices and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the Basin.

Additionally, potential bidders may have been notified utilizing South Coast AQMD's own electronic listing of certified minority vendors. Notice of the RFP was emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associates, and placed on the Internet at South Coast AQMD's website (<http://www.aqmd.gov>).

Bid Evaluation

AQ-SPEC

Both RJ Lee Group, Inc., and Ambilabs LLC submitted proposals for the development of a fully-integrated characterization chamber system for testing air monitoring sensor devices by the May 8, 2019 closing date of the RFP (#P2019-20). Both proposals were evaluated but only the RJ Lee Group, Inc.’s proposal met the minimum technical score of 64 points and was deemed to be qualified. RJ Lee Group, Inc. offered the most favored customer pricing status for which they were awarded two additional points. The evaluation scores are shown below:

Proposer	Technical Score	Cost Score	Additional Points	Total Score
Ambilabs LLC	30.9	N/A	N/A	N/A
RJ Lee Group	64.3	20	2.0	86.3

Panel Composition

AQ-SPEC

The evaluation panel consisted of three South Coast AQMD staff: one Program Supervisor, one Air Quality Specialist and one Air Quality Instrument Specialist II. Of the three panelists, one is Caucasian and two Asian-Pacific Islanders; two are male and one is female.

Proposal

STAR Program

This action is to transfer up to \$71,800 from the General Fund Services & Supplies Major Object to the Capital Outlays Major Object in Science & Technology Advancement’s FY 2019-20 Budget (Org 43) to reclassify the Mazama Science contract as an intangible asset (capital outlay) for the U.S. EPA STAR Program.

AB 617 Program

These actions are to appropriate funds up to \$240,000 into Science & Technology Advancement’s FYs 2019-20 and/or 2020-21 Budgets, Capital Outlays and Services and Supplies Major Objects, to reallocate estimated expenditures for the AB 617 program from the December 2018 Board letter (see Table 1). These allocations are further described below.

Purchase Orders

Based on an assessment of the AB 617 program, including input from multiple Community Steering Committee meetings, staff proposes to use \$105,000 to purchase up to seven microAeth® Model MA350 black carbon analyzers instead of three aethalometers. The black carbon analyzers that will be used are designed with a weather-proof enclosure, cellular connectivity and batteries for outdoor deployments, providing a more versatile tool for fence-line monitoring. Staff also proposes to allocate \$85,000 to upgrade South Coast AQMD's Aeroqual AQY sensor network. The optical and metal oxide sensors that comprise the most critical part of these low-cost devices have a limited lifetime, and the proposed upgrade, which also includes other parts and components, is necessary before this sensor network can be used to conduct further monitoring in Southern California communities.

This action is to authorize the Procurement Manager, in accordance with South Coast AQMD Procurement Policy and Procedure, to execute two sole source purchase orders for: 1) up to seven microAeth® MA350 black carbon analyzers, manufactured by AethLabs, in an amount not to exceed \$105,000 for the purpose of fence-line and community air monitoring within AB 617 communities; and 2) replacement parts from Aeroqual, Ltd., in an amount not to exceed \$85,000 to upgrade South Coast AQMD's network of 110 Aeroqual AQY sensors. This measurement equipment will be used for AB 617 implementation and is only available from single manufacturers or vendors.

Contracts

Aeroqual, Inc., has been collaborating with staff on developing calibration procedures for a network of 110 AQY sensors in the Basin. To develop and validate these calibration methods, there is a need to execute a contract with Aeroqual, Inc. This work and the data that will result from the deployment of these AQY sensors will be used to generate high-resolution air quality maps in AB 617 communities. This action is to authorize the Executive Officer to execute a sole source contract with Aeroqual, Inc., for up to \$50,000 for low-cost sensor network development and deployment in AB 617 communities.

AQ-SPEC

This action is to authorize the Executive Officer to execute a contract with RJ Lee Group, Inc., for up to \$900,000 to develop a characterization chamber system for testing air monitoring sensor devices to initiate a sensor performance verification program and sensor loaner library for communities.

Sole Source Justification

Section VIII.B.2 of the Procurement Policy and Procedure identifies provisions under which sole source awards can be made. The requests for sole source awards for both the purchase orders and contract are made under provision VIII.B.2.c.(1), the desired services are available from only the sole source based on the unique experience and

capabilities of the proposed contractor or contractor team; and (2) the project involves the use of proprietary technology.

AethLabs is currently the only manufacturer of a self-contained instrument with built-in pump, data storage and battery for continuous measurement of black carbon. This is the only commercially available solution for conducting black carbon measurements on street poles and along fencelines with low maintenance and infrequent site visits.

Aeroqual, Ltd., is currently the only manufacturer of AQY sensors for PM2.5, ozone and NO2 monitoring, and replacement parts from these devices can only be purchased from this vendor.

The calibration procedures and methods Aeroqual and staff have been working on involve the use of proprietary algorithms and other intellectual property. Aeroqual, Inc., is the only contractor capable of delivering very high quality PM2.5, ozone, NO2, temperature and relative humidity sensor data using a scalable stationary platform that combines leading-edge sensor technology and machine learning.

Benefits to South Coast AQMD

The contracts and equipment described in this Board letter will allow South Coast AQMD to fulfill the goals and objectives of the U.S. EPA STAR Program and the legislative directives of AB 617, resulting in benefits to environmental justice communities and all residents in the Basin. The development of an open source data analysis for sensors, sensor network for community monitoring, calibration procedures for sensor networks, and a performance verification and sensor library program will provide new tools, resources and information for stakeholders. This will also strengthen South Coast AQMD's role as the leading agency in the area of air quality sensor development and applications.

Resource Impacts

Funding from U.S. EPA and CARB will provide sufficient resources to implement the STAR and AB 617 programs.

Attachments

Table 1 - Proposed AB 617 Reallocations from the December 2018 Board Letter (# 10)

Table 2 - FYs 2019-20 and/or 2020-21 Proposed Capital Outlay Expenditures for AB 617

Table 3 - FYs 2019-20 and/or 2020-21 Proposed Services and Supplies Expenditures for AB 617

Table 4 - FYs 2019-20 and/or 2020-21 Proposed Contracts for AB 617

Table 1
Proposed AB 617 Reallocations from the December 2018 Board Letter #10

December 2018 Board Letter #10	Estimated Amount	Proposal	Estimated Amount
Table 7 - Capital Outlays Aethalometers (black carbon analyzers) (Qty 3)	(\$105,000)	Table 2 - AethLab microAeth® MA350 (black carbon analyzers) (Up to 7)	\$105,000
Table 8 - Services & Supplies Miscellaneous*	(85,000)	Table 3 - Aeroqual, Ltd. Replacements parts for AQY sensors (up to 110)	85,000
Table 8 - Services & Supplies Miscellaneous*	(50,000)	Table 4 - Aeroqual, Inc. Develop and validate calibration procedures for low-cost sensors	50,000
Total	(\$240,000)		\$240,000

*Total amount for the Miscellaneous Account in the December 2018 Board letter is \$215,000.

Table 2
FYs 2019-20 and/or 2020-21 Proposed Capital Outlay Expenditures for AB 617

Description	Org Unit	Account	Quantity	Estimated Amount	Contracting Method
AethLab microAeth® MA350 black carbon analyzers	STA	77000	Up to 7	\$105,000	Sole Source
Total				\$105,000	

Note: Listed expenditures may be appropriated in the Services and Supplies Major Object as warranted. Also, quantities may be adjusted as community monitoring needs are identified (not to exceed total estimated amount).

Table 3
FYs 2019-20 and/or 2020-21 Proposed Services and Supplies
Expenditures for AB 617

Description	Org Unit	Account	Quantity	Estimated Amount	Contracting Method
Aeroqual, Ltd. Replacements parts for AQY sensors	STA	68300	Up to 110	\$85,000	Sole Source
Total				\$85,000	

Table 4
FYs 2019-20 and/or 2020-21 Proposed Contracts for AB 617

Contractor	Description	Org Unit	Account	Estimated Amount
Aeroqual, Inc.	Develop and validate calibration procedures for low-cost sensors	STA	67450	\$50,000
RJ Lee Group, Inc.	Environmental Chamber	STA	77000	\$900,000*
			Total	Up to \$950,000

*Estimated amount may be appropriated in the Services & Supplies Major Object as specific needs are identified.