

BOARD MEETING DATE: July 7, 2017

AGENDA NO. 9

**PROPOSAL:** Transfer Funds, Appropriate Funding, Execute Purchase Orders, Execute Contract and Authorize Release of RFQs for the Fifth Multiple Air Toxics Exposure Study

**SYNOPSIS:** Since 1987, SCAQMD has conducted four Multiple Air Toxics Exposure Studies to evaluate air toxics health risks in the South Coast Air District. This project is to conduct the fifth Multiple Air Toxics Exposure Study (MATES V) beginning January 2018 to monitor air toxics for a one-year period, conduct air toxics modeling, and quantify the health impacts. These actions are to: 1) transfer \$1,815,800 from the Clean Fuels Program Fund (31) to the General Fund (01) for the MATES V program; 2) appropriate funding to the Science & Technology Advancement and the Planning, Rule Development, and Area Sources budgets over FYs 2017-18, 2018-19, and 2019-20 on an as-needed basis; 3) authorize sole source purchase orders for air toxics monitoring equipment; 4) authorize a sole source contract for meteorological network support services; and 5) authorize RFQs and purchase orders for the purchase of air toxics samplers, additional laboratory and ambient monitoring instruments, and a vehicle. Additional expenditures include the purchase of laboratory and field supplies, adding temporary staff services to support the additional workload, contract costs for support for study design, data analysis and review, and mileage and administrative expenses related to the Technical Advisory Group.

**COMMITTEE:** Administrative, June 9, 2017; Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Transfer up to \$1,815,800 from the Clean Fuels Program Fund (31) to the General Fund (01) on an as-needed basis over FYs 2017-18, 2018-19, and 2019-20 to support the MATES V program;

2. Appropriate up to \$1,815,800 from the Undesignated Fund Balance to the Science & Technology Advancement and the Planning, Rule Development, and Area Sources budgets to procure additional resources needed to complete the MATES V Study, which are shown in Attachment 1, on an as-needed basis at any time over the period of FY 2017-18 through FY 2019-20;
3. Authorize the Procurement Manager to issue sole source purchase orders with the following entities to be funded from Science and Technology Advancement's FY 2017-18 budget:
  - a. TSI, Inc. for an amount not to exceed \$168,000 for the purchase of six (6) Condensation Particle Counters;
  - b. Magee Scientific for an amount not to exceed \$211,200 for the purchase of eleven (11) Aethalometers;
4. Authorize the Executive Officer to execute a sole source contract with Sonoma Technology, Inc. in an amount not to exceed \$60,000 for the MATES V meteorological upper air station technical support;
5. Authorize the Procurement Manager, in accordance with SCAQMD Procurement Policy and Procedure, to:
  - a. Issue solicitations and purchase orders in an amount not to exceed \$294,400 for Air Toxics Samplers as set forth in the Attachment; and
  - b. Issue solicitations and purchase orders in an amount not to exceed \$297,000 for laboratory equipment as set forth in the Attachment; and
  - c. Issue solicitation and purchase order in an amount not to exceed \$50,000 for the purchase of a vehicle to help with deployment of instruments as set forth in the Attachment.

Wayne Nastri  
Executive Officer

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### **Background**

The SCAQMD conducted the first Multiple Air Toxics Exposure Study (MATES) in 1987. This groundbreaking study was the first to attempt to characterize the concentration of airborne toxic compounds within the South Coast Air Basin and to determine the Basin-wide cancer risks associated with major airborne carcinogens.

The SCAQMD conducted a second air toxics exposure study (MATES II) in 1998-1999 that expanded on the scope of the first study. MATES II was another groundbreaking comprehensive study which built upon and expanded the knowledge gained in MATES. Among the lessons learned from MATES II was the extent of the impact of diesel emissions and the downward trend of certain air toxic contaminants common with the

first MATES. Additionally, as part of MATES II, air toxics measurements were conducted in specific areas in close proximity to industrial and transportation sources.

The MATES III Study was conducted in 2004-2006 and expanded measurements to include naphthalene and other polycyclic aromatic hydrocarbons, as well as a chemical speciation of fine particulate matter to aid in identifying the sources of PM<sub>2.5</sub>, including diesel combustion. MATES III ambient measurements found that non-diesel air toxics risk had declined about 50%, but the average levels of diesel particulate matter were similar, when compared to MATES II. From the modeling exposure analysis, the study found that, on average, risk from air toxics was lower in several areas, but in other locations, including near the ports and near transportation corridors in the eastern and northern parts of the Basin, air toxics risks had increased.

The MATES IV Study was conducted in 2012-2013 and was the first of the MATES studies to include comprehensive continuous ultrafine particle (UFP) and black carbon (BC) measurements. The MATES IV study showed that the average cancer risk from air toxics in the Basin had decreased by more than 50% since MATES III. The study also showed that diesel exhaust emissions had declined by about 70%, but diesel particulate matter continued to account for about two-thirds of the cancer risk from air toxics. Based on the modeling analysis, the areas near the ports and major transportation corridors had the highest air toxic cancer risks. The MATES IV study also implemented the updated risk assessment guidelines issued by the California Office of Environmental Health Hazard Assessment (OEHHA), which accounted for the increased health risks for children exposed to air toxics. In addition, the MATES IV study included local-scale studies of diesel particulate matter and UFPs near the LAX airport, the San Bernardino Railyard, and a community in Mira Loma near the CA-60 freeway. The UFP measurements at the 10 fixed sites showed that regional ultrafine levels were higher in the western areas of the Basin with greater population and traffic density.

As part of the overall effort to reduce air toxics exposure in the South Coast Air Basin, SCAQMD will be conducting the MATES V Program beginning in January 2018. MATES V field measurements will be conducted over a one-year period at ten fixed sites (the same sites selected for MATES III and IV) to assess trends in air toxics levels. MATES V will also include measurements of UFP and BC concentrations, which can be compared to the 2012-2013 UFP and BC levels measured in MATES IV.

Similar to previous MATES studies, SCAQMD staff will convene a Technical Advisory Group to provide technical guidance in the design of the study. The group will include experts from academia, environmental groups, industry, and public agencies.

In addition to the fixed site monitoring, MATES V will include local-scale studies in areas near oil refineries, to assess the air toxics exposures and associated health risks in

these communities. The current proposed budget does not include resources needed for these local-scale studies. The Technical Advisory Group will assist with the overall design of these local-scale studies, and a scope and budget for this part of the MATES V program will be presented to the Board later this year.

Additionally, SCAQMD staff will work with the Technical Advisory Group to discuss options for enhanced monitoring and/or modeling efforts as part of MATES V, with a focus on providing more detailed air toxics exposure information to people living in environmental justice communities. The current proposed budget does not include resources needed for these enhanced monitoring and modeling efforts, but a scope and budget for this part of the MATES V program, along with the focused refinery monitoring, will be presented to the Board later this year.

SCAQMD already has some of the monitoring and laboratory equipment needed for MATES V. However, additional instrumentation and replacement, repair, and calibration of some older equipment is required to complete all of the proposed measurements. Laboratory and field supplies are also needed to conduct the MATES V program. In addition to equipment and supply needs, temporary staffing is necessary to meet the additional workload associated with MATES V, as well as contractor support services for the maintenance of the upper air meteorological stations, and for support for study design, data analysis and review. Additional costs include mileage for travel to all the monitoring sites to install and maintain equipment, as well as administrative costs related to convening the Technical Advisory Group meetings (including travel costs for Advisory Group members and web-meeting technology services).

### **Proposal**

To obtain the necessary equipment and supplies, and to retain temporary staff to conduct the MATES V program, this action is to transfer and appropriate up to \$1,815,800 to the Science & Technology Advancement and the Planning, Rule Development, and Area Sources budgets over FYs 2017-18, 2018-19, and 2019-20 on an as-needed basis. A list of resource needs is detailed in the Attachment, as well as the expected time frame for the expenditures. Individual contracts will be brought to the Board as needed, pursuant to the Procurement Policy.

### **Proposed Sole Source Purchase Orders**

#### *Condensation Particle Counters*

The MATES V study will also include the measurement of UFPs, which will allow for an evaluation of trends in UFP levels since MATES IV. Since the majority of the number of particles in the atmosphere is in the ultrafine mode, counting the number of atmospheric particles provides a good indicator of ultrafine particle levels. The most common method for determining ambient particle number concentrations is to use Condensation Particle Counters (CPCs). The SCAQMD currently owns several CPCs, but most of these units have been deployed at existing near-road monitoring stations or

are in need of replacement or rebuilding. Therefore, this action is to authorize the Procurement Manager to issue a sole source purchase order with TSI, Inc. for an amount not to exceed \$168,000 for the purchase of six (6) CPCs.

#### *Aethalometers*

Aethalometers are monitors that measure BC, which can be used to help estimate diesel particulate matter. The SCAQMD owns several aethalometers already, but most are outdated and need to be replaced. In addition a more accurate and reliable version of Magee Scientific's Aethalometer has been released since MATES IV. Considering that BC may be used to help estimate levels of diesel particulate matter (the major contributor to air toxics risk in the Basin) staff proposes to purchase a new set of Aethalometers for the planned MATES V. Therefore, this action is to authorize the Procurement Manager to issue a sole source purchase order with Magee Scientific for an amount not exceed \$211,200 for the purchase of eleven (11) Aethalometers, including trading in nine (9) older units to help offset the cost.

#### Proposed Sole Source Contract

##### *Technical Support – Upper Air Meteorological Stations*

MATES V air pollution modeling and data analysis utilizes meteorology data from a network of stations that provide vertical profiles of wind and temperature of the lower atmosphere. Staff proposes a sole source contract with Sonoma Technology, Inc. (STI) to provide operational support for the maintenance of the upper air measurement stations during calendar year 2018. The stations are located at Los Angeles International Airport (LAX) and Whiteman Airport (Pacoima) in Los Angeles County, Ontario International Airport in San Bernardino County, Moreno Valley in Riverside County, and Irvine in Orange County. While these services have previously been funded through the U.S. EPA Section 105 Grant for the PAMS program for many years, anticipated reductions in this U.S. EPA funding necessitate seeking alternate funding to continue field and data management support for the MATES V study. For the past 8 years, STI has been the contractor responsible for the field and data management of the SCAQMD upper air program through two multi-year, competitive-bid contracts at an annual cost of \$100,000, funded by the U.S. EPA PAMS Section 105 Grant. By continuing to work with the past contractor, the existing contractor expertise, data management system, and telecommunications network can be leveraged to reduce costs. This action is to authorize the Executive Officer to execute a sole source contract with STI for an amount not to exceed \$60,000 to provide one year of technical support services.

#### Proposed Purchase through the RFQ Process

##### *Air Toxics Samplers*

The current inventory of Air Toxics Samplers for measuring Volatile Organic Compounds (VOCs), carbonyls, and metals dates back to the MATES II and MATES III Studies, and many units are in need of replacement. While some of the samplers are

still functioning, many are being used on an ongoing basis in existing air monitoring programs such as U.S. EPA's National Air Toxics Trends Stations (NATTS) program, and for other purposes, such as the sampling for hexavalent chromium and other metals in the City of Paramount. Since the previous MATES studies, some new models and manufacturers have become available which have many updated features such as combination units that can sample both air toxics gases and particles simultaneously. Therefore, this action is to authorize the Procurement Manager to release an RFQ and issue purchase orders for Air Toxics Samplers to measure VOCs, carbonyls, and metals at a cost not to exceed \$294,400.

#### *Gas ChromatographMass Spectrometer*

The laboratory currently has two gas chromatograph mass spectrometers (GC-MS) instruments that are used for the measurement of gaseous airborne toxics. Both of these instruments are over ten years old and their reliability has been steadily declining. To ensure timely analysis of gaseous toxic samples collected in MATES V it is necessary to replace one of the GC-MS systems. This action is to authorize the Procurement Manager to release an RFQ and issue purchase orders for a GC-MS system at a cost not to exceed \$225,000.

#### *Gas Dilution Systems*

Two gas dilution systems are needed for the preparation of lower concentration standards to support the analysis of air toxics gases. Each toxic compound analyzed on the GC-MS requires calibration against standards at varying concentrations which must be prepared using gas dilution systems. Currently the laboratory does not have gas dilution systems to prepare calibration standards from multiple standards. This action is to authorize the Procurement Manager to release an RFQ and issue purchase orders for two gas dilution systems at a cost not to exceed \$72,000.

#### *Vehicle*

There is a need to replace at least one of the older high-mileage vehicles. This will help with the installation of air monitoring equipment at all ten (10) sites in preparation for MATES V. This additional vehicle is also necessary to perform routine and non-routine calibration, maintenance and repair of air monitoring equipment throughout this study. Thus, this action is to authorize the Procurement Manager to release an RFQ and issue a purchase order for a vehicle (truck or van) to support field activities related to MATES V at a cost not to exceed \$50,000.

#### **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFQs and inviting bids will be 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 South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFQ will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations and placed on the internet at SCAQMD's website (<http://www.aqmd.gov>) where it can be viewed by making the selection "Grants & Bids."

### **Sole Source Justification**

A sole source award is authorized under Sections IV.B. of the Procurement Policy and Procedure when a purchase does not lend itself to substitution. Section VIII, B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified.

The requests for sole source purchases of the CPCs and the Aethalometers / BC Monitors are made under Section IV.B.4 of the Procurement Policy and Procedure. The items are available from only one source. TSI is the only manufacturer of water-based CPCs in the United States whose products have a long history of scientific evaluation and testing. Various CPC models have been extensively evaluated by SCAQMD staff over the past several years for the purpose of choosing the most appropriate instrument for ultrafine measurements in studies such as MATES IV. The Aethalometers are similarly available from only one distributor, Magee Scientific. No other manufacturer or distributor sells a "dual-channel" BC monitor with similar technical specifications and pricing, as it involves the use of proprietary technology.

The request for a sole source contract for technical support for the SCAQMD upper air meteorological network is made under Section VIII, B.2.c.1 of the Procurement Policy and Procedure which states: Except for contracts funded in whole or in part with federal funds, written justification for a sole source award must be provided documenting that the desired services are available from only the sole source based upon one or more of the following reasons: (1) The unique experience and capabilities of the proposed contractor or contractor team. Sonoma Technology, Inc. (STI) has unique experience and capabilities for the continued field operation and data management of the SCAQMD upper air meteorological network, due to their significant experience with this network for the past several years and their ability to leverage existing staff resources, techniques, telecommunications, databases, and data processing and validation software developed for the previous effort. This will also ensure operational consistency of the SCAQMD upper air network equipment and data.

### **Benefits to SCAQMD**

Community exposure to air toxics continues to be an important issue. The MATES studies conducted by SCAQMD provide essential information on air toxics levels in the South Coast Air District, and present a unique opportunity to evaluate long-term trends in air toxics and their health impacts. The SCAQMD continues to work toward reducing air toxics emissions through supporting cleaner technologies (including cleaner diesel technologies), rulemaking to address toxic emissions, and implementing air toxics monitoring and enforcement initiatives. The MATES V program complements these efforts, and provides information to track progress on reducing air toxics in the region.

### **Resource Impacts and Justification**

Staff is requesting that a total of up to \$1,815,800 from the Clean Fuels Program Fund (31) be used on an as-needed basis over FYs 2017-18, 2018-19, and 2019-20 to cover the cost of the additional resources shown in the Attachment. Section 40448.5(e) of the California Health and Safety Code provides that “when considering which clean fuels projects to promote, the South Coast District shall consider, among other factors potential effects on public health, ambient air quality, visibility within the region, and other factors determined to be relevant by the South Coast District.” MATES V will help establish an emissions baseline and toxic air contaminant risks for mobile sources, from which the benefits of clean fuel programs can be calculated.

Results from MATES IV indicate that mobile sources contribute over 90% of the potential cancer risk from air toxics in the South Coast Air Basin. Diesel exhaust accounted for 68% of the total estimated air toxics risk, based on the MATES IV monitoring data. The activities paid for by these funds are very closely related to emissions from mobile sources.

MATES V will provide an update on the impact of mobile emission sources on air toxic exposure. The study will provide additional information for the SCAQMD staff to promote clean fuel projects that will advance the commercialization of clean mobile source technologies.

### **Attachment**

Proposed Additional Resources for MATES V



**Attachment  
Proposed Additional Resources for MATES V**

					Estimated Expenditures by Budget Year		
Description	Division	Qty	Unit Cost	Total Cost	FY 17-18	FY 18-19	FY 19-20
<i>Fixed Assets</i>							
Condensation Particle Counters (CPCs)	STA	6	\$28,000	\$168,000	\$168,000		
Aethalometers	STA	11	\$19,200	\$211,200	\$211,200		
Air Toxic Samplers	STA	Up to 19	NA	\$294,400	\$294,400		
GC/MS pre-concentrator and auto-sampler	STA	1	\$225,000	\$225,000	\$225,000		
Dilution System	STA	2	\$36,000	\$72,000	\$72,000		
Vehicle	STA	1	\$50,000	\$50,000	\$50,000		
<i>Temporary Services</i>							
AQ Instrument Specialists	STA	2	\$65,000	\$130,000	\$65,000	\$65,000	
AQ Chemist	STA	2	\$75,000	\$150,000	\$75,000	\$75,000	
Lab Technicians	STA	2	\$65,000	\$130,000	\$65,000	\$65,000	
<i>Laboratory and Field Supplies</i>							
Various tools and flow devices	STA	NA	NA	\$35,000	\$25,000	\$10,000	
Refurbishment, maintenance and repair	STA	NA	NA	\$80,000	\$50,000	\$30,000	
Lab supplies	STA	NA	NA	\$62,000	\$30,000	\$32,000	
Field supplies	STA	NA	NA	\$60,000	\$30,000	\$30,000	
Silanated canisters	STA	25	\$800	\$20,000	\$20,000		
<i>Contracts</i>							
Technical Support – Upper Air Meteorological Stations	PRDAS	1	\$60,000	\$60,000	\$30,000	\$30,000	
Advising, analysis, reviewing, auditing services, support for collaborative studies	PRDAS	NA	NA	\$50,000	\$5,000	\$15,000	\$30,000
<i>Other</i>							
Mileage	STA	30,000	\$0.54	\$16,200		\$16,200	
Administrative	PRDAS	NA	NA	\$2,000	\$1000	\$500	\$500
			<b>Total</b>	<b>\$1,815,800</b>	<b>\$1,416,600</b>	<b>\$368,700</b>	<b>\$30,500</b>