BOARD MEETING DATE: December 3, 2021 AGENDA NO. 4

PROPOSAL: Recognize 2021 U.S. EPA Targeted Airshed Grant Program Awards for Zero-Emission Vehicles and Equipment, Issue RFPs, Transfer Funds, Execute Contracts to Demonstrate Zero-Emission Vehicles and Equipment, and Reimburse General Fund

SYNOPSIS: South Coast AQMD has been awarded up to $14,339,960 from U.S. EPA 2021 Targeted Airshed Grant Program to demonstrate a zero-emission freight line-haul locomotive, long-range Class 8 fuel cell trucks, deploy zero-emission school buses, and replace commercial lawn and garden equipment. These actions are to: 1) recognize revenue, upon receipt, of up to $14,339,960 from U.S. EPA into the Advanced Technology, Outreach and Education Fund (17); 2) transfer up to $2,169,169 from the Air Quality Investment Fund (27) into the Advanced Technology, Outreach and Education Fund (17) for South Coast AQMD cost-share; 3) contingent upon U.S. EPA's final awards, execute three contracts in a total amount not to exceed $12,749,000 from the Advanced Technology, Outreach, Outreach and Education Fund (17); 4) issue RFPs and execute resulting contracts for the Commercial Lawn and Garden Equipment Incentive and Exchange Program in an amount not to exceed $3,020,000 from the Advanced Technology, Outreach and Education Fund (17); and 5) reimburse the general fund for administrative costs up to $590,960 from the Advanced Technology, Outreach and Education Fund (17).

COMMITTEE: Technology, November 19, 2021; Recommended for Approval

RECOMMENDED ACTIONS:

1. Recognize revenue, upon receipt, of up to $14,339,960 from 2021 U.S. EPA Targeted Airshed Grant Program into the Advanced Technology, Outreach and Education Fund (17), Comprised of the following grant awards:
   a. $4,174,000 for zero-emission freight line-haul locomotive repower with supporting charging infrastructure;
   b. $7,998,024 for long-range class 8 fuel cell truck demonstration ($3,608,012) and zero-emission school bus replacement project ($4,390,012); and

c. $2,167,936 for commercial lawn and garden equipment incentive and exchange program.

2. Transfer up to $2,169,169 from the Air Quality Investment Fund (27) - Rule 1111 into the Advanced Technology, Outreach and Education Fund (17) for South Coast AQMD's cost-share for the zero-emission line-haul locomotive demonstration project ($1,000,000) and Commercial Lawn and Garden Equipment Incentive and Exchange Program implementation ($1,169,169);
3. Authorize the Chairman to execute the following contracts from the Advanced Technology, Outreach and Education Fund (17), contingent upon U.S. EPA's final awards:
   a. BNSF for up to $4,967,000 to demonstrate a zero-emission freight line-haul locomotive with supporting charging infrastructure;
   b. Hyundai Motor Company for up to $3,500,000 to demonstrate five long-range Class 8 fuel cell trucks; and
   c. Moreno Valley Unified School District for up to $4,282,000 to replace 38 diesel school buses with battery-electric buses and supporting charging infrastructure.
4. Authorize the Executive Officer to issue RFPs to solicit outreach support and vendors of commercial-grade, electric lawn and garden equipment, and based upon the results of the solicitation, execute the contract(s) from the Advanced Technology, Outreach and Education Fund (17) with qualified vendors and outreach support for the Commercial Lawn and Garden Equipment Incentive and Exchange Program, in an amount not to exceed $3,020,000; and
5. Reimburse the General Fund up to $590,960 from the Advanced Technology, Outreach and Education Fund (17) for administrative costs necessary to implement the above-mentioned projects.

Wayne Nastri
Executive Officer

MMM:AK:JI:WS:MW

Background

The 2016 AQMP identifies the need for NOx reductions in meeting upcoming national ambient air quality standards. On-road heavy-duty diesel vehicles and locomotives are major contributors to NOx emissions in the South Coast Air Basin. Significant increases in NOx, PM, and GHG emissions from these sources are expected due to increased demand in goods movement activities. Accelerating the deployment of zero-emission long-range Class 8 fuel cell trucks, replacing diesel school buses with zero-emission buses, and repowering freight locomotives with zero-emission technology will significantly reduce NOx, PM, and GHG emissions. The commercial lawn and garden equipment replacement with the latest zero-emission battery-electric commercial

equipment within the Coachella Valley and the urban areas of Riverside County will provide additional emission reductions.

Staff submitted five applications to U.S. EPA under the Targeted Airshed Grant Program, each for up to or close to the $8 million limit. Three applications were preliminarily awarded, including a diesel freight line-haul locomotive repower with zero-emission technology, heavy-duty fuel cell truck demonstration, and zero-emission school bus deployment coupled with commercial lawn and garden equipment replacement.

Zero-Emission Freight Line-Haul Locomotive Repower with Supporting Charging Infrastructure

Locomotives generally utilize very large diesel combustion engines and have a long service life of over 20 years. The emissions of NOx, PM, hydrocarbons, and GHG's are distributed throughout the South Coast Air Basin from long-distance hauling and the railyards. Developing the zero-emission solution for locomotives will significantly reduce toxic diesel exhaust and criteria pollutant emissions.

Long-Range Class 8 Fuel Cell Truck Demonstration

Long-range Class 8 trucks are designed to satisfy the need for regional and long-haul goods movement. Validating the ability of fuel cell technology to meet the real-world needs of long-haul freight is necessary to help with the commercialization of this technology. The average daily driving range per long-haul truck is approximately 360 miles. The demonstration will be conducted in a variety of routes to fully utilize up to a 500-mile range. This demonstration will provide valuable insight through real-world operations in a range of driving conditions and expands an existing demonstration project of 2 fuel-cell trucks that were previously awarded through U.S. EPA's Clean Air Technology Initiative Program.

Zero-Emission School Bus Replacement Project

Replacing older diesel emitting school buses with zero-emission school buses reduce direct diesel exhaust exposure for school children. The typical duty cycle for school buses makes battery technology an ideal candidate for the charging cycles of battery technology.

Commercial Lawn and Garden Equipment Incentive & Exchange Program

Since 2017, South Coast AQMD has implemented the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program utilizing funding provided by U.S. EPA's 2016 Targeted Air Shed Grant Program. The program replaces old gasoline- or diesel-powered commercial lawn and garden equipment with zero-emission, battery-electric equipment. A variety of makes and models of commercial-grade electric lawn and garden equipment are offered, including handheld trimmers, chainsaws, pruners, backpack and handheld blowers, and lawnmowers, including ride-on, stand-on, and

walk-behind mowers. Local governments, school districts, nonprofit organizations and commercial gardeners and landscapers have participated in the Commercial Lawn and Garden Equipment Incentive and Exchange Program, which requires the scrapping of the old equipment being replaced. To date, over 5,000 old gasoline- or diesel-powered commercial lawn and garden equipment have been replaced.

Proposal

Zero-Emission Freight Line-Haul Locomotive Repower with Supporting Charging Infrastructure

Progress Rail (P.R.), a Caterpillar Company, will replace a BNSF Tier 1+ freight line-haul locomotive engine with an 8 megawatt-hour battery-powered propulsion system. Two 1.4MW chargers with a unique pantograph design will be installed at Los Angeles and Barstow Stations to support the charging.

Long-Range Class 8 Fuel Cell Truck Demonstration

Hyundai Motor Company will demonstrate five day-cab tractors with their fleet partner and their commercial operations in existing goods movement routes to validate fuel cell technology's ability to meet the real-world needs of long-haul freight movement in the United States.

Zero-Emission School Bus Replacement Project

Replace up to 38 MY 2007 and older diesel school buses in Moreno Valley Unified School District fleet with MY 2021 and newer zero-emission battery-electric school buses certified to meet the CARB Standard and provide funding for supporting charging infrastructure.

Commercial Lawn and Garden Equipment Incentive & Exchange Program

The Commercial Lawn and Garden Equipment Incentive and Exchange Program will focus on the exchange of gasoline- or diesel-powered commercial grade lawn and garden equipment for new zero-emission, battery-electric equipment for local governments, school districts, colleges, non-profit organizations, commercial landscapers/gardeners, and private entities within the Coachella Valley and surrounding urban areas of Riverside County.

In addition, RFPs would be issued to solicit outreach support and vendors of commercial-grade, electric lawn and garden equipment. Based upon the results of the RFPs, the actions would be to execute the contract(s) in an amount not to exceed $3,020,000 for the Commercial Lawn and Garden Equipment Incentive and Exchange Program including outreach.

Sole Source Justification

Section VIII.B.3. of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified for federally funded

procurement. The request for sole source awards for the BNSF, Hyundai Motor Company, and Moreno Valley Unified School District contracts are made under Section VIII.B.3.c, which states the awarding federal agency or pass-through entity expressly authorizes non-competitive proposals in response to a written request from the non-federal entity.

Benefits to South Coast AQMD

The South Coast Air Basin is classified as an "extreme" nonattainment area for ozone under the Federal Clean Air Act. Projects supporting zero-emission locomotive repower, long-range Class 8 fuel cell truck demonstration, zero-emission school buses deployment, and lawn and garden equipment replacement help reduce ozone and PM2.5 air pollution. The project supports the *Technology Advancement Office Clean Fuel Program 2021 Plan Update* under the categories of "Electric/Hybrid Vehicle Technologies and Infrastructure" and "Hydrogen/Mobile Fuel Cell Technologies and Infrastructure."

Also, the primary objective of the Commercial Lawn and Garden Equipment Incentive and Exchange Program is to reduce emissions of harmful criteria air pollutants by replacing gasoline- or diesel-powered lawn and garden equipment with zero-emission equipment in the South Coast AQMD jurisdiction, specifically in the ozone non-attainment area of Coachella Valley and the surrounding urban areas of Riverside County.

Resource Impacts

Zero-Emission Freight Line-Haul Locomotive Repower with supporting Charging Infrastructure

The contract with BNSF for repowering a diesel locomotive with zero-emission technology will not exceed $4,967,000 from the Advanced Technology, Outreach and Education Fund (17). This includes U.S. EPA 2021 Targeted Airshed Grant funding of $4,174,000, of which $207,000 is for project implementation support, $1 million cost-share from BNSF, $533,000 from Progress Rail, and $2.2 million in-kind from both BNSF and Progress Rail. The proposed project cost-share is shown in the table below:

Funding Source	Funding Amount	Percent
U.S. EPA FY21 Targeted Airshed Grant	$4,174,000	46.9
BNSF	$1,000,000	11.2
Progress Rail	$533,000	6.0
BNSF & Progress Rail (In-Kind)	$2,200,000	24.7
South Coast AQMD (requested)	$1,000,000	11.2
Total	**$8,907,000**	**100.0**

Long-Range Class 8 Fuel Cell Truck Demonstration

The contracts with Hyundai Motor Company will not exceed $3,500,000 from Advanced Technology, Outreach and Education Fund (17). This includes U.S. EPA 2021 Targeted Airshed Grant funding of $3,608,012, of which $108,012 is for program implementation support. The total project cost of $7,279,133 includes $3,671,121 of cost-share from the fleet user FirstElement Fuel and Hyundai Motor Company. The proposed project cost-share is shown in the table below:

Funding Source	Funding Amount	Percent
U.S. EPA FY21 Targeted Airshed Grant	$3,608,012	49.6
FirstElement Fuel (Fleet)	$468,785	6.4
Hyundai Motor Company & FirstElement Fuel (In-Kind)	$3,202,336	44.0
Total	**$7,279,133**	**100.0**

Zero Emission School Bus Replacement Project

The contracts with Moreno Valley Unified School District will not exceed $4,282,000 from the Advanced Technology, Outreach and Education Fund (17). This includes U.S. EPA 2021 Targeted Airshed Grant funding of $4,390,012, of which $108,012 is for program implementation support. The total project cost of $12,952,162 includes $8,562,150 of cost-share from Moreno Valley Unified School District. The proposed project cost-share is shown in the table below:

Funding Source	Funding Amount	Percent
U.S. EPA FY21 Targeted Airshed Grant	$4,390,012	33.9
Moreno Valley Unified School District	$8,562,150	66.1
Total	**$12,952,162**	**100.0**

Commercial Lawn and Garden Equipment Incentive & Exchange Program

The total project cost of $4,337,105 consists of the award from U.S. EPA in the amount of $2,167,936, of which $167,936 is for program implementation support. As part of the total project cost, $1,000,000 is leveraged funding provided by participating equipment manufacturers in anticipated discounts for commercial-grade, electric lawn and garden equipment, and the remaining $1,169,169 will be the cost-share for South Coast AQMD. Out of the $1,169,169 cost-share from South Coast AQMD, $20,000 is for program outreach and $149,168.78 is for program implementation support.

Funding Source	Funding Amount	Percent
U.S. EPA FY21 Targeted Airshed Grant	$2,167,936	50.0
Equipment Manufacturers	$1,000,000	23.0
South Coast AQMD (requested)	$1,169,169	27.0
Total	**$4,337,105**	**100.0**

Sufficient funds will be available to execute contracts from the Advanced Technology, Outreach and Education Fund (17), once U.S. EPA 2021 Targeted Airshed grant funds are recognized. Sufficient funds are available in Air Quality Investment Fund (27)- Rule 1111 for the transfer of $2,169,169 to the Advanced Technology, Outreach and Education Fund (17) to support the Zero-Emission Freight Line-Haul Locomotive Repower with supporting Charging Infrastructure and the Commercial Lawn and Garden Equipment Incentive & Exchange Program.