

Air Pollution Reduction Incentive Programs

PROGRAM REVIEW REPORT

Bay Area Air Quality Management District
Fiscal Years 2007-08 through 2013-14

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Mobile Source Control Division, Incentives Oversight Section
August 2015

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1. Introduction

The Air Resources Board (ARB) is responsible for overseeing a number of voluntary State air pollution reduction incentive programs that are implemented through California's 35 local air pollution control districts and air quality management districts (air districts), and other local agencies. As part of this oversight responsibility, ARB staff has conducted a review of the Bay Area Air Quality Management District's (Bay Area AQMD or District) incentive programs.

ARB incentive program reviews serve the public interest for transparency and accountability, helping to ensure that expenditures of State funds achieve intended outcomes and are within legal requirements. Projects are selected for review following a risk evaluation. These projects represent a percentage of the funds expended during the years within the overall scope of the review. Unless noted, issues and findings reported here pertain to the individual circumstances described and do not apply to other projects, although they may be indicative of similar issues occurring with projects not reviewed.

The Bay Area AQMD is one of the largest of California's local air districts and is responsible for air quality within the San Francisco Bay Air Basin, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County and portions of southwestern Solano and southern Sonoma Counties. The District's incentive programs are crucial components of its efforts to reduce emissions and meet requirements of Federal Clean Air Act Amendments and the California Clean Air Act.

The review that is the subject of this report was conducted between October 2014 and June 2015. ARB staff reviewed the District's implementation of the following programs:

- The Air Quality Improvement Program (AB 118) (AQIP)
- The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program)
- The Proposition 1B Goods Movement Emission Reduction Program (Goods Movement Program)
- The Lower-Emission School Bus Program (School Bus Program)

The *Air Quality Improvement Program* was established by the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (Assembly Bill 118) to fund clean vehicle and equipment projects that reduce criteria and toxic air pollutants. AQIP is funded by smog abatement, vehicle registration, and vessel registration fees. ARB develops statewide implementation guidelines, distributes funds to air districts, and conducts periodic oversight. Statute lists eight broad categories for project types, of which the District has implemented a Lawn and Garden

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Program that encourages the replacement of gasoline-powered lawn mowers with electric lawn mowers. The District has also implemented a Technology Demonstration Program including a Locomotive Demonstration Project; this is the first ARB incentive program review to include this type of AQIP-funded project. The Bay Area AQMD (like other large and medium-sized air districts) contributes match funds as required by AQIP.

The *Carl Moyer Program* funds the extra capital cost of cleaner-than-required vehicles and equipment to help achieve air pollution reductions that are both early and surplus to regulations. Funds for the Carl Moyer Program come from tire replacement and vehicle registration (smog abatement) fees. ARB develops statewide implementation guidelines, distributes funds to air districts, and conducts periodic oversight. Air districts choose which project types to fund from a variety of eligible categories, including on-road and off-road vehicles and equipment, marine, shore power, locomotives, stationary agriculture pumps, emergency equipment, lawn and garden equipment, and light duty vehicle scrappage. Funded projects must achieve early or extra emission reductions not otherwise required by law or regulation. The Bay Area AQMD (like other large and medium-sized air districts) contributes match funds as required by the Carl Moyer Program.

The *Proposition 1B Goods Movement Emission Reduction Program* offers grants to owners of equipment used in freight movement to fund the purchase of cleaner technologies to reduce air pollution emissions and health risk from freight movement along California's trade corridors. The Goods Movement Program is funded by bonds authorized by Proposition 1B, and is implemented by local agencies that apply to ARB for grants to fund specific project categories. At the discretion of the implementing agency, the project categories may include heavy-duty trucks used in freight transportation through specific corridors or serving seaports or railroad intermodal transportation hubs, as well as locomotives, ships at berth, commercial harbor craft, and cargo handling equipment. ARB develops guidelines, awards grants to fund projects proposed by air districts and seaports, and conducts periodic oversight. As with the Carl Moyer Program, projects funded must achieve early or extra emission reductions that are not otherwise required by law or regulation. The Goods Movement Program does not require the District to contribute match funds toward this program.

The *Lower-Emission School Bus Program* helps to clean up the school buses that serve California's public schools in order to reduce the exposure of school children to diesel exhaust. The School Bus Program is funded by bonds authorized by Proposition 1B, a grant of federal Diesel Emission Reduction Act (DERA) funds and local AB 923 funds. The program provides grants to purchase new school buses that replace older, high-emitting buses or to retrofit existing diesel bus engines with ARB-verified diesel emission control systems. ARB develops statewide implementation guidelines, distributes State and federal funds to air districts, and provides oversight of program implementation. Air districts select and fund school bus projects with public school

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districts and transportation providers in their areas. The School Bus Program does not require the District to contribute match funds towards the program.

This review was conducted in accordance with ARB's policies and procedures for review of incentive programs, which are viewable at the following ARB website: <http://www.arb.ca.gov/msprog/moyer/audits/audits.htm>. The scope of the review includes grant agreements between ARB and the District made in fiscal years (FY) 2007-08 through 2013-14. The review began with an entrance conference held on October 20, 2014, at the District office. The results of the program review were presented during an exit meeting held with the District on August 6, 2015.

ARB's programmatic review was supplemented by a fiscal compliance review conducted by the California Department of Finance Office of State Audits and Evaluations (Department of Finance). Department of Finance presented their observations and recommendations at a separate exit meeting on June 8, 2015, and will issue a separate report to be posted on the Department of Finance and ARB websites.

This report describes the scope of the review, the projects selected for review and site inspection, and any findings, recommendations, and commendable efforts. Under established policies and procedures for program reviews, the District has 30 days from the date of this report's cover letter to submit its comments. ARB and Department of Finance reports are posted with air district comments on ARB's Incentive Program Oversight web page, at <http://www.arb.ca.gov/msprog/moyer/audits/audits.htm>.

2. Overall Assessment

ARB's program review has concluded that the District's incentive programs are efficiently and effectively achieving their emission reduction objectives. A summary review of each program follows below.

a. Air Quality Improvement Program

The District received approximately \$1.1 million in AQIP funds in one FY within the scope of review, FY 2010-11. The largest grant was awarded for an Advanced Technology Demonstration Locomotive Project, which was selected for review. In June 2011 a grant of \$529,810 was used for the construction and demonstration of a Tier 4 GenSet switcher locomotive for use in the Richmond Pacific Railroad Company rail yard in Richmond, California. An N-ViroMotive ultra-low emission locomotive was designed and constructed by National Railway Equipment Company (NREC) to meet emission standards of 1.3 gram per brake horsepower hour (g/bhp-hr) for oxides of nitrogen and 0.03 g/bhp-hr for particulate matter. Following completion of emissions testing in May 2014, the unit was placed in service for completion of a 3,000 hour durability milestone. NREC will apply to ARB for final verification toward commercialization of this and subsequent Tier 4 GenSet locomotives in California. *ARB staff identified no findings or*

recommendations for the District's implementation of the Air Quality Improvement Program.

b. Carl Moyer Program

For the FY within the scope of the review, which included 2009-10 through 2012-13, the District's Carl Moyer Program funded over 400 projects and 7,000 engines with \$43,576,225 in State and District match funding. Categories within the review scope included on-road heavy-duty vehicles, marine vessels, shore power, locomotives, off-road construction and agricultural equipment, airport ground support equipment, agricultural pumps, car scrap projects and on-road voucher incentive program projects. *ARB staff identified no findings regarding the District's implementation of the Carl Moyer Program, but offers two recommendations following review of project files.* The recommendations are discussed in Section 5 of this report.

c. Goods Movement Program

For the FY within the scope of the review, the District accepted eight Goods Movement Program grants totaling about \$90,446,625. This includes three FY 2007-08 grants for \$27,411,381.88; two FY 2008-09 grants for \$27,594,203; two FY 2011-2012 grants for \$33,417,260; and one FY 2013-2014 grant for \$2,023,780. The District reports that the FY 2007-08 grants funded the replacement of 401 heavy-duty diesel trucks, the installation of ARB-certified Level-3 Retrofit devices on 902 diesel trucks, and three shore power projects. The FY 2008-2009 shore power grant funded nine shore power projects. The combined FY 2008-2009 and FY 2011-12 truck grants funded the replacement of 348 heavy-duty diesel trucks and the installation of ARB-certified Level-3 Retrofit devices on 28 diesel trucks. The FY 2011-2012 drayage grant funded the replacement of 357 heavy-duty diesel drayage trucks and the FY 2013-2014 grants are expected to fund the replacement of 316 heavy-duty diesel trucks. *ARB staff identified no findings or recommendations for the District's implementation of the Goods Movement Program.*

d. School Bus Program

A FY 2007-08 Proposition 1B grant of \$8,523,208 and a FY 2008-09 DERA grant of \$382,000 enabled the District to fund, during the FY within the scope of this review, 168 school bus replacements, 502 retrofits, and 80 compressed natural gas (CNG) tank replacements, for a total of 750 projects. FY 2009-10 through 2012-13, local AB 923 funds of \$27,796,911 were used to fund school bus projects. This met School Bus Program goals for the District and reduced exposure to diesel exhaust for thousands of Bay Area school children. *ARB staff identified no findings or recommendations for the District's implementation of the LESBP projects.*

3. Scope of the Program Review

The scope of the review covered the District’s implementation of incentive programs associated with grants awarded from FY 2007-08 through 2013-14. Scope varies somewhat by program, as discussed below.

a. Air Quality Improvement Program

The District received funding for four AQIP projects for FY 2010-11. A Lawn and Garden Equipment Replacement Project delivered emission benefits by providing funds to aid consumers in replacing higher polluting gasoline mowers with cordless, zero-emission mowers. A Wind Assist Marine Demonstration Project was commissioned to analyze whether wind conditions used daily by commercial sail boat operators on the San Francisco Bay can be used to decrease the emissions and fuel consumption of ferry systems. A Demonstration of Tier 4 PM Emission Controls for Ultra Low-Emitting Locomotive Project was also funded, in addition to the locomotive project described in the previous section. Table 1 lists the projects and administration funding that the District received to implement the AQIP projects, as well as the District’s match funding commitment.

Table 1: Fiscal Year 2010-11 AQIP Grants¹

Grant Number	Project Name	Project	Administration	Total Grant	Matching Funds	Total
G10-AQIP-07	Lawn & Garden Equipment Replacement Project	\$165,643.00	\$16,382.00	\$182,025.00	\$182,025.00	\$364,050.00
G10-AQIP-11	Wind Assist Marine Demonstration for Ferry Districts on San Francisco Bay	\$164,250.20	\$0.00	\$164,250.20	\$164,250.20	\$328,500.40
G10-AQIP-12	Demonstration of Tier 4 PM Emission Control of Ultra Low-Emitting Locomotive	\$229,830.00	\$0.00	\$229,830.00	\$229,830.00	\$459,660.00
G10-AQIP-13	Construction & Demonstration of a Tier 4 Gen Set Locomotive	\$529,810.00	\$0.00	\$529,810.00	\$1,208,588.00	\$1,738,398.00
Total		\$1,089,533.20	\$16,382.00	\$1,105,915.20	\$1,784,693.20	\$2,890,608.40

¹ Interest earned by the District is not included in table.

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b. Carl Moyer Program

For the Carl Moyer Program, the scope of the review covered grants awarded in FY 2009-10 through 2012-13. Project categories within the review scope included on-road heavy-duty vehicles, marine vessels, locomotives, off-road construction and agricultural equipment, airport ground support equipment, agricultural pumps, and car scrap. Table 2 lists the project and administration funding granted to the District by FY (including Multi-district funds), and the District’s match funding commitment for each year’s grant.

Table 2: Carl Moyer Program Funds¹						
Fiscal Year	Grant Number	Project	Administration	Total Grant	Matching Funds²	Total
Carl Moyer Program						
2009-10	G09-M003	\$8,207,151	\$431,955	\$8,639,106	\$1,295,866	\$9,934,972
2010-11	G10-M004	\$7,668,499	\$403,605	\$8,072,104	\$1,210,816	\$9,282,920
2011-12	G11-M003	\$8,297,495	\$436,710	\$8,734,205	\$1,310,131	\$10,044,336
2012-13	G12-M003	\$6,819,109	\$358,901	\$7,178,010	\$1,076,702	\$8,254,712
Total		\$30,992,254	\$1,631,171	\$32,623,425	\$4,893,515	\$37,516,940
Carl Moyer Program—Multi-District						
2009-10	G09-M032	\$604,745	\$31,829	\$636,574	-	\$636,574
2010-11	G10-M033	\$1,190,277	\$62,646	\$1,252,923	-	\$1,252,923
2011-12	G11-M033	\$1,129,389	\$59,442	\$1,188,831	-	\$1,188,831
2012-13	G12-M035	\$2,831,909	\$149,048	\$2,980,957	-	\$2,980,957
Total		\$5,756,320	\$302,965	\$6,059,285		\$6,059,285

¹ Interest earned by the District is not included in table.

² ARB waived the match requirement for the Multi-District grants.

c. Goods Movement Program

For the Goods Movement Emission Reduction Program the scope of the review covered grant funding cycles for FY 2007-08, 2008-09, 2011-12, and 2013-14. Project categories within the review scope included heavy-duty diesel trucks, drayage trucks, and shore power projects. Table 3 lists the project and administration grant amounts for the District.

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Table 3: Goods Movement Program Grants¹

Fiscal Year	Grant Number	Grant Name	Project	Administration	Total Grant
2007-2008	G07GMBT1	Heavy Duty Trucks	\$9,964,000.00	\$498,200.00	\$10,462,200.00
2007-2008	G07GMBP1	Drayage Trucks	\$13,835,135.00	\$691,756.00	\$14,526,891.00
2007-2008	G07GMBS1	Shore Power/ Ships at Berth	\$2,374,795.00	\$47,495.88	\$2,422,290.88
2008-2009*	G08GMBT1	Heavy Duty Trucks	\$7,232,574.00	\$361,629.00	\$7,594,203.00
2008-2009	G08GMBS1	Shore Power/ Ships at Berth	\$19,417,476.00	\$582,524.00	\$20,000,000.00
2011-2012*	G11GMBT1	Heavy Duty Trucks	\$22,005,962.00	\$1,100,298.00	\$23,106,260.00
2011-2012	G11GMBP1	Drayage Trucks	\$9,820,000.00	\$491,000.00	\$10,311,000.00
2013-2014*	G13GMBT1	Heavy Duty Trucks	\$1,927,410.00	\$96,370.00	\$2,023,780.00
Total			\$86,577,352.00	\$3,869,272.88	\$90,446,624.88

¹ Interest earned by the District is not included in table.

*ARB combined the FY 2008-09 and FY 2011-12 grants for the truck projects because these grants covered projects from the same statewide solicitation and the same ranked lists, although the funds are from different FY appropriations. Additionally, the information for the FY 2013-14 truck projects includes funds reallocated from the FY 2011-12 grant that were not utilized due to project fallout.

d. School Bus Program

For the Lower-Emission School Bus Program, the review scope covered funding cycles for a FY 2007-08 Proposition 1B grant, a 2009 DERA grant, and Lower-Emission School Bus local AB 923 funds for FY 2009-10 through 2012-13. Table 4 lists the School Bus Program grants the District implemented during the scope of the review.

Table 4: Lower-Emission School Bus Grants¹			
2007-08 Proposition 1B Lower-Emission School Bus Program			
Grant Number	Project	Administration	Total Grant
G07-SB03	\$8,084,314	\$438,894	\$8,523,208
2009 DERA Lower-Emission School Bus Grant			
Grant Number	Project	Administration	Total Grant
G08-DEA-03	\$355,260	\$26,740	\$382,000
2009-10 through 2012-13 AB 923 Lower-Emission School Bus Funds			
AB 923 Funds	Project	Administration²	Total Funds
	\$27,796,911	-	\$27,796,911
Total	\$36,236,485	\$465,634	\$36,702,119

¹Interest earned by the District is not included in table.
²Some AB 923 funds reported were used to co-fund Proposition 1B projects. Up to 5 percent of AB 923 funds are used for administrative costs. Administrative costs are not included in table

4. Project Selection and Review

In choosing specific projects for review, ARB staff considered the diversity of project types funded by the District within the scope of the program review. The funding sources considered in selecting the review sample included all grant and match funds listed in Tables 1 through 4 above, as well as the interest earned on those grant funds and expended on projects.

The District also used \$2 Assembly Bill 923 motor vehicles fees to fund projects (match and non-match) during the time period covered by the review. Such projects were considered in selecting the review sample and one project was selected for review that was partially match-funded. ARB did not select or evaluate any non-match \$2 Assembly Bill 923 funded projects and is not issuing a separate report for AB 923 projects.

Below is an overview of projects within the scope for each program. The projects selected for review and inspection is shown in Appendix Tables 1 - 4.

a. Air Quality Improvement Program

As discussed in Sections 2 and 3, four AQIP project grants were made to the District in FY 2010-11, as shown in Table 1. The project funded by the largest grant was selected for full file review; no AQIP projects were selected for inspection.

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b. Carl Moyer Program

Table 5 summarizes the source categories funded and the number of engines and projects funded for each Moyer Program fund source within the scope of the review. Because projects often include multiple engines, engines are shown in the table along with the total number of projects by source category. The review team selected twelve projects for full file review. Following the file review and based on its results, the review team selected 3 projects for inspection in the field as shown in Table A2 of the Appendix.

Table 5: Carl Moyer Program Engines and Projects¹

Fund Source	Source Category	2009-10	2010-11	2011-12	2012-13	Total	
		Engines	Engines	Engines	Engines	Engines	Projects
Carl Moyer Program	On-Road Voucher Incentive Program	0	0	12	0	12	12
	Off-Road Equipment - Other	2	4	4	7	17	7
	Off-Road Equipment - Mobile Agricultural	49	96	26	92	263	157
	Airport Ground Support Equipment	0	0	0	3	3	1
	Off-Road Equipment - Construction	11	13	8	5	37	19
	Marine Vessels	25	42	8	8	83	36
	Locomotives	4	0	1	0	5	2
	On-Road Heavy-Duty Vehicles	0	1	0	0	1	1
	Car Scrap	0	43	2,796	0	2,839	2
Carl Moyer Program - Multi District	On-Road Voucher Incentive Program	20	34	32	75	161	161
	On-Road Heavy-Duty Vehicles	2	0	0	0	2	2
Match	Off-Road Equipment - Mobile Agricultural	0	0	1	0	1	0
	Car Scrap	918	858	980	873	3,629	3
Total		1,031	1,091	3,868	1,063	7,053	403

¹Projects or engines with more than one funding year were assigned to the earliest year.
 Source of Data: Carl Moyer Program Clean Air Reporting Log (CARL) database query April 24, 2015.

c. Goods Movement Program

Table 6 summarizes Goods Movement Program grants, with the number of truck retrofit, truck replacement, and shore power projects funded, as of the entrance conference held on October 20, 2014. The review team selected 26 funded projects for full file

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review. Following the file review and based on its results, the review team selected two projects for inspection in the field, as shown in Table A3 of the Appendix.

Table 6: Goods Movement Program Projects Ranked and Funded				
Grant Number Grant Name	Retrofits	Replacement Diesel	Shore Power	Total Projects
G07GMBT1 Heavy Duty Trucks	13	198	0	211
G07GMBP1 Drayage Trucks	889	203	0	1,092
G07GMBS1 Shore Power	0	0	3	3
G08GMBT1/ G11GMBT1* Heavy Duty Trucks	28	348	0	376
G08GMBS1 Shore Power	0	0	9	9
G11GMBP Drayage Trucks	0	357	0	357
G13GMBT1* Heavy Duty Trucks	0	118	0	118
Total	930	1,224	12	2,166

* ARB combined the FY 2008-09 and FY 2011-12 grants for the truck projects because these grants covered projects from the same statewide solicitation and the same ranked lists, although the funds are from different FY appropriations. Additionally, the information for the FY 2013-14 truck projects includes funds reallocated from the FY 2011-12 grant that were not utilized due to project fallout.

d. School Bus Program

Table 7 summarizes School Bus Program project types, the number of projects, and individual buses funded by the District within the scope of the review. Projects were selected for review to include the different sources of funding and three types of projects: retrofits of school bus diesel engines, replacements of old school buses, and replacements of school bus CNG tanks. The review team selected four projects for full review. Following the file review and based on its results, the review team selected two projects for inspection in the field, as shown in Table A4 of the Appendix.

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Table 7: Lower-Emission School Bus Program Projects and Number of Buses Funded¹					
Grant Number Grant Name	Project Type	Retrofits	Replacements	CNG Tank Replacements	Total
Fiscal Year 2007-2008 Proposition 1B Projects ² G07-SB03	Buses	297	22	0	319
	Projects	33	7	0	40
Fiscal Year 2008-2009 DERA Projects G08-DERA-03	Buses	18	0	0	18
	Projects	3	0	0	3
Fiscal Year 2009-2010 through 2013-2014 AB 923 Projects ³	Buses	187	146	80	413
	Projects	13	38	13	64
Total	Buses	502	168	80	750
	Projects	49	45	13	107

¹ Each contract with a public school or transportation provider is counted as a project; one project may include multiple buses.
² Current as of November 6, 2014 (from Proposition 1B bond database).
³ Some AB 923 funds reported were used to co-fund Proposition 1B projects.

5. Review Findings and Recommendations

“Findings” are district practices found to be inconsistent with one or more of the items below. “Conditions” are detailed descriptions of district practices that resulted in findings as revealed by the review. “Required Actions” are minimum actions a district must take to mitigate the findings.

- State requirements including those under Health and Safety Code sections as follows:
 - 39625 through 39627.5—Goods Movement Program.
 - 44275 through 44299.2—Carl Moyer Program.
 - 44299.90 through 44299.91—School Bus Program.
- Governor’s Executive Order S-02-07.
- *Carl Moyer Program 2008 Guidelines* (April 21, 2008), and *Carl Moyer Program 2011 Guidelines* (December 31, 2014) (<http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>).
- Lower-Emission School Bus Program Guidelines (2006 and newer versions) (<http://arb.ca.gov/bonds/schoolbus/guidelines/2008lesbp.pdf>).
- Carl Moyer and School Bus Program advisories, Mail-outs, and other written communications.
- Carl Moyer and School Bus Program Grant Award and Authorization requirements.
- Goods Movement Program Local Agency Grant Agreements.

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- Goods Movement Program Guidelines (http://www.arb.ca.gov/bonds/gmbond/docs/prop_1b_goods_movement_2013_program_guidelines_for_implementation.pdf)
- District policies and procedures and forms, including contracts with the engine owners/grant recipients.

ARB staff identified no findings for the District's implementation of incentive programs, from either file review or project inspections.

ARB staff may offer "Recommendations" when district practices are found to be consistent with the items above and mitigation is not required, but a change in practices would improve program effectiveness, efficiency, or transparency. Following completion of project file reviews for the Carl Moyer Program, ARB staff offers the two recommendations below. No recommendations were identified from project inspections.

1. *Development of additional project file procedures may ensure their completeness.* For three reviewed project files, reviewing staff found instances of incomplete information that required follow-up. All three occurrences were corrected completely by the District as soon as they learned of them, and District staff entered a recalculation of emission reductions into the CARL database when they were made aware of the need.
2. *Use of a more detailed breakdown of project costs in staff project evaluations would reduce risk of including ineligible costs.* One project file was found to be missing information needed to determine whether an ineligible cost had been included in the cost-effectiveness calculation. Once additional information was obtained, an ineligible cost was found to have been included in staff's evaluation. District staff later identified the error in a submitted invoice, and only eligible costs were paid.

The District has responded and acknowledged these recommendations indicating their intent to augment their internal procedures document with additional detail on determining eligible costs as part of the application review process. The District has also provided their administrative operating procedures pertaining to file construction and routing, developed to ensure file completeness.

Note that the results of the Department of Finance's independent fiscal review will be included in their report, to be posted on the ARB's incentive program review website at: <http://www.arb.ca.gov/msprog/moyer/audits/audits.htm>.

6. Commendable Efforts

A commendable effort is an exceptional practice that goes beyond the basic requirements for implementing incentive programs. ARB commends the District for successful development of electronic filing systems for the Carl Moyer Program and Goods Movement Emissions Reduction Program, which enable efficient and accurate retrieval of program and project information. The District's structure and attention to detail in creating the filing system assisted the Program Review process, due to the ease of reviewing detailed information contained in the project files. In addition, ARB commends the District for the completeness of its LESBP project files and its effective and efficient administration of the program.

ARB commends the District for quickly implementing and funding from May through December 2012 the replacement of over 350 drayage trucks with much cleaner equipment. The District was required to quickly implement this project to achieve early emission reductions ahead of Phase 2 of the Drayage Truck Regulation. This was in addition to the implementation and funding of their heavy-duty truck grant.

7. Resources

1. Air Resources Board Lower-Emission School Bus website, <http://www.arb.ca.gov/msprog/schoolbus/schoolbus.htm>
2. Air Resources Board Carl Moyer Program website, <http://www.arb.ca.gov/msprog/moyer/moyer.htm>
3. Air Resources Board Goods Movement Emissions Reduction Program website, <http://www.arb.ca.gov/bonds/gmbond/gmbond.htm>
4. Air Resources Board Incentives Program Audit and Program Reviews website (includes previous reports and Policies and Procedures) <http://www.arb.ca.gov/msprog/moyer/audits/audits.htm>
5. *Lower-Emission School Bus 2008 Guidelines* (April 15, 2008), Air Resources Board
6. *Lower-Emission School Bus 2006 Guidelines* (March 2, 2006), Air Resources Board
7. *Carl Moyer Program 2005 Guidelines* (January 6, 2006), Air Resources Board
8. *Carl Moyer Program 2008 Guidelines* (April 21, 2008), Air Resources Board
9. *Carl Moyer Program 2011 Guidelines* (December 31, 2014), Air Resources Board
10. *Proposition 1B: Goods Movement Emission Reduction Program, Final 2013 Guidelines for Implementation* (January 25, 2013)
11. Governor's *Executive Order S-02-07*

Appendix

Table A1 Project Reviewed---Air Quality Improvement Program		
Grantee	Contract Number	Project Inspected by ARB
Bay Area Air Quality Management District - Construction & Demonstration of a Tier 4 Gen Set Locomotive	G10-AQIP-13	No

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Table A2
Projects Reviewed---Carl Moyer Program

Fiscal Year	Project Number	Grantee	Source Category	Project Inspected by ARB (√)
2009-10	11MOY44	California Department of Transportation	Locomotives	√
2009-10	11MOY46	APL Maritime Services Ltd	Marine Vessels	
2009-10	12MOY36	Marin Sanitary Service	Off-Road Equipment - Other	√
2010-11	13MOY69	Sonoma-Cutrer Vineyards, Inc.	Off-Road Equipment– Mobile Agricultural	
2010-11	13MOYFA1	City of Sunnyvale	On-Road Heavy Duty Vehicles	
2010-11	2008-208a	Thomas Ecklund (Environmental Engineering Studies, Inc.)	Car Scrap	
2011-12	14MOY40	Jerico Products Inc	Marine Vessels	√
2011-12	1XPCDB9X8YD511200	Manual Gamboa	On-Road Voucher Incentive Program	
2011-12	2013.118	Javiera A. Lacayo (Pick N Pull)	Car Scrap	
2011-12 and 2012-13	12MOY94	Poncia Fertilizer Spreading	Off-Road Equipment– Mobile Agricultural	
2012-13	12MOY133	Dominus Estate Corporation	Off-Road Equipment– Mobile Agricultural	
2012-13	15MOY01	Sanco Pipelines Inc	Off-Road Equipment– Construction	

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Table A3
Projects Reviewed---Goods Movement Program

	Grant	ARB Project ID	Grantee	Project Type	Project Inspected by ARB (√)
1	G07GMBP1	G07GMBP1_00159	Devine Intermodal	Replacement	
2	G07GMBP1	G07GMBP1_00124	Ning Zhang	Replacement	
3	G07GMBP1	G07GMBP1_00836	Raul A. Rivas	Retrofit	
4	G07GMBP1	G07GMBP1_01394	Pargat Singh / Pritam Singh	Retrofit	
5	G07GMBT1	G07GMBT1_00045	Harpinder Singh Chauhan	Replacement	
6	G07GMBT1	G07GMBT1_00310	Lawson Drayage, Inc.	Retrofit	
7	G07GMBT1	G07GMBT1_00243	Lee Financial Services Lessorr. Gardner Trucking Inc. Lessee.	Replacement	√
8	G07GMBS1	G07GMBS1_00001	Eagle Marine Services	Grid Based	
9	G08GMBT1	G08GMBT1_00859	David Bass /EZ Transportation	Retrofit	
10	G08GMBT1	G08GMBT1_00406	Royal Trucking	Replacement	
11	G08GMBT1	G08GMBT1_00276	Silicon Roadways	Replacement	
12	G08GMBT1	G08GMBT1_00584	Ricky Lok	Replacement	
13	G08GMBS1	G08GMBS1_00010	Ports America Outer Harbor Terminal, LLC	Grid Based	
14	G08GMBS1	G08GMBS1_00008	Port of Oakland	Grid Based	
15	G11GMBP1	G11GMBP1_00544	Gudy Ardany Linarez	Replacement	
16	G11GMBP1	G11GMBP1_00788	Ed Rocha Livestock, Trans Inc.	Replacement	√
17	G13GMBT1	G13GMBT1_00140	Frank Ghiglione, Inc. dba Rodgers Trucking	Replacement	
18	G13GMBT1	G13GMBT1_00033	United Parcel Service	Repower	
19	G13GMBT1	G13GMBT1_00126	Antioch Building Materials	Replacement	
20	G13GMBT1	G13GMBT1_00214	San Mateo Lumber Company	Replacement	
21	G13GMBT1	G13GMBT1_00330	Carlos S. Sanchez dba Sanchez Trucking	Replacement	
22	G13GMBT1	G13GMBT1_00539	Advanced Cargo, Inc.	Replacement	
23	G13GMBT1	G13GMBT1_00147	Assured Aggregates Co., Inc.	Replacement	
24	G13GMBT1	G13GMBT1_00107	Challenge Dairy Products, Inc.	Replacement	
25	G13GMBT1	G13GMBT1_00103	Gonzalez Pallets, Inc.	Replacement	
26	G13GMBT1	G13GMBT1_00333	Economy Lumber Company of Oakland	Replacement	

Incentive Program Review Report
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Table A4
Projects Reviewed—Lower-Emission School Bus Program

	Fiscal Year	Project Number	Grantee	Project Type	Projects Inspected by ARB (√)
1	2009-10	08SBPM10	San Lorenzo Unified School District	Retrofit	
2	2011-12	08LESBP48	Mount Diablo Unified School District	School Bus Replacement	
3	2012-13	12SBTR07	San Ramon Unified School District	Compressed Natural Gas Tank Replacement	
4	2013-14	08SBPM24	First Student, Inc.	Retrofit	√