PROPOSITION 1B:
GOODS MOVEMENT
EMISSION REDUCTION PROGRAM

STAFF REPORT ON FINAL GUIDELINES FOR IMPLEMENTATION

Adopted February 28, 2008

California Environmental Protection Agency
Air Resources Board

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DOCUMENT AVAILABILITY

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

The Goods Movement Emission Reduction Program (Program), is a partnership between the Air Resources Board (ARB or Board) and local agencies (like air districts, ports, and transportation agencies) to quickly reduce air pollution emissions and health risk from freight movement along California's priority trade corridors. Proposition 1B authorizes $1 billion in bond funding for this purpose.

This Staff Report discusses and recommends Board approval of the proposed *Proposition 1B: Goods Movement Emission Reduction Program Guidelines for Implementation,* which describe: the Program structure, requirements, eligible projects, funding criteria, and procedures. The Staff Report proposes that the Board approve funding targets for each trade corridor and source sector, as well as $25 million for specific "early grant" projects submitted by local air districts.

Problem. Emissions from the diesel engines in trucks, locomotives, ships, harbor craft, and cargo-handling equipment contribute to local, regional, and global air pollution. The diesel pollution from current goods movement operations greatly impacts the health of community residents near ports, rail yards, distribution centers, and roads with high truck traffic. Diesel emissions are also a major cause of the high regional ozone and fine particle levels that harm millions of Californians today.

Goods movement sources contribute to each trade corridor's air pollution challenges. The Los Angeles/Inland Empire region has the largest concentration of goods movement facilities (like ports and rail yards), with high near source risks and high levels of regional ozone and fine particulate (PM2.5) pollution. In the Central Valley, the facilities are less concentrated, but there is relatively more through truck and rail traffic that contribute to the region's harmful ozone and PM2.5 levels. In the Bay Area, regional ozone and PM2.5 levels are much lower, but truck, port, and rail yard activity adjacent to neighborhoods contributes to high localized risks. In the San Diego/Border region, trucks and operations at the port contribute to regional ozone and PM2.5 pollution above the State standards.

Implementing Legislation and Funding. The State Fiscal Year (FY) 2007-08 budget includes the first installment of $250 million, plus implementing legislation via Senate Bill 88 (Chapter 181, Statutes of 2007) that created the Goods Movement Emission Reduction Program. Assembly Bill 201 (Chapter 187, Statutes of 2007) includes a minor clarification. These funds will augment over one billion in annual incentive dollars available over the next year for cleaner vehicles and equipment. The funding sources include vehicle registration and tire fees, federal transportation funds, port fees and funds, developer fees and other sources.

Purpose. This Program will supplement regulatory actions and other incentives to cut diesel emissions. By statute, the Program can only fund emission reductions "not otherwise required by law or regulation." The Program can co-fund eligible equipment

subject to existing or future regulations, but only if the equipment upgrades are early (completed a set time prior to the compliance date) or extra (the upgrade must go beyond the regulatory requirements). Key pollutants targeted by the Program include diesel particulate matter (diesel PM), an air toxic, and nitrogen oxides (NOx) that contribute to formation of both PM2.5 and ozone. The projects funded under the Program will also provide co-benefits by reducing greenhouse gas and black carbon emissions that contribute to climate change.

The implementing statutes direct ARB to maximize the emission reduction benefits and achieve the earliest possible health risk reduction in communities heavily impacted by goods movement. Since the four trade corridors do not share identical air quality challenges, it is important for this Program to offer local agencies the flexibility to pursue the source and pollutant strategies that address their most pressing air pollution needs.

Roles. Under the enabling legislation, ARB will award grants to fund projects proposed by local agencies that are involved freight movement or air quality improvements associated with goods movement activities. The local agencies will then be responsible for providing financial incentives to owners of equipment used in freight movement to upgrade to cleaner technologies, consistent with Program Guidelines adopted by ARB. Bond funds will flow via grants from ARB to local agencies, then to equipment owners via contracts or other binding agreements with those local agencies. (We use the term "contract" to refer to these agreements throughout this document for simplicity.) At both steps, there is competition based on the emission reductions and reductions per State dollar invested to ensure the most beneficial projects are funded.

Objectives. As shown in Appendices A-C, the legislation and directives from Governor Schwarzenegger call on ARB to design and implement the Program to meet the following key objectives:

- Reduce existing emissions and health risk as quickly as possible, with a focus on communities heavily impacted by goods movement.
- Incorporate simplicity and efficiency.
- Ensure cost-effectiveness and leverage other funding sources.
- Provide transparency and accountability to the public.

Funding Targets. ARB staff recommends that the Board identify funding targets – by source category and trade corridor – to create an overall vision for the $1 billion Program and ensure that all of the statutory criteria can be effectively implemented. While the targets do not commit the Board to specific allocations in future years, they can help guide each region in the development of viable project proposals. The Board can administer the funding targets in a flexible manner based on both the readiness of local agencies to deliver emission reduction projects and the time window to fund projects prior to regulatory deadlines. As a result, we expect that annual allocations may not be directly proportional to the targets, but total funding over the course of the Program will reach the targets.

We considered several factors identified in the statute to develop the funding targets by source category. We evaluated the contribution of each source category to total statewide goods movement emissions and the health impacts caused by each type of source. The health impact considers the operating location in proximity to people. Trucks are found at goods movement facilities -- whether seaports, airports, rail yards, high-traffic roads, or distribution centers. Trucks serving seaports and intermodal rail yards contribute to high risks in heavily-impacted nearby communities. As a result, we believe it is important to allocate a substantial portion of the funding for trucks dedicated to this vocation.

Table 1. Recommended Source Category Funding Targets

Funding*	Source Categories
$400 million	Heavy duty diesel trucks serving seaports and intermodal rail yards
$360 million	Other heavy duty diesel trucks that haul goods, plus any truck stop or distribution center electrification
$100 million	Diesel freight locomotives
$100 million	Shore power for cargo ships at berth, plus cargo handling equipment
$ 40 million	Commercial harbor craft

* Includes up to 8% Program administration costs.

With three-quarters of the total $1 billion in funding directed to cleaner trucks, the Program benefits would be realized throughout the State. Since this Program looks at the trade corridors as part of a single goods movement system, local agencies administering bond monies would be required to fund truck and locomotive projects based on the total emission reductions expected in all four corridors (not just their local area). Regions like the San Joaquin Valley with high through-truck and rail traffic will benefit from projects administered by agencies in other corridors.

The funding for port trucks (allocated to the corridors that contain the ports) will be available for all California trucks focused on that service, regardless of their home base. Thus, cleanup funds allocated to the Bay Area for the Port of Oakland may go to trucks carrying agricultural products to and from the Valley. Likewise, funds for the ports in the Los Angeles area may go to trucks based in the San Diego/Border region.

To develop the funding targets for Program administration within each trade corridor, we evaluated quantitative factors that are consistent with the statutory criteria: population, the contribution of emissions from goods movement sources, and the need for new emission reductions to meet federal standards, as documented in State Implementation Plans. In the timeframe of the bond program, 2/3 of the new SIP tons are needed in the South Coast and 1/3 are needed in the San Joaquin Valley. For reference, we also show the regional allocations established by the Legislature (with the concurrence of the local air districts) for the Carl Moyer Program.

Table 2. Recommended Trade Corridor Funding Targets

	Percent in Each Corridor			
Factors Considered	**LA/Inland Empire**	**Central Valley**	**Bay Area**	**SD/ Border**
Population (2007)	51	17	22	10
Goods movement emissions - average % diesel PM and % NOx (2010)	45	26	20	9
SIP needs - new NOx reductions (2014)	70	30	0	0
Average of above factors	*55%*	*25%*	*14%*	*6%*
Staff recommendation*	55%	25%	14%	6%
	$550M	**$250M**	**$140M**	**$60M**
For Reference Purposes:				
Moyer allocation in these areas (FY 2006-07)	51%	24%	18%	7%

* Includes up to 8% Program administration costs.

Example: Impact of Funding for San Joaquin Valley

The Central Valley trade corridor encompasses both the large San Joaquin Valley and the smaller Sacramento Metropolitan region. As one of the two most severely polluted areas in California, we looked at goods movement in the San Joaquin Valley and how the funding targets might impact this region. Unlike the coastal regions with major seaports and marine vessel emissions, trucks and locomotives account for nearly all of the goods movement emissions in the San Joaquin Valley.

The $250 million funding target for Program administration within the Central Valley is a component of the total $860 million in bond funding for trucks and locomotives. Most of the trucks and some of the locomotives funded under the Program will travel throughout the trade corridors. As home to the primary north-south travel routes in California, we expect the San Joaquin Valley to benefit from projects funded by local agencies in other corridors. Program funds will augment the $350 million expected in the San Joaquin Valley over the next four years from other funding sources (like vehicle registration fees, the Moyer Program, federal Congestion Mitigation and Air Quality dollars, and the Valley District's indirect source/developer mitigation fees.)

Table 3. Key Statistics for the San Joaquin Valley

Goods movement emissions in San Joaquin Valley relative to all trade corridors (% of total for 4 corridors)	**21%**
Breakdown of goods movement emissions within San Joaquin Valley	**86% trucks** **12% locomotives**
Existing incentive funds in San Joaquin Valley (over the next 4 years) – not including AB 118 and school bus funds	**$350 million**
Program funding targeted for administration within the Central Valley (expected over 4 years)	**$250 million**
Program funding targeted for other trucks and locomotives in all four trade corridors (expected over 4 years)	**$860 million**

Projects Eligible for FY 2007-08 Funding. We propose that funding under this Program be restricted to projects to upgrade diesel engines or provide alternative power sources for trucks, locomotives, ships at dock, commercial harbor craft, and cargo equipment operating in California's four priority trade corridors. We further recommend that transportation infrastructure projects not be eligible to compete for this funding since there are other Proposition 1B and federal/State programs available for this purpose.

We sought to identify the optimum types of projects to reduce emissions from eligible sources. We looked for technology approaches that can be widely and quickly deployed in each source category, and evaluated the cost and the emission reductions achievable. To ensure that bond investments are sustainable, we considered regulatory requirements for each category to assess how long the technology could operate.

To simplify the Program, we are recommending that the Board define specific equipment project options for each source category with a cap on the maximum bond funding that is available for each piece of equipment. For example, we recommend a funding cap of $5,000 per truck for retrofit with a diesel particulate filter (at 85 percent efficiency) and $50,000 per truck for replacement with a diesel or alternative fuel truck meeting model year 2007 standards or better.

Table 4 summarizes the project options for FY 2007-08 funds, including upgrade specifications, funding caps, minimum project life, and key operating conditions. Please see the Guidelines for the complete requirements. Local agencies may apply for funding to implement all the project options identified for a source category, or just the subset of project options that most effectively addresses the goods movement air pollution problem in that region.

We propose to bring recommendations for updates to the list of equipment projects to the Board following each new appropriation of funds. We will assess Program effectiveness, technology advances and costs, regulatory actions, and other new information for each update.

Staff believes that only existing equipment that has been registered and operating in California for the last two years should be eligible for funding. Old equipment would generally need to be scrapped. Bond funding would typically cover 1/3 to 1/2 of the total project cost, with the remaining match provided by local agencies, ports, other agencies, or the equipment owner. The equipment funded by the bond would need to operate exclusively or nearly exclusively in California for 4-20 years, depending on the equipment type, to ensure that Californians realize the full benefits of their investment.

In response to comment, we identified several options that offer the equipment owner the choice of a shorter project life with a commensurate reduction in the percent of project cost eligible for bond funding. Equipment owners need to sign enforceable contracts or other binding agreements with local agencies and accept on-board monitoring equipment, if requested.

Table 4. Revised Summary of Eligible Equipment Projects for FY 2007-08 Funds[1]

Sector	Eligible Equipment (partial description)	Project	Est. Total Cost	Bond Pays Up To	Project Life	Before Rule Req't	Other Conditions (partial description)
Diesel trucks serving ports and intermodal rail yards	MY2006 or older diesel truck plus registration/travel below	Retrofit with ARB-verified Level 3 diesel PM filter	$10k	$5k	4 yrs	6 mos	• 4 yrs frequent port service (150 times/yr) • 100% CA operation
	MY2003 or older diesel truck w/ 2 yrs CA registration and 50% of travel within the trade corridors	Repower w/ MY2007+ engine, including PM filter and electronic controls/diagnostics	$40k	$20k	8 yrs or 350k mi	3 yrs	• 4 yrs frequent port service (150 times/yr) • 100% CA operation • Scrap old engine
				$10k	4 yrs		
		Replace w/MY2007+ diesel or alternative fuel truck	$100-180k	$50k	8 yrs or 350k mi	3 yrs[2]	• 4 yrs frequent port service (150 times/yr) • 100% CA operation • Scrap old truck
				$25k	4 yrs		
Other diesel trucks	MY2006 and older diesel truck plus registration/travel below	Retrofit with ARB-verified Level 3 diesel PM filter	$10k	$5k	4 yrs	6 mos	• 100% CA operation
	MY2003 and older diesel truck w/ 2 yrs CA registration and 50% of travel within the trade corridors	Repower w/MY2007+ engine	$40k	$20k	8 yrs or 500k mi	3 yrs[2]	• 100% CA operation • Scrap old engine
				$10k	4 yrs		
		Replace w/MY2007+ diesel or alternative fuel truck	$100-180k	$50k	8 yrs or 500k mi	3 yrs[2]	• 100% CA operation • Scrap old truck
				$25k	4 yrs		
	Diesel truck A: MY2003-06 and Diesel truck B: MY 1990 and older, plus registration/travel above	Three-way truck transaction (replacement, retrofit, and scrappage)	$110-190k	$50k towards Truck C, no $ to retrofit Truck A	8 yrs or 500k mi for Truck C	2 yrs[2] for Truck C	• Truck A retrofit with diesel PM filter and replaced with new Truck C (MY2007+) • Truck A replaces Truck B • Truck B is scrapped • 100% CA operation

[1] Please see the Guidelines for the complete list of eligibility requirements and conditions on the operation of upgraded equipment.
[2] An owner/operator of a single truck of any model year, or an owner of a 1997 or older truck, may begin operating a bond-funded replacement truck up to 2 years prior to a rule deadline.

Sector	Eligible Equipment (partial description)	Project	Est. Total Cost	Bond Pays Up To	Project Life	Before Rule Req't	Other Conditions (partial description)
Truck stop/ distribution center	Existing facility w/ 2 yrs CA operation	Electric infrastructure for power to replace diesel engine operation	Greater reductions per State $ than truck replacement -- See Guidelines Appendix G		10 yrs	n/a	• Reimbursement following demonstrated use levels
Diesel freight locomotives	Existing locomotive w/ 2 yrs CA operation and over 20,000 gallons/yr fuel use	Switchers – Repower or replace w/gen-set or equivalent	$1.5M	Lower of 50% or $750k	15 yrs	n/a	• 100% CA operation, except for periodic maintenance • Scrap or ban old engine/locomotive from CA operation • No credit towards 1998 MOU
		Line-hauls – Repower or replace with Tier 2 or better model	$2M - $2.5M	Lower of 50% or $1M			
Cargo ships/ shore power	Existing cargo ship berth	Install grid based shore power (to berth only)	$5M *+ power to port + ships*	Lower of $2.5M or 50%	20 yrs	2 yrs	• 25% of ship visits by 2011 • 60% of ship visits by 2014 • 70% of ship visits by 2017 • 90% of ship visits by 2020 +
	Existing cargo ship terminal	Install non grid based shore power (natural gas engine w/SCR or zero-emission system)	$4M for 2MW unit *+ ships*	$200k/MW	7 yrs	By 1/1/10	• 1,000 hrs/yr by 2010 • 2,000 hrs/yr by 2012 • 3,000 hrs/yr by 2014 + • Emissions testing
				$140k/MW	5 yrs		
Diesel commercial harbor craft	Existing tug, tow w/ 2 yrs CA registration/operation	Repower w/ current Tier 2 engine or better	$270/hp	Lower of 50% or $135/hp	15 yrs	2 yrs	• 100% CA operation • Scrap old engine
				½ of above	7 yrs		
	Existing work or pilot boat, comm. fishing boat w/2 yrs CA registration and 700 operating hrs/yr	Repower w/ current Tier 2 engine or better	$270/hp	Lower of 80% or $215/hp	10 yrs	n/a	• 10 yrs of CA home port or 5 yrs with pro-rated option • Scrap old engine
				½ of above	5 yrs		
Diesel cargo equip't	Existing rubber tired gantry crane w/ 2 yrs CA operation at port or rail yard	Retrofit ARB-verified Level 1 or better energy storage system	$160k-$320k	Lower of 50% or $160k	15 yrs	n/a	• No credit towards ARB cargo equipment rule
				½ of above	10 yrs		

Based on these eligible projects with maximum bond funding and the source category funding targets, the staff estimates that the Program can reduce emissions of diesel PM by 7,800 tons, and NOx emissions by 190,000 tons over the project lifetime covered by contract. Shore power and engine upgrade projects will also reduce SOx and/or greenhouse gas emissions. The Program benefits will ultimately depend on the mix of projects and the bond funding per project.

Early Grant Projects. The statute permits ARB to award up to $25 million in "early grants" with FY 2007-08 funds using an accelerated process to get cleaner equipment operating sooner than the rest of the $250 million appropriation. ARB staff solicited proposals from six local air quality management districts (AQMDs) and air pollution control districts (APCDs) that already have the experience to quickly ramp up for the Program. As shown in Appendix D, they submitted $177 million in early grant proposals covering the range of categories, with trucks dominating.

As shown below, we recommend that the Board use $25 million to partially fund each district's proposal, with a priority on truck projects that can be operational by the end of July 2008 to quickly reduce the health risk in heavily impacted communities. If a district proposed both truck retrofit and replacement, we recommend full funding of the retrofits and a pro-rated share of the replacements. We also support funding for a grid-based shore power project at the Port of Oakland that would be the first to demonstrate the utility of this approach at the Port. These projects would reduce diesel PM by about 240 tons and NOx by about 6,100 tons over the project life.

For all of these projects, the technology is effective and available now. The match from non-State funds is 1:1 or greater. We also propose that the air districts be allowed to use up to five percent of any grant award on truck projects, and up to two percent on grid-based shore power projects, for program administration.

Table 5. Staff Recommendations for Early Grant Projects

Bond Funding (%)	Trade Corridor	Local Air District	Project(s)
$13.8M (55%)	Los Angeles/ Inland Empire	South Coast AQMD	• Replace 130 port trucks in lease-to-own program • Replace 130 other trucks
$5.7M (23%)	Central Valley	San Joaquin Valley APCD	• Retrofit 450 trucks • Replace 60 pre-1996 trucks
$0.8M (3%)	Central Valley	Sacramento Metro AQMD	• Replace 15 trucks
$3.4M (14%)	Bay Area	Bay Area AQMD	• Install grid-based shore power at 2 ship berths • Retrofit 75 port trucks
$1.3M (5%)	San Diego/ Border Region	San Diego APCD & 5 partners	• Replace 10 pre-1995 port trucks or retrofit up to 115 port trucks • Retrofit 115 trucks in Imperial Valley
$25M			

Public Participation. By statute and policy, this Program will provide a high level of transparency and opportunity for affected communities and other stakeholders to participate in shaping the rules, influencing the projects proposed for funding, and monitoring implementation. For each appropriation of funds:

- ARB will update the Program Guidelines and the list of eligible project options in a public process.
- Local agencies will hold at least one community meeting in the trade corridor during development of their project applications to solicit input.
- We will post a list of those applications on ARB's website.
- We will hold public workshops to discuss staff's recommendations on funding for local agency projects and solicit input.
- The Board will hold a hearing and consider public testimony prior to selecting local agency projects for funding.
- Local agencies will post a prioritized list of candidate equipment projects on their web sites prior to funding.
- Local agencies and ARB staff will routinely update the website with the project status, including the equipment projects funded and completed.
- In each trade corridor, we will work with all local agencies implementing projects to convene a joint community meeting once a year to report on progress.
- We will prepare and post an annual report on Program implementation.

Schedule. The Board held a public hearing and adopted the Guidelines and $25 million in early grant projects on February 28, 2008 in Sacramento. In March 2008, we will then sign early grant agreements and solicit applications from local agencies for the remaining FY 2007-08 funds. Following another series of public workshops, ARB will hold a public hearing and allocate the remainder of the $225 million to local agencies in Spring 2008.

We expect that local agencies will begin announcing the availability of incentives for equipment owners in Spring 2008 for any early grants and Summer 2008 for the bulk of the funds. We are proposing that local agencies have 18 months to get all of their first year bond funds obligated via contracts with equipment owners (12 months in succeeding years of the Program), and another one to four years to complete the projects and make final payment (based on the project type).

Staff Recommendations. ARB staff recommends that the Board adopt the proposed *Proposition 1B: Goods Movement Emission Reduction Program Guidelines for Implementation*. We further recommend that the Board establish funding targets for the trade corridors and source categories via resolution. Finally, we recommend that the Board approve $25 million in funding to air districts for early grant projects.

A. PROGRAM BASICS

1. What is the Goods Movement Emission Reduction Program?

The Goods Movement Emission Reduction Program (Program) is a $1 billion bond program created by voter-approved Proposition 1B in 2006, and clarified by Senate Bill 88 (Chapter 181, Statutes of 2007) which was passed as part of the FY 2007-08 State budget. This is a new incentive program administered by the Air Resources Board (ARB or Board) in partnership with local agencies to quickly reduce emissions and human health risk the movement of freight or "goods" along California's trade corridors.

The Program will provide financial incentives to owners of equipment used in freight movement to upgrade to cleaner technologies.

2. How does this Program contribute to ARB's efforts to reduce air pollution from goods movement?

The Board approved ARB's *2006 Emission Reduction Plan for Ports and Goods Movement in California* (Plan) on April 20, 2006, to reduce pollution from the trucks, locomotives, ships, harbor craft, and cargo-handling equipment that move international and domestic freight throughout the State. This Plan describes the related emissions and health impacts, establishes health-protective goals, identifies an array of regulatory and incentive strategies to cut pollution, and quantifies the costs and benefits.

We estimate the cumulative cost for Plan implementation at $6-10 billion statewide through 2020. The Plan envisions that regulations will remain the framework for reducing emissions over time, with industries paying a large majority of the cost of compliance. The Plan recognizes that incentives can accelerate the benefits for both sources without the financial resources to fund cleanup quickly and sources outside California's direct authority. Public incentives can also be leveraged to stimulate private investment.

ARB is actively developing and implementing the State regulatory strategies, with rules now adopted for port trucks, ship auxiliary engine fuel, shore power for ships at dock, harbor craft, and cargo equipment. In 2008, ARB will consider additional regulations for the rest of the diesel truck fleet operating in California, ship main engine fuel, and truck aerodynamic improvements to reduce greenhouse gases. The incentive components are also underway, through the existing Carl Moyer Program and this new Goods Movement Emission Reduction Program.

This Plan is part of the broader State *2007 Goods Movement Action Plan*, which addresses California's goods movement needs in the areas of infrastructure, security, workforce development, finance, community impacts, and environmental mitigation. A

key principle is the simultaneous and continuous improvement of both goods movement infrastructure and the environment. Proposition 1B provides targeted funding to support these improvements – for infrastructure, security, and the environment.

3. Where are California's priority trade corridors?

SB 88 identifies four priority trade corridors, consistent with the State's *2007 Goods Movement Action Plan*. To implement this air quality program, we identified air quality-related boundaries for each corridor. The equipment funded under the Program may operate in multiple corridors and occasionally beyond these boundaries within California. Projects will compete for funding based on their total emissions within California.

Table 6. Trade Corridor Descriptions

Trade Corridor	Boundary	County or Counties
Los Angles/ Inland Empire	South Coast Air Basin	Western Los Angeles, Orange, Western Riverside, and Western San Bernardino Counties
	Port Hueneme	Located in Southwestern Ventura County
Central Valley	San Joaquin Valley Air Basin	Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties
	Sacramento Federal Ozone Nonattainment Area	Sacramento, Yolo, Eastern Solano, Western Placer, Western El Dorado, Southern Sutter Counties
Bay Area	San Francisco Bay Area Air Basin	Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Western Solano, and Southern Sonoma Counties
San Diego/ Border	San Diego Air District	San Diego County
	Imperial Air District	Imperial County

4. What are the health impacts from air pollution due to goods movement?

Air pollution from goods movement contributes to premature death, cardiac and respiratory diseases, more asthma and bronchitis episodes, and increased risk of cancer. In ARB's 2006 Emission Reduction Plan, we attributed over 2,400 premature deaths (plus over 70,000 hospitalizations and asthma/bronchitis cases) statewide in 2005 to goods movement emissions. For the 15-year period between 2005 and 2020, the Plan identifies the value of the aggregate health impact statewide from goods movement air pollution at $200 billion.

5. What emission sources and pollutants are targeted in the Program?

The targeted emission sources include the trucks, locomotives, ships, harbor craft and cargo-handling equipment that transport goods, which are typically powered by long-lived diesel engines. The Program will fund eligible projects for these emission sources that quickly and effectively reduce the following pollutants:

- Diesel particulate matter (diesel PM), which ARB identified as a toxic air contaminant. We treat combustion particulate matter from ship diesel engines burning bunker fuels as diesel PM.
- Nitrogen oxides (NOx) and sulfur oxides (SOx) that contribute to fine particles (PM2.5) formed in the atmosphere.
- NOx and reactive organic gases (ROG) that form ozone in the atmosphere.

As part of simplifying the Program, we are proposing to focus on quantifying diesel PM and NOx emissions and the resulting reductions from bond-funded projects. These are the two most consistently important pollutants from goods movement in all four corridors, and the most likely to differ between competing proposals within the same source category.

Of the targeted source categories, only ships are still significant sources of SOx emissions. Shore power projects to reduce ship emissions at dock will effectively cut this pollutant. It is not necessary to quantify the SOx emission reductions from each competing shore power project. Comparing the reductions in diesel PM and NOx emissions is an adequate basis to assess shore power project proposals relative to others in the same source sector. Diesel engines emit ROG, but emission levels are typically less than 1/10 the NOx emissions and also should not be a determining factor in project selection.

We considered greenhouse gas emissions in setting the source category funding targets, specifically the amount allotted for shore power and cargo equipment projects that reduce fuel consumption. Since projects are competing within source categories, there is not a need to quantify greenhouse gas reductions from individual projects.

6. What are the emissions from goods movement in the four trade corridors?

The four priority trade corridors combined account for 2/3 of all statewide goods movement emissions. This report uses diesel PM and NOx emission estimates developed for ARB's 2006 Emission Reduction Plan for Ports and Goods Movement, with one significant update. For trucks, we used the improved inventories developed for the new ARB truck rules. For ships and harbor craft, we excluded the emissions from passenger vessels, including cruise ships, ferries, and excursion boats. We focused on 2010 as a mid-year for this Program. These numbers do not reflect the benefits of the regulations the Board adopted in December 2007 for drayage trucks serving ports and intermodal rail yards, and shore power for ships at dock.

Table 7. Diesel PM Emissions from Goods Movement by Corridor and Category

	Diesel PM Emissions in 2010 (tons per day)				
Source Category	**LA/Inland Empire**	**Central Valley**	**Bay Area**	**SD/ Border**	**Total 4 Corridors**
Heavy diesel trucks	7.9	5.5	2.6	1.4	17.4
Ships out to 24 nm	2.5	0.06	1.6	0.3	4.5
Locomotives	0.9	0.8	0.3	0.2	2.2
Commercial harbor craft	0.8	0.1	1.1	0.4	2.4
Cargo handling equipment	0.2	<0.1	<0.1	<0.1	0.3
Total all categories	12.3	6.5	5.6	2.3	26.7

Table 8. NOx Emissions from Goods Movement by Corridor and Category

	NOx Emissions in 2010 (tons per day)				
Source Category	**LA/Inland Empire**	**Central Valley**	**Bay Area**	**SD/ Border**	**Total 4 Corridors**
Heavy diesel trucks	183	141	63	34	421
Ships out to 24 nm	52	<1	26	7	85
Locomotives	21	28	11	5	65
Commercial harbor craft	16	2	22	8	47
Cargo handling equipment	9	<1	2	<1	12
Total all categories	281	172	124	54	630

7. What outreach has ARB staff done to develop this proposal?

ARB staff kicked off Program development in late August 2007 when the FY 2007-08 budget and implementing legislation were signed. We released a *Staff Draft Concepts for Implementation* paper on September 17, 2007 to share our initial thoughts and begin the public discussion. In October 2007, staff held five public workshops around the State on that concept paper, with about 240 attendees. We have considered over 35 letters and emails that provide comments on those concepts. We then sent letters inviting over 180 individuals from key stakeholder groups (those identified in the implementing legislation) to focused consultation meetings in late November and early December 2007 to share new information and seek feedback.

From September through late December 2007, staff participated in over 200 phone calls and 50 in-person meetings with interested stakeholders. We initiated regular discussions with an informal working group of air districts and ports from each region on Program administration issues and the early grants. We also participated in periodic conference calls with a group of environmental and community advocates throughout Program development.

Following the release of this Staff Report on January 3, 2008, and the proposed *Proposition 1B: Goods Movement Emission Reduction Program Guidelines for Implementation,* ARB staff held another five public workshops around the State during the week of January 7, 2008. After the release of the proposed Guidelines for Implementation on February 4, 2008, ARB staff held a final public workshop (webcast) on February 15, 2008 in Sacramento.

8. What is the schedule to implement the Program?

We show the tentative schedule for ARB and local agency actions to implement the Program below. These milestones apply to the bulk of the $250 million in FY 2007-08 funds. Any funds approved for early grant projects will be on a faster schedule.

Feb 28, 2008 — ARB consideration of the Program Guidelines. The Board will hold a public hearing and consider adoption of the Program Guidelines, based on staff recommendations and public input. Once the Guidelines are adopted, staff will issue a Notice of Funding Availability and solicit local agency project applications.

Mar/Apr 2008 — Local agency project applications. Local agencies will submit proposals (by source category) to ARB to implement incentive programs for eligible projects within the trade corridors.

Apr 2008 — Public review and staff evaluation of proposals. Following the close of the application period, ARB will review and post eligible applications on its website. Staff will rank eligible applications based on criteria in the Guidelines, propose the most competitive projects for funding, and hold public workshops.

May-June 2008 — Local agency project awards. The Board will hold a public hearing to consider approval of funding for specific local agency project applications, based on staff recommendations and public input. Once the Board has acted, staff will execute grant agreements with the selected local agencies.

3rd Quarter 2008+ — Equipment owner applications and awards. Local agencies will solicit applications for equipment projects, rank and select eligible projects based on criteria in the Guidelines, and execute contracts with equipment owners to fund projects.

3rd Quarter 2008+ — Installation of cleaner technology. Equipment owners will begin purchasing and installing replacement equipment, retrofit pollution control devices, or electric infrastructure.

9. How will this Program contribute to meeting California's State Implementation Plan targets to attain federal ozone and PM2.5 standards?

The State Implementation Plan (SIP) is California's comprehensive strategy to show how regions that violate federal air quality standards will attain those standards by the applicable deadline. In September 2007, the Board adopted a new Statewide Strategy for PM2.5 and 8-hour ozone, as well as the local SIP elements for the South Coast. The Board had previously approved the local ozone SIP elements for the San Joaquin Valley. These SIP revisions rely heavily on reducing emissions from existing vehicles and equipment already in use in the State.

Goods movement projects funded under this Program will support attainment of the SIP's emission reduction targets for the South Coast (and the downwind Antelope/Mojave region), the San Joaquin Valley, and the Sacramento Region. We expect that bond funds and other incentives, in concert with regulations, will dramatically accelerate the replacement of diesel trucks, locomotives, and commercial harbor craft, as well as the installation of shore-based power for ships at dock.

10. How will this Program contribute to meeting California's greenhouse gas emission reduction targets?

Assembly Bill 32 (Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006, establishes the first-in-the-world comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, and cost-effective reductions of greenhouse gases. This Goods Movement Program will help accelerate the introduction of more efficient technology that cuts greenhouse gas emissions. For example, when ships at dock transition from running their on-board engines to use of shore-based electrical power, the ship's electrical demands can be met with much lower greenhouse gas emissions. New locomotive and harbor craft engines are also expected to reduce fuel consumption and greenhouse gas emissions.

For longer-haul trucks, aerodynamic devices can improve fuel efficiency and reduce greenhouse gases, with a 2-3 year payback period through lower fuel costs. The Program will require local agencies to provide information on these devices as part of their outreach to encourage truck owners to include them on new truck purchases or retrofits.

11. How does this Program relate to other elements of Proposition 1B?

Proposition 1B authorizes funding for many transportation improvements, including $2 billion specifically to support goods movement infrastructure through the Trade Corridors Improvement Fund administered by the California Transportation Commission. The Commission expects to program funds for competing transportation projects in early Spring 2008, based criteria including throughput, reliability, deliverability, regional benefits, congestion relief, safety, community impacts, and air quality. It is the responsibility of the

project proponents to mitigate any air quality impacts as part of the project proposal and budget.

This $1 billion in Proposition 1B for the Goods Movement Emission Reduction Program is intended to reduce the existing health risk from goods movement operations by cleaning up the equipment that moves freight.

12. What other air quality incentives are available to reduce emissions from mobile sources?

The $250 million in Program funding this year will augment $1.3 billion in annual funding currently available for air quality incentives that target cleaner vehicles and equipment.

Table 9. Major Sources of Incentive Funding in the Four Corridors

Funding Source	Annual Funding for Air Quality Incentive Programs (million dollars)					
	# of Yrs	LA/ Inland Empire	Central Valley	Bay Area	San Diego/ Border	Total (or State-wide)
Vehicle Registration Fees and the Carl Moyer Program	ongoing	107.8	38.3	40.2	8.0	194.3
Technology Clean Air Program Grants (AB118, Nunez, 2007)	8	to be determined				80.0
Federal Congestion Mitigation and Air Quality Funds	ongoing	244.0	63.0	75.0	33.0	415.0
Lower-Emission School Bus Program (Prop 1B)	1	to be determined				200.0
Port of LA/Port of Long Beach (port funds)	5	83.6	0	0	0	83.6
Port of LA/Port of Long Beach (truck cargo fees)	5	320.0	0	0	0	320.0
San Joaquin Valley (indirect source/developer fees)	ongoing	0	19.5	0	0	19.5
Total						*1,312.4*

B. PROGRAM STRUCTURE AND KEY CONCEPTS

13. What is the basic structure of the Program?

The framework for the overall Program is provided by the Legislature in SB 88. The Program is structured to effectively reduce emissions and health risk utilizing local agency expertise in each trade corridor.

In addition to the legislative framework, we relied on the successful Carl Moyer Program, run jointly by ARB and the local air districts, as a model for most of the operational and administrative elements of this Goods Movement Program. However, the project eligibility and funding criteria are unique to this Goods Movement Program in response to the specific statutory priorities.

The statute directs ARB to first develop and approve the Program Guidelines. The Guidelines provide the competitive criteria and procedures for the overall Program, and the safeguards necessary to maximize the emission reduction benefits and achieve the earliest possible health risk reduction in heavily impacted communities.

ARB will use the Guidelines to award grants for "local agency projects" by source category and trade corridor through a competitive process. Successful local agencies are then responsible for providing incentives to the end recipients -- "equipment owners"—who will purchase and install cleaner equipment. Local agencies also have the option of hiring sub-contractors to administer their grant awards. Local agencies (or their sub-contractors) will use the criteria established in the Guidelines to competitively select "equipment projects" for funding. Both ARB and the local agencies are responsible for ensuring compliance with the funding and accountability provisions of the Program Guidelines.

Governor Schwarzenegger emphasized the need for simplicity in this Program, which offers two key advantages: (1) it makes the Program more accessible for equipment owners, especially small businesses, and (2) it reduces the government overhead to run the Program, leaving more bond funding available for emission-reducing projects.

> *"I am requesting the State Air Resources Board to develop program administrative guidelines that make sense, reduce bureaucratic red tape, simplify and expedite project application and award procedures, and ensure projects are completed in record time."*
>
> Governor Arnold Schwarzenegger
> August 24, 2007

14. What are a "local agency" and a "local agency project?"

The statute restricts eligibility for grant administration to "local public entities involved in the movement of freight through the trade corridors of the State or involved in air quality improvements associated with goods movement." To qualify, a local public entity must be able to implement all of the local agency requirements of the Guidelines, fund mobile equipment that operates in multiple regions, and meet at least one of the following criteria:

- Be directly responsible for operating a freight movement facility (like a seaport or airport);
- Have statutory authority for designing and implementing strategies and/or plans to reduce emissions or health risk from air pollution sources (like an air district); or
- Have statutory authority for planning and funding regional goods movement infrastructure projects (like a regional transportation planning agency).

We do not believe that the presence of a goods movement facility (like a distribution center or rail yard) within its political jurisdiction alone makes a local government entity (like a city or county) eligible for direct funding under this Program. To make the competitive aspects of this Program work, the scope of project proposals must be regional in nature. For example, if a city wanted to seek funds to upgrade trucks serving a single distribution center, they would be required to offer the incentives to all trucks operating in the trade corridor without a preference for the local trucks serving that distribution center. The end result could be that city taking on the administrative burden of Program implementation for trucks that do not even serve the target facility. We encourage such local governments to work with their local air districts to develop eligible projects and line up sufficient match funding to make those truly local projects competitive against others within the trade corridor.

A "local agency project" is the source category-specific incentive program that the local agency proposes to implement. For example, ARB may award a grant to a local agency for a local agency project that targets 1,000 truck replacements in the Central Valley. Local agencies may propose projects for more than one source category. However, we will evaluate each local agency project separately to ensure the competitive process is consistent within each source category.

15. What are an "equipment project" and an "equipment owner?"

An "equipment project" refers to the upgrade of a vehicle or specific piece of equipment. Equipment owners that have fleets may apply for multiple equipment projects under the bond program. We use the term "equipment owner" to refer to the person who can purchase and sell the equipment, and make legally binding certifications and commitments regarding past and future equipment operation. For a truck replacement project that relies on a lease-to-own program, both the registered owner and the lessee must sign the contract with the local agency.

C. FUNDING TARGETS, MATCH, AND PRIORITIES

16. Why is staff recommending that the Board establish funding targets for corridors and source categories?

The statute contains over 15 criteria that ARB and/or local agencies are to consider in making funding decisions. Some of these factors are most effectively applied by targeting levels of funding to source categories and corridors, while others lend themselves to selecting among competing local agency projects or equipment projects. Establishing these targets will help ensure that all of the funding criteria and considerations in the statute can be effectively implemented.

The statute recognizes the need for projects to compete against others in the same source category, not against projects in other categories. To implement this approach, set portions of the funding are targeted to each source category (or a combination of categories). Source category funding targets support the reduction in local and regional health risk from goods movement as a primary consideration. For example, if truck and locomotive projects competed head-to-head for funding with total emission reductions or cost-effectiveness as the basis for selecting projects, trucks might receive very little funding. However, since trucks are the dominant source of health risk from goods movement in most impacted communities, staff believes that it is most appropriate to use a source related funding target to ensure truck projects receive the appropriate priority for upgrade under the Program.

The statute does not explicitly require an allocation by corridor, but it does direct ARB to identify a means to consider an air basin's attainment status for State and federal air quality standards and its health risk from goods movement. We believe this is most efficiently and effectively done by targeting funding to each corridor based on population, goods movement emissions, and federal attainment needs. These targets also ensure that California residents in each defined trade corridor see benefits from the statewide program which is eventually funded by all taxpayers. Finally, proposing such targets facilitates a transparent and open discussion of the optimum funding splits to reduce the contribution of goods movement sources to each region's toughest air pollution challenges.

17. How did staff develop the source category funding targets?

We considered several factors identified in the statute to develop the funding targets by source category. First, we evaluated the contribution of each source category to total statewide goods movement emissions (diesel PM, NOx, and greenhouse gases) in 2010, with regulations adopted prior to October 2007 in place. The heaviest trucks used to haul cargo account for more than two-thirds of the goods movement emissions statewide, followed by ships at 14 percent, locomotives at ten percent, harbor craft at seven percent and cargo handling equipment at one percent.

Table 10. Goods Movement Emissions by Source Category in the Trade Corridors

Pollutant	Emissions by Source Category in 2010					
	Trucks	Ships*	Cargo Equip	Locos	Harbor Craft*	Total
Diesel PM (tons per day)	17.4	4.4	0.3	2.2	2.4	26.7
NOx (tons per day)	421	85	12	65	47	630
Greenhouse gases (MMCO2 equivalents)	19.6	2.9	0.4	3.0	1.4	27.3
% Emissions by category						
Diesel PM	65%	17%	1%	8%	9%	
NOx	67%	14%	2%	10%	7%	
Greenhouse gases	72%	11%	1%	11%	5%	
Average % emissions	**68%**	**14%**	**1%**	**10%**	**7%**	

* Operations in port and out to 24 nautical miles at sea.

Second, we looked more qualitatively at the health impacts caused by each source category; this also considers the location of emissions in proximity to people. Trucks are found at goods movement facilities -- whether seaports, airports, rail yards, high-traffic roads, or distribution centers. The health impact factor suggests that the percentage of funding to trucks should increase, relative to other categories. We decreased the percentage of funding to ships and harbor craft main engines since many of these emissions occur while at sea and have less impact than emissions from vessels in port or from land-based sources.

Table 11. Impact of Goods Movement Emissions by Source Category

Pollutant	Impact by Source Category				
	Trucks	Ships	Cargo Equip	Locos	Harbor Craft
Average % emissions (2010)	68%	14%	1%	10%	7%
Health impacts (2005)	71%	9%	2%	12%	6%
Proximity to people	+++	- -	+	+	-
Staff recommendation	**76%**	**10%**		**10%**	**4%**

We combined the ship and cargo equipment emissions because most of these sources occur at the same facilities – ports – and can appropriately compete for funding. ARB's health risk assessments also show that drayage trucks serving seaports and intermodal rail yards contribute to high risks in heavily-impacted nearby communities. As a result, we believe it is important to earmark a substantial portion of the funding for trucks dedicated to this vocation.

Looking at the entire Program, we recommend these source category targets:

- $400 million: Heavy diesel drayage trucks serving seaports and intermodal rail yards
- $360 million: Other heavy diesel trucks that haul goods, plus any truck stop or distribution center electrification projects
- $100 million: Diesel freight locomotives
- $100 million: Shore power for cargo ships at berth, plus any cargo handling equipment projects
- $ 40 million: Commercial harbor craft

18. What level of match funding is required?

To achieve the greatest public health benefit with the bond funds, the legislation directs us to consider cost-effectiveness when selecting projects, and to seek the maximum match funding from federal, local, and private sources.

The match funding is the difference between the bond funding requested and the total cost of the project. For each type of eligible project, we are proposing a cap on the bond funding available. In most cases, the bond would pay up to 1/3 to 1/2 of the total project cost. The highest match is required of the industries with the greatest ability to pay – the shipping industry (for shore power) and the rail industry (for locomotives). We have structured the funding caps so that the Program secures overall match funding of better than 1:1. The Program also provides a competitive advantage within each source category for projects with the greatest amount of non-State match funding.

19. What sources of match funding can be used for this Program?

The statute distinguishes between State funds and monies from all other sources. The match required to cover the difference between the bond funding cap and the total project cost can come from the private sector, local agencies, or the federal government. Private match funding can be provided by the equipment owner, an industry sponsored program, or other sources.

Examples of public match funds include, but are not limited to: vehicle registration fees controlled by local agencies or local governments, air district fees (like the indirect source and developer mitigation fees imposed by the San Joaquin Valley APCD), port monies or fees from truck tariffs, federal Congestion Mitigation and Air Quality program dollars programmed by transportation agencies, and the U.S. Environmental Protection Agency's (U.S. EPA's) Clean Diesel Program or West Coast Diesel Collaborative monies.

There are additional conditions attached to the use of vehicle registration fees. These funds can only be used to provide match for on-road vehicle projects, i.e. cleaner trucks. Further, the $2 portion of the vehicle registration fee authorized by Assembly Bill 923 (Chapter 707, Statutes of 2004) can be used for match under the bond program, but

truck projects co-funded with these monies must satisfy both the project eligibility in the Carl Moyer Program and in this Goods Movement Program. Proposed funding from that $2 fee and the bond program must be combined to determine if a project complies with the applicable cost-effectiveness cap (measured in dollars per weighted ton of emissions reduced) for the Moyer Program. For the purpose of competitively ranking local agency and equipment projects under this Program, the calculation of reductions per State dollar invested must treat both bond Program monies and the $2 surcharge monies as State funds since the surcharge monies would otherwise be used in the Moyer Program.

20. What priorities does the staff recommend for FY 2007-08 funds?

We suggest that the Board consider identifying these priorities for funding in the first year of the Program:

- Eligible projects that can quickly begin implementation and deliver air quality results. This is consistent with statutory direction to give priority to projects that achieve the earliest possible reduction of health risk in heavily impacted communities. These could be communities with high risks due to nearby goods movement facilities or communities impacted by high regional pollution levels from goods movement emissions.
- Truck retrofit projects to add diesel particulate filters for immediate, broad scale, cost-effective risk reduction in many communities. Based on the implementation schedules in related truck regulations, we expect that these projects would only be eligible for FY 2007-08 funding.
- Port truck replacement projects in the Los Angeles/Inland Empire corridor to support the Port of Los Angeles and the Port of Long Beach clean truck tariff programs. These ports are requiring that all drayage trucks serving the ports be replaced (with models meeting 2007 emissions standards) between late 2008 and the end of 2011. The 1988 and older trucks will no longer be allowed to operate at the ports as of October 2008; 1993 and older trucks must be phased out prior to January 2010; and 2006 and older trucks must meet the new standards before January 2012. This schedule means any financial assistance from the bond program needs to come in the first few years of Program funding.

D. LOCAL AGENCY INFORMATION

21. How will candidate local agencies be asked to demonstrate their ability to successfully implement this Program?

A local agency eligible to apply for funding must demonstrate its ability to implement a project that complies with the statute and the Program Guidelines. Eligible local

agencies must be able to provide, at minimum, the following information specific to the proposed project for each source category:

- A description of the proposed local agency project and the primary trade corridor to be targeted.
- A funding demonstration showing that financial resources are available and sufficient to implement and monitor the full scope of the proposed local agency project. This demonstration must also detail how the equipment projects will be fully funded via a combination of requested bond monies, any other State dollars, and the match funding from private, local, and/or federal sources.
- Evidence that the agency has the staff resources and experience to successfully administer funding for equipment projects in each proposed source category, including equipment inspections.
- Evidence that the local agency has the internal fiscal controls to meet accountability requirements and pass fiscal audits.
- An implementation plan that details the procedures and process the agency will follow for each proposed project, including: marketing; a solicitation process; equipment project review, prioritization, selection, and tracking; inspections of old and upgraded equipment; legal contracts with equipment owners; and contingencies to respond to equipment projects that drop out of the Program.
- A commitment to a schedule that includes, at minimum, clear milestones for marketing, project solicitation, application review and ranking, equipment inspections, funding awards, expenditure of bond funds by equipment owners, overall program reporting to ARB, and individual equipment tracking.

22. What are a local agency's obligations under this Program?

The Guidelines detail the requirements for local agencies implementing projects funded under this Program. In summary, successful local agencies will be required to accomplish all of the following, consistent with the Guidelines:

- Conduct a community meeting to discuss concepts for project proposals.
- Develop and submit complete application.
- Sign a legal grant agreement with ARB.
- Provide adequate staffing to run program.
- Conduct marketing to reach equipment owners, with an extra level of effort to reach owners of a single truck or harbor craft.
- Solicit and receive applications from equipment owners, confirm the emission reduction estimates, and apply the competitive process to select and fund equipment projects. Also, for each source category, post the prioritized list of equipment projects on the agency's website prior to funding and make available to ARB electronically.
- Sign and enforce contracts with equipment owners.
- Inspect equipment and monitor compliance.
- Deliver projects and benefits on time.

- Provide required data and reports to ARB.
- Participate in annual community meetings coordinated by ARB for each corridor.
- Take part in audits by ARB and other State agencies (or State contractors).

23. What Program administration funds are available for local agencies?

All State bond programs have to cover bond issuance costs of roughly two to three percent of the total bond. SB 88 authorizes ARB to use an additional 5 percent of the funds for administration and audits, and allows local agencies to apply for up to 5 percent of the grant award for administrative costs. As a result, up to $120-130 million of the $1 billion could be used for bond and Program administration costs, reducing the funds available for cleaner equipment. We believe that an effective program can be implemented using a substantially lower level of funds for administration.

To allow more funding for clean air projects, we believe that ARB and its local agency partners (in the aggregate) should limit their bond-funded expenses to well below the five percent each is authorized to use by the statute. In addition to reducing ARB's administrative costs to an expected 2-3 percent through Program design, the Guidelines include lower caps on local agency compensation for the source categories that will require fewer resources to administer. For example, we expect the cost to local agencies to fund a limited number of locomotive replacement or shore power electrification projects will be much lower than the cost to administer the truck incentive program with hundreds or thousands of equipment owners. We propose that most local agencies be limited in the amount of grant funding that can be used for administration to these levels:

- 2% of the grant amount for grid-based shore power.
- 3% of the grant amount for locomotives, cargo cranes, and non-grid shore power.
- 4% of the grant amount for harbor craft.
- 5% of the grant amount for trucks.

Since the requested administrative costs affect the competitiveness of local agency projects (less emission reductions per State dollar invested), agencies may choose to request less than the maximum amount shown above for administration.

The other mechanism to reduce the costs paid with bond funds is to have the ports (and any other local agencies with the ability to generate new funding through fees on goods movement sources) cover their own administrative expenses. As a result, we recommend that these agencies be required to apply 100 percent of grant funds directly to cleaner equipment, with no bond funding allowed to cover administrative costs.

Based on these proposals, we can reduce the administrative costs for the combination of statewide, ARB, and local agencies from a potential as high as 13 percent, down to 8 percent or less, as illustrated below:

- 2% for statewide bond costs (bond issuance, fiscal oversight, and audits -- by agencies other than ARB).
- 3% for ARB administration (Program development and updates, outreach, application review, grant processing and monitoring, oversight, auditing, and reporting).
- 3% on average for local agency administration, based on the recommended source category funding targets, local agency administrative funding caps, and likely participation by seaports with no administrative expenses charged to the Program.

24. How long will local agencies and equipment owners have to complete the equipment upgrades?

SB 88 allows a local agency up to two years to award contracts to equipment owners from the date of grant agreement with ARB, and up to four more years to complete projects and make final payment. Combined, this provides up to six years from ARB's initial grant award before a project is fully implemented and operational. This time period is longer than needed for most of the source categories in this Program, particularly given the urgency to reduce emissions and health risk.

We recommend shorter deadlines as appropriate for each source category to expedite completed projects. From signature of a grant agreement with ARB, we propose that local agencies have 1 year to sign equipment project contracts (for all source categories) that obligate all grant funds (minus allowed administrative expenses).

Given the size of this Program and the number of pieces of equipment that could be funded, there is some uncertainty regarding a local agency's ability to complete the project solicitation and review, equipment pre-inspection, and award of contracts in 1 year during this first round of Program implementation. Therefore, we propose that local agencies be permitted up to 18 months to sign contracts with equipment owners to obligate the FY 2007-08 funds only. By the second year of this Program, there will be an established baseline and local agencies can adjust the scope of their next project proposal up or down to based on the number of equipment projects they can confidently deliver within the 1 year timeframe.

From the time that the local agency and equipment owner sign a contract, we recommend the following limits:

- 1 year to verify project completion/close out payment for cargo equipment projects.
- 18 months to verify project completion/close out payment for truck retrofit, repower, and replacement projects.
- 2 years to verify project completion/close out payment for locomotive projects and non-grid shore power projects.
- 3 years to verify project completion, obtain at least one year of data on actual use, and close out payment for truck stop or distribution center electrification projects.

- 4 years to verify project completion/close out payment for harbor craft projects and grid-based shore power projects.

25. How will ARB select local agency projects for funding?

SB 88 requires that ARB allocate funding for local agency projects considering more than 15 criteria, including competition based on the emission reductions to be achieved. Our proposal assumes that the Board elects to identify Program funding targets for each source category and corridor that encompass a number of these criteria.

We recommend a two-step process to select local agency proposals for funding. Step 1 is *quantitative* and results in a competitively ranked list of projects. Step 2 is qualitative to determine the level of funding, considering the availability of bond funds, the corridor and category funding targets, and priorities established by the Board for each appropriation. This process would be followed for competing local agency projects within each trade corridor and funding category.

STEP 1:

Step 1 is based on two statutory factors – emission reductions and a measure of cost-effective that considers match funding.

a) Emission reduction score

The calculation of emission reductions uses the Carl Moyer program protocol of weighting combustion PM emissions (essentially diesel PM) by a factor of 20 relative to other pollutants to account for the greater health impacts of PM per ton of emissions. This protocol helps target Program funding to the projects that will achieve the greatest reduction in health risk.

For each equipment project option that a local agency proposes to implement within a source category, ARB staff will evaluate the local agency's estimate of the total pollutant-weighted emission reductions in California, over the average project life, based on the Project Benefits Calculator for that source category.

This factor would also recognize the efficiency of large-scale proposals, subject to credible evidence that the local agency has the ability to process the number of equipment projects within the timeframes allowed by the Guidelines. ARB staff will use past performance of the local agency as one mechanism to assess this ability.

Emission reductions = Reduction in NOx + (combustion PM x 20) emissions in California over the average project life in tons

If a local agency proposal combines multiple equipment project options within a source category, the calculation is repeated for each option, and the reductions added together for the source category.

ARB staff will list projects in descending order of emission reductions, with the greatest emission reductions on top and the lowest emission reductions on the bottom. Staff will number or score each project starting at the bottom with a score of 1 and continuing consecutively to the top project. For example, if there are 8 project proposals, the one with the greatest emission reductions would receive a score of 8. See Figure 1 for an example.

Emission Reduction Score = number from above evaluation

b) Cost-effectiveness and match score

For each proposed equipment project option in a source category, ARB staff will review the local agency's estimate of the total pollutant-weighted emission reductions (as determined above and converted from tons to pounds), divided by the total State funding proposed for the project, based on the Project Benefits Calculator for that source category. Total State funding includes requested Program funds (project and administration funds), plus any other State dollars – see discussion under Question 19 regarding Match Funding, on treatment of the $2 vehicle registration fee surcharge under AB 923 as State dollars.

Cost-effectiveness and match = weighted emission reductions (lbs)/total State $

If the proposal includes multiple equipment project options, the calculation is repeated for each option. Finally, the costs are added together and the benefits are added together to determine the average cost-effectiveness and match number for the source category.

ARB staff will list projects in descending order of emission reductions per State dollar, with the highest number on top and the lowest number on the bottom. Staff shall number or score each project starting at the bottom with a score of 1 and continuing consecutively to the top project. For example, with 8 project proposals, the one with the greatest emission reductions per State dollar would receive a score of 8. See Figure 1 for an example.

Cost-Effectiveness and Match Score = number from above evaluation

This calculation of cost-effectiveness indirectly accounts for the level of match funding. A project will always have a combination of Program funding and match funding (from State or non-State sources) to cover the total cost of the project. The cost-effectiveness equation uses the full emission reductions achieved by the total project funding, not just a subset of the reductions in proportion to the State funding component. By counting the total emission reductions, the Program recognizes the benefits of non-State match funds and offers a competitive advantage to projects with greater match. If an agency cannot seek administrative dollars from the bond program or chooses to request less than the maximum, the proposal would achieve relatively more benefits per State dollar expended.

For example, assume the Program offers funding for up to 50 percent of the cost of new equipment, with the other 50 percent covered by non-State match funds (resulting in a 1:1 match). Most project proponents seek the maximum Program funds, but proponent X only requests Program funding for 25 percent of the total cost, with the other 75 percent covered by non-State match funds (effectively providing a 3:1 match). The emission reductions for all the projects would likely be similar, but the total reductions per State dollar are much greater for proponent X because this project relies on less State funds and more match funds.

c) Competitive ranking

ARB staff will add the Emission Reduction Score to the Cost-Effectiveness and Match Score to determine the final points for each local agency project. ARB staff will rank local agency projects within each corridor and funding category from highest points to lowest points. We will post this competitively ranked list on the Program website. See Figure 1 for an example.

Note: projects to repower or replace switcher locomotives shall be considered a higher priority than other types of locomotive equipment project options, consistent with the statutory direction to give funding priority to switchers.

Figure 1. Local agencies A,B,C submit competing truck projects (hypothetical)

Results from Project Benefits Calculator:

Agency/ Project	Reductions over 8-Year Project Life		Weighted Emission Reductions (tons)	State Dollars
	NOx tons	PM tons		
A/ Replace 1,000 trucks	3,170	220	7,570	$50M at $50k/truck
B/ Replace 800 trucks	2,536	176	6,056	$24M at $30k/truck
C/ Replace 700 trucks	2,219	154	5,299	$28M at $40k/truck

Emission Reduction Score		Cost-Effectiveness and Match Score	
A-7,570 tons	Score: 3	B-0.5 lbs/$	Score: 3
B-6,056 tons	Score: 2	C-0.4 lbs/$	Score: 2
C-5,299 tons	Score: 1	A-0.3 lbs/$	Score: 1

Competitive Ranking	
Project B: 2+3	5 points
Project A: 3+1	4 points
Project C: 1+2	3 points

STEP 2:

Step 2 determines the level of funding, considering the availability of bond funds, the corridor and category funding targets, and priorities established by the Board for each appropriation.

a) Consideration of available funds and funding priorities

Starting with the project with the highest competitive ranking above, ARB staff will compare the requested bond dollars with the available funds, the Program funding targets for the corridor and source category, and any priorities identified by the Board for that year.

b) Pro-rated funding of local agency project proposals.

ARB staff will recommend whether the most competitive local agency project in each corridor and funding category should be funded in whole, in part, or not at all in that funding cycle. ARB staff may recommend pro-rating the requested Program funding and the estimated performance measures (pieces of equipment, emission reductions, etc.) based on the available dollars and funding priorities.

Board priorities may result in preferential funding for one of the equipment project options proposed in the local agency application for a source category (i.e., if the Board makes funding for PM filter retrofits a priority for FY2007-08 funds, ARB could provide more funding for that equipment project option relative to the other options within the source category). If Board priorities do not favor a specific equipment project option within a source category, ARB will assume that any pro-rated funding will be applied proportionally to all of the equipment project options the local agency proposes to implement.

Once the recommended funding is determined for the top project, ARB staff will evaluate the project with the second highest competitive ranking in consideration of available funds and funding priorities. Staff will continue until the appropriate level of funding for that corridor and category – in that funding cycle -- is reached.

Based on the process described above for evaluating and ranking eligible local agency projects, as well as assessing the funding level, ARB will issue its written recommendations to the Board for local agency project funding with the available grant funds.

26. How does the Program consider project timing and location?

We considered including other factors (like project timing and location) in this two-step evaluation process. We concluded that an explicit consideration of timing in this evaluation would not be productive since it would likely create an incentive for agencies to be overly optimistic in their schedules. However, the ability (or inability) of an agency

to reliably complete projects within the timelines defined in the Guidelines would impact ARB staff's evaluation in Step 1 for future funding requests.

We sought public feedback on the question of how best to deal with project location. The statute directs us to both: (a) prioritize funding for projects that benefit communities heavily impacted by goods movement and (b) consider whether emission reductions are likely to occur in an area with elevated emissions that contribute to cumulative exposure to air pollution. We consulted with environmental and community advocates, as well as local agencies, to determine if location should be part of the local agency project evaluation and concluded that is was neither necessary nor practical to do so.

The available data from health risk assessments of goods movement facilities (like ports, rail yards, and roads with high truck traffic) and local air district estimates of the risk from diesel PM by census tract or ZIP code show that the highest risks occur near the facilities and along truck travel corridors. By targeting the vehicles and equipment that operate at or along these facilities, the Program will deliver the benefits to heavily impacted areas with elevated emissions. The primary mechanism to prioritize funding for these areas is through the corridor funding targets.

E. EQUIPMENT PROJECT INFORMATION

27. What are the basic requirements for equipment projects?

To satisfy the direct requirements of the statute or fulfill the purpose of the Program, we propose that all eligible equipment projects must:

- Significantly reduce diesel PM and/or NOx emissions.
- Produce real, quantifiable, and enforceable emission reductions from existing diesel equipment used to move freight in one or more of California's four major trade corridors.
- Achieve emission reductions not otherwise required by law or regulation.
  - Including, but not limited to, adopted ARB rules or agreements for: solid waste vehicles, public/utility truck fleets, truck idling, truck auxiliary power systems, truck inspections for excess smoke and tampering, transportation refrigeration units, diesel cargo-handling equipment, gas forklifts and equipment, diesel off-road equipment, ship fuel, harbor craft, locomotive fuel, locomotive idling limits and shutoff technology, locomotive inspections for excess smoke, and locomotive fleet average emission standards in the South Coast.
- Have funding reasonably available to provide the necessary non-State match and begin operating the cleaner equipment on the schedule set forth in the Guidelines.
- Be sponsored by a local agency and consistent with local and/or State goods movement and air quality plans.

- Replace, retrofit, or repower (as applicable) equipment that is currently registered (if applicable) in California and operating at a certain activity level in one or more of California's trade corridors.
- Use retrofit technology that is verified by ARB for effectiveness and durability (as applicable).
- Sign a legally binding contract with a local agency that reflects the conditions and restrictions detailed in the Guidelines (if a truck that is co-funded with bond monies is leased, the owner and lessee must both sign this contract).
- Commit to 100% California operation for the life of the project, unless the contract includes special exceptions for periodic maintenance at an out-of-state facility.
- Accept an on-board monitoring device (if requested) and/or provide annual documentation to demonstrate that the expected benefits continue in California for the project lifetime.
- Agree to equipment inspections.
- Comply with record-keeping, reporting, and audit requirements.

28. What types of equipment projects would be eligible for funding?

SB 88 lists the following types of equipment projects as candidates for funding:

- The replacement, repower, or retrofit of heavy-duty diesel trucks.
- The replacement, repower, or retrofit of diesel locomotive engines, with priority given to switching locomotives.
- The replacement, repower, or retrofit of harbor craft that operates at seaports.
- The provision of on-shore electrical power for ocean freight carriers.
- Mobile or portable shoreside distributed power generation projects.
- The replacement, repower, or retrofit of cargo handling equipment that operates at seaports and rail yards.
- Electrification infrastructure to reduce engine idling and use of internal combustion auxiliary power systems at truck stops, intermodal facilities, distribution centers, etc.

We evaluated this list to determine the most effective types of projects in each source category based on technical feasibility, cost, and emission reduction potential. We focused on the most effective advanced technology that is verified, available, and can be widely deployed to reduce emissions quickly. The most effective approach for simplifying the Program to speed health benefits is to establish a limited number of project types that are technically feasible and can cost-effectively reduce emissions and health risk with a high degree of certainty.

The Guidelines detail staff's recommendations for the eligible projects in each source category that could be funded with FY 2007-08 monies. Table 4 summarizes these recommendations. Local agencies could choose to propose projects from all of the options in a category, or just a subset of those options, to best address the air pollution problem in that corridor.

29. How and when would the list of eligible projects be updated?

Each time the Legislature and the Governor appropriate funding under this Program to ARB via the State budget, staff will develop updates to the Program Guidelines for consideration by the Board. We will evaluate the progress of the Program and any changes needed to improve its effectiveness, plus advances in technology and equipment costs that create a need to revise the list of eligible projects.

30. What types of projects are <u>not</u> eligible for funding in this Program?

Not Eligible: In addition to the statutory restrictions, the following types of projects are not eligible for funding under the Program:

- Projects to design, acquire rights-of-way, perform environmental review, build, improve, or operate transportation infrastructure (like roads, bridges, or interchanges; rail yards, tracks or sidings; rail or highway tunnel widening; railroad crossing grade separations; ship channel dredging; etc.).
- Projects to design, acquire rights-of-way, perform environmental review, build, improve, or operate intermodal transfer or distribution centers (also called inland ports), except for electric infrastructure at existing distribution centers.
- Scientific or technical research and development that does not directly clean up existing engines and produce quantifiable, enforceable emission reductions from freight movement. Includes programs to perform emissions testing on new technology. (If that technology is later demonstrated and verified, it can be considered for funding in the next update to the Guidelines)
- Business plan development or implementation that does not directly clean up existing engines and produce quantifiable and enforceable emission reductions from freight movement.
- Technology demonstration projects that cannot compete on a level playing field with other project options in the same source category.
- Equipment, vehicles, or ship berths owned or leased by the federal government, including the military.
- Fuel or electricity purchases.
- Operation and maintenance costs.
- Legal costs.
- Any other projects that cannot meet all of the requirements in the Guidelines (see Question 27 for a summary).

31. What is the basis for the project options for heavy-duty trucks?

The largest heavy-duty trucks – weighing over 33,000 pounds – travel over 30 million miles daily in California. Most of these trucks are powered by diesel fuel. These trucks are major emitters of NOx and diesel PM and create high health risks near high-traffic roads, intermodal and distribution centers, as well as regional pollution.

Even with the growth expected in goods movement activity due to increases in population and trade, California is on a course for substantial reduction in overall heavy-duty truck emissions. We expect emissions of all pollutants from heavy trucks to decline by about one-half or more by 2020, as the existing truck fleet slowly turns over to the cleaner engines required by ARB and U.S. EPA regulations. In the case of trucks, we refer to these increasingly stringent emissions standards by the first year that vehicles meeting those standards are introduced, as shown in the table below.

Table 12. Existing Emission Standards for New Truck Engines

Model Year of Engine	Percent Emission Control When Engine Is New	
	NOx	PM
1986 and older	0%	0%
1987 – 1990	44%	0%
1991 – 1993	53%	58%
1994 – 1997	53%	83%
1998 – 2003*	63%	83%
2004 – 2006	81%	83%
2007 – 2009	90%	98%
2010 and later	98%	98%

* Some MY2003 trucks meet 2004 engine standards due to U.S. EPA and ARB "pull-ahead" agreements with truck engine manufacturers.

These control percentages apply to new engines being certified. Emissions from vehicles on the road are typically higher than the certification levels for two reasons. "Real world" truck operations differ from the test cycle and performance of the emission controls deteriorates over time. To calculate the benefits of any project, and the Program as a whole, we will rely on in-use truck emission factors that take these considerations into account.

ARB regulations and incentive programs are reducing truck emissions over time as the fleet naturally turns over to these cleaner models, but the sheer number of these trucks and the long life of diesel engines mean California must accelerate the cleanup to meet its public health goals. There are three basic ways to clean up truck emissions.

- Retrofit – Keep the existing truck and engine, but add an ARB-verified diesel emission control system, like a diesel particulate filter to achieve Level 3 control (85 percent PM reduction). These filters are widely available for 1994 and later trucks, but not pre-1994 trucks.
- Repower – Keep the truck itself, but replace the existing diesel engine with a new, cleaner diesel or natural gas engine. There is a technical feasibility issue that we expect will limit this option in the near term. Because the more sophisticated control technologies used to comply with 2007+ standards are highly integrated with the truck chassis and other components as a single system, engines meeting those standards may be unavailable as stand-alone units to replace older truck engines.

- Replace – Completely replace an old truck with a newer, cleaner truck powered by a diesel, natural gas, or advanced technology engine. This option is available for any vintage of existing truck, but carries the highest cost.

ARB is developing a comprehensive new regulation that would apply to all in-use commercial diesel trucks operating in California. Trucks would be required to employ the above approaches to accelerate the phase-in of a cleaner fleet in California. The rule is scheduled for Board consideration in Fall 2008. We have coordinated this proposal with that effort to ensure that projects deemed eligible for bond funding in this cycle will be good investments once the regulation is implemented. In coordination with the regulatory efforts, we identified opportunities through this Program to achieve a combination of immediate reductions in diesel PM (by adding diesel particulate filters to existing trucks) and lasting reductions of NOx and diesel PM that go beyond anticipated regulatory requirements (by replacing older existing trucks with ones meeting 2007 standards or better, several years in advance of a rule deadline).

At the request of the San Joaquin Valley APCD, we also evaluated the potential for a three-way (or tiered) truck transaction to occur under the Program. The basic concept is to replace a middle-aged truck with a new truck, retrofit that middle-aged truck with a Level 3 diesel PM filter, use the retrofitted middle-aged truck to replace a really old truck, and then scrap the oldest truck. We analyzed the potential emissions benefit of this approach and identified some ranges of model years for the middle-aged and old trucks that would clearly provide an air quality benefit. Since the middle-aged truck will increase in value with addition of the diesel PM filter and can be sold to the old truck owner, we do not believe bond funding should be available for this retrofit component. We do believe bond funding could be appropriately used for the purchase of the new truck, at levels consistent with other truck replacement projects.

Standard truck replacement projects require the existing truck to be scrapped to secure bond funding towards the new truck. We recognize that this will make the Program most attractive to owners of older trucks that have the least economic value and reliability. This is a positive aspect since getting these high-emitting oldest trucks off the road is critical to reducing the diesel PM risk.

For the first update to the Guidelines, we will evaluate the potential benefits and impacts of allowing middle-aged or newer trucks to be retrofit with a diesel PM filter and resold – either in California to replace the oldest trucks that can't be retrofit -- or outside California. We will consider ways that the proceeds from such a sale could be used to augment the grant funding available.

In the San Joaquin Valley, NOx reductions are the highest priority to reduce the atmospheric formation of both ozone and PM2.5 pollution to meet air quality standards. Local agencies in this area could choose to focus funding exclusively on truck replacement to cut NOx and address this significant regional pollution problem. Local agencies in other regions could similarly choose to propose the eligible project option(s) that best fit their air quality needs.

32. Can truck lease-to-own programs be funded under the Program?

Yes, equipment owners may receive bond co-funding to replace old equipment with cleaner models and offer those new models for lease -- with appropriate conditions. First, both the equipment owner and the lessee must sign the contract with the local agency and be legally liable (i.e., jointly and severally) for fulfilling the requirements of that contract. Second, the funds provided by the bond must be used to reduce the principal owed by the lessee to purchase the truck. The owner cannot impose a charge on the lessee for any portion of the bond funds as a component of the monthly lease payment. However, the owner can set a lease payment schedule that recoups his out-of-pocket investment and a reasonable rate of interest over the term of the lease. If local agencies want to propose bond funding for lease-to-own programs, they should contact ARB staff for a list of financial data that must accompany the application.

33. What is the basis for the project options for trucks serving seaports or intermodal rail yards?

Heavy-duty trucks serving seaports and intermodal rail yards are typically among the oldest, dirtiest trucks on the road. These trucks operate in and near densely populated neighborhoods, leading to significant health and safety impacts for the communities. In December 2007, ARB adopted a new rule to help modernize the intermodal drayage trucks, reduce emissions, and cut the resulting health risk as quickly as possible. The Program can further expedite the application of diesel particulate filters and the replacement of older trucks with 2007 models or cleaner -- in an industry that often cannot afford the full cost of these upgrades.

We have proposed a separate category for these drayage trucks, consistent with ARB's rule. The eligible projects (retrofit, repower, or replace) would achieve a combination of immediate reductions in diesel PM and lasting reductions of NOx and diesel PM based on early introduction of the technology.

34. What is the basis for the project options for locomotives?

The captive (in-state) diesel locomotives that operate at rail yards to help move rail cars around (switchers) and provide additional towing power for steep grades (helpers) have historically been some of the oldest, dirtiest models in rail operation. More powerful line-haul locomotives are the workhorses that pull trains long distances. ARB's recent health risk assessments at rail yards across the State demonstrate the need to clean up diesel PM from locomotive operations. NOx reductions from locomotives are also essential to aid attainment of ozone and PM2.5 air quality standards. The statute defines switchers as the highest priority for upgrade in the locomotive source category.

Table 13. Existing National Emission Standards for New Locomotive Engines

Type	Tier	Date of Original Manufacture	Percent Control When Engine is New or Remanufactured	
			NOx + ROG	PM
Line-haul locomotives	Tier 0	1973 - 2001	33%	0%
	Tier 1	2002 - 2004	47%	0%
	Tier 2	2005 and later	61%	47%
Switcher locomotives	Tier 0	1973 - 2001	26%	0%
	Tier 1	2002 - 2004	41%	0%
	Tier 2	2005 and later	58%	52%

* Relative to uncontrolled equipment

The current cleaner switcher technology being ordered by the railroads is called a generator set, or "gen-set," that is powered with two or three (700 hp) Tier 3 non-road diesel engines instead of one large conventional diesel locomotive engine. These gen-set switchers achieve over 85 percent PM control and over 80 percent NOx control, relative to uncontrolled equipment. Gen-set locomotive manufacturers report that these locomotives can also reduce fuel consumption by 20 to 35 percent. We propose that these gen-sets (or a technology with equivalent emission control) be used to replace switcher engines and other intrastate locomotives.

U.S. EPA has proposed the next set of emission standards (Tier 3 and Tier 4) for new or remanufactured engines. If Tier 3 or Tier 4 engines should become commercially available during the course of this Program, we will change the eligible project specifications to require replacement with an engine meeting the cleanest emission standard.

Eligibility for locomotive bond funding under AB 201 requires ARB to determine that the emission reductions are not necessary to satisfy any mandated emission reduction requirement under any agreements with federal, state, or local agencies. ARB's first agreement with the large, Class I railroads -- Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) -- to reduce emissions was signed in 1998 and requires their locomotive fleets operating in the South Coast to reduce NOx emissions over 65 percent by 2010. Cleaner locomotives counted by the railroads toward these fleet averages are not eligible for bond funding. These railroads can apply for bond funds to upgrade or replace a locomotive that operates part- or full-time in the South Coast, but neither the resulting benefits, nor a pro-rated portion of those benefits, could be applied toward their obligations under this agreement.

The second agreement in 2005 focused on reducing the health risk from diesel PM due to rail yard operations by 20 percent over a three-year period. Among its provisions, this 2005 agreement requires installation of devices to reduce idling; these devices are required and not eligible for bond funding. The 2005 agreement also calls more broadly for the railroads and ARB to work with communities to further reduce emissions and health risk through other actions. The agreement specifically anticipates the use of public incentives to help co-fund these actions. Staff believes that the provisions in the

2005 agreement for further actions do not constitute a specific requirement that would prohibit locomotives operated by the Class I railroads from eligibility for bond funding.

We are proposing locomotive equipment projects that target replacement of switcher or line-haul freight locomotives (or their engines) that can be dedicated to service in California. These projects can significantly reduce NOx and diesel PM. The greater efficiency of the new engines also reduces greenhouse gas emissions.

Similar to trucks, locomotive leasing programs are also eligible for bond funding if both the equipment owner and the lessee sign the contract with the local agency and become legally liable (i.e., jointly and severally) for fulfilling the requirements of that contract.

35. What is the basis for the project options to supply shore power to ships?

Ships at dock ("hotelling") typically run their auxiliary diesel generators for on-board power. Diesel generators provide electrical power for lights and equipment, and boilers provide steam for hot water and fuel heating. These engines account for significant diesel PM emissions that impact nearby communities, as well as NOx and SOx emissions that contribute to regional ozone and particle pollution.

With the development of electrical infrastructure at the ports, ships can plug in to electrical power at berth (cold-ironing) rather than running their on-board engines. The shore-side electrical power can be supplied through connections to the electricity grid or produced on-site with distributed generation. Use of shore-based electrical power also reduces greenhouse gas emissions compared to power generation on-board the ship.

We are proposing partial funding for the electrical infrastructure needed to provide shore-side power to cargo ship berths at ports in the trade corridors. These eligibility requirements are consistent with ARB's shore power regulation adopted on December 6, 2007. The bond incentives would be available for ports and terminal operators that can install the shore power infrastructure at some berths earlier than required and deliver greater emission reductions than required by the regulation.

Grid-based electrical power is the current most effective option for shore power because these systems are capable of meeting the full power needs of a large cargo ship, including one with refrigerated containers, with the lowest emissions. Several California ports need to bring additional power capacity to the port itself, before there is the possibility of running lines to supply ships. If a port has adequate power available, it's still a lengthy process to do the design, environmental review, and installation of the underground electric infrastructure to each ship berth.

There is interest in using distributed generation as an effective technology to provide emission reductions. Power sources might include fuels cells, solar panels, or a portable, natural gas generator. The portable generator can achieve diesel PM

reductions on par with grid power, but achieves less reduction of NOx emissions. We are proposing to allow early installation of distributed generation shore power projects using selective catalytic reduction to control NOx to compete for funding in this source category. The funding cap is structured to be equivalent to grid-power per megawatt of power provided.

36. What is the basis for the project options for commercial harbor craft?

Harbor craft operate in and around ports, contributing to community health risk on shore and regional pollution. These vessels generally stay within California coastal waters, and usually leave and return to the same port. The commercial vessels related to goods movement include tug/tow boats, pilot boats, workboats, crew/supply boats, and commercial fishing vessels. Tug and tow boats typically have multiple large engines with high horsepower and high emissions per vessel. These emissions, in combination with daily operations near shore, create the greatest health risk from freight harbor craft. Most harbor craft use diesel-powered propulsion and auxiliary engines. The diesel engines typically used in harbor craft were built for durability, with no requirement for emission controls on new engines until 2000.

Table 14. Existing Emission Standards for New Harbor Craft Engines

Engine Category	Emission Tier	Model Years	Percent Control*	
			NOx	PM
1: Cylinder displacement <5 liters per cylinder	Tier 1	2000-2003	25%	45%
	Tier 2	2004-2011	68%	61%
2: Cylinder displacement ≥5 to <30 liters per cylinder	Tier 1	2000-2006	25%	46%
	Tier 2	2007-2011	61%	60%

* Relative to uncontrolled equipment

U.S. EPA has proposed the next set of emission standards (Tier 3 and Tier 4) for new engines. Like locomotives, if Tier 3 or Tier 4 engines should become commercially available during the course of this Program, we will change the eligible project specifications to require replacement with an engine meeting the cleanest emission standard.

On some vessels, older dirty engines can be replaced with newer, cleaner engines or remanufactured to equivalent emission levels. Ease of engine replacement varies widely vessel to vessel. Repowering with a new engine may involve substantial hull and vessel modifications to accommodate the new engine.

ARB adopted a rule for commercial harbor craft that includes the tugs and tows used in goods movement, but not the pilot and work boats or the commercial fishing fleet. This rule accelerates the replacement of uncontrolled or Tier 1 engines with current technology certified to Tier 2 or Tier 3 emissions standards, as applicable on the compliance date.

The project options for repower are complementary to the regulatory requirements, with more funding offered to the non-regulated boats as an incentive for participation. We also suggest a shorter project life for commercial fishing vessels to stay in a California home port. We focus on replacing just propulsion engines in uncontrolled tugs, tows, pilot and work boats, and commercial fishing boats, as these engines provide the most cost-effective return on the bond investment. We structured the funding caps based on horsepower because that is the most important factor in determining project cost, and horsepower varies widely in this source category.

37. What kind of location monitoring devices or other mechanisms may be required for trucks, locomotives, and harbor craft?

At this time, only equipment owners awarded Program funds for locomotive equipment projects will be required to install, monitor, and report data from an on-board monitoring device. Program funds cannot be used for this requirement on locomotives.

For trucks and harbor craft, equipment owners must agree to the installation of an on-board monitoring device, or electronic monitoring unit, at any time over the life of the contract if requested by ARB or the local agency. The equipment owner would not be responsible for the cost of purchasing a device, but would need to make the equipment available for installation of any required device.

We are currently evaluating the viability and cost of requiring passive or active Global Positioning System (GPS) devices. Both passive and active GPS devices record equipment location and activity. We are assessing the applicability of the GPS units in terms of cost, lifetime, range of application, privacy concerns, and other factors. We are also evaluating the viability of a large volume purchase of devices with bond funds to minimize costs and ensure the use of standardized technology and software. For active devices that routinely transmit electronic data to a monitoring center, the majority of the cost is in the monthly monitoring fee. The passive devices are much cheaper, but require periodic download via direct connection to a computer. We will propose requirements for these devices, as appropriate, on trucks and potentially harbor craft in the first update to the Guidelines.

We are also utilizing federal, State, and local equipment registration databases to ensure ongoing equipment project compliance with California registration and operation requirements. Equipment registration databases include, but are not limited to, those administered by the:

- Air Resources Board.
- California Department of Motor Vehicle.
- California Department of Fish and Wildlife.
- California Department of Transportation.
- Local agencies, such as air districts and ports.

Finally, when ARB field inspectors check trucks, locomotives, harbor craft, cargo equipment, and ship berths for compliance with ARB rules, they will also determine if the equipment received bond funding via an equipment database. They will assess bond-funded equipment to ensure that all pollution controls are functioning and the equipment is meeting the Program operating conditions.

38. What is the basis for the project options for cargo handling equipment?

Cargo handling equipment is used at ports and intermodal rail yards to transfer container and bulk goods between ships, trains, trucks, or storage areas within the facility. The equipment includes yard trucks, cranes, forklifts, top handlers, side handlers, reach stackers, sweepers, loaders, dozers, excavators, railcar movers, and backhoes. California and U.S. emission standards for off-road diesel equipment will significantly reduce emissions from this sector as new, cleaner equipment is phased in.

Table 15. Existing Emission Standards for New Diesel Cargo Handling Equipment

Regulatory Horsepower Range	Examples of Equipment	Percent Emission Control* (Year Implementation Begins)							
		NOx + ROG				PM			
		Tier 1	Tier 2	Tier 3	Tier 4	Tier 1	Tier 2	Tier 3	Tier 4
100-<175 hp	Forklifts	22% (1997)	44% (2003)	66% (2007)	95% (2012)	0% (1997)	59% (2003)	59% (2007)	97% (2012)
175-<300 hp	Yard tractors Top picks	11% (1996)	44% (2003)	66% (2006)	95% (2011)	27% (1996)	73% (2003)	73% (2006)	97% (2011)
300-<600 hp	Rubber-tired gantry cranes	11% (1996)	46% (2001)	66% (2006)	95% (2011)	27% (1996)	73% (2001)	73% (2006)	97% (2011)

* Relative to uncontrolled equipment

ARB has two rules on the books to accelerate the introduction of this cleaner equipment. The statute focuses on diesel cargo-handling equipment used at seaports and rail yards. In December 2005, ARB adopted a rule for this equipment that already requires significant emission reductions from almost all off-road diesel-fueled engines operating at major seaports and intermodal rail yards in California. ARB's 2007 regulation to clean up existing off-road diesel equipment captures many of the other equipment types that might be used to move freight.

We looked at cost-effective opportunities to achieve emission reductions beyond those required under the regulations and identified one type of project with potential for funding. Rubber-tired gantry (RTG) cranes, which are used to lift and move containers, may be a suitable candidate for energy storage systems with co-funding from the Program if cost-effectiveness can be demonstrated. These hybrid systems (including flywheel, battery or other energy storage devices) reduce peak power demands, lowering fuel consumption as well as diesel PM, NOx, and greenhouse gas emissions.

Shortly before we released this report, the Port of Long Beach provided limited information about a proposal to convert diesel powered RTG cranes to electric power and requested that this project be eligible for bond funding. We plan to follow up with the Port and the technology providers to evaluate this approach for potential inclusion in the first update to the Guidelines, expected in Fall 2008.

39. What is the basis for the project options for truck stop or distribution center electrification?

The final type of eligible project listed in SB 88 is electrification infrastructure to reduce engine idling and use of internal combustion auxiliary power systems at trucks stops, intermodal facilities, distribution centers, and other places where trucks congregate. The emissions from the trucks themselves, together with their auxiliary power units for cabin comfort and transport refrigeration units that chill perishable loads, impact nearby communities.

Staff continues to investigate whether electrification infrastructure at these facilities is an effective investment of bond money to reduce the health impacts from these operations, considering current and upcoming regulations. ARB already has several regulations in place that are substantially reducing emissions from heavy-duty trucks, truck idling, transport refrigeration units, and auxiliary power units over the next few years.

- On July 22, 2004, ARB adopted a rule limiting unnecessary diesel truck idling to 5 minutes, beginning in February 2005.
- On October 20, 2005, ARB amended the rule so sleeper berth equipped trucks must comply with the 5-minute idling rule, beginning in January 2008. In addition, auxiliary power systems and fuel fired heaters on 2007 and newer trucks are subject to more stringent emission performance standards.
- On February 26, 2004, ARB adopted a rule for diesel-fueled Transport Refrigeration Units (TRU) and TRU generator sets, and facilities where TRUs operate that requires these sources to reduce diesel PM emissions to meet idling emission performance standards, beginning in January 2009.

ARB is also developing a comprehensive rule to accelerate the cleanup and replacement of commercial diesel trucks operating in California – this rule is scheduled for Board consideration in Fall 2008. Current proposals call for diesel PM filters by the end of 2009, and upgrades to a model year 2007 or newer truck by the end of 2013.

In the Staff Draft Concepts, we requested public input on the benefits and cost-effectiveness of electrifying truck stops or distribution centers, after accounting for the impacts of adopted and pending ARB rules. The objective was to determine if there are electrification projects that can offer benefits per State dollar invested similar to the other truck projects. We did not receive any comments demonstrating that this approach will be cost-effective or competitive.

To assess the potential benefits, we looked at internal analyses being done to support a health risk assessment for typical distribution centers of various sizes. To evaluate the optimum scenario, we considered a large distribution center where trucks and TRUs are operating. TRUs could account for over 80 percent of the diesel PM emissions at the facility, since trucks are subject to the 5-minute idling rule, and the TRUs may operate an average of 3 hours while loading/unloading at the dock. The emission reductions per dollar invested in electric infrastructure to replace some of these operations would diminish rapidly over time.

Table 16. Large Distribution Center Emissions with Adopted ARB Rules

Large distribution center with trucks and transport refrigeration units (TRUs)				
	Diesel PM Emissions	**Expected diesel PM reductions from adopted ARB rules** (cumulative from 2006 levels)		
Source/Year	**2006**	**2010**	**2015**	**2020**
Trucks	<1 lb/day	45%	73%	84%
TRUs	9 lbs/day	30%	75%	>90%

Despite the diminishing returns, we acknowledge that electrification of a truck stop or distribution center may be useful to reduce emissions in the near term at high use facilities with neighborhoods nearby. We provide a general methodology and standard that a project proponent would need to meet to apply for bond funding.

Under the Guidelines, the proponent must work with the local air district to estimate the baseline emissions from existing operations, after accounting for the benefits of all adopted regulations. The proponent needs to provide the proposed operating statistics for the project and calculate the resulting change in emissions over a ten year period. Based on the bond funding requested, if the weighted reductions per State dollar invested is better than the average for truck replacement projects, the electrification project could compete against other truck proposals for funding. Reimbursement for the costs to install the landside electric infrastructure and pedestals could be awarded for a successful project, based on demonstrated use over the first year of operation. Truck or TRU modifications, and electricity costs, are not reimbursable.

40. Can projects that would divert cargo from truck to rail be funded?

We've been contacted by several proponents of projects to build new inland ports or intermodal distribution centers, with requests to fund design, right-of-way acquisition, environmental review, construction, and/or operation of the transportation infrastructure or distribution facility. One proposal would develop a new short haul rail line between a seaport and inland distribution center where cargo would then be shipped to its final destination via truck. Another proposal would use short haul trucks to bring agricultural goods to an intermodal hub to package them for shipment to the East Coast via special rail service. These types of projects can potentially reduce truck congestion, increase the velocity and reliability of freight transport, and may also have air quality benefits (depending on the specifics of the equipment used).

We do not believe the infrastructure elements of these projects are an appropriate or effective use of funds under this Program. There is other funding available under the Proposition 1B Trade Corridors Improvement Fund (and transportation programs) that is specifically directed to these kinds of projects and we encourage the project proponents to seek those sources.

We have identified one component of these proposals that might be eligible for this Program in future years – bond co-funding for the clean locomotives that would displace existing truck trips. In concept, we believe a proposal that includes the following elements might provide sufficient cost-effective reductions inclusion in the list of eligible projects that can compete for funding:

- Necessary infrastructure fully funded and operational, with all appropriate permits and other authorities secured.
- A commitment to scrap the existing California trucks the project claims to take off the road.
- A written commitment from those former truck owners to use the rail service rather than simply divert the cargo to other trucks.
- And a mechanism funded by the project proponent to objectively track the actual cargo carried via rail in the four trade corridors to support monitoring of project benefits.

41. Can loan assistance programs be funded?

The statute permits loan and loan guarantee programs to be funded. ARB staff will be working with our partners in other State agencies over the next several months to explore a loan assistance program. This program could involve an interest rate buydown and/or loan guarantee approach to allow reasonable monthly payments for equipment owners to purchase new, clean technology. Recent and upcoming ARB rules will require hundreds of thousands of truck and equipment owners to make substantial new investments in cleaner technology.

A statewide loan assistance program may be an effective way to help provide access to capital at reasonable interest rates. This bond funding could provide some of the dollars needed to launch a program, focusing initially on the freight industry and later expanding to other regulated sectors.

Locally run loan assistance programs are another potential approach. ARB staff will also evaluate and develop the specific conditions to allow loan programs proposed by local agencies to compete for funding.

We intend to further consider State and local loan assistance programs in the next update to the Program Guidelines, expected in Fall 2008 after the second appropriation of bond funds to ARB.

42. How will local agencies prioritize and select competing equipment projects in each source category for funding?

Similar to ARB's process for awarding local agency grants, the legislation requires local agencies to use a competitive process to select equipment projects for funding. (See Questions 25 and 26 for a more complete explanation and discussion of related issues.)

Local agencies would not be able to impose non-air quality requirements (like employee drivers) on projects selected for funding under this Program. The Guidelines would also not permit a local agency to impose additional travel restrictions on funded projects (i.e., the majority or "x" percent of the miles traveled with a new truck must occur within a single city, county, air basin, or trade corridor – See section III.B.2.d. of the Guidelines for discussion of acceptable geographic conditions).

The competitive ranking is quantitative based on multiple factors – emission reductions and a measure of cost-effectiveness that considers match funding. This process will be followed for competing eligible equipment projects within each trade corridor and funding category. Each vehicle or piece of equipment is a separate project that must compete independently.

a) Emission reduction score

The calculation of emission reductions uses the Carl Moyer program protocol of weighting combustion PM emissions (essentially diesel PM) by a factor of 20 relative to other pollutants to account for the greater health impacts of PM per ton of emissions. This protocol helps target Program funding to the projects that will achieve the greatest reduction in health risk.

For each equipment project within a source category, the local agency shall review the equipment owner's estimate of the total pollutant-weighted emission reductions in California, over the project life, based on the Project Benefits Calculator.

Emission reductions = Reduction in NOx + (combustion PM x 20) emissions in California over the project life in pounds

The local agency shall list all equipment projects within the same source category and eligible under the same local agency project grant agreement, in descending order of emission reductions, with the greatest emission reductions on top and the lowest emission reductions on the bottom. The agency shall number or score each project starting at the bottom with a score of 1 and continuing consecutively to the top project. For example, if there are 8 project proposals, the one with the greatest emission reductions would receive a score of 8.

Emission Reduction Score = number from above evaluation

This factor recognizes the benefits of cleaning up equipment that will operate in multiple corridors within the State and is consistent with treating the four corridors as elements of a statewide freight movement system.

b) Cost-effectiveness and match score

For each equipment project within a source category, the local agency staff shall review the equipment owner's estimate of the total pollutant-weighted emission reductions in pounds (as determined above), divided by the total State funding proposed for the project. Total State funding includes requested Program funds, plus any other State dollars.

Cost-effectiveness and match = weighted emission reductions (lbs)/total State $

The local agency shall list all equipment projects within the same source category and eligible under the same local agency project grant agreement, in descending order of emission reductions per State dollar, with the highest number on top and the lowest number on the bottom. The local agency shall number or score each project starting at the bottom with a score of 1 and continuing consecutively to the top project. For example, with 8 equipment project proposals, the one with the greatest emission reductions per State dollar would receive a score of 8.

Cost-Effectiveness and Match Score = number in above evaluation

c) Competitive ranking

The local agency shall add the Emission Reduction Score to the Cost-Effectiveness and Match Score to determine the final points for each equipment project. The agency shall rank equipment projects within the source category covered by the grant agreement from highest points to lowest points to create the competitive ranking list.

Note: eligible projects to upgrade switcher locomotives shall automatically be ranked above other types of competing locomotive equipment project options, consistent with the statutory direction to give funding priority to switchers.

d) Application of available funding

The local agency shall apply the available grant dollars (minus allowed administration funding) to the list of competitively ranked equipment projects within the source category. The local agency shall award grant funds to the top project and continue down the competitive ranking list until the grant funds are exhausted. The local agency shall maintain an equipment project backup list comprised of the projects on the competitive ranking list that did not receive funding. Equipment projects on this backup list are available for Program funding, in the order established on the competitive ranking list, if additional funds become available.

F. STATUTORY REQUIREMENTS

43. How does the Program address the statutory criteria for allocating funding and selecting projects?

SB 88 includes specific factors that ARB must consider when allocating funds or prioritizing projects. In the table below, we list those factors and identify how the structure of the Program incorporates each. The Program includes the definition of eligible equipment projects and funding caps, plus:

- Step (1) -- ARB funding targets for trade corridors and/or source categories.
- Step (2) -- the criteria ARB uses to select local agency projects for funding.
- Step (3) – the criteria local agencies use to select equipment projects for funding.

Table 17. Relationship of Statutory Funding Criteria to Program Structure

Citation (SB 88)	Statutory requirement for allocation of funds and/or prioritization of projects	Step(s) in Program where considered
39625.02(d)	Funds are reasonably available and sufficient to complete project	(2) Local agency project selection (3) Equipment project selection
39625.5(a)(1)	Projects compete based on greatest emission reductions from emission source category	(2) Local agency project selection – emission reductions (3) Equipment project selection – emission reductions
39625.5(b)(1)	Earliest possible reduction of health risk in communities with highest risk from goods movement	(1) Funding targets – corridor and category
39625.5(b)(2)(A)	Magnitude of the emission reduction	(2) Local agency project selection – emission reductions (3) Equipment project selection – emission reductions
39625.5(b)(2)(B)	Public health benefits of the emission reduction	Definition of eligible projects (1) Funding targets – category and corridor
39625.5(b)(2)(C)	Cost-effectiveness and sustainability of reductions	Definition of eligible projects including project life under contract (3) Equipment project selection – reductions per State dollar invested
39625.5(b)(2)(D)	Severity and magnitude of source's emission contribution	(1) Funding targets - category
39625.5(b)(2)(E)	Regulatory and SIP requirements	Definition of eligible projects (1) Funding targets – corridor and category
39625.5(b)(2)(E)	Surplus reductions	Definition of eligible projects
39625.5(b)(2)(F)	Reduction in greenhouse gas emissions	Definition of eligible projects (1) Funding targets – category

Citation (SB 88)	Statutory requirement for allocation of funds and/or prioritization of projects	Step(s) in Program where considered
39625.5(b)(2)(G)	Uses advanced emission reduction technologies	Definition of eligible projects
39625.5(b)(2)(H)	Leverages funds from other sources	Definition of equipment funding caps (2) Local agency project selection – reductions per State dollar invested (3) Equipment project selection - reductions per State dollar invested
39625.5(b)(2)(I)	Reduces criteria and toxic air pollutants to achieve AQ standards and lower toxics	Definition of eligible projects (1) Funding targets -- category (2) Local agency project selection – emission reductions (3) Equipment project selection – emission reductions
39625.5(b)(2)(J)	Total reductions over project lifetime per State dollar invested	(2) Local agency project selection – reductions per State dollar invested (3) Equipment project selection – reductions per State dollar invested
39625.5(b)(2)(K)	Reductions likely to occur in location w/elevated emissions and exposure	(1) Funding targets – corridor and category
39626(a)(1)(D)	Air basin's status in maintaining/achieving State and fed air quality standards, and health risk from goods movement emissions	(1) Funding targets – corridor and category

G. Environmental Justice and Community Participation

44. How will the Program focus on reducing emissions and risk in communities heavily impacted by goods movement operations?

The statute directs ARB to "…allocate funds in a manner that gives priority to emission reduction projects that achieve the earliest possible reduction of health risk in communities with the highest health risks from goods movement facilities." It also enumerates 11 other criteria for use in prioritizing such projects (shown in the table above).

The Program will effectively target emission reductions in heavily impacted communities by allocating more funds to the corridors with the greatest impacts from goods movement and more funds to the source categories contributing to the highest health risks (predominantly trucks). These include communities near ports, rail yards, and distribution centers, as well neighborhoods along travel corridors with high truck traffic. In the Central Valley, the greatest impacts may be in communities miles downwind as

these emission sources contribute to formation of regional PM2.5 and ozone pollution. The focus on trucks also supports early reductions in health risk as truck upgrades can typically be accomplished more quickly than other project types.

45. What are the opportunities for affected communities and other stakeholders to influence or monitor the Program?

Consistent with the implementing legislation, the Governor's Executive Order on accountability, and ARB policy, we are proposing public involvement in many steps of Program development and implementation. We highlight the major products and decision points below, along with the responsible agency and the mechanism(s) for public input and/or access.

Table 18. Opportunities for Community and Public Involvement

Product	Who	Public Input/Access
1. Staff draft concepts document	ARB staff	Posted on ARB web for public comment; discussion at public workshops and followup meetings
2. Proposed Program Guidelines (including criteria for prioritizing local agency and equipment projects) and Staff Report with funding targets	ARB staff	Posted on ARB web for public comment; discussion at public workshops
3. Board adoption of Program Guidelines	ARB	Testimony at Board hearing; final document posted on ARB web for public access
4. Notice of Funding Availability (i.e., call for local agency projects)	ARB staff	Posted on ARB web for public access
5. Preliminary concepts for local agency projects	Local agencies	Discussion at community meeting(s) in corridor
6. List of local agency applications submitted to ARB for funding	ARB staff	Posted on ARB web for public comment after screening for eligibility
7. Staff recommendations on funding local agency projects (based on adopted funding criteria in Guidelines)	ARB staff	Posted on ARB web for public comment, discussion at public workshops
8. Board approval of funding for local agency projects	ARB	Testimony at Board hearing; final list posted on ARB web for public access
9. Signed grant agreements with local agencies	ARB staff	Project status updated on ARB web for public access

Product	Who	Public Input/Access
10. Solicitation for equipment projects	Local agencies	Posted on local agency web and distributed to interested parties (ARB web will include link)
11. Prioritized list of equipment project applications submitted to local agency, according to Guidelines	Local agencies	Posted on local agency web for public review prior to action (ARB web will include link)
12. Equipment projects funded by local agencies	Local agencies/ ARB staff	Posted on local agency and/or ARB web for public access
13. Semi-annual updates by local agencies on project status	Local agencies/ ARB staff	Posted on ARB web for public access
14. Annual presentation on progress in implementing bond-funded projects within the corridor	Local agencies/ ARB staff	Discussion at community meeting in each corridor with ARB staff and all local agencies with active projects
15. Annual ARB Program Report to the Legislature	ARB staff	Posted on ARB web for public access
16. Updates to Program Guidelines (following each appropriation to ARB)	ARB	Posted on ARB web for public review/comment; discussion at public workshops; and testimony at Board hearing

H. PROGRAM BENEFITS AND ACCOUNTABILITY MEASURES

46. What benefits can be achieved under the Program?

The full $1 billion Program, as described by staff in this document and consistent with the implementing statute, is conservatively capable of reducing diesel PM emissions by 7,800 tons and NOx emissions by 190,000 tons over the life of the bond-funded equipment that is covered by contract. If we look at the full useful life of the equipment funded under the entire Program (beyond the contract period), the benefits increase to 9,800 tons of diesel PM reduced and 266,000 tons of NOx reduced. Shore power projects will also reduce SOx and greenhouse gas emissions. The projected reduction in carbon dioxide emissions from shore power projects is 1.3 million tons over the contract life, and 2.3 million tons over the full equipment life.

The Program benefits will ultimately depend on the mix of projects and the bond funding requested per project. Anticipating widespread application of diesel particulate filters and replacements for trucks, the greatest reduction in health risk will be achieved in the first five years of the program.

Staff will estimate the benefits from expenditure of the $250 million in FY 2007-08 funds when we review and recommend local agency projects for Board approval in Spring 2008, based on the specific project proposals.

47. What is the cost-effectiveness of the eligible projects?

Since the statute defines cost-effectiveness in terms of emission reductions per State dollar invested, that is the metric we use. The table below shows the relative cost-effectiveness of the eligible projects for each source category, if the full Program funding were spent on these projects. Shore power for ships provides the most benefits for each State dollar invested, due to both the 20 year-project life and the higher match funding requirement. Harbor craft also provides very cost-effective reductions, but many of these emissions occur off-shore and therefore have a lower health impact than land-based sources. With the majority of the funding directed to trucks, it is important to recognize that each ton reduced has the greatest potential to reduce health risk because of the proximity of people to truck operations. These estimates will be revised each time the Guidelines are updated based on changes to the eligible project options and funding levels.

Table 19. Cost-Effectiveness of Eligible Projects (based on options for FY2007-08 Funds)

Source Categories	**Equipment Funds** ($1B category targets minus 8% admin)	**Diesel PM Reductions Over Project Life** (tons)	**NOx Reductions Over Project Life** (tons)	**Weighted Reductions** (lbs PM x 20, plus NOx) **per State Dollar**
Trucks serving ports and intermodal rail yards	$368,000,000	2,453	36,010	0.46
Other trucks and electrification of truck stops/ distribution centers	$331,200,000	2,285	23,470	0.42
Locomotives	$92,000,000	796	30,180	1.00
Shore power for ships and cargo equipment	$92,000,000	1,585	88,510	2.61
Commercial harbor craft	$36,800,000	692	14,240	1.53
TOTAL	$920,000,000	7,811	192,410	0.76

48. How did ARB staff estimate the Program benefits?

We used the emission calculator that will be provided with the Guidelines to estimate benefits for each equipment project under the Program. To estimate the diesel PM and NOx emission reductions achievable under the Program, we assumed:

- The recommended source category funding targets, minus 8% for administration on average (for statewide, ARB, and local agency costs combined).

- For trucks serving ports and intermodal rail yards: 3% of funding for retrofits (for ports outside of the Los Angeles area) and 97% for replacements with the age and activity of the eligible truck population proportional to the current distribution.
- For other trucks: 10% of funding for retrofits and 90% for replacements with the age and activity of the eligible truck population proportional to the current distribution.
- For locomotives: 100% of funding for switchers with an average fuel consumption of 50,000 gallons per year (line-hauls are expected to show greater reductions per State dollar, making this the conservative assumption).
- For shore power: 100% of funding for grid-based power since the alternative project is roughly equivalent in terms of benefits per State dollar.
- For commercial harbor craft: 30% to tugs and tows, 20% to crew/supply/work boats, and 50% to high use commercial fishing vessels based on the population of eligible vessels in the four corridors with the activity of the eligible vessel population proportional to the current distribution.
- All projects were assumed to begin operation in 2010 and continue for the required project life.
- Activity levels for old and new equipment were assumed to be constant.
- Emissions deterioration was assumed for new and upgraded equipment over the project life.

49. How will the State ensure accountability for results and sound fiscal practices?

In January 2007, Governor Schwarzenegger issued Executive Order S-02-07 highlighting the importance of transparency and accountability in administering the over $40 billion in bond funding approved by voters in 2006.

Accountability Plan. The Executive Order directs all State government entities responsible for expending bond proceeds to establish and document a three part accountability structure that includes:

- Front-end accountability, which defines the criteria for expending bond funds as well as the outcomes that the funds are intended to achieve.
- In-progress accountability, which documents actions to ensure projects are staying within scope and cost, and requires semi-annual reports to Department of Finance.
- Follow-up accountability, which requires audits to ensure expenditures achieved the intended outcomes and were consistent with legal requirements.

The Guidelines include extensive accountability requirements that are the substantive basis for this plan. The Department of Finance approved ARB's accountability plan on February 27, 2008, prior to ARB expenditure of funds as required by the Executive Order and statute. The approved accountability plan is available on the Program website.

Fiscal and program audits done on the Moyer Program have proven to be a valuable resource in designing the accountability component for this new incentive program. Consistent with the statute, the Guidelines include:

- Criteria and procedures for ARB allocation of funds to local agency projects.
- Criteria and procedures for local agency selection of equipment projects.
- Project funding demonstrations, contingencies, and remedies for projects that withdraw or don't perform.
- Specific project eligibility requirements, funding caps and match requirements, and project life.
- Operating conditions and enforcement mechanisms for bond-funded equipment.
- Maximum timeframes for ARB to obligate funds via grant agreements with local agencies.
- Criteria that local agencies must meet to receive grant funds from ARB and ARB internal controls on release of funds.
- Maximum timeframes for local agencies to obligate funds via contracts with equipment owners.
- Criteria that equipment owners must meet to receive grant funds from local agency and local agency internal controls on release of funds.
- Maximum timeframes for local agencies to complete projects and make final payment (specific to each source category).
- Physical inspection requirements for old and new equipment.
- Ongoing monitoring and reporting on project operations.
- Ongoing tracking of funds obligated and expended.
- Enforceable grant agreements between ARB and local agencies, and enforceable contracts between local agencies and equipment owners.
- Periodic reporting to local agencies, ARB, the Department of Finance, and the Legislature.
- Program and fiscal audits of ARB, local agencies, and equipment projects.

Bond Website. The Executive Order also requires public website access to information on how bond funds are being utilized for each program to increase transparency for community residents, governments, industries, and other interested parties. ARB will maintain a website at: http://www.arb.ca.gov/gmbond to make information readily available to the public. The website will include at minimum: documents and notices of meetings, the Program Guidelines and accountability plan, Notices of Funding Availability, lists of the local agency projects being considered for funding, the local agency projects awarded bond funds, the local agency project status, links to local agency websites showing the prioritized list of equipment projects considered for funding, the equipment projects awarded bond funds, and periodic updates on the status of equipment projects.

I. RELATIONSHIP TO OTHER PROGRAMS

50. How does the Program relate to air quality regulations, enforceable agreements, and other requirements to reduce emissions?

By statute, the Program can only fund emission reductions "not otherwise required by law or regulation." The Program can co-fund eligible equipment subject to existing or future regulations, but only if the equipment upgrades are early (completed a set time prior to the compliance date) or extra (the upgrade must go beyond the regulatory requirements).

Bond funded equipment is subject to both existing and future regulations once adopted. We have designed the Program with recently adopted regulations for drayage trucks, shore power, harbor craft, and cargo handling equipment in mind, as well as the comprehensive regulatory proposal for privately owned diesel trucks.

The statutes also prohibit funding for technology explicitly required under an enforceable agreement with the railroads. This means that bond funding cannot be used for idle reduction technology on locomotives or for cleaner locomotives credited towards the railroads' compliance with the 2010 fleet average emission standard for the South Coast Air Basin. Locomotive upgrades that go beyond the itemized requirements of these agreements are eligible for bond funding.

Similarly, if a certified Environmental Impact Report (EIR) includes a commitment to install specific technology as a mitigation measure, that technology would not be eligible for bond funding. However, general mitigation measures to further reduce emissions would be eligible.

51. Can projects funded under this Program generate emission reduction credits?

No. Projects co-funded with bond monies cannot be used to generate emission reduction credits for any pollutant or otherwise offset another source's emission reduction obligations. All of the emission reduction benefits of bond funded projects are creditable towards applicable State Implementation Plan commitments and California's greenhouse gas reduction targets.

52. What are the key similarities and differences between this Program and the existing Carl Moyer Program?

This Program and the Carl Moyer Air Quality Standards Attainment Program (Carl Moyer Program) are incentive programs required by State law to reduce emissions beyond what would otherwise occur though law or regulation.

In both programs, ARB is tasked with setting minimum program requirements, granting funds to local agencies, and providing program oversight. Local agencies then solicit and evaluate equipment project applications, select projects, enter into contracts with successful equipment owners, and track project completion. Both programs seek to leverage funding to maximize emission reductions. There are, however, several important differences between the two programs, as summarized below.

Table 20. Comparison to the Carl Moyer Program

	Goods Movement Program	**Carl Moyer Program**
Purpose	Reduce emissions and public health risk associated with freight movement along California's trade corridors	Reduce community health risks, achieve SIP-creditable emission reductions
Program funding	$1 billion subject to legislative appropriation ($250 million appropriated in FY 2007/08)	$140 million/year through 2014, $61 million/year thereafter
Eligible geographic areas	Four trade corridors: Los Angeles/Inland Empire, Central Valley, Bay Area, and San Diego/border	All of California
Eligible source categories	Limited to equipment associated with freight movement: • Heavy duty diesel trucks • Diesel freight locomotives • Harbor craft (non-passenger) • Shore power for cargo ships • Cargo handling equipment • Truck stop electrification	Open to diesel engines used in a broad range of applications, plus passenger vehicle scrap: • On-road heavy duty vehicles • Locomotives • Harbor craft • Shore power • Off-road equipment • Truck stop electrification • Agricultural pumps • Car scrappage
Local agency grant recipients	Local public entities involved in goods movement or involved in improving air quality associated with goods movement	Air districts
Distribution of funds	Competitive between local agencies that apply for funds within a corridor and source category	Divided by formula, and allocated directly to air districts
	Competitive between equipment projects within a corridor and source category based on emission reductions and non-State match funding	District choice. May be first-come-first-serve or competitive
Min. cost-effectiveness for funding eligibility	None (project specifications and competition ensure cost-effectiveness)	$14,300/weighted ton
Project funding limits	Pays a set dollar amount or percent of the eligible costs per piece of equipment	Pays no more than $14,300/weighted ton for the incremental cost of the project

53. Can a single equipment project be funded by both this Program and the Carl Moyer Program?

Yes, in limited cases. Carl Moyer funds derived from the $2 increase in vehicle registration fees authorized by AB 923 (Chapter 707, Statutes of 2004) may be combined with bond Program funding if (a) the equipment project meets both sets of criteria (bond Program eligibility and Carl Moyer funding criteria), (b) the equipment project to be funded includes only trucks and other vehicles, and (c) the funds are not counted as part of an air district's Carl Moyer match requirement.

Calculation of cost-effectiveness under the Carl Moyer Program cap and in the competitive ranking process under this Program must include Carl Moyer and bond monies combined.

54. How does this Program relate to the San Pedro Bay Ports Clean Air Action Plan?

In November 2006, the Harbor Commissions of the Ports of Los Angeles and Long Beach adopted a joint strategy to address air quality concerns – the San Pedro Bay Ports Clean Air Action Plan. This Plan lays out actions the Ports committed to take (using their own legal mechanisms like leases and tariffs) to reduce emissions from trucks, ships, cargo equipment, and rail over five years. The key measures to cut air pollution from port operations are the heavily-subsidized Clean Truck Program, and a shore-side expansion program to bring grid-based electrical power to ship berths.

This Plan identifies a joint commitment by the Ports to over $417 million in funding through 2011, and a South Coast Air Quality Management District commitment of over $47 million, to support Plan implementation. The ports recently adopted new tariffs to restrict entry to clean trucks over the next four years and raise funds via a truck cargo fee to help truckers transition to a fleet of trucks meeting model year 2007 emission standards. The Plan and the truck tariffs anticipate substantial funding from Proposition 1B, on the order of $400 million, to supplement the above commitments and the cargo fee.

These ports are using their authority as landlords to enter into contracts with port tenants to reduce emissions through the leases or to achieve reductions through other means and authority available to the ports. As a result, we believe that bond monies can be used to co-fund projects defined in this Plan, including trucks subject to the new tariffs, so long as they are consistent with project eligibility requirements in the statute and Program Guidelines, as well as any applicable regulations. We expect that the percent match funding from the Ports and District will be high, making these projects competitive for bond funds.

APPENDICES

A: Governor Schwarzenegger's Budget Message
Excerpt from Senate Bill 77 (Chapter 171, Statutes of 2007)

B: Implementing Legislation
Excerpt from Senate Bill 88 (Chapter 181, Statutes of 2007)
Assembly Bill 201 (Chapter 187, Statutes of 2007)

C: Governor Schwarzenegger's Executive Order S-02-07 on Bond Accountability

D: Summary Table of Early Grant Proposals from Air Districts

APPENDIX A

Excerpt from Senate Bill 77 (Chapter 171, Statutes of 2007): Governor's Statement Regarding Bond Funding for the Goods Movement Emission Reduction Program

August 24, 2007

I am sustaining the legislative augmentation of an additional $139,000,000 *[for a total of $250,000,000]* provided for trade corridor emissions reductions to be expended in the budget year for this new program authorized by the voters in Proposition 1B in the November 2006 general election.

Proposition 1B provides $1 billion to fund projects intended to improve air quality along four of California's major transportation corridors: from the Los Angeles ports to the Inland Empire, State Route 99 in the Central Valley, the San Francisco Bay Area, and the San Diego border region. The State Air Resources Board will be developing program guidelines and will solicit project proposals. The projects to be funded are intended to achieve air quality improvements above and beyond anything required by current law or regulation.

The travelers on our busy trade corridors and the individuals who reside along their routes are demanding relief now—not many years from now. However, I am concerned about taxing the ability of the State Air Resources Board to develop program guidelines and allocate $250,000,000 in the 2007-08 fiscal year. We must ensure effective expenditure of this bond funding. It is important that we do not sacrifice accountability in the interests of expediency. Therefore, while acknowledging the challenge that the State Air Resources Board faces in distributing these funds, I am directing the State Air Resources Board to ensure that this funding be allocated consistent with the accountability safeguards identified in my Executive Order S-02-07 for all bond funds approved by the voters in the November 2006 general election.

I am requesting the State Air Resources Board to develop program administrative guidelines that make sense, reduce bureaucratic red tape, simplify and expedite project application and award procedures, and ensure projects are completed in record time. The people who voted for proposition 1B are demanding this action. I know that my colleagues in the Legislature agree with these goals, and that the staff of the State Air Resources Board is up to this challenge.

In addition, because the language adopted by the Legislature relies heavily on local and regional entities to carry out this program, I am calling on those entities to work closely with the State Air Resources Board and ensure they are prepared to submit applications to receive and allocate funding as soon as possible in this fiscal year.

APPENDIX B

IMPLEMENTING LEGISLATION

Excerpt from Senate Bill 88 (Chapter 181, Statutes of 2007): Implementing Legislation for the Goods Movement Emission Reduction Program

August 24, 2007

Chapter 3.2. Goods Movement Emission Reduction Program

39625. The Legislature finds and declares as follows:

(a) In November 2006, the voters approved the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, also known as Proposition 1B, that, among other things, provided one billion dollars ($1,000,000,000) to reduce emissions associated with the movement of freight along California's trade corridors.

(b) Proposition 1B requires these funds to be made available, upon appropriation by the Legislature and subject to the conditions and criteria provided by the Legislature, to the State Air Resources Board in order to reduce the emissions associated with goods movement.

(c) Proposition 1B further required these funds to be made available for emission reductions not otherwise required by law or regulation. These funds are intended to supplement existing funds used to finance strategies that reduce emissions and public health risk associated with the movement of freight commencing at the state's seaports and land ports of entry and transported through California's trade corridors.

(d) Tremendous growth in goods movement activity has created a public health crisis in communities located adjacent to ports and along trade corridors. It is the intent of the Legislature that these funds be expended in a manner that reduces the health risk associated with the movement of freight along California's trade corridors.

(e) It is the intent of the Legislature that the state board maximize the emission reduction benefits, achieve the earliest possible health risk reduction in heavily impacted communities, and provide incentives for the control of emission sources that contribute to increased health risk in the future.

(f) It is the intent of the Legislature that the state board develop partnerships between federal, state, and private entities involved in goods movement to reduce emissions.

(g) The purpose of this chapter is to establish standards and procedures for the expenditure of these funds.

39625.01. This chapter shall be known, and may be cited, as the Goods Movement Emission Reduction Program.

39625.02. (a) As used in this chapter and in Chapter 12.49 (commencing with Section 8879.20) of Division 1 of Title 2 of the Government Code, the following terms have the following meanings:
(1) “Administrative agency” means the state agency responsible for programming bond funds made available by Chapter 12.49 (commencing with Section 8879.20) of Division 1 of Title 2 of the Government Code, as specified in subdivision (c).
(2) Unless otherwise specified in this chapter, “project” includes equipment purchase, right-of-way acquisition, and project delivery costs.
(3) “Recipient agency” means the recipient of bond funds made available by Chapter 2.49 (commencing with Section 8879.20) of Division 1 of Title 2 of the Government Code that is responsible for implementation of an approved project.
(4) “Fund” shall have the meaning as defined in subdivision (c) of Section 8879.20 of the Government Code.

(b) Administrative costs, including audit and program oversight costs for the agency administering the program funded pursuant to this chapter, recoverable by bond funds shall not exceed 5 percent of the program’s costs.

(c) The State Air Resources Board is the administrative agency for the Goods Movement Emission Reduction Program pursuant to paragraph (2) of subdivision (c) of Section 8879.23 of the Government Code.

(d) The administrative agency may not approve project fund allocations for any project until the recipient agency provides a project funding plan that demonstrates that the funds are expected to be reasonably available and sufficient to complete the project. The administrative agency may approve funding for useable project segments only if the benefits associated with each individual segment are sufficient to meet the objectives of the program from which the individual segment is funded.

(e) Guidelines adopted by the administrative agency pursuant to this chapter and Chapter 12.49 (commencing with Section 8879.20) of Division 1 of Title 2 of the Government Code are intended to provide internal guidance for the agency and shall be exempt from the Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of the Government Code), and shall do all of the following:
(1) Provide for audit of project expenditures and outcomes.
(2) Require that the useful life of the project be identified as part of the project nomination process.
(3) Require that project nominations have project delivery milestones, including, but not limited to, start and completion dates for environmental clearance, land acquisition, design, construction bid award, construction completion, and project closeout, as applicable.

(f) (1) As a condition for allocation of funds to a specific project under Chapter 12.49 (commencing with Section 8879.20), the administrative agency shall require the recipient agency to report, on a semiannual basis, on the activities and progress made toward implementation of the project. The administrative agency shall forward the report to the Department of Finance by means approved by the Department of Finance. The purpose of the report is to ensure that the project is being executed in a timely fashion, and is within the scope and budget identified when the decision was made to fund the project. If it is anticipated that project costs will exceed the approved project budget, the recipient agency shall provide a plan to the administrative agency for achieving the benefits of the project by either downscoping the project to remain within budget or by identifying an alternative funding source to meet the cost increase. The administrative agency may either approve the corrective plan or direct the recipient agency to modify its plan.
(2) Within six months of the project becoming operable, the recipient agency shall provide a report to the administrative agency on the final costs of the project as compared to the approved project budget, the project duration as compared to the original project schedule as of the date of allocation, and performance outcomes derived from the project compared to those described in the original application for funding. The administrative agency shall forward the report to the Department of Finance by means approved by the Department of Finance.

39625.1. As used in this chapter, the following terms have the following meanings:

(a) “Applicant” means any local public entity involved in the movement of freight through trade corridors of the state or involved in air quality improvements associated with goods movement.

(b) “Emission” or “emissions” means emissions including, but not limited to, diesel particulate matter, oxides of nitrogen, oxides of sulfur, and reactive organic gases.

(c) “Emission sources” means one of the following categories of sources of air pollution associated with the movement of freight through California’s trade corridors: heavy-duty trucks, locomotives, commercial harbor craft, ocean-going vessels related to freight, and cargo-handling equipment.

(d) “Goods movement facility” means airports, seaports, land ports of entry, freight distribution warehouses and logistic centers, freight rail systems, and highways that have a high volume of truck traffic related to the movement of goods, as determined by the state board.

(e) “Trade corridors” means any of the following areas: the Los Angeles/Inland Empire region, the Central Valley region, the Bay Area region, and the San Diego/border region.

39625.3. Funding pursuant to this chapter may include grants, loans, and loan guarantees.

39625.5. (a) (1) Upon appropriation by the Legislature from the funds made available by paragraph (2) of subdivision (c) of Section 8879.23 of the Government Code, the state board shall allocate funds on a competitive basis for projects that are shown to achieve the greatest emission reductions from each emission source identified in subdivision (c) of Section 39625.1, not otherwise required by law or regulation, or by a memorandum of understanding or any other agreement executed between a railroad company and a state or federal agency, a local air quality management district, or a local air pollution control district, including, but not limited to, the ARB/Railroad Statewide Agreement Particulate Emissions Reductions Program at California Rail Yards, dated June 2005, from activities related to the movement of freight along California's trade corridors, commencing at the state's airports, seaports, and land ports of entry.
(2) Projects eligible for funding pursuant to paragraph (1) shall include, but are not limited to, the following: (A) The replacement, repower, or retrofit of heavy-duty diesel trucks.
(B) The replacement, repower, or retrofit of diesel locomotive engines, with priority given to switching locomotive engines.
(C) The replacement, repower, or retrofit of harbor craft that operates at the state's seaports.
(D) The provision of on-shore electrical power for ocean freight carriers calling at the state's seaports to reduce the use of auxiliary and main engine ship power.
(E) Mobile or portable shoreside distributed power generation projects that eliminate the need to use the electricity grid.
(F) The replacement, repower, or retrofit of cargo handling equipment that operates at the state's seaports and rail yards.
(G) Electrification infrastructure to reduce engine idling and use of internal combustion auxiliary power systems at truck stops, intermodal facilities, distribution centers, and other places where trucks congregate.

(b) (1) The state board shall allocate funds in a manner that gives priority to emission reduction projects that achieve the earliest possible reduction of health risk in communities with the highest health risks from goods movement facilities.
(2) In evaluating which projects to fund, the state board shall at a minimum consider all of the following criteria:
(A) The magnitude of the emission reduction.
(B) The public health benefits of the emission reduction.
(C) The cost-effectiveness and sustainability of the emissions reductions.
(D) The severity and magnitude of the emission source's contributions to emissions.
(E) Regulatory and State Implementation Plan requirements, and the degree of surplus emissions to be reduced.
(F) The reduction in greenhouse gases, consistent with and supportive of emission reduction goals, consistent with existing law.
(G) The extent to which advanced emission reduction technologies are to be used.
(H) The degree to which funds are leveraged from other sources.
(I) The degree to which the project reduces air pollutants or air contaminants in furtherance of achieving state and federal ambient air quality standards and reducing toxic air contaminants.

(J) The total emission reductions a project would achieve over its lifetime per state dollar invested.
(K) Whether an emissions reduction is likely to occur in a location where emissions sources in the area expose individuals and population groups to elevated emissions that result in adverse health effects and contribute to cumulative human exposures to pollution.

(c) The state board shall ensure that state bond funds are supplemented and matched with funds from federal, local, and private sources to the maximum extent feasible.

39626. (a) (1) The state board shall develop guidelines by December 31, 2007, consistent with the requirements of this chapter, to implement Section 39625.5, in consultation with stakeholders, including, but not limited to, local air quality management and air pollution control districts, metropolitan planning organizations, port authorities, shipping lines, railroad companies, trucking companies, harbor craft owners, freight distributors, terminal operators, local port community advisory groups, community interest groups, and airports. The guidelines shall, at a minimum, include all of the following:
(A) An application process for the funds, and any limits on administrative costs, including a local administrative cost limit of up to 5 percent.
(B) A requirement for a contribution of a specified percentage of funds leveraged from other sources or in-kind contributions toward the project.
(C) Project selection criteria.
(D) The method by which the state board will consider the air basin's status in maintaining and achieving state and federal ambient air quality standards and the public health risk associated with goods movement-related emissions and toxic air contaminants.
(E) Accountability and auditing requirements to ensure that expenditure of bond proceeds, less administrative costs, meets quantifiable emission reduction objectives in a timely manner, and to ensure that the emission reductions will continue in California for the project lifetime.
(F) Requirements for agreements between applicants and recipients of funds executed by the state board related to the identification of project implementation milestones and project completion that ensure that if a recipient fails to accomplish project milestones within a specified time period, the state board may modify or terminate the agreement and seek other remedies as it deems necessary.
(2) Prior to the adoption of the guidelines, the state board shall hold no less than one public workshop in northern California, one public workshop in the Central Valley, and one public workshop in southern California.

(b) For each fiscal year in which funds are appropriated for the purposes of this chapter, the state board shall issue a notice of funding availability no later than November 30. For the 2007–08 fiscal year, if funds are appropriated for the purposes of this chapter, the state board shall issue a notice of funding upon adoption of the guidelines described in subdivision (a).

(c) (1) After applications have been submitted and reviewed for consistency with the requirements of this chapter and the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, the state board shall compile and release to the public a preliminary list of all projects that the state board is considering for funding and provide adequate opportunity for public input and comment.
(2) The state board shall hold no less than one public workshop in northern California, one public workshop in the Central Valley, and one public workshop in southern California to discuss the preliminary list. This requirement shall not apply to the funds appropriated in the 2007–08 fiscal year.
(3) After the requirements of paragraphs (1) and (2) are met, the state board shall adopt a final list of projects that will receive funding at a regularly scheduled public hearing.

(d) Nothing in this chapter authorizes the state board to program funds not appropriated by the Legislature.

39626.5. (a) A project shall not be funded pursuant to this chapter unless both of the following requirements are met:
(1) The project is sponsored by an applicant.
(2) The project is consistent with any comprehensive local or regional plans or strategies to reduce emissions from goods movement activities in its jurisdiction.

(b) Notwithstanding Section 16304.1 of the Government Code, an applicant receiving funds pursuant to this chapter shall have up to two years from the date that the funds are allocated to the applicant to award the contract for implementation of the project, or the funds shall revert to the California Ports Infrastructure, Security, and Air Quality Improvement Account for allocation as provided in paragraph (2) of subdivision (c) of Section 8879.23 of the Government Code upon appropriation by the Legislature. Funds not liquidated within four years of the date of the award of the contract between the applicant and the contractor shall revert to the California Ports Infrastructure, Security, and Air Quality Improvement Account for allocation as provided in paragraph (2) of subdivision (c) of Section 8879.23 of the Government Code upon appropriation by the Legislature. Returned funds or unspent funds from obligated contracts received by the applicant prior to the end of the liquidation period shall revert to the California Ports Infrastructure, Security, and Air Quality Improvement Account for allocation provided in paragraph (2) of subdivision (c) of Section 8879.23 of the Government Code upon appropriation by the Legislature.

(c) Of the amount appropriated in Item 3900–001–6054 of the Budget Act of 2007, not more than twenty-five million dollars ($25,000,000) shall be available to the state board for the purpose of executing grant agreements directly with ports, railroads, or local air districts for eligible projects to achieve the earliest possible health risk reduction from the emission sources identified in subdivision (c) of Section 39625.1. It is the intent of the Legislature that funds allocated pursuant to this subdivision be distributed pursuant to the guidelines adopted by the state board under Section 39626, and that the board provide sufficient opportunity for the public to review and comment on any projects proposed to be funded pursuant to this subdivision.

39627. The state board may seek reimbursement for program administration costs annually through an appropriation in the Budget Act from funds available pursuant to paragraph (2) of subdivision (c) of Section 8879.23 of the Government Code.

39627.5. The state board shall submit an annual report to the Legislature summarizing its activities related to the administration of this chapter with the Governor's proposed budget, on January 10, for the ensuing fiscal year. The summary shall, at a minimum, include a description of projects funded pursuant to this chapter, the amount of funds allocated for each project, the location of each project, the status of each project, and a quantitative description of the emissions reductions achieved through the project or program.

Assembly Bill 201 (Chapter 187, Statutes of 2007)
Additional Implementing Legislation
for the Goods Movement Emission Reduction Program
August 24, 2007

AB 201, Committee on Budget. Transportation bonds: implementation.

Existing law, the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, approved by the voters as Proposition 1B at the November 7, 2006, general election, authorizes the issuance of general obligation bonds for various transportation-related purposes, including reducing emissions and improving air quality in trade corridors. SB 88 of the 2007-08 Regular Session, as proposed to be enacted, describes the types of projects eligible for funding in that regard, among other things, to include projects for the replacement, repower, or retrofit of diesel locomotive engines, except to the extent the project is otherwise required by law or regulation or pursuant to a memorandum of understanding or other agreement between a railroad company and a public agency, as specified.

This bill would amend the provisions to be added by SB 88 to allow projects for the replacement, repower, or retrofit of diesel locomotive engines to be eligible for funding in the case where a railroad company has entered into a memorandum of understanding or other agreement with a public agency, provided that the State Air Resources Board determines that the emission reductions that would be achieved by the locomotive engine are not necessary to satisfy any mandated emission reduction requirements under any such agreement.

This bill would also declare that it is to take effect immediately as an urgency statute.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 39625.5 of the Health and Safety Code, as added by Senate Bill 88 of the 2007-08 Regular Session, is amended to read:

39625.5. (a) (1) Upon appropriation by the Legislature from the funds made available by paragraph (2) of subdivision (c) of Section 8879.23 of the Government Code, the state board shall allocate funds on a competitive basis for projects that are shown to achieve the greatest emission reductions from each emission source identified in subdivision (c) of Section 39625.1, not otherwise required by law or regulation, from activities related to the movement of freight along California's trade corridors, commencing at the state's airports, seaports, and land ports of entry.
(2) Projects eligible for funding pursuant to paragraph (1) shall include, but are not limited to, the following:

(A) The replacement, repower, or retrofit of heavy-duty diesel trucks.
(B) The replacement, repower, or retrofit of diesel locomotive engines, with priority given to switching locomotive engines, provided that before any project is authorized for a locomotive engine operated and controlled by a railroad company that has entered into a memorandum of understanding or any other agreement with a state or federal agency, a local air quality management district, or a local air pollution control district, including, but not limited to, the ARB/Railroad Statewide Agreement Particulate Emissions Reductions Program at California Rail Yards, dated June 2005, the state board shall determine that the emission reductions that would be achieved by the locomotive engine are not necessary to satisfy any mandated emission reduction requirement under any such agreement.
(C) The replacement, repower, or retrofit of harbor craft that operates at the state's seaports.
(D) The provision of on-shore electrical power for ocean freight carriers calling at the state's seaports to reduce the use of auxiliary and main engine ship power.
(E) Mobile or portable shoreside distributed power generation projects that eliminate the need to use the electricity grid.
(F) The replacement, repower, or retrofit of cargo handling equipment that operates at the state's seaports and rail yards.
(G) Electrification infrastructure to reduce engine idling and use of internal combustion auxiliary power systems at truck stops, intermodal facilities, distribution centers, and other places where trucks congregate.

(b) (1) The state board shall allocate funds in a manner that gives priority to emission reduction projects that achieve the earliest possible reduction of health risk in communities with the highest health risks from goods movement facilities.
(2) In evaluating which projects to fund, the state board shall at a minimum consider all of the following criteria:
(A) The magnitude of the emission reduction.
(B) The public health benefits of the emission reduction.
(C) The cost-effectiveness and sustainability of the emissions reductions.
(D) The severity and magnitude of the emission source's contributions to emissions.
(E) Regulatory and State Implementation Plan requirements, and the degree of surplus emissions to be reduced.
(F) The reduction in greenhouse gases, consistent with and supportive of emission reduction goals, consistent with existing law.
(G) The extent to which advanced emission reduction technologies are to be used.
(H) The degree to which funds are leveraged from other sources.
(I) The degree to which the project reduces air pollutants or air contaminants in furtherance of achieving state and federal ambient air quality standards and reducing toxic air contaminants.
(J) The total emission reductions a project would achieve over its lifetime per state dollar invested.
(K) Whether an emissions reduction is likely to occur in a location where emissions sources in the area expose individuals and population groups to elevated emissions that

result in adverse health effects and contribute to cumulative human exposures to pollution.

(c) The state board shall ensure that state bond funds are supplemented and matched with funds from federal, local, and private sources to the maximum extent feasible.

SEC. 2. Section 1 of this act shall become operative only if Senate Bill 88 of the 2007-08 Regular Session is also enacted and becomes operative.

SEC. 3. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to implement the transportation programs funded by voter-approved bonds as efficiently and expeditiously as possible, it is necessary that this act take effect immediately.

APPENDIX C

Executive Order S-02-07: Governor Schwarzenegger's Executive Order on Bond Accountability

January 24, 2007

EXECUTIVE ORDER S-02-07
by the
Governor of the State of California

WHEREAS in the 1950s and 1960s, Californians made a phenomenal investment in the state's highways, water supply systems, schools and universities providing the infrastructure that is now the foundation of the eighth largest economy in the world; and

WHEREAS in 1950s the state's population was about 13 million, but is now approaching 38 million, and over the next two decades it will increase by another 23 percent; and

WHEREAS the infrastructure investments of a half century ago are showing their age and straining to support a vibrant economy and population much larger than they were designed to accommodate; and

WHEREAS a massive infusion of new infrastructure investment is necessary to ensure the state's high quality of life and California's position as a global economic powerhouse; and

WHEREAS on November 7, 2006 the people of California approved a $42.7 billion bond package to partially fund the first phase of an historic twenty-year California Strategic Growth Plan that is intended to build a prosperous future for our children and grandchildren; and

WHEREAS I am proposing an additional $43.3 billion of bond funding to complete the first phase of the Strategic Growth Plan; and

WHEREAS it is the obligation of state government to ensure that the foresight and commitment shown by the voters results in the high quality infrastructure future which they support; and

WHEREAS the essence of that obligation is for state government to be accountable to the people for how Strategic Growth Plan bond proceeds are spent; and

WHEREAS that accountability consists both of ensuring that bond expenditures contribute to long-lasting, meaningful improvements to critical infrastructure, and providing the public with readily accessible information about how the bonds they approved and are paying for are being spent.

NOW, THEREFORE, I ARNOLD SCHWARZENEGGER, Governor of the State of California, by the virtue of the power and authority vested in me by the Constitution and laws of the State of California, do hereby issue this Executive Order to become effective immediately:

1. All agencies, departments, boards, offices, commissions and other entities of state government (hereinafter referred to "departments") that are responsible for expending the proceeds of already authorized and future state general obligation bonds and lease revenue bonds shall be accountable for ensuring that those bond proceeds are expended in a manner consistent with the provisions of either the applicable bond act and the State General Obligation Bond Law or laws pertaining to state lease revenue bonds and all other applicable state and federal laws. In addition, departments shall be accountable for ensuring that bond proceeds are spent efficiently, effectively and in the best interests of the people of the State of California.

2. Each department shall establish and document a three part accountability structure for the Strategic Growth Plan bond proceeds.

   Front-End Accountability

   Each department shall follow criteria or processes that will govern the expenditure of bond funds, and the outcomes that such expenditures are intended to achieve. Such criteria and outcomes must be defined in, or derived from, one or more of the following:

   * Requirements of state or federal law.

   * Regulations defining the basis upon which bond proceeds are to be allocated for a program administered by the department.

   * A strategic plan for implementing the mission of the department or the pertinent program funded by bond proceeds. Such a strategic plan shall have been duly adopted by the executive officer or governing body of the department and be available to the public.

   * A capital outlay program that identifies departmental infrastructure needs and delineates projects or strategies for addressing those needs. Such a program shall have been duly adopted by the executive officer or governing body of the department and be available to the public.

   * Performance standards or outcome measures duly adopted by the executive officer or governing body of the department and available to the public.
   All projects, grants, loans or other expenditures of bond proceeds must be made consistent with these criteria and processes. In addition, each

department shall prepare a list of all projects, grants, loans or other activities funded from bond proceeds that will be made available to the public.

In-Progress Accountability

Each department shall document what ongoing actions it will take to ensure that the infrastructure projects or other permissible activities funded from bond proceeds are staying within the scope and cost that were identified when the decision was made to fund the project or activity. Each department shall make semi-annual reports to the Department of Finance (Finance) of these actions to ensure that the projects and activities funded from bond proceeds are being executed in a timely fashion and achieving their intended purposes.

Follow-Up Accountability

Department expenditures of bond proceeds shall be subject to audit to determine whether the expenditures made from bond proceeds:

* Were made according to the established front-end criteria and processes.

* Were consistent with all legal requirements.

* Achieved the intended outcomes.

Departments shall contract with Finance for the performance of these audits unless alternative audit arrangements are made with the concurrence of Finance.

3. By March 1, 2007, each department shall submit its three part accountability structure as delineated in paragraph 2 above to Finance for review. Finance shall determine the reasonableness of the structure and ensure its consistency with this Executive Order. No department shall expend bond proceeds until Finance has determined that the department's plan is adequate. However, Finance may authorize a department to expend funds for up to four months prior to approval of its accountability structure in extraordinary cases for an established program for which bond proceeds are continuously appropriated by the terms of a bond measure, or when the necessity of a department's governing board meeting schedule will make the March 1 date an unattainable deadline.

4. Finance shall establish a web site to provide the public with readily accessible information on how proceeds of State general obligation bonds and lease revenue bonds are being utilized. The web site shall include:

   * The three part accountability structure for each department.

   * A listing of the projects, programs or other authorized activities being funded under the provisions of each general obligation bond act and a description of

each project funded through State lease revenue bonds, and the amounts expended for each.

* The ongoing in-progress actions being taken to ensure that bond-funded projects and activities are remaining within scope and cost.

* The results of the completed projects, programs or other authorized activities funded from State general obligation and lease revenue bond proceeds.

Each department shall provide Finance the information necessary to support this web site in the form and time frame determined by Finance.

IT IS FURTHER ORDERED that State agencies and departments shall cooperate in the implementation of this Order. Other entities of State government not under my direct executive authority, including the California Public Utilities Commission, the University of California, the California State University, California Community Colleges, constitutional officers, and legislative and judicial branches are requested to assist in its implementation.

This Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its departments, agencies, or other entities, its officers or employees, or any other person.

I FURTHER DIRECT that as soon as hereafter possible, this Order be filed in the Office of the Secretary of State and that widespread publicity and notice be given to this Order.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 24th day of January 2007.

APPENDIX D

SUMMARY OF EARLY GRANT PROPOSALS FROM LOCAL AIR DISTRICTS

The following table summarizes the elements of the early grant proposals from five air pollution control districts (APCDs) or air quality management districts (AQMDs) covering the four trade corridors. Please note that the San Diego County APCD proposal includes five partner agencies, including the Imperial County APCD.

Please see our website at: http://www.arb.ca.gov/gmbond for a copy of the complete submissions.

Summary Table of Early Grant Submissions by Air Districts

Corridor	Air District	Total Requested Bond Funding	Project Type(s)	Project Cost (Bond + Match Funding)	Requested Bond Funding per equipment	Number of Sources	Requested Bond Funding per Source	Detailed Targeted Source(s)	New Equipment Type
Los Angeles/Inland Empire	SCAQMD	$135,904,000	Truck Replacement	$70,200,000	$50,000	10	$500,000	3Rivers pre-MY 1987 - 1997	MY 2007 or 2008 Diesel Truck
						25	$1,250,000	Apex Bulk MY 1994-2002	
						177	$8,850,000	Coke pre-MY 1987 - 2002	
						51	$2,550,000	Dependable Hwy MY 1987-1999	
						200	$10,000,000	Ecology Auto Parts pre-MY 1987 - 2002	
						20	$1,000,000	KKW MY 1991-2002	
						17	$850,000	Pepsi pre-MY 1987 - 2002	
						202	$10,100,000	Ralphs MY 1994-2002	
			Drayage Truck Replacement	$40,000,000	$50,000	400	$20,000,000	Drayage w/ VMT = 10,000 miles	LNG MY 2007 or 2008
						380	$19,000,000	Drayage w/ VMT = 10,000 miles	Diesel MY 2007 or 2008
			Harbor Craft Repower	$5,108,000	< $175/hp	32	$2,554,000	Tier 0 engines	Tier 2 Engines
			Cargo Handling	$45,000,000	$150,000	150	$22,500,000	RTG Cranes	RTG Energy Storage
			Locomotive	$73,500,000	$525,000	70	$36,750,000	Switchers	Low emission switchers with DPF and SCR

Corridor	Air District	Total Requested Bond Funding	Project Type(s)	Project Cost (Bond + Match Funding)	Requested Bond Funding per equipment	Number of Sources	Requested Bond Funding per Source	Detailed Targeted Source(s)	New Equipment Type
Central Valley	SJVAPCD	$17,500,000	Truck Replacement	Not Specified	$50,000	285	$15,000,000	pre-MY 1996	MY 2007 or 2008
			Truck Retrofit	Not Specified	$5,000	475	$2,500,000	MY 2006 or older	Level 3 diesel PM filter
	SMAQMD	$17,325,000	Truck Replacement	Not Specified	$50,000	330	$17,325,000	MY 1991-1998 (Class 8)	Truck with MY 2007 emission standards
Bay Area	BAAQMD	$4,305,000	Shore Power	$4,000,000	$1,400,000	2 (Berths)	$2,940,000	APL Container Shipping	Grid based shore power, operational by 12/2009
			Drayage Truck Replacement	$1,800,000	$50,000	18	$945,000	GSC Logistics Drayage pre-MY 1993	Truck with MY 2007 emission standards
			Drayage Truck Retrofit	$800,000	$5,000	80	$420,000	Port of Oakland Drayage MY 1996-2004	Level 3 diesel PM filter
San Diego/Border	SDAPCD	$2,677,500	Drayage Truck Replacement	$2,000,000	$50,000	20	$1,050,000	Port of San Diego pre-MY 1995	Truck with MY 2007 emission standards
			Truck Retrofit	$3,100,000	$5,000	40	$210,000	Port of San Diego MY 1995-2006	Level 3 diesel PM filter
						20	$105,000	SD Airport MY 1995-2006	
						150	$787,500	Border Region MY 1993-2001	
						100	$525,000	Imperial Valley MY 1995-2006	
TOTAL Requested:		$177,711,500							