

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Addendum to June 2000 Final Program Environmental Assessment for Proposed Fleet Vehicle Rules and Related Rule Amendments for:

Proposed Amended Rule 1186.1 – Less-Polluting Sweepers and Rule 1196 – Clean On-Road Heavy Duty Public Fleets

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INTRODUCTION

Between June 2000 and April 2001 the South Coast Air Quality Management District (SCAQMD) Governing Board adopted seven mobile source rules, commonly referred to as the “fleet rules.” The purpose of the fleet rules is to reduce mobile source emissions primarily from public fleets by accelerating the implementation of currently available cleaner-burning or alternative-fueled vehicle technologies. Modification of two of the originally adopted and amended rules is currently being proposed, Rule 1186.1 – Less-Polluting Sweepers, and Rule 1196 – Clean On-Road Heavy-Duty Public Vehicles.

Rule 1186.1 affects street sweepers in public fleets with 15 or more on-road vehicles and private fleets that provide street sweeping services to affected public fleets. Beginning July 1, 2002, Rule 1186.1 required operators of these fleets to purchase alternative-fueled sweepers when adding or replacing street sweepers to their existing fleets.

Rule 1196 affects public fleets with 15 or more on-road heavy-duty vehicles. Beginning July 1, 2002, Rule 1196 required operators of affected fleets to purchase either alternative-fuel-, dual-fuel-, or dedicated gasoline-powered heavy-duty vehicles when adding or replacing heavy-duty vehicles.

Both Rules 1186.1 and 1196 include provisions that allow the purchase of diesel-powered vehicles in lieu of the above requirements if compliant vehicles are technically infeasible or refueling infrastructure is not available, and certain conditions are met by the fleet operator. These provisions originally expired on July 1, 2004, and June 30, 2004, respectively. In June 2004, and subsequently in September 2005, these sunset dates were extended for one year, and further extended for two years in May 2006, due to the lack of natural-gas refueling infrastructure in certain areas of the SCAQMD’s jurisdictional boundaries as well as the lack of alternative-fueled street sweepers for some specific applications.

Because of the continuing lack of natural-gas refueling infrastructure in more remote and outer areas within the SCAQMD’s jurisdiction, as well as the lack of availability of alternative-fuel engines for street sweepers, the SCAQMD staff is currently proposing to further extend the sunset dates of July 1, 2008 to July 1, 2010 in Rule 1186.1 and June 30, 2008 to June 30, 2010 in Rule 1196.

An addendum to the appropriate California Environmental Quality Act (CEQA) document for the proposed project is modified because the proposed modifications to the amended rules only require minor technical changes or additions or the changes do not trigger any conditions identified in CEQA Guidelines §15162. Pursuant to CEQA Guidelines §15164(c), an addendum need not be circulated for public review. This Addendum, along with the previously prepared Final Program EA and the June

2004, September 2005, and May 2006 Addenda, supporting documentation, and record of project approval are available upon request by calling the SCAQMD Public Information Center at (909) 396-2039. These CEQA documents are also available at the following internet address: www.aqmd.gov/ceqa/aqmd.html.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The proposed amendments to Rules 1186.1 and 1196 are considered to be modifications to previously approved projects and are a "project" as defined by CEQA. CEQA requires that the potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid identified significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD, as the CEQA Lead Agency for the original adoption of the fleet rules, which included Rules 1186.1 and 1196, prepared a comprehensive Final Program Environmental Assessment (EA) for the following previously approved projects: Proposed Fleet Vehicle Rules and Related Rule Amendments (SCAQMD No. 000307DWS, June, 2000) and the June 2004 (SCAQMD No. 040512MK), September 2005 (SCAQMD No. 050707MK) and May 2006 Addenda to the June 2000 Final Program EA for Proposed Fleet Vehicle Rules (SCAQMD No. 060301MK, March, 2006). The environmental impacts from adopting and implementing the fleet vehicle rules, including the provision that includes a sunset date for the purchase of diesel vehicles in lieu of alternative fuel vehicles, were evaluated in the Program EA. The Draft PEA was released for a 45-day public review and comment period from March 10, 2000, to April 25, 2000. The environmental impacts from delaying the sunset dates were evaluated in the June 2004, September 2005, and May 2006 Addenda. The Addenda were not required to be circulated for public review pursuant to CEQA Guidelines §15164 (c).

This 2008 Addendum to the June 2000 Final Program EA has been prepared in accordance with CEQA Guidelines §15164, which states that an addendum shall be prepared unless any of the following conditions requiring preparation of a subsequent EA pursuant to CEQA Guidelines §15162 are anticipated:

- Substantial changes which will require major revisions of the previous CEQA documents due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes, with respect to the circumstances under which the project is undertaken, which will require major revisions of the previous CEQA documents due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- New information of substantial importance which was not known and could not have been known with the exercise of reasonable diligence at the time the previous CEQA documents were certified as complete, such as:
 - ◇ The project will have one or more significant effects not discussed in the previous CEQA documents;
 - ◇ Significant effects previously examined will be substantially more severe than shown in the previous CEQA documents;
 - ◇ Identification of mitigation measures or alternatives previously found not be feasible, but would in fact be feasible, and would substantially reduce one or more significant effects, but the project proponent declines to adopt the mitigation measures or alternatives; or
 - ◇ Identification of mitigation measures or alternatives which are considerably different from those analyzed in the previous CEQA documents would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

An Addendum is the appropriate CEQA document because an extension of the sunset dates does not result in new or more severe significant effects requiring substantial revisions in the previous Program EA. A portion of the emission reductions anticipated from usage of alternative-fueled vehicles will be delayed, but the proposed project will not result in any increase in existing emissions since fleet operators are currently able to take advantage of the Technical Infeasibility Certification Request (TICR) provision, which allows fleet operators to purchase diesel-fueled vehicles in lieu of alternative-fueled vehicles if they can make a demonstration of technical infeasibility regarding alternative fuel engine or fueling station availability. Regardless, a delay in emission reductions will occur from affected fleet vehicles because affected operators using the TICR provision will not achieve the emission reductions expected since they are not required to purchase new alternative-fueled sweepers and heavy-duty vehicles if their TICR is granted. Overall, however, the fleet vehicle rules are continuing to produce air quality benefits as existing fleet vehicles are replaced with the lowest emission vehicles available or alternative clean fueled vehicles. No new significant adverse project-specific or cumulative impacts in any environmental areas were identified, nor would any project-specific or cumulative impacts in any environmental areas be made substantially worse as a result of implementing the proposed project as explained in subsequent sections of this Addendum. This Addendum is not required to be circulated for public review but will be provided to the Governing Board at the June 6, 2008 Public Hearing. This Addendum and all other related CEQA documents are available to the public upon request by contacting the SCAQMD's Public Information Center at (909) 396-2039.

PROJECT LOCATION

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles (referred to hereafter as the district), consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the district, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portions of the SSAB and MDAB are bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1).

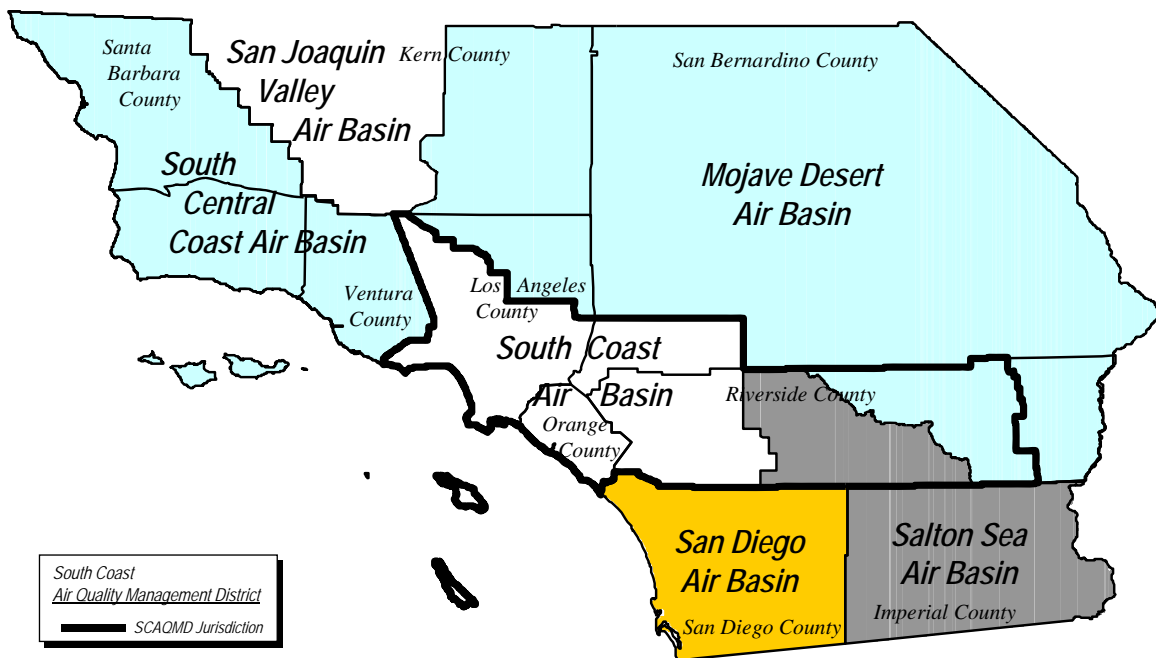


FIGURE 1

South Coast Air Quality Management District

RULES 1186.1 AND 1196 BACKGROUND

Rule 1186.1

Rule 1186.1 was adopted by the SCAQMD Governing Board on August 18, 2000, and it regulates street sweepers in public fleets with 15 or more on-road vehicles and private fleets that provide street sweeping services to affected public fleets. A street sweeper is defined as an on-road vehicle weighing 14,000 pounds or more that is permitted to operate on public roads for the express purpose of removing material from paved surfaces by using mechanical systems through the action of one or more brooms, by suction through a vacuum/regenerative air system, or any combination of these two systems. As of July 1, 2002, Rule 1186.1 required operators of street sweeper fleets to purchase alternative-fueled sweepers when adding or replacing street sweepers to their existing fleets. This rule applies to any federal, state, county, city or governmental department or agency; any special district such as water, air, sanitation, transit, and school districts; or private individual firm, association, franchise, contractor, user or owner who provides sweeping services to a governmental agency that owns or leases 15 or more vehicles, including passenger cars, light-duty trucks, and medium- and heavy-duty on-road vehicles in the jurisdiction of the SCAQMD. The purpose of the rule is to reduce both air toxic and criteria pollutant emissions.

Under Rule 1186.1, in order to take advantage of the provision that allows the purchase of diesel-powered vehicles in lieu of alternative-fueled vehicle usage requirements, the affected fleet operator must submit a TICR with appropriate documentation for the SCAQMD to determine if the required conditions have been met. For Rule 1186.1, an affected fleet operator may obtain TICR approval if a demonstration is made that: (1) no alternative-fuel engine and chassis configuration is more commercially available for sweeping operations conducted by the fleet operator; or (2) a fueling station for alternative-fuel sweepers is not available within five miles of the fleet operator's vehicle storage or maintenance yards. If a TICR is approved, the affected fleet operator is allowed to purchase the necessary number of diesel-powered vehicles within a specific timeframe. The current Rule 1186.1 TICR provision expires on July 1, 2008.

Rule 1196

Rule 1196 was adopted by the SCAQMD Governing Board on October 20, 2000, and it regulates public fleets with 15 or more on-road heavy-duty vehicles. Heavy-duty vehicles are defined as on-road vehicles with a maximum loaded weight capacity of 14,000 pounds or greater. Typical vehicle applications affected by Rule 1196 include public works vehicles such as dump trucks, boom trucks, flatbed trucks, and water trucks. As of July 1, 2002, Rule 1196 required affected fleet operators to purchase either alternative-fuel-, dual-fuel-, or dedicated gasoline-powered heavy-duty

vehicles when adding or replacing heavy-duty vehicles. The rule applies to all government agencies located in the district including federal, state, regional, county and city departments and agencies and any special districts such as water, air, sanitation, transit and school districts with 15 or more heavy-duty vehicles. The purpose of the rule is to reduce both air toxic and criteria pollutant emissions.

The corresponding TICR provisions for Rule 1196 specify that an affected fleet operator may obtain TICR approval if a demonstration is made that: (1) no alternative-fuel, gasoline, or dual-fuel engine and chassis configuration are commercially available from any manufacturer or could be used in a specific application; or (2) a demonstration that an alternative-fuel refueling station for alternative-fueled or dual-fueled heavy-duty vehicles is not available within five miles of the vehicle storage or maintenance yards, at locations where vehicles will be home-based for extended periods of time and the refueling supply is provided by mobile means, or (3) the purchase of compliant vehicles exceeds the incremental cost-effectiveness criteria established in accordance with the most recent requirements of the Carl Moyer Program or the Mobile Source Emission Reduction Review Committee Program, whichever is greater. The Rule 1196 TICR expiration date of June 30, 2008, only applies to the TICR provision relating to lack of alternative fuel refueling stations within five miles of the vehicle storage or maintenance yards.

Approved TICRs for Rules 1186.1 and 1196

The number and location of publicly accessible alternative-fuel refueling stations is a critical element in implementing the TICR provisions in Rules 1186.1 and 1196. To date over the last six years, six Rule 1186.1 TICRs for a total of six street sweepers have been submitted to the SCAQMD and approved based on the lack of alternative-fuel refueling stations within five miles of the vehicle's storage and maintenance yards. For Rule 1196, 48 TICRs for a total of 64 heavy-duty vehicles have been submitted to the SCAQMD over the last four years and approved based on the lack of alternative-fuel refueling stations within five miles of the vehicle's storage and maintenance yards.

PROPOSED AMENDMENTS

To address the lack of natural-gas refueling infrastructure in certain areas of the SCAQMD jurisdictional boundaries as well as the lack of alternative-fuel street sweepers for specific applications, the SCAQMD is proposing rule amendments that would extend the sunset date for the TICR provision from July 1, 2008, to July 1, 2010, in Rule 1186.1 subparagraph (d)(1)(B) and the sunset date of June 30, 2008, to June 30, 2010, in Rule 1196 paragraph (d)(4). A two-year extension of these sunset dates is appropriate given the potential number of alternative-fuel refueling stations

that could be constructed in the district and the development and small extent of commercialization of new alternative street-sweeping models for specific applications that could address the specific street sweeping applications where Rule 1186.1 compliant street sweepers currently do not exist.

In addition, staff is proposing administrative amendments to Rule 1186.1 clauses (d)(1)(B)(iv) and (d)(2)(B)(ii) to delete the following text: “without invoking the exemption provision in Rule 1186 paragraph (i)(3)”, which references to Rule 1186 paragraph (i)(3). This paragraph no longer exists in Rule 1186.

ANALYSIS OF ENVIRONMENTAL IMPACTS

Of the 17 environmental impact areas on the environmental checklist, only air quality was identified as being potentially adversely affected by the proposed project. The air quality impact identified is a delay in a portion of the emission reductions originally anticipated for Rules 1186.1 and 1196. The impact, however, is not significant, will not result in increased emissions or worsen current air quality, and is currently expected to last for only two years.

Air Quality

Delay of Emission Reductions for NOx and PM

Proposed amended Rules (PAR) 1186.1 and 1196 will result in a delay of emission reductions because affected operators using the TICR provision will not achieve the emission reductions originally expected since they will not be required to purchase new alternative-fueled sweepers and heavy-duty vehicles if their TICR is granted. Because the rules affect diesel fueled engines, the affected criteria pollutants are primarily nitrogen oxides (NOx) and particulate matter (PM). The emission impacts from carbon monoxide (CO) and hydrocarbons (HC) are negligible since diesel fuel combustion and natural gas combustion both generate small amounts of these pollutants and, therefore, are not further calculated. Further, diesel PM emissions contribute to carcinogenic risk whose reduction will also be foregone.

In order to provide a “worst-case” scenario, as explained in the following subsections, conservative assumptions, such as the projected number of affected operators who are granted TICRs in the future, are used to calculate the delay of emission reductions. Therefore, the estimated delay of emission reductions overestimates the actual delay of emission reductions. The proposed revisions to these rules consist of a two-year delay to the sunset date associated with the provision allowing TICR approval for the unavailability of refueling infrastructure for both rules and lack of availability of compliant street sweepers for all applications.

Rule 1186.1 Air Quality Impact

The projected number of street sweepers that could receive TCR approval in the future due to the two-year delay in sunset date is based on number of street sweepers that have already received or are pending TCR approval for lack of refueling infrastructure during the first six years of Rule 1186.1 implementation. Therefore, based on the historical record, approximately one street sweeper operator has applied for TCR approval per year.

The proposed rule amendment will extend the TCR provision over the next two years from July 1, 2008, to July 1, 2010. Due to the CARB's exhaust emission standards for 2007 and subsequent model year heavy-duty on-road engines and vehicles (California Code of Regulations, Title 13, Section 1956.8), new heavy-duty vehicles are subject to a lower emission standard of 0.01 gram per brake-horsepower per hour (g/bhp-hr) for PM starting in January 2007, and will be subject to a lower emission standard of 0.2 g/bhp-hr for NO_x starting in January 2010. Therefore, the emission reductions foregone from the proposed amendments will occur only for NO_x during the first eighteen months of the compliance date extension until January 1, 2010. The PM value is equivalent or less than the PM emission level achieved when using alternative fuels. Diesel auxiliary engines, however, have higher PM emissions than auxiliary engines operated on alternative clean fuels and are considered in the following analysis. Further, in projecting the number of operators anticipated to take advantage of the provision, if approximately one street sweeper operator has applied for TCR approval per year, then up to two street sweeper operators would apply during the time period of eighteen months. The "worst-case" scenario assumes that a maximum of four street sweeper operators, double the number who currently take advantage of the provision over eighteen months, would replace existing street sweepers with new diesel street sweepers and, therefore, would not achieve anticipated NO_x emission reductions as a result of implementing the proposed amendment.

The above assumptions do not account, however, for the fact that not all street sweepers are designed the same. Some street sweepers utilize a single engine and others are designed with dual engines. Single engine street sweepers utilize a propulsion engine for both propulsion and operation of the broom/vacuum device while dual engines have a propulsion engine and auxiliary engine for operation of the broom/vacuum device. The current street sweeper population is 80 percent dual engines and 20 percent single engines (Rule 1186.1 Staff Report, SCAQMD, August 2000). Since it is not known whether the extended TCR will be applied to single engine or dual engine street sweepers, delayed emission reductions for both types of engines were considered. However, because only two street sweepers are expected to generate foregone emission reductions from the proposed amendments, both sweepers

are assumed to be equipped with dual engines for a “worst case” overall emission reduction delayed from the proposed project since dual engine sweepers have higher overall NO_x emissions compared to the single engine sweepers.

Street sweeper emission rates vary depending upon the engine type. To accurately determine the emission reductions foregone for eighteen months prior to January 1, 2010 when new heavy duty on-road diesel engine standards go into effect, the propulsion engine emission rate used is necessary to calculate the difference between the emissions from the affected street sweepers if complying with the emission rate of alternative-fueled street sweepers (0.2 g/bhp-hr for NO_x) and the emissions from diesel street sweepers with TICR approval (1.2 g/bhp-hr for NO_x) to obtain the emission rate for calculating maximum daily emission reductions foregone. Thus, the differential NO_x emission rate from the propulsion engines is 1.0 g/bhp-hr (1.2 g/bhp-hr – 0.2 g/bhp-hr).

The same methodology is used to calculate emission reductions foregone from auxiliary engines. The difference between complying with the emission rate of auxiliary engines in alternative fueled street sweepers (1.4 g/bhp-hr for NO_x and 0.03 g/bhp-hr for PM) and the emissions from the diesel-fueled auxiliary engine with TICR approval (2.8 g/bhp-hr for NO_x and 0.22 g/bhp-hr for PM) is 1.4 g/bhp-hr for NO_x (2.8 g/bhp-hr – 1.4 g/bhp-hr) and 0.19 g/bhp-hr for PM (0.22 g/bhp-hr – 0.03 g/bhp-hr).

The following equation was used to calculate NO_x and PM emission reductions delayed from the each engine type (propulsion and auxiliary) and then added together for the dual engine street sweepers:

Pounds per day of emissions =

$$\begin{aligned} & (\text{estimated \# of affected street sweepers}) \times (\text{differential engine emission rate}) \times (\text{fuel use}) \times 1.5 \text{ (equate one year to 18 months)} \times (\text{energy content factor}) \times (1 \text{ lb}/454 \text{ grams}) \\ & \div (\text{\# of work days}/18 \text{ months}) \end{aligned}$$

As previously noted, the four street sweepers is the “worst-case” number that could be affected by extending the TICR provision within the first eighteen months. The four sweepers are assumed to operate using dual engines and the total NO_x and PM emission reductions foregone are calculated and presented in Table 1.

TABLE 1**NO_x and PM Emission Reductions Delayed from Four Dual Engine Street Sweepers**

Pollutant	Estimated Number of Affected Street Sweepers	Differential Emission Rate (gram/bhp-hour)	Fuel Use¹ (gallons per year)	Diesel Energy Content Factor (bhp-hour/gallon)	Number of Work Days for Eighteen Months²	Total Emission Reductions Delayed from PAR 1186.1 (pounds per day)
Propulsion Engine						
NO _x	4	1	5000	18.5	375	3.26
PM	4	0	5000	18.5	375	0
Auxiliary Engine						
NO _x	4	1.4	2500	18.5	375	2.28
PM	4	0.19	2500	18.5	375	0.3
TOTAL EMISSIONS DELAYED (pounds per day)					NO_x	5.5
					PM	0.3

1. From Rule 1186.1 Staff Report, SCAQMD, August 2000; annual fuel use needs to be projected for eighteen months to reflect the period of time before the new heavy duty diesel engine standards take effect.
2. Emissions are delayed for eighteen months before January 1, 2010 when CARB on-road standards become effective lowering diesel engine emissions comparable to emissions from alternative-fueled engines.

Diesel particulate emissions contribute to carcinogenic risk, so converting from diesel fuels to alternative fuels results in a reduction in potential region-wide cancer risk to sensitive receptors exposed over a 70-year period. By delaying the PM emission reductions, potential carcinogenic risk reduction from affected operators is also foregone. However, the rule amendments will continue to allow fleet operators using the TICR provision to comply with certain conditions, such as using low-sulfur diesel fuel and applicable approved control devices. With less-polluting new diesel engines, potential carcinogenic risk is also less than with traditional diesel, albeit not as low if operating alternative-fueled engines. PM emissions and corresponding carcinogenic risk from affected sources are primarily generated while traveling over a roadway and if idling at a fixed location. Even so, PM emissions and cancer risk generated while traveling over a roadway would be dispersed and, thus, would not affect one particular sensitive receptor over a 70-year exposure period. The refueling stations currently exist in a fixed location and their current settings are not expected to change. Further, four diesel street sweepers projected to be purchased under the TICR provision will have no discernable effect on region-wide cancer risks. As a result, current potential cancer risk exposure is not expected to change and, thus, the rule amendments will not generate worse potential cancer risk impacts than under the existing setting because the stations are expected to continue serving other diesel

customers. In fact, potential cancer risk will be reduced under the TICR provision because replacement diesel sweepers are expected to produce lower PM emissions than the old diesel sweepers they will be replacing. Therefore, the delayed phase-out of the TICR provision from the rule amendments will not cause a significant adverse cancer risk impact.

PAR 1196 Air Quality Impact

Similar to PAR 1186.1, the projected number of trucks that could receive TICR approval in the future due to the two-year delay in sunset date is based on number of trucks that have already received or are pending TICR approval for lack of refueling infrastructure during the first six years of Rule 1196 implementation. Table 2 provides the data needed to calculate the emission reductions delayed from PAR 1196. Operators of 64 trucks have already received or are pending TICR approval for lack of refueling infrastructure during six years of Rule 1196 implementation.

As already noted, the proposed rule amendment extends the TICR provision over the next two years from July 1, 2008, to July 1, 2010. Due to the CARB's exhaust emission standards for 2007 and subsequent model year on-road heavy-duty engines and vehicles (California Code of Regulations, Title 13, Section 1956.8), new heavy-duty vehicles are subject to a lower emission standard of 0.01 g/bhp-hr for PM starting in January 2007, and will be subject to a lower emission standard of 0.2 g/bhp-hr for NO_x starting in January 2010, the date when the more stringent NO_x exhaust standard becomes effective. These values are equivalent or less than the emission levels achieved when using alternative fuels. Therefore, the emission reductions foregone from the proposed amendments will occur only for NO_x during the first eighteen months of the compliance date extension until January 1, 2010. If truck operators applied for the TICR approval of 64 heavy-duty vehicles over the last six years (11 per year), sixteen would be expected to apply over eighteen months. The "worst-case" scenario assumes that operators of a maximum of 32 trucks, double the number who currently takes advantage of the provision during the period of eighteen months, would not achieve anticipated emission reductions as a result of implementing the proposed amendment.

To accurately determine the delay of NO_x emission reductions, the emission rate used is the difference between the emission rate from alternative-fueled vehicle (0.2 g/bhp-hr) and vehicles with TICR approval (1.2 g/bhp-hr). Thus, the differential NO_x emission rate from the affected engines is 1.0 g/bhp-hr (1.2 g/bhp-hr – 0.2 g/bhp-hr).

The following equation was used to calculate NO_x reductions delayed from heavy duty vehicles subject to Rule 1196:

<p>Pounds per day of emissions =</p> <p>(estimated # of affected trucks) x (propulsion engine emission rate) x (fuel use) x (energy content factor) x (1 lb/454 grams) ÷ (# of work days/18 months)</p>
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TABLE 2

Total NOx Emission Reductions Delayed from PAR 1196

Pollutant	Estimated Number of Affected Trucks	Differential Emission Rate from Propulsion Engine (gram/bhp-hour)	Fuel Use¹ from Propulsion Engine (gallons per year)	Energy Content Factor (bhp-hour/gallon)	Number of Work Days per Eighteen Months²	Emission Reductions Delayed from PAR 1196 (pounds per day)
NOx	32	1	1667	18.5	375	8.7

1. From Rule 1196 Staff Report, SCAQMD, October 2000; annual fuel use needs to be projected for eighteen months to reflect the period of time before the new heavy duty diesel engine standards take effect.
2. Emissions are delayed for eighteen months before January 1, 2010 when CARB on-road standards become effective lowering diesel engine emissions comparable to emissions from alternative-fueled engines.

Since new PM standards for 2007 and later vehicles are equivalent to the PM emissions from alternative-fueled vehicles, extending the TCR provision has no effect on PM emission as shown in Table 2. Thus, PAR 1196 has no potential carcinogenic risk impact.

Table 3 summarizes the overall air quality impact from the emission reductions delayed by extending the sunset dates in both PAR 1186.1 and 1196 under “worst case” conditions. The NOx and PM emissions are substantially less than the SCAQMD’s operational CEQA significance thresholds and, therefore, the proposed project is not considered to have a significant adverse project-specific air quality impact.

TABLE 3

Overall NOx and PM Emission Reductions Delayed from PAR 1186.1 and 1196

Pollutant	Emission Reductions Delayed from PAR 1186.1 (pounds per day)	Emission Reductions Delayed from PAR 1196 (pounds per day)	Overall Emission Reductions Delayed from PAR 1186.1 and 1196 (pounds per day)	SCAQMD Operational Significance Threshold (pounds per day)	Significant?
NOx	5.5	8.7	14	55	No
PM	0.3	0	0.3	150	No

Delay of Emission Reductions – Cumulative Impacts

Criteria Pollutants

Since PARs 1186.1 and 1196 are not expected to potentially generate significant adverse project-specific air quality impacts, the proposed project's contribution to a potentially significant cumulative impact is rendered less than cumulatively considerable and, thus, is not significant (CEQA Guidelines §15064(h)(2)). With regard to other projects in the vicinity occurring at the same time as this project, CEQA Guidelines §15064(h)(4) states "the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."

Greenhouse Gases

Global climate change refers to changes in average climatic conditions on earth as a whole, including temperature, wind patterns, precipitation and storms. Global warming, a related concept, is the observed increase in average temperature of the earth's surface and atmosphere. One identified cause of global warming is an increase of greenhouse gases (GHG) in the atmosphere. The six major GHGs identified by the Kyoto Protocol are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), haloalkanes (HFCs), and perfluorocarbons (PFCs). The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHGs also radiate longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation absorbed by the atmosphere is known as the "greenhouse effect." Some studies indicate that the potential effects of global climate change may include rising surface temperatures, loss in snow pack, sea level rise, more extreme heat days per year, and more drought years.

Events and activities, such as the industrial revolution and the increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHGs. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHGs emissions (CEC, 2004). The GHG inventory for California in 2004 was approximately 480 million metric tons of CO₂ equivalence (CO₂eq.) (CARB, 2007). Approximately 80 percent of GHGs in California are from fossil fuel combustion and over 70 percent of GHG emissions are carbon dioxide emissions.

GHG emission impacts were not analyzed in the June 2000 Final EA for the fleet vehicle rules and related amendments because of the uncertainty associated with GHG effects on global warming at that time. As a result, potential GHG emission reduction benefits were not identified. It is expected that lower emission vehicles

would also generate lower GHG emissions. Consequently, the effects of delaying the TICR sunset date for two years on GHG emissions are evaluated in this Addendum.

In addition to the impact on criteria pollutant and toxic air contaminant air quality, PARs 1186.1 and 1196 will also result in a delay of CO2 emission reductions because affected operators using the TICR provision will not achieve potential CO2 emission reductions expected since they will not be required to purchase new alternative-fueled sweepers and heavy-duty vehicles if their TICRs are granted.

In order to provide a “worst-case” scenario, as explained in the previous subsections, conservative assumptions, i.e., the numbers of affected vehicles, are used to calculate the delay of CO2 emission reductions. Therefore, the estimated delay of CO2 emission reductions overestimates the actual delay of emission reductions. The proposed revisions to these rules consist of a two-year delay to the sunset date associated with the provision allowing TICR approval for the unavailability of refueling infrastructure.

The following equation was used to calculate CO2 emissions:

$$(\text{estimated \# of affected vehicles}) \times (\text{fuel use}) \times (\text{carbon content}) \times (\text{oxidation factor}) \times (\text{ratio of the molecular weight of CO}_2 \text{ to the molecular weight of carbon: } 44/12) \times (2.2 \text{ kg/gal}) \times (\text{metric ton}/2200 \text{ lbs}) = \text{CO}_2 \text{ emissions (metric tons/yr)}$$

Since natural gas vehicles have been the primary compliant vehicles for both Rules 1186.1 and 1196, and also for the purpose of conservative assumptions, natural gas was used for the CO2 emission calculations for Rules 1186.1 and 1196 compliant vehicles. The equivalent fuel use for natural gas was calculated using the following equation:

$$\text{diesel fuel use} \times \text{energy content for diesel} \div \text{energy content for natural gas} \times 3.785 \text{ liters/gallon} = \text{equivalent fuel use for natural gas}$$

Fuel properties used for this calculation are listed in Table 4.

TABLE 4
Fuel Properties of Diesel and Natural Gas

Fuel Properties	Diesel	Natural Gas
Carbon content	2.778 kg carbon / gallon	0.49 kg carbon / m ³
Oxidation factor	0.99	0.99
Energy content (LHV)	36.4 MJ / liter	34.6 MJ / m ³

LHV = lower heating value; MJ = mega-joule

Table 5 summarizes the impact from the CO₂ emission reductions delayed by extending the sunset dates in both PAR 1186.1 and 1196 in the second year. Impacts from the second year that the TCR provision is delayed was chosen because the second year includes the full number of affected vehicles, whereas the first would have one-half the total number of affected vehicles.

TABLE 5**CO₂ Emission Reductions Delayed from PAR 1186.1 and 1196**

PAR	Estimated Number of Affected Vehicles	Diesel Fuel Use per Vehicle* (gallons per year)	Equivalent Natural Gas Use per Vehicle (m ³ per year)	CO₂ Emissions for Diesel Use (metric tons per year)	CO₂ Emissions for Natural Gas Use (metric tons per year)	Total CO₂ Emission Reductions Delayed (metric tons per year)
1186.1	4	5,000 (Propulsion Engine) + 2,500 (Auxiliary Engine)	29,864	334	234	100
1196	32	1,667	6,638	538	378	160
TOTAL CO₂ EMISSION REDUCTIONS DELAYED (metric tons per year)						260

*: From Rule 1186.1 Staff Report, SCAQMD, August 2000; and Rule 1196 Staff Report, SCAQMD, October 2000

A delay in reducing GHG emissions of 260 metric tons during the second year of delaying the TCR sunset provision would be less than significant for the following reasons. Neither SCAQMD nor any other air regulatory agency in California has established a significance threshold for GHG emissions yet. In the absence of a specific significance threshold, SCAQMD staff has evaluated significance for projects where it is the lead agency on a case-by-case basis. In this analysis, SCAQMD staff has used a variety of benchmarks to evaluate GHG impacts. As additional information is compiled with regard to the level of GHG emissions that constitute a significant cumulative climate change impact, SCAQMD will continue to revisit and possibly revise the level of GHG emissions considered to be significant.

In its CEQA & Climate Change document (January, 2008), CAPCOA identifies many potential GHG significance threshold options. The CAPCOA document indicates that establishing quantitative thresholds is a balance between setting the level low enough to capture a substantial portion of future residential and non-residential development, while also setting a threshold high enough to exclude small

development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions. For example, CAPCOA identifies one potential significance threshold as 10,000 metric tons per year, which was considered by the Market Advisory Committee for inclusion in a Greenhouse Gas Cap and Trade System in California. Another potential threshold identified by CAPCOA is 25,000 metric tons per year, which is CARB's proposed mandatory reporting threshold under AB 32. GHG emissions reductions delayed in the second year of the proposed project for both PARs 1186.1 and 1196 would be lower than both of these reporting thresholds.

Finally, another approach to determining significance is to estimate what percentage of the total inventory of GHG emissions are represented by emissions from a single project. If emissions are a relatively small percentage of the total inventory, it is possible that the project will have little or no effect on global climate change. According to available information, the statewide inventory of CO₂eq. emission is as follows: 1990 GHG emissions equal 427 million metric tons of CO₂eq. and 2020 GHG emissions equal 600 million metric tons of CO₂eq. with business as usual. Interpolating an inventory for the year 2010 results in approximately 543 million metric tons of CO₂eq. CO₂ emissions in 2010 of 260 metric tons from PARs 1186.1 and 1196 represent 0.0000005 percent of the statewide GHG inventory in 2010. This small percentage of GHG emissions compared to the total projected statewide GHG emissions inventory is another basis for the SCAQMD's conclusion that GHG emissions from implementing PARs 1186.1 and 1196 are less than significant.

PARs 1186.1 and 1196 are part of a comprehensive ongoing regulatory program that includes implementing related SCAQMD 2007 AQMP control measures as amended or new rules to attain and maintain with a margin of safety all state and national ambient air quality standards for all areas within its jurisdiction. The 2007 AQMP estimates a CO₂ reduction of 427,849 metric tons per year by 2014, and a CO₂ reduction of 1,523,445 metric ton per year by 2020. Therefore, PARs 1186.1 and 1196 in connection with other 2007 AQMP control measures is not considered to be cumulatively significant.

Since GHG emissions are considered cumulative impacts, and PARs 1186.1 and 1196 GHG emissions are below the 10,000 metric ton per year Market Advisory Committee threshold, 25,000 metric ton per year CARB proposed mandatory reporting threshold under AB32, a small percentage of the total statewide GHG inventory in 2014, and, with other control measures in the 2007 AQMP, which is a comprehensive ongoing regulatory program that would reduce overall CO₂ emissions; cumulative GHG adverse impacts from PARs 1186.1 and 1196 are not considered significant..

Other Environmental Topics Considered Not Potentially Significant

It was determined that the remaining 16 environmental topics would not be adversely affected by the proposed project as explained in the following paragraphs. Further, the results of the analysis in this Addendum do not change the conclusions originally made in the Final PEA for the Fleet Vehicle Rules (SCAQMD, June, 2000).

In general, the proposed amendments will have few physical environmental effects because the proposed amended rules would continue to allow fleet operators to replace an existing vehicle with a new diesel vehicle that performs the same function and the same number of diesel vehicles would continue refueling at the same stations. For example, under PAR 1186.1 new diesel street sweepers would replace old diesel street sweepers, which would allow the fleet operator to continue the same street sweeping operations. Although alternative fuel refueling stations may be constructed to serve fleet operators as they continue their conversion from diesel to alternative fuel vehicles, impacts from constructing all alternative fuel refueling stations necessary to serve the converted fleets were comprehensively analyzed in the Final PEA for the fleet vehicle rules.

Aesthetics – There are no physical changes anticipated at facilities taking advantage of the extended TICR provision. The proposed project will not require any construction activity and, thus, will not cause the obstruction of scenic vistas or resources, or create new sources of substantial light or glare. Because the project will not adversely affect aesthetics, it will not change conclusions regarding aesthetics in the PEA for the Fleet Vehicle Rules.

Agriculture Resources – The proposed project includes the extension of an existing TICR provision eligible to public fleets of street sweepers and heavy-duty vehicles which are not expected to affect agricultural resources. New vehicles would continue performing existing functions. Further, no conversion of farmland to non-agricultural uses is required. Because the project will not adversely affect agricultural resources, it will not change conclusions regarding agricultural resources in the PEA for the Fleet Vehicle Rules.

Biological Resources - The extension of an existing TICR provision will not cause any modifications to the existing facilities and, therefore, will not affect biological resources or any special status plants, animals or natural communities. Because the project will not adversely affect biological resources, it will not change conclusions regarding biological resources in the PEA for the Fleet Vehicle Rules.

Cultural Resources - The extension of an existing TICR provision for two years will not require the destruction of existing structures or construction of new buildings on sites with prehistoric, historic, archaeological, religious, or ethnic significance.

Therefore, no impacts to cultural resources are expected from the proposed project. Because the project will not adversely affect cultural resources, it will not change conclusions regarding cultural resources in the PEA for the Fleet Vehicle Rules.

Energy – No additional energy resources are needed to take advantage of the TICR provision and, therefore, no impacts to energy resources are expected from the proposed project. Impacts to energy resources when the sunset date is reached were analyzed and disclosed in the Final PEA (SCAQMD, June 2000) and the conclusions have not changed or been made substantially worse as a result of implementing the proposed project.

Geological Resources – Since the extension of the existing TICR provision does not require construction of any kind, the proposed project will not expose people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. In addition, the proposed project has no potential to result in changes in topography or surface relief features, and, therefore, no impacts to geological resources are expected from the proposed project. Because the project will not adversely affect geological resources, it will not change conclusions regarding geological resources in the PEA for the Fleet Vehicle Rules.

Hazards – The extension of the existing TICR provision will allow facility operators to continue taking advantage of the provision and, thus, the fuel currently used by affected facilities is not expected to change. Thus, no new hazard impacts are anticipated as a result of the proposed project. Impacts from potential hazards when the sunset date is reached were analyzed and disclosed in the Final PEA (SCAQMD, June 2000) and the conclusions have not changed or been made substantially worse as a result of implementing the proposed project.

Hydrology and Water Quality – Allowing the continued use of the existing TICR does not increase demand for water supplies or produce wastewater products. Impacts to water quality when the sunset date is reached were analyzed and disclosed in the Final PEA (SCAQMD, June 2000) and the conclusions have not changed or been made substantially worse as a result of implementing the proposed project.

Land Use and Planning - The extension of the existing TICR provision would not affect land use plans, policies, regulations, or require changes to zoning ordinances or general plans, and, therefore, no impacts to land use and planning are expected from the proposed project. Because the project will not adversely affect land use and planning, it will not change conclusions regarding land use and planning in the PEA for the Fleet Vehicle Rules.

Mineral Resources – The extension of the existing TICR provision would not require additional mineral resources and, thus, the project proposal will not result in the loss of any mineral resources or increased demand for mineral resources. Because the

project will not adversely affect mineral resources, it will not change conclusions regarding mineral resources in the PEA for the Fleet Vehicle Rules.

Noise - The extension of the existing TICR provision does not require construction of any kind and, if the affected facility is already taking advantage of the provision, no change in the operational activity is expected. No noticeable change in noise levels is expected because the provision would allow operators to replace one type of diesel engine vehicle with another diesel vehicle. Because the project will not generate any adverse noise impacts, it will not change conclusions regarding noise in the PEA for the Fleet Vehicle Rules.

Population and Housing – The extension of the existing TICR provision will not require additional workers or a shift in the existing labor force. Therefore, existing affected facilities will not induce population growth, displace housing or people, or require the construction of new or replacement housing. Because the project will not adversely affect population and housing, it will not change conclusions regarding population and housing in the PEA for the Fleet Vehicle Rules.

Public Services – The extension of the existing TICR provision will not require modifications at the existing affected facilities because the proposed project would allow affected fleet operators to continue purchasing diesel vehicles. Thus, the proposed project does not require additional fire, police or emergency services over and above those currently available to respond to any affected facility in the case of an emergency. Affects to public services when the sunset date is reached were analyzed and disclosed in the Final PEA (SCAQMD, June 2000) and the conclusions have not changed or been made substantially worse as a result of implementing the proposed project.

Recreation - The extension of the existing TICR provision will not require modifications at the existing affected facilities because the proposed project would allow affected fleet operators to continue purchasing diesel vehicles. Thus, no impact on existing recreational facilities is expected and no new recreational facilities will be required to be constructed as a result of the current project proposal. Because the project will not adversely affect recreation facilities, it will not change conclusions regarding recreation in the PEA for the Fleet Vehicle Rules.

Solid/Hazardous Waste – No additional solid/hazardous waste is generated when a facility operators takes advantage of the TICR provision because old vehicles would be replaced by new diesel vehicles at the end of their useful lives instead of alternative fuel vehicles. The need to replace old vehicles with new vehicles will not be altered by continuing the TICR provision. Affects to solid/hazardous waste when the sunset date is reached were analyzed and disclosed in the Final PEA (SCAQMD, June 2000) and the conclusions have not changed or been made substantially worse as a result of implementing the proposed project. Because the project will not

adversely affect solid/hazardous waste, it will not change conclusions regarding solid/hazardous waste in the PEA for the Fleet Vehicle Rules.

Transportation/Circulation – Extending the TICR provision does not require purchasing new vehicles. It allows fleet operators to replace existing diesel vehicles with new diesel vehicles, which are expected to continue perform the same function as the old diesel vehicles and travel the same distances over roadways, so no new impacts are expected from implementing the proposed project. Impacts to transportation/circulation when the sunset date is reached were analyzed and disclosed in the Final PEA (SCAQMD, June 2000) and the conclusions have not changed or been made substantially worse as a result of implementing the proposed project.

CONCLUSION

As indicated in the previous discussions, the proposed project does not create any new significant adverse impacts or make substantially worse existing significant effects. As a result, substantial revisions to the previous Program EA analyzing these previously approved projects are not required. An addendum is the appropriate CEQA document for the proposed project because the proposed modifications to the originally adopted rules require only minor technical changes or additions to the previously approved Final Program and the changes do not trigger any conditions identified in CEQA Guidelines §15162. The extension of the TICR provision will not result in increased daily emissions or substantially worsen current air quality, but will result in a delay in anticipated emission reductions from the affected fleet categories. Because the TICR sunset provision will remain, the delay of emission reductions will be temporary. No new significant project-specific or cumulative impacts in any environmental areas were identified, nor would any project-specific or cumulative impacts in any environmental areas be made substantially worse.