#11(b)

SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT

For Agenda of **August 25, 2011**

To: Board of Directors
Sacramento Metropolitan Air Quality Management District

From: Larry Greene
Executive Director/Air Pollution Control Officer

Subject: Public Hearing to Adopt a Resolution Approving Amendments to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan by Removing Control Measures SMAQMD-412, Internal Combustion Engines, and SMAQMD-471, Asphaltic Concrete

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Recommendations

1. Conduct a public hearing; and
2. Adopt the attached resolution approving the amendments to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan.

Executive Summary

In 2009, the Governing Boards of the districts in the Sacramento Federal Nonattainment Area adopted the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Plan) to achieve the federal 8-hour ozone air quality standard by 2018. The Plan included control measures SMAQMD-412, Internal Combustion (IC) Engines and SMAQMD-471, Asphaltic Concrete. These measures require reductions for NOx emission from engines and asphalt manufacturing facilities. The U.S. Environmental Protection Agency (EPA) has not yet approved the Plan. Staff recommends removing these control measures from the Plan because the emissions and emission reductions from these measures are lower than previous estimates, making the measures less cost effective and, in the case of the asphalt measure, the economic climate for the construction related industries makes the cost difficult for those industries to bear.

Staff has evaluated the removal of control measures SMAQMD-412 and SMAQMD-471 from the Plan and has concluded that the removal of both control measures will not interfere with the attainment demonstration or reasonable further progress (RFP) demonstration, and does not change the reasonably available control measure (RACM) conclusions. In addition, Staff evaluated the removal of these control measures together with the potential removal of control measure IS-1 (Agenda Item 11.a) and these conclusions do not change.

Attachments

The table below identifies the attachments to this memo:

Item	Attachment	Page Number
Board Resolution	A	5
Amended Plan Pages	B	8
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Background

The 2009 Plan approved by this Board includes the information and analyses necessary to fulfill the federal Clean Air Act (CAA) requirements for demonstrating reasonable further progress and attainment of the 1997 8-hour ozone National Ambient Air Quality Standard in the Sacramento region by 2018. The Plan was approved by the California Air Resources Board (CARB) on March 26, 2009 and on April 17, 2009 CARB submitted it for EPA approval and inclusion in the State Implementation Plan. The Plan has not yet been approved by the EPA.

The plan includes control measures SMAQMD-412, IC Engines and SMAQMD-471, Asphaltic Concrete. SMAQMD-412 would address emissions generated by stationary, prime power (non-emergency standby) internal combustion engines. SMAQMD-471 would address NOx emissions from dyers used to manufacture asphaltic concrete. Implementing these control measures begins with a more detailed technical evaluation of individual sources and compliance options. This evaluation uncovered new information about the costs and benefits of these measures that suggests they will not be cost effective as a federal measure when these rules come up for adoption by this Board in 2012, unless the cost or technology changes.

Although the District could defer action on the rules until 2012, when the rules are scheduled for Board adoption, it is possible that by then EPA will have approved the Plan with this rule commitment in place. Once approved as a rule commitment, the District cannot remove the rule without EPA's consent. By removing it now, the District avoids the requirement to obtain EPA's consent for the removal.

Reasons for Plan Amendment

Control Measure SMAQMD-412, IC Engines

Control measure SMAQMD-412 anticipated revising Rule 412, STATIONARY INTERNAL COMBUSTION ENGINES LOCATED AT MAJOR STATIONARY SOURCES that limits emissions from stationary, prime power (non-emergency standby) internal combustion engines to expand applicability to all engines. Currently Rule 412 only applies to sources that emit more than 25 tons per year (tpy) of NOx. Compliance would be achieved through engine replacements, electrification, or new control devices. The Plan estimated 0.01 tons per day (tpd) NOx emissions reduction at an estimated cost effectiveness of $5.75 per pound.

Additional technical evaluation now shows that engines are very close to proposed emission standards and that many of the permitted engines would qualify for a low usage exemption in the control measure[1] reducing expected emissions and emission benefits from the rule. Low usage exemptions are included in similar rules in other areas[2] when emission benefits do not merit the cost of controls. The lowered emissions and emission benefits skew the cost effectiveness analysis (the ratio of costs to emission reduced), rendering the cost much higher relative to the level of reductions achieved. The new estimate of cost effectiveness is $28 per pound reduced, which is higher than other rules adopted by the District to date ($1.12 to $19.80 per pound reduced).

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[1] SMAQMD, "2009 Emission Inventory Survey." June 15, 2010.
[2] Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Stationary Spark-Ignited Internal Combustion Engines (CARB, November 2001).

Control Measure SMAQMD-471, Asphaltic Concrete

Control measure SMAQMD-471 would establish a new rule to control NOx emissions from dryers used to manufacture asphaltic concrete, or hot-mix pavement material through low NOx burners used to heat the dryer. The Plan estimated 0.13 tpd NOx emissions reduction with an estimated cost effectiveness of $8.80 per pound – 21.15 per pound.

Additional technical evaluation now shows reduced emissions and emission reduction potential. The emissions are lower than previously estimated due in part to: 1) the economic downturn, resulting in reduced asphalt production, 2) installation of cleaner equipment[3], 3) conversion from diesel to propane fuel[4], and 4) updated emission factors[5]. The reduced emissions mean reduced emission reduction benefits from the anticipated controls and increase cost effectiveness of the measure higher than expected ($80 per pound reduced) and much worse than other rules adopted by the District to date.

Future Actions

The District may consider adoption of both rules as state measures in the future. For the engine rule, a state measure – which needn't meet federal testing requirements – might still prove to be cost effective. For the asphalt rule, increased production associated with the economic recovery might likewise improve the cost effectiveness of the rule. But removal of both rules from the federal SIP commitment provides the District with the maximum flexibility when considering rule adoption in the future.

Legal Requirements

The Clean Air Act (CAA) Section 110(l) prohibits State Implementation Plan (SIP) revisions that would interfere with attainment, and requires reasonable notice and public hearings on all revisions. The attached staff report discusses each of the CAA requirements relevant to removing SMAQMD-412 and SMAQMD-471, and establishes that removal is permissible because the prior SIP analysis did not rely on these measures to demonstrate attainment or reasonable further progress, or to meet contingency requirements. Removal also does not change the prior conclusion that the SIP contains all reasonable control measures.

Environmental Review and Compliance

A Final Environmental Impact Report (FEIR) for the 2009 Plan was adopted by the SMAQMD Board of Directors on January 22, 2009. The FEIR concluded that the Plan would have no significant adverse environmental impacts.

This project does not require any changes to the FEIR and, therefore, the proposed revision to the Plan is exempt from CEQA pursuant to California Code of Regulations Title 14, Chapter 3, Section 15162(a)(1) - Subsequent EIRs and Negative Declarations.

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[3] SMAQMD, "Permit to Operate #20866.", March 4, 2008.
[4] SMAQMD, "Permit to Operate #17276." June 18, 2004.
[5] SMAQMD, "Permit to Operate #20400 and #20412." March 21, 2008 and July 30, 2009.

Public Review Process

The noticing for this hearing and prior public workshop included:

- Email notices to 2,200 recipients, including affected sources;
- U.S. mail notices to all those who have requested them;
- A notice published in the Sacramento Bee in the Our Region section; and
- A notice posted on the District website on June 28, 2011 and July 25, 2011. The notice included a link to the amended Plan pages and staff report.

Staff did not receive any comments or questions at the public workshop held July 12, 2011.

Staff met with Teichert staff to discuss the proposed revisions at their request. Staff also briefed Breathe California and the Cleaner Air Partnership on the proposed amendments to the Plan. No comments have been received on the proposed Plan revisions.

Conclusion and Recommendations

The control measures SMAQMD-412, IC Engines and SMAQMD-471, Asphaltic Concrete anticipated amending District rules to control emissions from IC engines and asphaltic concrete production. Staff recommends removing these control measures from the 2009 Plan because recent detailed technical evaluation uncovered new information that emissions and emission reductions are lower than previous estimates making these measures less cost effective than any other previously adopted measure. Staff recommends that the Board adopt the attached resolution approving the Plan amendments, removing the District's Plan commitment to adopt control measures SMAQMD-412, IC Engines and SMAQMD-471, Asphaltic Concrete.

Respectfully submitted,

Larry Greene
Executive Director/Air Pollution Control Officer

Approved as to form:

Kathrine Pittard
District Counsel

Attachments

Attachment A

Board Resolution

RESOLUTION NO. AQM _____

SACRAMENTO REGIONAL 8-HOUR OZONE ATTAINMENT AND REASONABLE FURTHER PROGRESS PLAN (PLAN) AND ITS FINAL ENVIRONMENTAL IMPACT REPORT (FEIR)

THE BOARD OF DIRECTORS OF THE SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

WHEREAS, the U.S. Environmental Protection Agency (EPA) promulgated the 1997 National Ambient Air Quality Standard ("NAAQS") for ozone with an 8-hour averaging time of 0.08 parts per million and determined that the 8-hour ozone standard is necessary in order to protect public health (Federal Register, Vol. 62, No. 138, pages 2-37 (July 18, 1997); and

WHEREAS, in January and February of 2009, the Boards of Directors of the districts of the SFNA adopted the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2009 Plan), which satisfies the attainment and reasonable further progress demonstration requirements associated with the 1997 ozone NAAQS (42 USC §7502 (c) and §7511a); and

WHEREAS, the new information developed during staff's continued analysis of the 2009 Plan commitments established that two measures, control measures SMAQMD-412, IC ENGINES, and SMAQMD-471, ASPHALTIC CONCRETE, will have fewer emission reductions and higher control costs, rendering them much less cost-effective, and

WHEREAS, the Board of Directors of the Sacramento Metropolitan Air Quality Management District has determined that the unsatisfactory cost effectiveness of control measures SMAQMD-412, IC ENGINES, and SMAQMD-471, ASPHALTIC CONCRETE justifies removing them from the 2009 Plan; and

WHEREAS, the Board of Directors of the Sacramento Metropolitan Air Quality Management District has determined that the Plan revisions will not change the attainment demonstration or interfere with the attainment (Clean Air Act Sections 172(c)(1) and 182(c)(2)(A)); and

WHEREAS, the Board of Directors of the Sacramento Metropolitan Air Quality Management District has determined that the Plan revisions will not interfere with the reasonable further progress (Clean Air Act Sections 182(c)(2)(B) and (C)); and

WHEREAS, the Board of Directors of the Sacramento Metropolitan Air Quality Management District has determined that the Plan revisions do not change the conclusion that the 2009 Plan includes all reasonably available control measures (Clean Air Act Sections 172(c)(1) and 182(c)); and

WHEREAS, the Board of Directors of the Sacramento Metropolitan Air Quality Management District has determined that the Plan revisions do not change the 2009 Plan Clean Air Act contingency measures (Clean Air Act Sections 172(c)(9) and 182(c)(9)); and

WHEREAS, the Board of Directors of the Sacramento Metropolitan Air Quality Management District held a duly notice public hearing on August 25, 2011 and considered public

comment on the proposed Plan revisions (Clean Air Act Sections 110(l) (42 United States Code Section 7410(l))); and

WHEREAS, the Board of Directors of the Sacramento Metropolitan Air Quality Management District has maintained records of the revision proceedings; and

WHEREAS, this action is exempt from CEQA by California Code of Regulations Title 14, Chapter 3, Section 15162(a)(1) – Subsequent Environmental Impact Reports and Negative Declarations, because the project does not require any changes to the Final Environmental Impact Report for the 2009 Sacramento Regional Non-Attainment Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan (December 2008).

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Sacramento Metropolitan Air Quality Management District determines the revisions to the Plan is exempt from CEQA; and

BE IT FURTHER RESOLVED that the Board of Directors of the Sacramento Metropolitan Air Quality Management District approves and adopts the proposed revisions to the 2009 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan; and

BE IT ORDERED that the Board of Directors of the Sacramento Metropolitan Air Quality Management District directs staff to forward the adopted revisions and all necessary supporting documents to the California Air Resources Board for its approval and subsequent submittal to EPA for final approval as a revision to the State Implementation Plan.

ON A MOTION by Director _____, seconded by Director _____, the foregoing Resolution was passed and adopted by the Board of Directors of the Sacramento Metropolitan Air Quality Management District, State of California, this 25th day of August, 2011, by the following vote, to wit:

AYES: Directors

NOES: Directors

ABSENT: Directors

_____
Chair of the Board
Sacramento Metropolitan Air
Quality Management District

(SEAL)

ATTEST: _____
Clerk of the Board
Sacramento Metropolitan Air Quality Management District

Attachment B

Amended Plan Pages

The following Table 1-3 contains a summary of the proposed new regional and local control measures and expected VOC and NOx emission reductions for the Sacramento nonattainment area for the 2018 attainment demonstration year. Emission benefits from these new committal measures are estimated to provide reductions of 3 tons per day of VOC and 3 tons per day of NOx in 2018. Some of these new local measures will be adopted by the end of 2008, and emission benefits from just these adopted new measures are estimated to provide reductions of 1 ton per day of VOC in 2018.

Table 1-3
Summary of New Regional and Local Proposed Control Measures
Sacramento Nonattainment Area

Control Measure Name	2018 Emission Reductions (TPD)	
	VOC	NO_x
Regional Non-regulatory Measures		
Regional Mobile Incentive Program – On-road	<0.1	0.9
Regional Mobile Incentive Program – Off-road	<0.1	<0.1
Spare The Air Program	<0.1	<0.1
SACOG Transportation Control Measures	-	-
Urban Forest Development Program	0 - 0.2	-
Total Regional Non-regulatory Measures	**0.1**	**0.9**
Local Regulatory Measures		
Indirect Source Rule - Construction	-	0.1
Indirect Source Rule - Operational	0-<0.1	0-0.1
Architectural Coating	1.5	-
Automotive Refinishing	0.2	-
Degreasing/Solvent Cleaning	1.4	-
Graphic Arts	na	-
Miscellaneous Metal Parts and Products	<0.1	-
Natural Gas Production and Processing	0.1	-
Asphalt Concrete	-	≤0.1
Boilers, Steam Generator, and Process Heaters	-	0.2
IC Engines	-	0.1
Large Water Heaters and Small Boilers	-	0.9
Total Local Regulatory Measures	**3.2**	**1.43**
Total Reductions*	**3.4**	**2.75**

Notes: Numbers are truncated to one decimal place. na = not available
*Total reductions are summed from untruncated values. See summary table in Appendix C – Proposed Control Measures.

Natural Gas Production and Processing

There are several natural gas production fields within Sacramento County. Fugitive emissions of VOC from natural gas production occur from equipment leaks in valves, pumps, compressors, pressure relief devices, flanges, and threaded connections at gas wells and associated transmission systems. The proposed control measure would establish inspection and repair requirements for leaking components. Emission reductions would result from a reduction in the number of leaking components. The proposed measure would establish leak inspection frequencies and allowable repair periods.

Natural Gas Production and Processing Category			VOC Emission Reduction (TPD)
District Measure	**Adoption Year**	**Implement Year**	**2018**
SMAQMD-461	2011	2012	0.1
Total			**0.1**

7.6 NOx Emission Control Measures

Asphalt Concrete

Asphaltic concrete, or hot-mix pavement material, is produced in both continuous and batch plants; some of the latter are portable. The process involves heating aggregate in a rotary dryer to 300°F and mixing with melted asphalt cement refined from petroleum. This measure addresses NOx emissions from burners used to heat the dryer. Other ancillary NOx emissions come from heaters used to melt asphalt cement and from stationary internal combustion engines.

The control of dryer NOx emissions is accomplished by controlling the burners used to heat the dryer. The control measure will propose a NOx limit that may be complied with by retrofitting with low NOx burners and flue gas re-circulation.

Asphalt Concrete Category			NOx Emission Reduction (TPD)
District Measure	**Adoption Year**	**Implement Year**	**2018**
~~SMAQMD-471~~	~~2012~~	~~2014~~	~~0.1~~
PCAPCD-CM1	2013	2014	<0.1
Total			**≤0.1**

Boilers, Steam Generator, and Process Heaters

Boilers and steam generators are used to provide hot water and steam for numerous industrial and commercial applications. These applications include space heating, food processing, garment laundering, and equipment sterilization. Manufacturing operations use process heaters to heat materials or equipment. The equipment burners can be fired on solid, liquid or gaseous fuels. The proposed control measure lowers the NOx emission to a more stringent level. Current technology is widely available to adopt this control measure.

Boilers, Steam Generators, and Process Heaters Category			NOx Emission Reduction (TPD)
District Measure	Adoption Year	Implement Year	2018
YSAQMD-2.27	2010	2012	0.2
Total			**0.2**

IC Engines

Internal combustion (IC) engines are used widely in many different facilities. They can be used to drive electric generators, pumps, gas compressors, or blowers. A high percentage of the engines are used to provide backup power or electricity in emergencies. IC engines use propane, gasoline, natural gas, liquefied petroleum gas, diesel or other fuels as their source of energy. The ignition of the fuels converts the energy in the fuel to mechanical energy. NOx is produced during the combustion process.

The proposed control measure would establish emission standards for stationary engines.

IC Engines Category			NOx Emission Reduction (TPD)
District Measure	Adoption Year	Implement Year	2018
~~SMAQMD-412~~	~~2011~~	~~2013~~	~~<0.1~~
FRAQMD-3.22	2010	2011	<0.1
YSAQMD-2.32	2010	2011	0.1
Total			**0.1**

Large Water Heaters and Small Boilers

Large water heaters and small boilers are used to provide hot water and steam to a variety of different applications, including space heating and food processing. Those units are usually fired on gaseous fuels and have burner ratings of less than 1 million BTU/hr. In general, units with burner rating under 0.3 million BTU/hr use the draft

Table 7-4
Summary of New Regional and Local Proposed Control Measures
Sacramento Nonattainment Area

Control Measure Name	2018 Emission Reductions (TPD)	
	VOC	NO_x
Regional Non-regulatory Measures		
Regional Mobile Incentive Program – On-road	<0.1	0.9
Regional Mobile Incentive Program – Off-road	<0.1	<0.1
Spare The Air Program	<0.1	<0.1
SACOG Transportation Control Measures	--	--
Urban Forest Development Program	0 - 0.2	--
Total Regional Non-regulatory Measures	**0.1**	**0.9**
Local Regulatory Measures		
Indirect Source Rule - Construction	--	0.1
Indirect Source Rule - Operational	0-<0.1	0-0.1
Architectural Coating	1.5	--
Automotive Refinishing	0.2	--
Degreasing/Solvent Cleaning	1.4	--
Graphic Arts	na	--
Miscellaneous Metal Parts and Products	<0.1	--
Natural Gas Production and Processing	0.1	--
Asphalt Concrete	--	≤0.1
Boilers, Steam Generator, and Process Heaters	--	0.2
IC Engines	--	0.1
Large Water Heaters and Small Boilers	--	0.9
Total Local Regulatory Measures	**3.2**	**1.43**
Total Reductions*	**3.4**	**2.75**

Notes: Numbers are truncated to one decimal place. na = not available
*Total reductions are summed from untruncated values. See summary table in Appendix C – Proposed Control Measures.

The following Table 14-1 contains a summary of the proposed new regional and local control measures and expected VOC and NOx emission reductions for the Sacramento nonattainment area for the 2018 attainment demonstration year. Emission benefits from these new committal measures are estimated to provide reductions of 3 tons per day of VOC and 3 tons per day of NOx in 2018. Some of these new local measures will be adopted by the end of 2008, and emission benefits from just these adopted new measures are estimated to provide reductions of 1 ton per day of VOC in 2018.

Table 14-1
Summary of New Regional and Local Proposed Control Measures
Sacramento Nonattainment Area

Control Measure Name	2018 Emission Reductions (TPD)	
	VOC	NO_x
Regional Non-regulatory Measures		
Regional Mobile Incentive Program – On-road	<0.1	0.9
Regional Mobile Incentive Program – Off-road	<0.1	<0.1
Spare The Air Program	<0.1	<0.1
SACOG Transportation Control Measures	-	-
Urban Forest Development Program	0 - 0.2	-
Total Regional Non-regulatory Measures	**0.1**	**0.9**
Local Regulatory Measures		
Indirect Source Rule - Construction	-	0.1
Indirect Source Rule - Operational	0-<0.1	0-0.1
Architectural Coating	1.5	-
Automotive Refinishing	0.2	-
Degreasing/Solvent Cleaning	1.4	-
Graphic Arts	na	-
Miscellaneous Metal Parts and Products	<0.1	-
Natural Gas Production and Processing	0.1	-
Asphalt Concrete	-	≤0.1
Boilers, Steam Generator, and Process Heaters	-	0.2
IC Engines	-	0.1
Large Water Heaters and Small Boilers	-	0.9
Total Local Regulatory Measures	**3.2**	**1.43**
Total Reductions*	**3.4**	**2.75**

Note: Numbers are truncated to one decimal place. na = not available
*Total reductions are summed from untruncated values. See summary table in Appendix C – Proposed Control Measures.

The following Table 14-2 contains a summary of SACOG transportation control measures (TCMs) that are included in the Sacramento region's federal 8-hour ozone plan. The TCMs include new and continuing projects and funding programs.

Stationary and Area-wide Source Control Measures

VOC Control Measures

NOx Control Measures

Further Study Measures

Measure Name	Emission Reductions (TPD) 2018	
	VOC	NOx
Total Miscellaneous Metal Parts and Products	**0.02**	
Natural Gas Production and Processing		
SMAQMD-461	0.116	-
Total Natural Gas Production and Processing	**0.12**	-
Asphalt Concrete		
~~SMAQMD-471~~	-	~~0.132~~
PCAPCD-CM1	-	0.036
Total Asphalt Concrete		**~~0.1704~~**
Boilers, Steam Gen. and Process Heaters		
YSAQMD-2.27	-	0.288
Total Boilers, Steam Gen. and Process Heaters		**0.29**
IC Engines		
~~SMAQMD-412~~	-	~~0.013~~
FRAQMD-3.22	-	0.004
YSAQMD-2.32	-	0.118
Total IC Engines		**~~0.1412~~**
Large Water Heaters and Small Boilers		
SMAQMD-414	-	0.708
EDCAQMD-239	-	0.003
FRAQMD-3.23	-	0.000
PCAPCD-CM2	-	0.030
YSAQMD-2.37	-	0.240
Total Large Water Heaters and Small Boilers		**0.98**
Total Stationary and Area Source Measures	**3.30**	**~~1.5843~~**
Total Regulatory Measures	**3.30**	**~~1.7256~~**
Total Reductions	**3.42**	**~~2.6953~~**

tbd = to be determined

Summary Table of Emission Reductions by Air District

Air District Control Measure Name (Rule No.)	Emission Reductions (TPD) 2018	
	VOC	NOx
Stationary and Area Source Measures		
Sacramento Metropolitan AQMD		
Architectural Coating (SMAQMD-442)	0.913	-
Automotive Refinishing (SMAQMD-459)	0.113	-
Degreasing/Solvent Cleaning (SMAQMD-454/466)	0.593	-
Natural Gas Production and Processing (SMAQMD-461)	0.116	-
~~Asphalt Concrete (SMAQMD-471)~~	-	~~0.132~~
~~IC Engines (SMAQMD-412)~~	-	~~0.013~~
Large Water Heaters and Small Boilers (SMAQMD-414)	-	0.708
Total Sacramento Metropolitan AQMD	**1.74**	**0.8571**
El Dorado County AQMD		
Architectural Coating (EDCAQMD-215)	0.186	-
Degreasing/Solvent Cleaning (EDCAQMD-225/235)	0.076	-
Misc. Metal Parts and Products (EDCAQMD-246)	0.002	-
Large Water Heaters and Small Boilers (EDCAQMD-239)	-	0.003
Total El Dorado County AQMD	**0.26**	**0.00**
Feather River AQMD		
Architectural Coating (FRAQMD-3.15)	0.004	-
Automotive Refinishing (FRAQMD-3.19)	0.001	-
Degreasing/Solvent Cleaning (FRAQMD-3.14)	0.001	-
IC Engines (FRAQMD-3.22)	-	0.004
Large Water Heaters and Small Boilers (FRAQMD-3.23)	-	0.000
Total Feather River AQMD	**0.01**	**0.00**
Placer County APCD		
Architectural Coating (PCAPCD-218)	0.201	-
Automotive Refinishing (PCAPCD-234)	0.045	-
Misc. Metal Parts and Products (PCAPCD-CM3)	0.014	-
Asphalt Concrete (PCAPCD-CM1)	-	0.036
Large Water Heaters and Small Boilers (PCAPCD-CM2)	-	0.030
Total Placer County APCD	**0.26**	**0.07**
Yolo-Solano AQMD		
Architectural Coating (YSAQMD-2.14)	0.214	-
Automotive Refinishing (YSAQMD-2.26)	0.058	-
Degreasing/Solvent Cleaning (YSAQMD-2.24/2.31)	0.762	-
Graphic Arts (YSAQMD-2.29)	---	-
Boilers, Steam Gen. & Process Heaters (YSAQMD-2.27)	-	0.288
IC Engines (YSAQMD-2.32)	-	0.118
Large Water Heaters and Small Boilers (YSAQMD-2.37)	-	0.240
Total Yolo-Solano AQMD	**1.03**	**0.65**
Total Stationary and Area-wide Source Measures	**3.30**	**1.5743**

Control Measure Number: SMAQMD - 471

Control Measure Title: Asphaltic Concrete

Date: December 11, 2006

Control Measure Description

Asphaltic concrete, or hot-mix pavement material, is produced in both continuous and batch plants; some of the latter are portable. The process involves heating aggregate in a rotary dryer to approximately 300 °F and mixing it with melted asphalt cement refined from petroleum. This measure targets NOx emissions from the burners used to heat the dryer. NOx emissions also come from heaters used to melt asphalt cement, and from stationary internal combustion engines.

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The control of dryer NOx emissions may be accomplished by controlling the burners used to heat the dryer. Nearly all plants in the Sacramento Metropolitan Air Quality Management District (SMAQMD) are fired with natural gas. The concentration of NOx discharged from uncontrolled burners is typically over 100 parts per million, volumetric dry (ppmvd) @ 3% O2, or about 0.016 pounds per ton. This measure will consider the use of low NOx burners and flue gas recirculation (FGR) to reduce these emissions. A similar control measure (Rule 4309 – Dryers, Dehydrators, and Ovens) was adopted by the San Joaquin Valley Unified APCD and applies to dryers at asphaltic concrete plants.

Emission Inventory –2018

EIC Code	EIC Description	NOx Inventory for Control Measure (tpd)
		2018
430-424-7006-0000	Asphaltic Concrete Production	0.2087

Emission Reductions

EIC Description	Adoption Date	Implementation Date	NOx Emission Reduction (tpd)
			2018
Asphaltic Concrete Production	2012	2014	0.1326

Cost Effectiveness

In the December 15, 2005 staff report for Rule 4309. San Joaquin district staff estimated the cost effectiveness of NOx controls for asphaltic concrete plants to range from $17,600 to $42,300 per ton of NOx reduced. Cost effectiveness in the SMAQMD is expected to be similar.

Authority

Authority to implement this control measure by the SMAQMD is in accordance with California Health and Safety Code, Sections 40000, 40001, and 41010.

Implementation

The Sacramento Metropolitan Air Quality Management District is the implementing agency.

References

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1. CARB Ozone SIP Planning Inventory, Version 1.0, Sacramento NAA (Rf#980), November 16, 2006.
2. Control Measure, SMAQMD 471, September 14, 2006.
3. Best Available Control Technology Guidelines, Part D: BACT Guidelines for Non-Major Polluting Facilities. South Coast Air Quality Management District. October 20, 2000 (Revised July 9, 2004).
4. San Joaquin Valley Unified Air Pollution Control District. Final Draft Staff Report for Rule 4309 (Dryers, Dehydrators, and Ovens). December 15, 2005.
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6. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Control Cost Manual, Fourth Edition (EPA 450/3-90-006). U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. January 1990.
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8. Employer Costs for Employee Compensation -- March 2006, Table 9, All workers in private industry, installation, maintenance, and repair. June 21, 2006
9. Average Retail Price of Electricity by End-Use Sector. Energy Information Administration. Washington, D.C. Accessed August 16, 2006. Internet Address: http://www.eia.doe.gov/cneaf/electricity/epm/epmxlfile5_6_b.xls.
10. Natural Gas Prices. Energy Information Administration. Washington, D.C. Accessed August 16, 2006. Internet Address: http://tonto.eia.doe.gov/dnav/ng/ng_pri_sum_dcu_SCA_m.htm.

Control Measure Number: SMAQMD - 412

Control Measure Title: IC Engines

Date: December 7, 2006

Control Measure Description

Internal combustion (IC) engines are used at a wide variety of stationary sources including hospitals, farms, and natural gas fields. Approximately 93% of the engines currently permitted with the district are designated as emergency standby engines that only operate for maintenance and emergency purposes. These engines are in place to provide backup power or operate fire pumps while prime powered engines could be used continuously.

IC engines are typically classified by the method in which the fuel is ignited. Compression ignited engines are diesel fueled and are typically used as emergency standby engines and in agricultural operations. Spark ignited engines can use natural gas, propane, gasoline, or other fuels as source of energy. Typically, natural gas is used in prime powered spark ignited engines where most of the prime powered engines are used in the process of natural gas compression. Spark ignited engines can be further classified as rich or lean burn depending upon the amount of air that is mixed with the fuel before it is ignited.

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The pollutants that are created during the combustion process that are of primary concern for the District are NOx, CO, and VOC. Some of the standard methods for controlling these pollutants from IC engines include selective and non-selective catalytic reduction, low emission combustion technologies, NOx absorbers, and engine replacement. Additionally, diesel particulate matter (PM), which has been identified as a carcinogen and an air toxic contaminant, is a large concern, but has primarily been addressed in the State's air toxic control measure for compression ignited engine PM.

The proposed control measure would establish emission standards for stationary engines.

This control measure will not be addressing engines used in agricultural processes. The California Air Resources Board (CARB) established new standards in the diesel engine particulate air toxic control measure (ATCM) for engines used in agricultural processes. CARB has stated that the anticipated method of compliance to meet their newly proposed standards is replacement with EPA certified Tier 3 or 4 engines. The proposed amendments to the ATCM will also require the replacement engine to maintain the NOx standards for that particular Tier engine. Therefore, additional local control measures would likely duplicate the state measure.

Emission Inventory –2018

EIC Code	EIC Description	NOx Inventory for Control Measures (tpd)
		2018
010-040-0142-0000	IC Engines, Electric Utilities - Landfill Gas	0.1098
030-040-0100-0000	IC Engines, Oil and Gas Production – Gaseous Fuel (Unspecified)	0.0773
050-040-0110-0000	IC Engines, Mfg. and Industrial - Natural Gas	0.5616
050-040-0124-0000	IC Engines, Mfg. and Industrial – Propane	0
050-040-1200-0000	IC Engines, Mfg. and Industrial – Diesel	0.0443
052-042-0110-0000	IC Engines, Food and Ag Processing - Natural Gas	0.1119
052-042-1200-0000	IC Engines, Food and Ag Processing – Diesel	0.2313
060-040-0110-0000	IC Engines, Service and Commercial – Natural Gas	0.0114
060-040-1200-0000	IC Engines, Service and Commercial – Diesel	0.0179
099-040-1200-0000	IC Engines, Other – Diesel	0.3914
Total		1.5569

Emission Reductions

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EIC Description	Adoption Date	Implementation Date	NOx Emission Reduction (tpd)
			2018
IC Engines	2011	2013	0.0131

Cost Effectiveness

In estimating cost effectiveness, staff assumed that all spark ignited engines would either upgrade or install new non-selective catalytic reduction (NSCR) systems, which is the most cost effective option for meeting BARCT standards. Additionally, staff assumes that the method of compliance for prime power diesel engines is to electrify. Staff estimates that by electrifying this diesel engine there will be a cost savings of approximately $5,000 annually. For all other engines affected by this rule, including capital, testing, and operational costs, the total cost effectiveness of the control measure is approximately $11,500 per ton of NOx reduced.

Authority

The District is authorized to adopt and amend rules and regulations by Health and Safety Code Sections 40001, 40702, and 41010.

Implementation

This control measure will be implemented by the SMAQMD.

References

1. CARB Ozone SIP Planning Inventory, Version 1.06, Sacramento NAA (Rf#980), November 16, 2006
2. CARB November 2001 Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Stationary Spark-Ignited Internal Combustion Engines
3. Section 93115, Title 17 of the California Code of Regulations, Airborne Toxic Control Measure for Stationary Compression Ignition Engines
4. South Coast AQMD Rule 1110.2
5. San Joaquin Valley Unified APCD Rule 4702
6. Ventura County APCD Rule 74.9
7. Control Measure, SMAQMD 412, December 7, 2006

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Table H-2
SMAQMD Stationary/Area Source Control Measures Considered

Measure No.	Title	Current Requirements	Opportunity for Strengthening	Conclusion
460	Adhesives and Sealants	VOC limits on adhesives and sealants	Reduce VOC limits on adhesives and sealants to limits used in SCAQMD	Not Recommended - Evaluated for Attainment Advancement
442	Architectural Coatings	VOC limits on coatings	Reduce the VOC limits on the coatings consistent with the SCM	Control Measure
454/466	Degreasing/ Solvent Cleaning	VOC limits on solvents	Reduce the VOC limits on the solvents to limits adopted by SCAQMD. Including all coating rules with solvent limits.	Control Measure
440	Unspecified Coatings	None	Establish VOC limits on coatings.	Not Recommended - Evaluated for Attainment Advancement
459	Automotive Refinishing	VOC limits on coatings	Reduce the VOC limits on the coatings consistent with the SCM	Control Measure
	Paper, Fabric, and Film Coating	None	Establish VOC limits on coatings.	Not Recommended - No sources
411	Boilers and Steam Generators	NOx limits on boiler/steam generators with rated heat input capacity of 1 mmBtu/hr or greater; 1-5 mmBTU/hr 30 ppm, 5-20 mmBTU/hr 15 ppm, >20 mmBTU/hr 9 ppm	Already adopted	Control Measure
411	Boilers and Steam Generators	NOx limits on boiler/steam generators with rated heat input capacity of 1 mmBtu/hr or greater; 1-5 mmBTU/hr 30 ppm, 5-20 mmBTU/hr 15 ppm, >20 9 ppm	Reduce NOx limit to 6 ppm for >20 mmBTU/hr	Not Recommended - Evaluated for Attainment Advancement
412	IC Engines	NOx limits on IC Engines located at major stationary source	Require NOx limits all IC Engines, not just those at major stationary sources of NOx.	Not Recommended - Evaluated for Attainment Advancement~~Control Measure~~
446	Storage Tanks	Requires use of a pressure tank or use of tank with vapor loss control device	Lower applicability threshold; additional control on fixed roof tank	Not Recommended - Evaluated for Attainment Advancement
	Cap and Trade	None	Establish CAP and Trade Emission Reduction Program similar to SCAQMD's RECLAIM Program	Not Recommended - Evaluated for Attainment Advancement
418	Commercial Cooking	None	Establish standards to control VOC emissions for Commercial Cooking (i.e. char boilers)	Not Recommended - Evaluated for Attainment Advancement
496	Livestock Waste	Implement several practice from a list	Lower applicability threshold; Increase number of practices and control efficiency	Control Measure
496	Livestock Waste	Implement several practices from a list	Lower applicability threshold; Increase number of practices and control efficiency	Not Recommended - Evaluated for Attainment Advancement

Attachment C

Staff Report

SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT

STAFF REPORT

REVISION TO THE 2009 SACRAMENTO REGIONAL 8-HOUR OZONE ATTAINMENT AND REASONABLE FURTHER PROGRESS PLAN:

REMOVAL OF CONTROL MEASURES

SMAQMD – 412, IC ENGINES

SMAQMD – 471, ASPHALTIC CONCRETE

July 19, 2011

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INTRODUCTION

The Sacramento Metropolitan Air Quality Management District (SMAQMD) included control measures SMAQMD – 412, IC Engines and SMAQMD – 471, Asphaltic Concrete in the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Plan.)[1] These measures require NOx reductions for IC engines and asphaltic concrete plants. Since the approval of the Plan by the districts of the Sacramento Federal Nonattainment Area (SFNA) and the California Air Resources Board (CARB), several factors have led Staff to recommend that these control measures be removed from the Plan and re-evaluated at a later time. These factors include:

- Recent impact of the economic downturn in the construction and development industry; and
- Reduced emissions and estimated emissions reduction potential from the control measures, which increased the cost effectiveness well beyond other measures.

Staff has evaluated the removal of control measures SMAQMD – 412, IC Engines and SMAQMD – 471, Asphaltic Concrete from the Plan and has concluded that the removal will not change or interfere with the attainment demonstration or reasonable further progress (RFP) demonstration, and does not change the reasonably available control measure (RACM) and contingency measure conclusions.

This staff report will review the anticipated measures and public process to date, and the legal requirements associated with these measures and this action. Then the report will discuss the reasons for removing these measures from the Plan now, and an anticipated schedule for re-consideration.

BACKGROUND

Plan Overview

In January and February of 2009, the Governing Boards of the SFNA districts approved the Plan. The Plan includes the information and analyses to fulfill the federal Clean Air Act (CAA) requirements for demonstrating reasonable further progress and attainment of the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS) in the Sacramento region. In addition, the Plan establishes an updated emissions inventory, provides photochemical modeling results, proposes adoption of control measures to meet CAA RACM requirements, and sets new motor vehicle emission budgets for transportation conformity purposes. The Plan was approved by CARB on March 26, 2009 and submitted to the U.S. Environmental Protection Agency (EPA) on April 17, 2009. The Plan has not yet been approved by the EPA. The Plan includes the following elements:

- Attainment demonstration
- Reasonable further progress demonstration
- Reasonably available control measures
- Emissions inventory

[1] "Sacramento Regional 8-hour Ozone Attainment and Reasonable Further Progress Plan", EDCAQMD, FRAQMD, PCAPCD, SMAQMD, YSAQMD, March 26, 2009

- Motor vehicle emissions budget
- General conformity budgets
- Photochemical modeling
- Contingency measures

The two control measures to be revised, SMAQMD – 412 and SMAQMD – 471, and their associated emissions reductions were not included in or relevant in any way to the following Plan elements:

- Emissions inventory[2]
- Motor vehicle emissions budgets[3]
- General conformity[4]
- Photochemical modeling[5]

Control Measure SMAQMD – 412, IC Engines

The Plan's SMAQMD – 412 control measure would revise Rule 412 that addresses emissions generated by stationary, prime power (non-emergency standby) internal combustion engines. Currently, Rule 412 only applies to 'major sources' of NOx. The control measure proposes to expand applicability to engines located at 'minor sources'. 'Minor sources' refers to sources that emit less than 25 tpy of NOx. The emission benefits that were estimated in the plan relied on CARB's Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Stationary Spark-Ignited Internal Combustion Engines[6] and the limits in Rule 412 for diesel fueled engines.

Internal combustion (IC) engines are used at a wide variety of stationary sources including hospitals, farms, and natural gas fields. Approximately 93% of the permitted engines are emergency standby engines that only operate for maintenance and emergency purposes. These engines provide backup power or operate fire pumps. The other 7% are prime powered engines used intermittently or continuously for non-emergency conditions.

IC engines are typically classified by the method in which the fuel is ignited. Compression-ignited engines use diesel fuel and are typically used as emergency standby engines and in agricultural operations. Spark-ignited engines can use natural gas, propane, gasoline, or other fuels. Typically, natural gas is the most common fuel in prime powered spark ignited engines and most of these engines in Sacramento County are used to compress natural gas from wells. Spark-ignited engines can be further classified as rich or lean burn depending upon the amount of air that is mixed with the fuel before it is ignited. Compliance would be achieved through engine replacements, electrification, upgrading current control device with three-way catalyst or installation of new control device. The Plan estimated 0.0131 tons per day (tpd) NOx emissions reduction at an estimated cost effectiveness of $5.75/lb.

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[2] Ibid. Section 5.5 states that the emissions inventory forecasts did not include benefits from measures that had not been adopted by December 31, 2006.
[3] Ibid. Appendix F only includes regional reductions from on-road mobile incentive strategy.
[4] Ibid. The general conformity inventory listed in Table 12-1 only includes aircraft and ground support emissions that would not be impacted by SMAQMD – 412 or SMAQMD – 471.
[5] Ibid. Section 6.3 of Appendix B states that the forecasted emissions used in the modeling accounts for the effects of growth and the effects of adopted emission control rules.
[6] Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Stationary Spark-Ignited Internal Combustion Engines (CARB, November 2001)

Control Measure SMAQMD – 471, Asphaltic Concrete

The Plan's SMAQMD – 471 control measure would control NOx emissions from dryers used to manufacture asphaltic concrete, or hot-mix pavement material. The process involves heating aggregate in a rotary dryer to approximately 300 °F and mixing it with melted asphalt cement refined from petroleum. The emissions reductions may be accomplished by controlling the NOx emissions from burners used to heat the dryer. Compliance would likely be achieved by replacing existing burners with low NOx burners and flue gas recirculation (FGR). The proposed requirements are based on SJVAPCD Rule 4309[7]. The Plan estimated 0.1326 tpd NOx emissions reduction with an estimated cost effectiveness of $8.80/lb – 21.15/lb.

LEGAL MANDATES

Clean Air Act Plan Requirements

The District is part of the SFNA, which is designated as a "severe" nonattainment area for the federal 8-hour ozone standard. The federal CAA requires nonattainment areas to prepare and submit to EPA an 8-hour ozone plan that meets specific requirements, including:

- Attainment demonstration. Sections 172(c)(1) and 182(c)(2)(A) of the CAA require a demonstration that the plan will provide for attainment of the national ambient air quality standard as expeditiously as practicable by the applicable attainment date. The demonstration must be based on photochemical grid modeling. The attainment date for nonattainment areas classified as "severe" is 2018.

- Reasonable Further Progress (RFP) demonstration. Sections 182(c)(2)(B) and (C) require a demonstration that the plan will result in VOC emissions (and/or NOx emissions) reductions from the baseline emissions of an average of at least three percent each year.

- Reasonably Available Control Measures (RACM). Section 172(c)(1) of the CAA requires that the plan provide for the implementation of all reasonably available control measures as expeditiously as practicable. EPA's RACM policy[8,9] indicates that areas should consider all candidate measures that are potentially reasonably available. Areas should consider all reasonably available measures for implementation in light of local circumstances. However, areas need only to adopt measures if they are both economically and technologically feasible and cumulatively will advance the attainment date (by one year or more) or are necessary for RFP.

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[7] Adopted December 15, 2005.
[8] "Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard – Phase 2" (Federal Register, November 29, 2005, p. 71659-71661).
[9] "Guidance on the Reasonably Available Control Measures (RACM) Requirement and Attainment Demonstration Submissions for Ozone Nonattainment Areas" (EPA, December 1999).

- Contingency Measures. Sections 172(c)(9) and 182(c)(9) of the CAA requires plans to include contingency measures which will reduce emissions in the event an area fails to meet Reasonable Further Progress (RFP) milestones or fails to attain by its attainment date.

In February 2009, the districts of the SFNA adopted a plan[10] to achieve the 1997 federal 8-hour ozone standard by 2018. The plan meets the requirements of the CAA, including an attainment demonstration, RFP, and includes control measures necessary to meet RACM and contingency measure requirements.

Removal of Control Measures from the Plan

Section 110(l) of the CAA requires that each revision to a State Implementation Plan be adopted after reasonable notice and public hearing. EPA cannot approve the revision if it would interfere with attainment, reasonable further progress, or any other applicable CAA requirement.

The 2009 plan includes commitments for the District to adopt measures to control emissions of NOx generated from stationary engines (SMAQMD – 412) and asphaltic concrete plants (SMAQMD – 471). The emissions reduction estimate in the plan for SMAQMD – 412 is 0.0131 tons per day of NOx, and for SMAQMD – 471, 0.1326 tons per day of NOx.

Staff is proposing to revise the State Implementation Plan to remove control measures SMAQMD – 412 and SMAQMD – 471 from the 2009 plan. In addition, the other air districts in the Sacramento Region with asphaltic concrete or IC engine commitments may request removal of their commitments. Even if all the districts remove these measures, the revision complies with Clean Air Act Section 110 (l) requirements because:

- The SIP revision will be adopted after 30 day notice and public hearing;
- The SIP revision does not change the attainment demonstration or interfere with attainment or RFP demonstration;
- The SIP revision does not change the RACM conclusions that control measures that are not included in the Plan collectively would not advance the attainment date for the Sacramento region because of the increased cost effectiveness and the insignificant amount of emissions reductions that they may potentially generate;
- The SIP revision has no impact on the contingency measure analysis or our ability to meet the Attainment Demonstration Contingency requirement; and
- The SIP revision does not interfere with any other applicable CAA requirement.

[10] Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (ECAQMD, FRAQMD, PCAPCD, SMAQMD, and YSAQMD, March 26, 2009).

Attainment demonstration

The attainment demonstration[11] established that a minimum emission reductions target of 12.5% reduction in NOx and 3.3% reduction in VOC is needed to meet the 1997 federal 8-hour ozone standard. The attainment demonstration showed that collectively all measures adopted in 2008 achieved this minimum emissions reduction target[12]. The Plan stated[13] that the new control measures are included to meet CAA requirements for RACM. The IC engine and asphaltic concrete control measures were not adopted in 2008 and not relied on to demonstrate attainment. Therefore, they can be removed from the Plan for any or all districts without changing the attainment demonstration or interfering with attainment.

Reasonable Further Progress (RFP)

The RFP demonstration in the Plan shows the SFNA achieves the required 3% emission reduction for milestone years 2011, 2014, 2017, and 2018 without relying on NOx and VOC emissions reductions from new federal, state, regional or local control measures[14]. Therefore, revising the Plan to remove the commitment to adopt IC engine and asphaltic concrete control measures in any or all districts would not affect the RFP demonstration.

Reasonably Available Control Measures (RACM)

Although new control measures adopted after 2008 were not required to demonstrate attainment or RFP, they were included to satisfy the RACM requirement[15]. Although these measures have a higher cost effectiveness and may not be "economically feasible," the District has not established a cost effectiveness threshold. Therefore, Staff analyzed whether removing the total potential emissions reductions from the IC engine and asphaltic concrete control measures in the districts with commitments[16] (up to 0.2 tpd NOx combined) changed the RACM conclusions[17]. Staff determined that the IC Engine and Asphaltic Concrete, and all other available control measures that are not included in the Plan, collectively would not advance the attainment date or contribute to RFP for the Sacramento region because of the insignificant amount of emissions reductions that they may potentially generate. Therefore, the Plan may be revised to remove the IC engine and asphaltic concrete commitments without changing the conclusion that the Plan meets RACM requirements.

[11] "Sacramento Regional 8-Hour Ozone Attainment Demonstration and Reasonable Further Progress Plan, March 26, 2009." Table 8-1,Line L, page 8-5
[12] Ibid. Table 8-1, Line N
[13] Ibid. page 8-2
[14] Ibid, Section 13.5, page 13-4, and Table 13-1, Lines 4 and 13 page 13-5.
[15] CAA Section 172(c)(1) and Section 181(a)(1), and 40 CFR 51.912(d)
[16] "Sacramento Regional 8-Hour Ozone Attainment Demonstration and Reasonable Further Progress Plan, March 26, 2009." Appendix C, pC-127-128 PCAPCD – CM1, pC-136-137, Asphalt Concrete Production; FRAQMD – 3.22, Stationary Internal Combustion Engines (Non-Agricultural); pC-138-139, YSAQMD – 2.32, Stationary Internal Combustion (IC) Engines.
[17] SMAQMD, "Emission Reductions Needed to Advance Attainment," June 27, 2011.

Contingency Measures

Sections 172(c)(9) and 182 (c)(9) require plans to include contingency measures which will reduce emissions in the event an area fails to meet Reasonable Further Progress (RFP) milestones or fails to attain by its attainment date. Federal guidance requires that sufficient contingency measures be identified in the plan to provide for a 3% emission reduction beyond what is needed for the attainment demonstration[18]. The demonstration that the 3% contingency measure requirement was met and did not include reductions associated with SMAQMD – 412 or SMAQMD – 471. As a result, removal of these measures has no impact on the contingency measure analysis or our ability to meet the Attainment Demonstration Contingency requirement.

Upcoming Ozone Standard Revision

In March 2008, EPA set a new 8-hour ozone standard of 0.075 parts per million (ppm). This standard is currently under reconsideration, and EPA is proposing to revise the standard in the range of 0.060 to 0.070 ppm (75 FR 2938, January 19, 2010). EPA's current timeline is to finalize the new standard by July 29, 2011 and complete nonattainment area designations by July 29, 2012. If EPA meets these deadlines then the deadline for submitting plans to EPA for attaining the new standard will be in mind-2014.

The District will consider potential measures to achieve the revised 8-hour ozone standard. The IC engine and asphaltic concrete control measures will be re-evaluated at that time.

SUMMARY OF CHANGES

Staff is proposing to amend the 2009 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan by removing control measures SMAQMD – 412 and SMAQMD – 471. The amendments will include all related changes to the attainment demonstration and RACM analysis. These changes to the Plan are in Chapters 1, 7, and 14, and its Appendices C and H. To clearly show the changes being made, deleted language is shown in strikeout format and new language is underlined.

REASONS FOR REMOVAL

Control Measure SMAQMD – 412, IC Engines

Emissions and Reductions:

The NOx emissions are lower than previously estimated, consequently the reduction potential of the measure is lower than the Plan's estimate. Several factors have contributed to the decrease in the emissions and the measure's reduction potential:

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[18] "General Preamble for Implementation of Title 1 of the Clean Air Act Amendments of 1990" (57 FR 13498, April 16, 1992) and SMAQMD 2009, Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, Sacramento Metropolitan Air Quality Management District, (March 26, 2009, Section 7-21, p7-32).

- A survey[19] performed after the Plan was adopted showed many of the permitted engines operate for fewer hours than the proposed low use exemption. These engines would be exempt from the emissions standards; therefore, emissions reductions would be less than those estimated in the control measure.
- The survey and permit information indicates that existing rich burn natural gas-fired engines use an add-on emissions control device that almost meets the control measure's anticipated emission standards. Therefore, these rich burn natural gas-fired engines emit less than the plan estimates and would not achieve anticipated reductions.

Potential Costs:

The survey and permit information indicates that because existing rich burn natural gas-fired engines almost meet the control measure's anticipated emission standards, the control measure achieves relatively small emission reduction benefits from these engines. A few lean burn natural gas and diesel engines would need to be modified or replaced to meet the control measure's anticipated control levels. The potential compliance options include replacing the existing engine with an electric motor or a lower emitting spark-ignited engine, or adding an exhaust control device.

EPA typically expects regular monitoring and testing requirement to demonstrate compliance with emissions standards. This adds costs even where the engines already meet the proposed emission standards. Added monitoring and testing costs without corresponding emissions reductions increases the cost effectiveness of the measure.

Collectively, these changes to emissions, emission reduction potential, and costs increases the cost effectiveness of the measure from $5.75 per pound[20] for SMAQMD – 412 to $28 per pound of NOx reduction. This is higher than prior rules adopted by the District to date.

Control Measure SMAQMD-471, Asphaltic Concrete

Emissions and Reductions:

The NOx emissions and reduction potential of the measure are lower than the Plan's estimate. The Plan used 2002 base year emissions to estimate the emission reductions from the measure. Several factors have contributed to the decrease in the emissions and reduction potential:

- Due to the economic downturn, the decrease in construction activity has resulted in a decrease of nearly 50% in the production of asphaltic concrete in the District from 2002 to 2010[21]. The 22% decrease in production for 2010 compared to 2009 shows that the downturn is not yet showing signs of a reversal.
- There are 5 asphaltic concrete facilities in Sacramento County. One facility switched from diesel fuel in 2004 to lower emission fuel (natural gas) after the facility changed

[19] SMAQMD, "2009 Emission Inventory Survey." June 15, 2010.
[20] "Sacramento Regional 8-Hour Ozone Attainment Demonstration and reasonable Further Progress Plan, March 26, 2009." Appendix C, pC-134.
[21] SMAQMD, "Point Source Emission Inventory Survey." Survey. Annually from 2002 to 2010.

ownership. The emission factor has been changed from 0.12 lbs NOx/ton of asphalt to 0.025 lbs NOx/ton of asphalt[22].

- Two facilities have lower NOx emissions based on recent source tests. The permits were changed to limit the facilities to these lower emission levels[23] and increase their maximum annual production rate.
- One facility has installed cleaner equipment that would meet the proposed NOx emission limits[24] as part of overall modifications to their facility including the installation of a hot oil heater.

Considered together, the NOx emissions from asphaltic concrete in the Plan year (2018) have been reduced from 0.21 tpd[25] to 0.05 tpd and the reduction potential from asphaltic concrete in the Plan year have been reduced from 0.13 tpd[25] to 0.014 tpd.

Potential Cost:

The decreased emission reduction potential increases the cost effectiveness from $8.80-$21.15 per pound[26] to approximately $80 per pound of NOx reduced.

PUBLIC COMMENTS

Staff held a public workshop to discuss the proposed amendments on July 12, 2011. A public notice was sent to interested parties, including the affected sources, and was posted on the District website. The staff report and Plan revisions were made available for public review at that time.

Staff did not receive any comments at the workshop or at the meetings.

A meeting was held with one facility prior to the workshop and Staff briefed Breathe California and Cleaner Air Partnership on the proposed amendments to the SIP.

ENVIRONMENTAL REVIEW AND COMPLIANCE

The Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Plan) included new regional and local control measures as part of the Plan. The measures included SMAQMD – 412 and SMAQMD – 471. All measures were evaluated under CEQA to determine whether or not they had the potential to generate adverse environmental impacts. A Final EIR was certified and the Plan was adopted by the SMAQMD Board of Directors on

[22] SMAQMD, "Permit to Operate #17276." June 18, 2004.
[23] SMAQMD, "Permit to Operate #20400 and #20412" March 21, 2008 and July 30, 2009.
[24] SMAQMD, "Permit to Operate #20866." March 4, 2008.
[25] "Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, Sacramento Metropolitan Air Quality Management District, March 26, 2009." Appendix C, pC-125
[26] Ibid. pC-125.

January 22, 2009. The Final Environmental Impact Report (FEIR)[27] filed on January 23, 2009, concluded that the Plan would have no significant adverse environmental impacts.

The District evaluated the removal of measures SMAQMD – 412 and SMAQMD – 471 under CEQA since removal of these measures is a discretionary action undertaken by a public agency[28]. As discussed in the Plan Overview section of this report, emission reductions associated with this rule were not included or considered in the emissions inventory, motor vehicle emission budgets, general conformity, or photochemical modeling elements of the Plan. In addition, as discussed in the Legal Mandates section, this project does not change or alter the Attainment Demonstration, the Reasonable Further Progress demonstration, the Reasonably Available Control Measures, or Contingency Measures conclusions in the Plan and the Plan EIR. Rather, as discussed in the Plan and FEIR, the additional measures provide a safety margin to insure attainment in the unlikely event that existing proposed measures were not fully adopted or implemented. In addition, the measures were identified as Reasonably Available Control Measures. The RACM analysis identified measures that were not included in the Plan, because when considered individually or collectively they did not advance attainment by a year. When the IC engine and asphaltic concrete measures are considered in conjunction with those previously-excluded measures, the measures still do not advance attainment by a year and therefore are not required to be included in the Plan. The remaining Plan measures, after deletion of SMAQMD – 412 and SMAQMD-417 control measures, still provide an adequate safety margin and still constitute RACM measures. Accordingly, the Plan and FEIR anticipated that all or some of the new measures would not be adopted as noted in the Attainment Demonstration for the Final EIR[29]. By definition, a margin of safety provides for contingencies, in this case, where the measure is not adopted or achieves fewer reductions than anticipated. Consequently, the possibility that the SMAQMD – 412 and SMAQMD – 471 measures would not be adopted was considered in the Final EIR. This project does not require any changes to the previous EIR and, therefore, the proposed revision to the Plan is exempt from CEQA pursuant to California Code of Regulations Title 14, Chapter 3, Section 15162(a)(1) - Subsequent EIRs and Negative Declarations.

CONCLUSION

The SMAQMD – 412 and SMAQMD – 471 control measures in the Plan would implement District rules requiring replacement or retrofit of engines and burners at asphalt manufacturing facilities. Since the approval of the Plan, several factors have led Staff to recommend removal of these control measures from the 2009 Plan and re-evaluate them at a later time.

The key reasons to remove these control measures from the plan at this time include:

1. **Potential cost impacts:** Implementing control measures 412 and 471 would impose additional costs on owners of IC engines and asphalt plants.

[27] Final Environmental Impact Report, Sacramento Regional Non-Attainment Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan, State Clearinghouse No. 2006102136, Sacramento Metropolitan Air Quality Management District, December 2008.
[28] Public Resources Code, State of California 21065(a)
[29] Final Environmental Impact Report, Sacramento Regional Non-Attainment Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan, State Clearinghouse No. 2006102136, Sacramento Metropolitan Air Quality Management District, December 2008. Section 2.7 – Attainment Demonstration, Page 2-26.

2. **Potential emission reductions:** New information shows decreases in emissions and estimated emissions reductions from both control measures from a total of 0.15 tons per day of NOx to 0.03 tons per day of NOx.

The proposed revision to the State Implementation Plan to remove control measures SMAQMD – 412 and SMAQMD – 471 complies with the CAA because it does not change the attainment demonstration, interfere with attainment, or change the RFP demonstration, and the Plan revision does not change the RACM conclusions that control measures that are not included in the Plan collectively would not advance the attainment date for the Sacramento region because of the insignificant amount of emissions reductions that they may potentially generate, even if all air districts remove their IC engine and asphaltic concrete commitments.

Staff plans to re-consider these control measures as part of its process to evaluate potential strategies to meet future federal heath based air quality standards. We anticipate that work to occur in 2014.

Attachment D

Evidence of Public Notice

AFFIDAVIT

Sacramento Metropolitan Air Quality Management District
777 12th Street, Third Floor, Sacramento, CA 95814

DECLARATION OF PUBLICATION
(C.C.P. 2015.5)

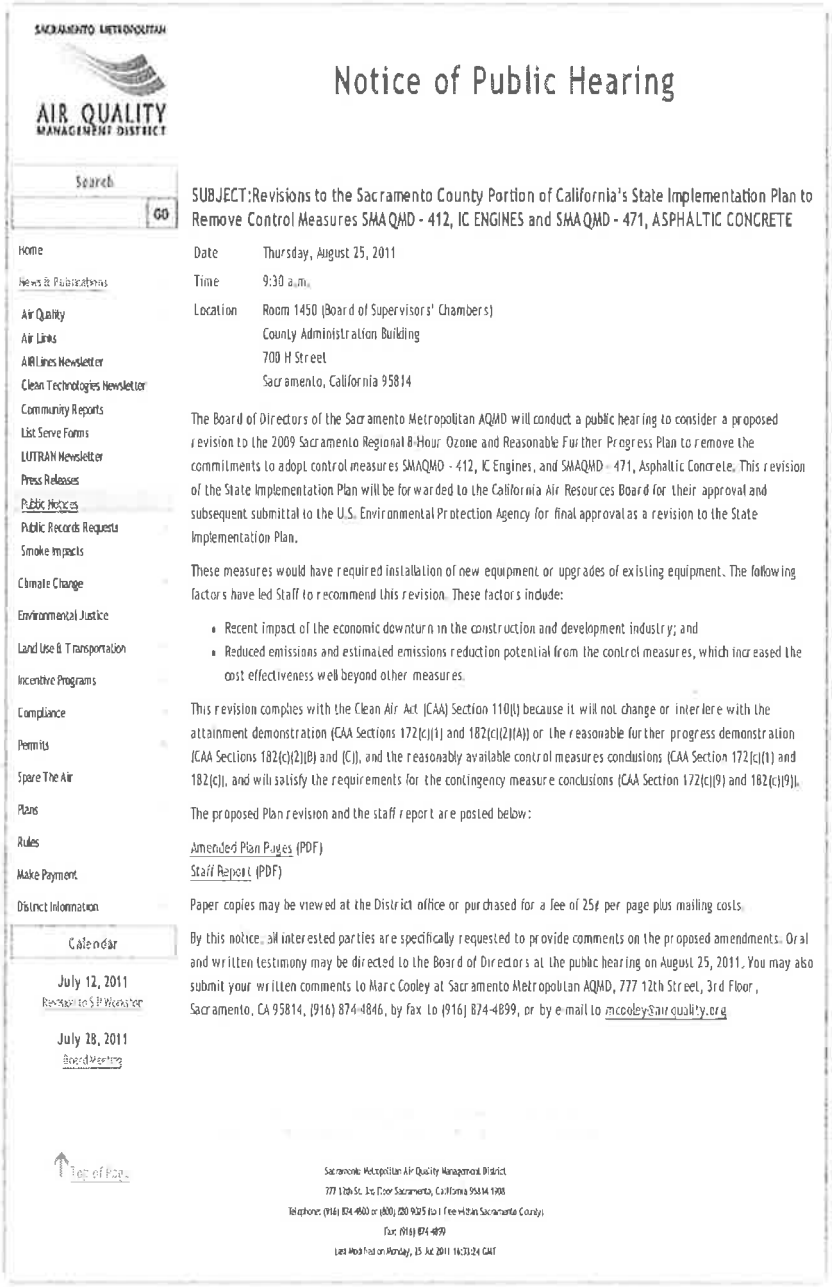
COUNTY OF SACRAMENTO, STATE OF CALIFORNIA

I am a resident of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the below entitled matter. I am an Information Technology Technician employed at the Sacramento Metropolitan Air Quality Management District.

The text below is a screen shot that was posted on the District's website, www.airquality.org, on July 25, 2011.

I declare under penalty of perjury under the laws of California that the foregoing is true and correct and that this declaration was executed at Sacramento, California on July 25, 2011.

Sheng, Her
Information Technology Technician



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Calendar

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Revisions to SIP Workshop

July 28, 2011
Board Meeting

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Notice of Public Hearing

SUBJECT: Revisions to the Sacramento County Portion of California's State Implementation Plan to Remove Control Measures SMAQMD - 412, IC ENGINES and SMAQMD - 471, ASPHALTIC CONCRETE

Date Thursday, August 25, 2011
Time 9:30 a.m.
Location Room 1450 (Board of Supervisors' Chambers)
County Administration Building
700 H Street
Sacramento, California 95814

The Board of Directors of the Sacramento Metropolitan AQMD will conduct a public hearing to consider a proposed revision to the 2009 Sacramento Regional 8-Hour Ozone and Reasonable Further Progress Plan to remove the commitments to adopt control measures SMAQMD - 412, IC Engines, and SMAQMD - 471, Asphaltic Concrete. This revision of the State Implementation Plan will be forwarded to the California Air Resources Board for their approval and subsequent submittal to the U.S. Environmental Protection Agency for final approval as a revision to the State Implementation Plan.

These measures would have required installation of new equipment or upgrades of existing equipment. The following factors have led Staff to recommend this revision. These factors include:

- Recent impact of the economic downturn on the construction and development industry; and
- Reduced emissions and estimated emissions reduction potential from the control measures, which increased the cost effectiveness well beyond other measures.

This revision complies with the Clean Air Act (CAA) Section 110(l) because it will not change or interfere with the attainment demonstration (CAA Sections 172(c)(1) and 182(c)(2)(A)) or the reasonable further progress demonstration (CAA Sections 182(c)(2)(B) and (C)), and the reasonably available control measures conclusions (CAA Section 172(c)(1) and 182(c)), and will satisfy the requirements for the contingency measure conclusions (CAA Section 172(c)(9) and 182(c)(9)).

The proposed Plan revision and the staff report are posted below:

Amended Plan Pages (PDF)
Staff Report (PDF)

Paper copies may be viewed at the District office or purchased for a fee of 25¢ per page plus mailing costs.

By this notice, all interested parties are specifically requested to provide comments on the proposed amendments. Oral and written testimony may be directed to the Board of Directors at the public hearing on August 25, 2011. You may also submit your written comments to Marc Cooley at Sacramento Metropolitan AQMD, 777 12th Street, 3rd Floor, Sacramento, CA 95814, (916) 874-4846, by fax to (916) 874-4899, or by e-mail to mcooley@airquality.org

Sacramento Metropolitan Air Quality Management District
777 12th St. 3rd Floor Sacramento, California 95814-1908
Telephone: (916) 874-4800 or (800) 880-9025 (Toll Free within Sacramento County)
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