

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**~~Draft~~ Final Socioeconomic Assessment For
Proposed Amendments to Rule 1113–Architectural Coatings
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EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the impacts of Proposed Amended Rule (PAR) 1113—Architectural Coatings and the alternatives identified in the Environmental Assessment. A summary of the analysis and findings are presented below.

Elements of Proposed Rule Amendments	<p>The proposed amendments to Rule 1113—Architectural Coatings—will lower the VOC limit for concrete-curing compounds, dry-fog coatings, and traffic coatings; and eliminate the fire retardant coating category to allow its inclusion into the averaging program.</p> <p>Other amendments that would not result in negative cost impacts include allowing the use of tertiary-butyl acetate (TBAC) as an exempt solvent in industrial maintenance coatings; postponing the final VOC limits for high gloss nonflat, quick-dry enamel, and specialty primers; and establishing a new high gloss subcategory of nonflat coatings and interim limits for quick-dry enamel coatings and specialty primers. The remaining proposed amendments are administrative.</p>
Affected Facilities and Industries	<p>The proposed amendments to Rule 1113 would impact manufacturers and end users of architectural coatings. The manufacturers belong to the industry of Paint and Coating Manufacturing (NAICS 325510). The end users include Painting and Wall Covering Contractors (NAICS 238320) as well as consumers and homeowners working on personal home improvement projects. The number of affected facilities cannot be determined because the majority of them are not permitted by the AQMD.</p>
Assumptions of Analysis	<p>Compliance costs associated with the proposed amendments consist of two types of savings as well as costs from lowering the VOC limit on traffic coatings and eliminating the fire retardant coating category. There are savings from the implementation of lower VOC limits on concrete-curing compounds and dry-fog coatings as well as potential savings from the delay in implementing lower VOC limits for nonflat high-gloss coatings, quick dry enamel coatings, and specialty primers.</p> <p>The cost of complying with lower VOC limits was based on the average price differentials of compliant and non-compliant coatings and their usage.</p>
Compliance Costs	<p>The lower VOC limits on concrete-curing compounds and dry-fog coatings are projected to result in an annual savings of \$0.76 million, \$0.62 million for concrete-curing</p>

	<p>compounds and \$0.14 million for dry-fog compounds, mainly due to lower prices of compliant coatings. A switch to compliant high traffic coatings would result in a cost of \$1.95 million annually. The elimination of the fire retardant coating category would make these coatings subject to lower VOC limits in other coating categories (as low as 50 g/l) at an annual cost of \$0.04 million. The annual net cost of these four categories is projected to be \$1.23 million. Only half of the savings and cost would occur in 2007 because the compliance starts in mid-year. The average annual net cost between 2007 and 2020 for the four categories is projected to be \$1.18 million.</p>
Jobs and Other Socioeconomic Impacts*	<p>It is estimated that an average of 483 jobs would be forgone annually from 2007 to 2020 in the four-county region, or 0.462% of the average annual baseline jobs from this same period. In 2007, increased expenditures on compliant coatings made by contractors are projected to result in jobs created in the industry of chemical manufacturing (NAICS 325). The construction industry (NAICS 23) where the painting contractors belong would experience, on average, sixfive jobs forgone annually due to the increased cost of doing business from compliant coatings. Other industries are expected to experience minor jobs forgone as well as a result of reduction in personal income. There are very few impacts on the relative cost of production and delivered prices of affected industries.</p>
Impacts of CEQA Alternatives*	<p>There are three CEQA alternatives associated with the proposed amendments to Rule 1113. Alternative A is the No Project Alternative, which is the existing Rule 1113. Alternative B is the NPCA Industry Proposal which involves eliminating the implementation of lower VOC limits for 12 categories (with the exception of interior applications for certain categories) scheduled to start in July 2006, delaying the implementation of lower VOC limits for industrial maintenance and rust preventative coatings until July 2007, and moving up the lower VOC limit for interior flat coatings from 2008 to 2007. There is no cost associated with Alternative B. Savings from the permanent exemption from current rule limits wereas not quantified. Alternative C is the same as the proposed amendments, but does not include the delisting of TBAC as an exempt solvent in industrial maintenance coatings and delays a lower VOC limit for industrial maintenance coatings until July 2007. Alternative C is similar to the proposed amendments and thus has the same cost and job impacts (Savings from an additional one year delay wereas not considered). The</p>

	<p>proposed project and Alternative C have the highest cost and job impacts among all of the alternatives, with an annualized cost of \$1.14 million and <u>48</u> projected average annual jobs forgone of 43 jobs between 2007 and 2020.</p>
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*The job impact assessment does not include the cost of fire retardant coatings.

INTRODUCTION

The proposed amendments to Rule 1113—Architectural Coatings—will lower the VOC limit for concrete-curing compounds, dry-fog coatings, and traffic coatings starting on July 1, 2007; eliminate the fire retardant coating category beginning on January 1, 2007 and allow their inclusion into the averaging program; postpone the final VOC limits for high gloss nonflat, quick-dry enamel, and specialty primers until July 1, 2007; allow the use of tertiary-butyl acetate (TBAC) as an exempt solvent in industrial maintenance coatings; and establish a new high gloss subcategory of nonflat coatings with a VOC limit of 150 g/l and interim limits for quick-dry enamel coatings of 150 g/l and specialty primers of 250 g/l. The other proposed amendments are administrative.

The socioeconomic analysis examines the impact of the proposed amendments as well as the three CEQA alternatives: Alternative A—No Project, Alternative B—National Paint and Coatings Association (NPCA) Proposal, and Alternative C—No TBAC Delisting and Delay of Industrial Maintenance Coating Limit.

REGULATORY HISTORY

Rule 1113 was adopted in September 1977 to lower VOC limits and required the use of waterborne coatings in place of solvent coatings where technically feasible, with small coating manufacturers allowed additional time for rule compliance. This rule has subsequently been amended 24 times.

An additional year for rule compliance was given in December 1977 and mastic and multicolored coatings were added to the rule in February 1978. Compliance deadline and sell-through date extensions were granted in the September 1980, April 1981, July 1981, May 1984, and August 1985 amendments. In addition, flat and nonflat coating categories and lower VOC limits were created in the April 1981 amendments, lower VOC limits were redefined in the July 1981 amendments for flat and nonflat coatings, and a higher VOC limit for nonflat coatings for small businesses was created in October 1981. In August 1983, lower VOC limits were created for multiple coating categories with compliance deadlines of September 1984 and September 1987. New interim VOC limits for some types of primers and topcoats with a compliance deadline of September 1986 were created in the November 1985 amendments. The small business exemption from lower VOC limits for nonflat coatings was removed in February 1987.

In January 1990, lower VOC limits were created for clear wood finishes, wood preservative, bond breakers, and industrial maintenance coatings, at an annualized cost of \$1.5 million.¹ The February 1990 amendments removed the exemption for aerosol coatings in 1 liter containers, at an annualized cost of \$1.6 million, while the November 1990 amendments removed aerosol coatings from the rule to have them regulated by Rule 1129—Aerosol Coatings. In December 1990, the rule was amended due to State Implementation Plan (SIP) revisions and the use of semi-transparent stains was allowed in the September 1991 amendments. Definitions of aerosol

¹ Compliance costs were presented in 2005 dollars.

coatings were amended to be consistent with CARB's aerosol coating regulation and with Health & Safety Code in March 1996. The small container exemption was reinstated in August 1996. VOC limits were lowered on lacquer and flat coatings in November 1996, at an annualized cost of \$17 million. Lower VOC limits were introduced for industrial maintenance coatings; nonflat coatings; primers, sealers, and undercoatings; quick dry enamels; roof coatings; floor coatings; and water proofing sealers for the May 1999 amendments, at an annualized cost of \$68 million. The July 2001 amendments created a new category for clear wood finish brushing lacquers with labeling requirements. The December 2002 amendments involved readoption of the May 1999 VOC limits and changes to compliance dates to comply with a court decision. The December 2003 amendments lowered VOC limits on roof coatings, clear wood finishes, and waterproofing sealers, at an annualized cost of \$16 million. The July 2004 amendments addressed SIP approvability issues with regard to the averaging compliance option of the rule. No significant socioeconomic impacts were projected for the amendments in December 1990, September 1991, August 1996, July 2001, December 2002, and July 2004.

LEGISLATIVE MANDATES

The socioeconomic assessments at the AQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed amendments include the AQMD Governing Board resolutions and various sections of the California Health & Safety Code (H&SC).

AQMD Governing Board Resolutions

On March 17, 1989 the AQMD Governing Board adopted a resolution that calls for preparing an economic analysis of each proposed rule for the following elements:

- Affected Industries
- Range of Control Costs
- Cost Effectiveness
- Public Health Benefits

On October 14, 1994, the Board passed a resolution which directed staff to address whether the rules or amendments brought to the Board for adoption are in the order of cost effectiveness as defined in the AQMP. The intent was to bring forth those rules that are cost effective first.

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and expands the Governing Board resolutions for socioeconomic assessments. H&SC Sections 40440.8(a) and (b), which became effective on January 1, 1991, require that a socioeconomic analysis be prepared for any proposed rule or rule amendment that *"will significantly affect air quality or emissions limitations."* Specifically, the scope of the analysis should include:

- Type of Affected Industries
- Impact on Employment and the Economy of the district
- Range of Probable Costs, Including Those to Industries

- Emission Reduction Potential
- Necessity of Adopting, Amending or Repealing the Rule in Order to Attain State and Federal Ambient Air Quality Standards
- Availability and Cost Effectiveness of Alternatives to the Rule

Additionally, the AQMD is required to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. H&SC Section 40728.5, which became effective on January 1, 1992, requires the AQMD to:

- Examine the type of industries affected, including small businesses
- Consider Socioeconomic Impacts in Rule Adoption

H&SC Section 40920.6, which became effective on January 1, 1996, requires that incremental cost effectiveness be performed for a proposed rule or amendment relating to ozone, carbon monoxide (CO), oxides of sulfur (SO_x), oxides of nitrogen (NO_x), and their precursors. Incremental cost effectiveness is defined as the difference in costs divided by the difference in emission reductions between one level of control and the next more stringent control.

AFFECTED FACILITIES

The proposed amendments to Rule 1113 would impact manufacturers and end users of architectural coatings. The manufacturers belong to the industry of Paint and Coating Manufacturing (NAICS 325510). The end users include Painting and Wall Covering Contractors (NAICS 238320) as well as consumers and homeowners working on personal home improvement projects. According to the 2003 *County Business Patterns*, there are 102 paint manufacturing establishments and 13,741 painting contractors in the four-county region (Los Angeles, Orange, Riverside, and San Bernardino Counties). However, the number of affected facilities cannot be determined because the majority of them are not permitted by the AQMD.

Small Businesses

The AQMD defines a "small business" in Rule 102 as one which employs 10 or fewer persons and which earns less than \$500,000 in gross annual receipts. In addition to the AQMD's definition of a small business, the federal Small Business Administration (SBA), the federal Clean Air Act Amendments (CAAA) of 1990, and the California Department of Health Services (DHS) also provide definitions of a small business.

The SBA's definition of a small business uses the criterion of gross annual receipts (ranging from \$0.5 million to \$25 million), number of employees (ranging from 100 to 1,500), or assets (\$100 million), depending on industry type. The SBA definitions of small businesses vary by 6-digit NAICS code. For the Paint and Coating Manufacturing industry, establishments with 500 or fewer employees would be considered small businesses. Establishments making \$12 million or less in gross annual receipts would be considered small businesses for the industry of Painting and Wall Covering Contractors.

The CAAA classifies a facility as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) does not emit more than 10 tons per year of either VOC or NO_x, and (3) is a small business as defined by SBA.

Under the above definitions, most of the affected painting manufacturers and contractors could potentially be small businesses. The number of affected small businesses cannot be determined since the majority of affected businesses cannot be identified.

COMPLIANCE COSTS

Compliance costs associated with the proposed amendments consist of two types of savings as well as costs from lowering the VOC limit on traffic coatings and eliminating the fire retardant coating category. There are savings from implementing lower VOC limits on concrete-curing compounds and dry-fog coatings as well as potential savings associated with the delay in implementing lower VOC limits for nonflat high-gloss coatings, quick dry enamel coatings, and specialty primers.

There are no projected costs with the use of TBAC as an exempt solvent in industrial maintenance coatings even though TBAC is a more expensive solvent than other industrial solvents for three primary reasons. Coatings manufacturers have already begun conducting research and development in the use of TBAC in industrial maintenance coatings. Second, manufacturers are able to use resin systems used in solvent-based industrial maintenance coatings. Third, the use of TBAC is not a requirement under the proposed amendments. Rather, it adds regulatory flexibility to the rule.

Table 1 shows prices and sales volume by coating category for compliant and non-compliant coatings. The lower VOC limits on concrete-curing compounds and dry-fog coatings are projected to result in a savings of \$0.76 million, \$0.62 million for concrete-curing compounds and \$0.14 million for dry-fog compounds, mainly due to lower prices of compliant coatings. A switch to compliant high traffic coatings would result in a cost of \$1.95 million annually. The elimination of the fire retardant coating category would make these coatings subject to lower VOC limits in other coating categories (as low as 50 g/l) at an annual cost of \$0.04 million. Some coating manufacturers believe that the elimination of the fire retardant coating category is problematic because nonintumescent coatings are a specialized type of fire retardant coating and compliance costs should only be considered within this subcategory rather than for fire retardant coatings in general. An analysis of compliance costs for non-compliant and compliant coatings shows that the difference in cost per gallon is the same whether comparing nonintumescent or all fire retardant coatings. The annual net cost of these four categories is projected to be \$1.23 million, as shown in Table 1. Only half of the savings and cost would occur in 2007 because the compliance starts in the mid-year. The average annual net cost between 2007 and 2020 for the three categories is projected to be \$1.18 million. It is assumed that the industry of painting and wall covering contractors would fully absorb the cost.

The delay in implementing lower VOC limits for nonflat high-gloss coatings, quick dry enamel coatings, and specialty primers would have no cost impact on coatings manufacturers because the research and development expenditures have already been committed. Currently there are some compliant products available for these coating categories as well. The cost of implementing the lower VOC limits for these categories was included in the socioeconomic analyses of previous amendments. There ~~are~~is potential savings from the delay of these costs by the proposed extension of these limits by one year for end users being able to use non-compliant coatings.

Table 1
Costs and Sales Volume by Coating Category

Coating Categories Proposed VOC Limits	Non-Compliant Coatings			Compliant Coatings			Annual Additional Compliance Cost
	Average price per gallon ¹	Sales Volume in AQMD (Gal) ²	Dollars	Average price per gallon ¹	Sales Volume in AQMD (Gal) ²	Dollars	
Concrete-Curing Compounds 100 g/l	\$11.22	111,811	\$1,254,519	\$6.18	102,088	\$631,089	-\$622,430
Dry-Fog Coatings 150 g/l	\$28.12	137,501	\$3,865,841	\$20.84	179,013	\$3,729,989	-\$135,852
Traffic Coatings 100 g/l	\$15.82	1,012,151	\$16,012,229	\$17.98	998,981	\$17,958,557	\$1,946,328
Fire Retardant Coatings 50 g/l	\$45.00	7,771	\$349,695	\$50.00	7,810	\$390,500	\$40,805
Net Total Costs							\$1,228,851

¹ Average cost per gallon for products above the proposed VOC limit listed in Appendix A.

² Appendix B to Staff Report.

³ Average cost per gallon for products at or below the proposed VOC limit listed in Appendix A.

⁴ Sales volume adjusted for solid content of compliant coatings in Appendix B to Staff Report.

REGIONAL ECONOMIC IMPACTS

The potential job and socioeconomic impacts of implementing the proposed amendments were projected through the use of the Regional Economic Models, Inc. (REMI) model. The REMI model is an economic and demographic forecasting and simulation model designed to examine the economic and demographic effects resulting from policy initiatives or external events in a local economy. A 13-year analysis period from 2007 to 2020 was used to assess the impacts of the proposed amendments.

The direct effects of the proposed amendments on the affected paint manufacturers and users are estimated and used as inputs to the REMI model via the industries to which all these entities belong.² Compliance costs for the proposed amendments will begin in 2007. Compliance costs for painting and wall covering contractors are distributed among the four counties based on the number of contractors in each county in the 2003 *County Business Patterns*. The cost of switching to compliant coatings will increase the cost of doing business for painting and wall covering contractors. The increased costs of compliant coatings will result in additional sales to paint manufacturers (NAICS 325510), which is allocated to each county based on the output of the chemical and allied products industry in that county by year.

Direct effects of the proposed amendments will be transmitted throughout the local economy via the interactions between industries and across counties. Secondary effects will ensue. The total (direct and secondary) impacts of the proposed amendments can thus be examined through a number of economic variables such as employment and the cost of production.

² Cost for the elimination of fire retardant coatings was not included in the REMI model results.

Employment Impact by Industry

It is estimated that an average of ~~483~~ jobs would be forgone annually from 2007 to 2020 in the four-county region, or 0.46~~2~~% of the average annual baseline jobs from this same period. Table 2 shows the job impact of the proposed amendments by industry. A negative number relates to a job forgone. A positive number relates to jobs created.

In 2007, increased expenditures on compliant coatings made by contractors are projected to result in jobs created in the industry of chemical manufacturing (NAICS 325). The construction industry (NAICS 23) where the painting contractors belong would experience, on average, ~~six~~~~five~~ jobs forgone annually due to the increased cost of doing business from compliant coatings. Other industries are expected to experience minor jobs forgone as well as a result of reduction in personal income.

Table 2
Job Impacts by Industry

Industry	(NAICS)	2007	2010	2015	2020	Average Annual (2007-2020)
Construction	23	-2	-6	-6	-5	-65
Fabricated metal product manufacturing	332	0	-10	-1	-1	-1
Computer, electronic product manufacturing	334	0	0	-1	-10	0
Chemical manufacturing	325	1	21	1	1	1
Wholesale trade	42	-1	-2	-2	-2	-2
Retail trade	44-45	-2	-5	-6	-5	-5
Truck transportation; couriers, messengers	484,492	0	-10	-1	-1	-1
Monetary authorities, et al.	521,522,525	0	-1	-1	-1	-1
Securities, commodity contracts	523	0	-1	-1	-1	-1
Insurance carriers and related activities	524	0	-1	-1	-1	-1
Real estate	531	-1	-3	-4	-3	-3
Rental, leasing services	532,533	0	0	0	0	0
Professional, technical services	54	-1	-3	-4	-54	-43
Management of companies, enterprises	551	0	0	-1	-1	0
Administrative, support services	561	-1	-43	-4	-5	-4
Educational services	61	-1	-2	-2	-2	-2
Ambulatory health care services	621	0	0	-1	-1	-10
Nursing, residential care facilities	623	0	0	0	-1	0
Social assistance	624	-1	-1	-1	-1	-1
Performing arts, spectator sports	711	0	-10	-1	-1	-1
Amusement, gambling, recreation	713	0	-1	-1	0	-1
Accommodation	721	0	0	-1	0	0
Food services, drinking places	722	-1	-3	-43	-3	-3
Repair, maintenance	811	0	-1	-1	-1	-1
Personal, laundry services	812	0	-1	-1	-1	-1
Membership associations, organizations	813	0	-1	-1	-1	-1
Private households	814	0	-1	-1	-1	-1
Total¹		-14	-483	-5449	-5445	-483

¹ The sum of individual numbers may not be the same as the total due to rounding.

Competitiveness

The additional costs from the proposed amendments would increase the cost of production of the affected industries relative to their national counterparts. Changes in the relative production costs would thus be a good indicator of changes in relative competitiveness. The magnitude of the impact depends on the size and diversification of, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact with relative ease.

Among all the industries, the industry of construction (NAICS 23) would face the highest increase in the relative production cost. In 2010 the relative production cost is projected to go up by 0.00198 percent. The effects on other industries are relatively minor in comparison.

In terms of the impact on relative delivered price, the largest impact is again on the industry of construction (NAICS 23). For example, in 2010, it is projected that this industry would have a projected increase of 0.00198 percent in price relative to its national counterpart.

CEQA ALTERNATIVES

There are three CEQA alternatives associated with the proposed amendments to Rule 1113. Alternative A is the No Project Alternative, which is the existing Rule 1113.

Alternative B is the NPCA Industry Proposal which involves permanently eliminating the implementation of lower VOC limits for 12 categories (with the exception of interior applications for certain categories) scheduled to start in July 2006, delaying the implementation of lower VOC limits for industrial maintenance and rust preventative coatings until July 2007, and moving up the lower VOC limit for interior flat coatings from 2008 to 2007. It is assumed that there are no costs for eliminating the lower VOC limits on these 12 coating categories or moving up the lower VOC limit for interior flat coatings. In the case of eliminating the limits on the 12 coating categories, the compliance date for these lower limits is only two months away and it is assumed that research and development expenditures have already been committed by coatings manufacturers and end users would continue to use existing coatings. For interior flat coatings, compliant coatings already exist on the market and research and development expenditures have already been spent by coatings manufacturers. Overall, there is no cost associated with Alternative B. It should be noted that eliminating and delaying the VOC limits results in a significant amount of forgone emission reductions.

Alternative C is the same as the proposed amendments, but does not include the delisting of TBAC as an exempt solvent in industrial maintenance coatings and delays a lower VOC limit for industrial maintenance coatings until July 2007. There are no projected costs with the use of TBAC as an exempt solvent in industrial maintenance coatings even though TBAC is a more expensive solvent than other industrial solvents because manufacturers have already begun conducting research and development in the use of TBAC in industrial maintenance coatings and the use of TBAC adds regulatory flexibility. There is potential savings for end users from delaying the VOC limit for industrial maintenance coatings. The potential savings from delaying

the lower VOC limit are not quantified because of unavailability of particular compliant coatings prices. Alternative C is similar to the proposed amendments and thus has approximately the same cost and job impacts.

The cost and job impacts of the proposed amendments and CEQA alternatives are presented in Table 3. The proposed ~~amendments project~~ and Alternative C have the highest cost and job impacts among ~~of~~ all the alternatives, with an annualized cost of \$1.14 million and ~~43~~ 48 projected average annual jobs forgone of ~~43 jobs~~ between 2007 and 2020.

Table 3
Impacts of CEQA Alternatives

Alternative	Cost (2005 \$ Millions)	Jobs	Cost-Effectiveness (\$/ton)
Proposed Project	\$1.18	-483	\$4,882
Alternative A—No Project	0.00	0	N/A
Alternative B—NPCA Proposal	0.00	0	N/A
Alternative C	~\$1.18	~- 483	~\$4,882

RULE ADOPTION RELATIVE TO THE COST-EFFECTIVENESS SCHEDULE

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for adoption are considered in the order of cost-effectiveness. The 2003 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the proposed control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first.

The proposed amendments implement part of ~~the~~ control measure CTS-07—Further Emission Reductions of Architectural Coatings—~~in~~ the 2003 AQMP. The cost-effectiveness of control measure CTS-07 was estimated at \$20,000 per ton of VOC reduced. Cost-effectiveness was not available for the portion that constituted the proposed amendments in control measure CTS-07. Therefore, consideration in the order of cost-effectiveness is not applicable. The cost-effectiveness of the proposed amendments to Rule 1113 is estimated to be \$4,882 per ton of VOC.

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