

Potential 2016 AQMP Control Strategy Development – Stationary Source Measures

August 2015

TITLE
Priority Ozone Measures:
<ul style="list-style-type: none"> • Co-Benefit Emission Reductions from GHG Programs, Policies and Incentives [All Pollutants]*
<ul style="list-style-type: none"> • Co-Benefits from Residential Weatherization and Other Energy Efficiency Measures [All Pollutants]*
<ul style="list-style-type: none"> • Co-Benefits from Energy Storage and Smart Grid [All Pollutants]*
<ul style="list-style-type: none"> • Further Emission Reduction from Commercial and Multi-unit Residential Space Heating and Boilers [NOx]*
Ozone Measures if Needed for Attainment or Contingency:
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<ul style="list-style-type: none"> • Reduced Ozone Formation and Emission Reductions from Cool Roof Technology [All Pollutants]*
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<ul style="list-style-type: none"> • Emission Reduction from Grinding, Stone Cutting and Polishing Operations [PM]
<ul style="list-style-type: none"> • Further Emission Reduction from Agricultural, Prescribed, and Training Burning [PM]*
<ul style="list-style-type: none"> • Further Emission Reduction from Wood Burning Fireplaces and Wood Stoves [PM]*
<ul style="list-style-type: none"> • Emission Reduction from Greenwaste Composting [NH3, PM, VOC]
All Feasible Measures:
<ul style="list-style-type: none"> • Emission Reductions from Breweries/Wineries [All Pollutants]
<ul style="list-style-type: none"> • Emission Reductions from Pulp and Recycled Paper Milling Operations [VOC]
<ul style="list-style-type: none"> • Emission Reductions from Indirect Sources [All Pollutants]*
<ul style="list-style-type: none"> • Application of All Feasible Measures [All Pollutants]

**Introduced or technology displayed at the June 11, 2015 Control Strategy Symposium*

NOTE: This list does not preclude the introduction of new control measures in the future.

Other Specific Concepts Displayed or Discussed at the Control Strategy Symposium:
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| <ul style="list-style-type: none">• Alternative Resins and Coatings with UV Technology [VOC] |
| <ul style="list-style-type: none">• Alternative Enamel Coating [VOC] |
| <ul style="list-style-type: none">• Ultra-Low Emissions Inverter-Based Cogeneration [VOC, NOx, CO] |
| <ul style="list-style-type: none">• Emission Reduction from Gas Engine Driven Chillers [NOx, CO] |
| <ul style="list-style-type: none">• Emission Reduction from Natural Gas Engine Retrofits [NOx,CO] |
| <ul style="list-style-type: none">• Emission Reduction from Aftertreatment Filter System for High Horsepower Applications [PM] |
| <ul style="list-style-type: none">• Emission Reduction from Power Generators with Aftertreatment System [NOx, CO, PM] |
| <ul style="list-style-type: none">• Emission Reduction from Ceramic Filter System [PM, SO2, NOx] |
| <ul style="list-style-type: none">• Ultra-Low Emissions from Alternative Fueled Generator [NOx, CO, VOC] |
| <ul style="list-style-type: none">• Ultra-Low Emission Alternative Fueled Water Heater [NOx] |
| <ul style="list-style-type: none">• Emission Reduction of Cooking Equipment from Kitchen Ventilation Hood [PM2.5] |
| <ul style="list-style-type: none">• Zero Emission Battery-Electric Transit Bus Fleet [VOC, NOx, PM]+ |
| <ul style="list-style-type: none">• Zero Emission Electric Utility Vehicle eTaxi Fleet [VOC, NOx, PM]+ |
| <ul style="list-style-type: none">• Emission Reduction from Alternative Fuel Engine Technology [NOx, CO]+ |
| <ul style="list-style-type: none">• Zero Emission Landscape Maintenance Equipment [VOC, NOx, PM] |
| <ul style="list-style-type: none">• Emission Reduction from Alternative Fuel Cell Module [NOx, SOx, CO] |
| <ul style="list-style-type: none">• Emission Reduction of Insulation Installation [potential indirect air quality benefit] |
| <ul style="list-style-type: none">• Further Emission Reduction from Improving Efficiencies [All Pollutants] |
| <ul style="list-style-type: none">• Funding and Incentives [All Pollutants] |
| <ul style="list-style-type: none">• Faster Deployment of Zero- and Near Zero Technologies [All Pollutants] |

+ *Mobile Source measures*

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Potential Control Measures Concepts for 2016 AQMP

August 2015

Priority Ozone Measures:

Co-Benefit Emission Reductions from GHG Programs, Policies and Incentives [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
Sources that emit greenhouse gases are typically sources of criteria pollutants. Significant efforts are currently being undertaken and planned to reduce GHGs under the State's 2020 and 2050 targets as well as the Governor's 50-50-50 targets by 2030. As these GHG reduction efforts are undertaken across all sectors; the reductions of criteria pollutants should be considered along with any additional enhancements needed to achieve further criteria pollutant reductions under the GHG programs. Existing and future incentives, programs, and partnerships would be evaluated for reduction of emissions of both GHGs and criteria pollutants.	245 tpd (NOx)	GHG reductions currently being implemented through AB32 programs with future reductions being developed under Scoping Plan updates.	TBD

Co-Benefits from Residential Weatherization and Other Energy Efficiency Measures [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
Residential energy consumption results in direct and indirect emissions of criteria and greenhouse emissions. Direct emissions result from combustion fuels such as natural gas, propane, and wood. Indirect emissions are a result of energy use associated with electricity production. Improvements in residential weatherization largely provide emission reductions through reduced heating and cooling needs. Energy management systems, such as smart thermostats, reduce emissions through better controlling heating and cooling. Energy management systems also can participate in utility demand response programs while providing residences more favorable rates. Weatherization and other demand side energy measures, to date, have proven to reduce the need for new power plants and additional energy infrastructure.	8 tpd (NOx)	Currently implemented in Title 24 Standards. Existing building implementation under Federal, State, and local programs.	50% reduction in existing buildings by 2030 (Governor's 2030 target)

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Co-Benefits from Energy Storage and Smart Grid [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>The electrical utility grid maintains stability by matching generation with demand. Maintaining grid stability is becoming difficult with increasingly higher percentages of power generation coming from intermittent renewable generation sources along with increasingly higher electrical load demands from electric transportation. These new variables on the grid require dispatchable and flexible resources. Peaking generation units have often provided these resources but have low capacity factors, are inefficient, and are emission sources. The use of energy storage provides a flexible and dispatchable resource with high capacity factors along with zero emissions. Grid based storage systems can replace the need for new peaking generation, be coupled with renewable generation, and reduce need for additional energy infrastructure. Using storage behind the electrical utility meter can help with demand charges, provide backup power during outages, reduced infrastructure needs to incorporate electric transportation, provide demand response capabilities, and short term dispatchability. Implementing renewable generation, storage, end use demand, along with other energy resources increasingly requires implementation of smarter grid control technologies.</p>	TBD	Partially being implemented through SGIP program and AB2514 energy storage mandate.	TBD

Further Emission Reduction from Commercial and Multi-unit Residential Space Heating and Boilers [NOx]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek NOx reductions from commercial space heating applications. The control measure has two components.</p> <p>The first is to continue rule development of Proposed Rule 1111.1 - NOx Reductions from Commercial Space Heaters. This proposed rule was based on a 2007 and 2012 AQMPs control measures which sought to establish a NOx emission limit of 20 to 30 ppm for commercial space heaters.</p> <p>The second component is to incentivize the replacement of older boilers and space heaters with more efficient new low NOx boilers and space heaters. The new boilers would comply with SCAQMD rule emission limits and new space heaters must meet a specified emission limit.</p>	3 tpd ¹ (NOX)	Short Term & Ongoing	Up to 50% reduction (assumes 5 ppm limit)

¹ Accounts for energy efficiency reductions (~50% baseline inventory)

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Ozone Measures If Needed for Attainment or Contingency:

Emission Reductions from Non-Refinery Flares [NO_x, VOC]

Synopsis	Baseline (2031) Inventory	Adoption/Implementation Period	Emission Reduction (tpd or %)
This proposed control measure would seek reductions of NO _x and VOC from flares from non-refinery sources such as organic liquid loading stations, tank farms, oil and gas production, landfills, and composting sources. Flare NO _x emissions are regulated through new source review and BACT, but there are currently no source-specific rules regulating NO _x emissions from flares at these sources. This control measure proposes that, consistent with all feasible control measures, all non-refinery flares meet current BACT for NO _x emissions and thermal oxidation of VOC.	5 tpd (NO _x)	Long Term	TBD

Emission Reductions from Restaurant Burners [NO_x]

Synopsis	Baseline (2031) Inventory	Adoption/Implementation Period	Emission Reduction (tpd or %)
This proposed control measure would seek NO _x reductions from retail restaurants and quick service establishments utilizing commercial cooking ovens, ranges and charbroilers by funding development of, promoting and incentivizing the use and installation of low NO _x burner technologies. In addition, the SCAQMD would consider developing a manufacturer based rule to establish emission limits for these cooking appliances.	TBD	Ongoing	TBD

Emission Reductions from Use of Fuel Cells [NO_x]

Synopsis	Baseline (2031) Inventory	Adoption/Implementation Period	Emission Reduction (tpd or %)
This proposed control measure would seek reductions of NO _x from traditional combustion sources by replacement with fuel cells for combined heating and power (CHP). Natural gas-fired engines, turbines, and microturbines are widely utilized for the production of facility power, heating, and steam production. Fuel cells are ultra low emitting technology and have been installed at numerous locations across the nation. Fuel cells would provide more efficient operation with concurrent reductions of NO _x .	TBD	Ongoing	TBD

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Improved Leak Detection and Repair [VOC]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would reduce emissions from a variety of VOC emissions sources including, but not limited to, oil and gas production facilities, petroleum refining and chemical products processing, storage and transfer facilities, marine terminals, and other sources, where VOC emissions occur from fugitive leaks in piping components, wastewater system components, and process and storage equipment leaks. Most of these facilities are required under SCAQMD and federal rules to maintain a leak detection and repair (LDAR) program that involves individual screening of all of their piping components and periodic inspection programs of equipment to control and minimize VOC emissions. This measure would utilize advanced remote sensing techniques (Smart LDAR), such as FTIR, UV-DOAS, SOF, and infrared cameras, that can identify, quantify, and locate VOC leaks in real time allowing for faster repair in a manner that is less time consuming and labor intensive than traditional LDAR.</p>	<p>9 tpd <i>(on-going evaluation)</i></p>	<p>Long term</p>	<p>TBD</p>

Further Emission Reductions from Coatings, Solvents, Adhesives and Lubricants [VOC]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure seeks VOC emission reductions by focusing on select coating, adhesive, solvent and lubricant categories by further limiting the allowable VOC content in formulations or incentivizing the use of super-compliant technologies. Examples of the categories to be considered include but are not limited to, coatings used in aerospace applications; adhesives used in a variety of sealing applications; solvents for graffiti abatement activities; and lubricants used as metalworking fluids to reduce heat and friction to prolong life of the tool, improve product quality and carry away debris. Reductions could be achieved by lowering the VOC content of the coatings, adhesives and lubricants where possible, but reductions could also be achieved by promoting the use of alternative low-VOC products or non-VOC product/equipment at industrial facilities.</p>	<p>54 tpd (VOC)</p>	<p>2017-2020</p>	<p>TBD</p>

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Improved Breakdown Procedures and Process Re-Design [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
SCAQMD Rule 430 applies to breakdowns that result in a violation of any rule or permit condition, with some exceptions, and stipulates reporting requirements. EPA's May 2015 final action on startups, shutdowns, and malfunctions (SSM) stipulates that exemptions from excess emissions during periods of breakdown are not allowed. This control measure would introduce improved breakdown procedures and a process re-design that would apply to breakdowns from all emission sources, providing pollutant concentration and/or incidence limits to comply with EPA's SSM policy.	TBD	Long term	TBD

Reduced Ozone Formation and Emission Reductions from Cool Roof Technology [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
Cool roofs reflect a higher fraction of incident sunlight than traditional roofing materials. Widespread adoption of cool roofs can reduce the urban heat island effect and can slow the rate of ozone formation. Additionally, cool roofs would reduce electricity demands for building cooling, leading to reductions in emissions from the power generation sector. Staff is currently evaluating the magnitude of ozone concentration reductions resulting from the adoption of this technology with the Community Multi-Scale Air Quality Model.	TBD	Currently implemented in Title 24 Standards, additional implementation under selective local ordinances/Long-term	TBD

Stationary Source Incentives [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
This proposed control measure would seek to incentivize emissions reductions from various stationary and area sources through incentive programs for the use of clean, low emission technologies. Facilities would be able to qualify for incentive funding if they utilize equipment or accept permit conditions which result in cost-effective emissions reductions in excess of existing requirements. The program would establish procedures for quantifying emissions benefits from clean technology implementation and develop cost-effectiveness thresholds for	TBD	TBD	TBD

DRAFT

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>funding eligibility. Examples include VOC emission reductions from using UV cured resins and coatings, super-compliant/ultra-low emission technologies, or electrification in lieu of combustion-based equipment.</p> <p>Additionally, the program would seek to provide incentives via regulatory relief for business that utilize enhanced Best Management Practices whereby emission benefits are obtained through improved methods or practices that are enforced through permit conditions or by other means. Such a program would receive a type of “green business” recognition.</p> <p>Funding for these programs could derive from mitigation fees, penalty or settlement fees, or federal or state grants and programs.</p>			

Improved Education and Public Outreach [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure seeks to provide educational outreach and incentives for consumers to contribute to clean air efforts. Examples include consumer choices such as the use of energy efficient products, new lighting technology, “super compliant” coatings, tree planting, and the use of lighter colored roofing and paving materials which reduce energy usage by lowering the ambient temperature. In addition, this proposed measure intends to increase the effectiveness of energy conservation programs through public education and awareness as to the environmental and economic benefits of conservation. Educational and incentive tools to be used include social comparison applications (comparing your personal environmental impacts with other individuals), social media, and public/private partnerships. Further improvement of outreach allows the public to alert staff of any environmental problems that can be corrected sooner.</p>	n/a	Ongoing	n/a ²

² N/A are reductions that cannot be quantified due to the nature of the measure (e.g., outreach, incentive programs).

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Priority PM2.5 Measures:

Further Emission Reduction from Commercial Cooking [PM]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek reductions from commercial cooking. Studies indicate commercial cooking activities are one of the largest direct PM2.5 sources, and emissions originate mostly from charbroiling activities (chain-driven and under-fired charbroilers). Chain-driven charbroilers are currently subject to Rule 1138 requirements. Although cost-effective control alternatives have been identified for under-fired charbroilers, the costs associated with initial control equipment purchase and associated operation and maintenance (O&M) have been too expensive for small businesses. SCAQMD is completing a study with the University of California Riverside, in partnership with U.S. EPA and other air agencies to identify more affordable and innovative under-fired charbroiler controls.</p> <p>This control measure would seek to establish a tiered program targeting higher efficiency controls for higher use under-fired charbroilers at larger establishments, with more affordable lower efficiency controls at smaller restaurants. Small business incentive programs funded by mitigation fees or other sources could also be explored to help offset initial purchase and installation costs.</p>	9 tpd (PM2.5)	TBD	TBD

Emission Reduction from Cooling Towers [PM]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek reductions of PM10 and PM2.5 from industrial cooling towers. This measure would require operators of cooling towers to use the latest drift eliminator technologies. The control measure would reduce PM2.5 emissions from cooling towers by requiring all units to upgrade their drift eliminator to more efficient drift eliminators that keep drift losses to less than 0.001% of the re-circulating water flow rate, resulting in water savings as well. Currently, industrial cooling towers not used for evaporative cooling of process water or containing chromium compounds are exempt from permit so that this control measure would need to incorporate a registration or permitting element for tracking and enforceability.</p>	1 tpd (PM2.5)	Short-term	TBD

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Further Emission Reduction from Fugitive Dust Sources [PM]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This control measure would seek further PM emission reductions from fugitive dust sources. Although fugitive dust emissions from agriculture and construction are primarily in the coarse size fraction (PM10-2.5), entrained road dust is still one of the major direct PM2.5 sources due to the large number of roadways and high traffic volumes in the region. SCAQMD Rule 1186 established requirements to prevent material from being deposited on roadways and also requires local jurisdictions to procure certified street sweeping equipment.</p> <p>This control measure would seek to establish minimum street sweeping frequencies and enhanced street cleaning for roads with higher silt loadings. Enhanced best management practices could also be established to prevent material from being tracked out onto roads from vehicles exiting construction sites, certain industrial facilities (<i>e.g.</i>, aggregate handling facilities), and landfills. Wheel washing systems could be required for higher activity sites with special consideration for systems that encourage use of reclaimed water or chemical stabilizers to reduce water demand.</p>	1 tpd (PM2.5)	TBD	TBD

Emission Reductions from Manure Management Strategies [NH3]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This control measure would seek to use manure management systems to reduce ammonia, a PM2.5 precursor. Such systems can be applied on a year-around basis; however, seasonal or episodic controls could be considered to minimize costs.</p> <p>Acidifier Application Ammonia reducing agents would reduce ammonia emissions from fresh manure.</p> <p>Dietary Manipulation/Feed Additives Dietary manipulation such as lowering the protein content and including high-fiber ingredients is an effective method to decrease ammonia emission from monogastric animals and ruminants manure. Feed additives can be considered as a seasonal or episodic control strategy when ambient ammonium nitrate concentration in the region is high. Dietary manipulation and feed additives can also be assessed for household pets.</p>	8 tpd (NH3)	Short-term	TBD

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Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>Other Other potential manure management methods include:</p> <ul style="list-style-type: none"> • Microbial manure additives • Cage-free egg laying manure removal • Manure slurry injection • Poultry manure thermal gasification 			

Ammonia Emission Reductions from NOx Controls [NH3]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek reductions of ammonia from NOx controls such as selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR). Ammonia slip is subject to permit conditions for different types of source equipment. It is often challenging to maintain NOx compliance due to NH3 slip requirements, but recent catalyst technology has resulted in the development of ammonia slip catalysts that enable a maximum control of NOx without the consequence of excess ammonia emissions. Ammonia slip catalysts would enable a reduction of ammonia slip permit limits and contemporaneous achievement of NOx emission limits.</p>	2 tpd (NH3)	Short-term	TBD

PM2.5 Measures If Needed for Attainment or Contingency:

Emission Reductions from Abrasive Blasting Operations [PM]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek additional reductions of PM from abrasive blasting operations. SCAQMD Rule 1140 regulates opacity requirements for confined and unconfined abrasive blasting using various abrasives conforming to the California Code of Regulations Title 17, Subchapter 6 – Abrasive Blasting. This proposed control measure seeks additional PM reductions by requiring expanded use of negative air machines, portable fume extractors, and portable dust collectors with high efficiency particulate air (HEPA) filters. Local exhaust ventilation to a fabric filter could be considered an equivalent method of control for permanent abrasive blasting operations conducted in a building.</p>	< 1 tpd (PM2.5)	Short and Long Term	TBD

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Emission Reductions from Grinding, Stone Cutting and Polishing Operations [PM]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek reductions of PM from cutting, grinding, scarifying, polishing, tuck pointing, milling, sawing, and drilling masonry or building materials, such as concrete, granite, tile, brick, stone, and mortar. These activities generate airborne dust emissions containing PM10, some PM2.5, and crystalline silica that are harmful to human health, if inhaled. Many of these operations are done at confined or unconfined worksites by construction workers, remodeling contractors and individuals, and may not be sufficiently controlled for dust emissions. Engineering controls such as local exhaust ventilation with dust collectors or wet methods to prevent the release of dust into the air can be considered. Housekeeping measures, such as vacuuming with high efficiency particulate air (HEPA) filter, wet-wiping, or wet sweeping can also be implemented. In addition, a visible emissions standard similar to Rule 1155 should be considered for PM control devices, including, but not limited to, portable dust collectors or negative air machines. Dust shrouds, cut-off saws with dust director, and vacuums with HEPA filter are commercially available for these activities. The PM emissions inventory from these operations is currently unknown and requires additional review.</p>	<p>< 1 tpd (PM2.5)</p>	<p>Short and Long Term</p>	<p>TBD</p>

Further Emission Reduction from Agricultural, Prescribed, and Training Burning [PM]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This control measure would seek further PM emission reductions from certain categories open burning including agricultural and prescribed (<i>e.g.</i>, forestry service) burning activities, as well as training burns. Agricultural burning involves collection and combustion of vegetative materials produced from the growing and harvesting of crops. Prescribed burning is the planned burning of vegetative materials, usually conducted by a fire protection agency or the department of forestry in order to control plant disease and pests or to reduce fire episode impacts. Training burns are hands-on activities conducted by fire protection agencies to practice suppressing fires.</p> <p>This control measure would seek further PM emission reductions via the use of alternatives to agricultural burning (<i>e.g.</i>, chipping/grinding or composting) through use of incentives, with priority for burn projects located within close proximity of sensitive receptors. Additional considerations could include increased</p>	<p>1 tpd (PM2.5)</p>	<p>TBD</p>	<p>TBD</p>

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Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
utilization of clean fuels for training burns and limiting multiple training events by a single agency.			

Further Emission Reduction from Wood Burning Fireplaces and Wood Stoves [PM]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek further PM emission reductions from residential wood combustion sources (fireplaces and wood heaters). SCAQMD Rule 445 (Wood-Burning Devices) presently includes a mandatory residential wood-burning curtailment program during winter months (November through February). A no-burn day is called under Rule 445, when PM2.5 levels are forecast to exceed the curtailment threshold of 30 µg/m³ during the no-burn season, and can apply to specific geographic areas or to the entire South Coast Air Basin (<i>i.e.</i>, “Basin-wide”). One potential element of this control measure would be to increase the stringency of the curtailment program to either lower the curtailment threshold or extend the curtailment season, similar to the approach used by SJVAPCD, although the contribution of wood smoke to ambient PM2.5 is considered to be less than in other air districts. Cost impacts from changes to the curtailment program are considered minimal.</p> <p>Since 2008, SCAQMD has implemented incentive programs to encourage the public to switch to cleaner hearth devices. The current program encourages households within inland (high PM2.5 areas) to upgrade wood-burning devices through SCAQMD incentives of up to \$1,600 to offset purchase and installation costs. Although this program has been effective, additional reductions may be achieved through use of higher incentives or expansion of the eligible geographic area. Experience has shown that education and outreach to targeted households is vital to ensure program participation, and an additional element of this control measure would focus on expanding the effectiveness of this program.</p>	5 tpd (PM2.5)	TBD	TBD

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Emission Reductions from Greenwaste Composting [NH3, PM, VOC]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek emissions reductions of VOC, ammonia and PM from composting of greenwaste, foodwaste, and agricultural waste streams. Control approaches include improved emissions characterization via inventory and emission factor development, anaerobic digestion, pollution prevention technology, and restrictions for direct applications of un-composted, chipped or ground non-curbide greenwaste to public lands.</p> <p>The statewide 75% organic recycling goal by 2020, processing of food scraps and greenwaste is expected to grow via composting or anaerobic digestion. An emerging pollution prevention technology (<i>e.g.</i>, Regreen Technology) is in the process of becoming commercially available to process foodwaste, as well as greenwaste, into beneficial soil amendments, concurrently killing harmful pathogens and thereby minimizing VOC and ammonia generation. Estimated equipment costs for this technology is expected to range between \$300K to \$400K for smaller and up to \$3.6 million for larger, full scale applications.</p> <p>Shredded non-curbide greenwaste, if un-composted, may cause air emissions or pathogen infections when used as ground cover. This control measure proposes restrictions for applying untreated greenwaste on public lands, as well as minimum composting standards to eliminate pathogens and weed seeds prior to use. Staff previously estimated VOC emissions of 0.196 lbs/wet ton-day from curbide composting feedstock piles. Additional review may be warranted to address non-curbide waste impacts.</p>	<p>1 tpd (VOC)</p> <p>1 tpd (NH3)</p>	<p>Short-term</p>	<p>TBD</p>

All Feasible Measures:

Emission Reductions from Breweries/Wineries [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
<p>This proposed control measure would seek reductions of PM10 and VOC emissions from breweries (greater than 1 million gallons a year of production), wineries, distillers (distilled spirits) and other similar operations that store and process grains, ferment, age, store and package the sprits (beer, wine, whiskey, etc.,)and treat the wastewater generated on site. This measure would also apply to operations that recovers alcohol and separates the solid materials for animal feed from the spent product at breweries.</p>	<p><< 1 tpd (VOC)</p>	<p>Long term</p>	<p>TBD</p>

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Emission Reductions from Pulp and Recycled Paper Milling Operations [VOC]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
This proposed control measure would seek reductions of fugitive VOC emissions from pulp and paper recycling operations that operates pulping machines, press and dryers to convert waste-paper (newspaper, cardboard, etc.) back into cardboard paper.	< 1 tpd (VOC)	Long term	TBD

Emission Reductions from Indirect Sources [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
The purpose of this proposed control measure is two-fold: (1) compliance with the “all feasible measures” requirement of the state law, and (2) capturing emission reduction opportunities at indirect sources of emissions (<i>facilities that attract mobile sources</i>) during project development phase. SCAQMD would reconvene a working group made up of stakeholders from industry, local governments, and community representatives, and would develop control measures which would establish applicability criteria for indirect sources (e.g., new or re-development projects, warehouses, railyards, ports) and may involve the selection of mitigation measures from a menu of technically feasible mitigation options.	TBD	Long term	TBD

Application of All Feasible Measures [All Pollutants]

Synopsis	Baseline (2031) Inventory	Adoption/ Implementation Period	Emission Reduction (tpd or %)
This control measure is to address the state law requirement for all feasible measures for ozone. Existing rules and regulations for pollutants such as VOC, NOx, SOx and PM reflect current best available retrofit control technology (BARCT). However, BARCT continually evolves as new technology becomes available that is feasible and cost-effective Staff would review actions taken by other air districts for applicability in our region.. Through this proposed control measure, the District would commit to consider the adoption and implementation of the new retrofit control technology standards.	n/a	Ongoing	TBD