

APPENDIX C

REASONABLY AVAILABLE CONTROL MEASURE ANALYSIS

REASONABLY AVAILABLE CONTROL MEASURE (RACM) ANALYSIS

General

Section 172(c)(1) of the Federal Clean Air Act (FCAA) requires states to “provide for implementation of all reasonably available control measures as expeditiously as practicable” and to include RACM analyses in the state implementation plan (SIP). In the General Preamble for implementation of the FCAA Amendments of 1992 (57 Federal Register 13498), the United States Environmental Protection Agency (EPA) explains that it interprets Section 172(c)(1) of the FCAA as a requirement that states incorporate into their SIP all reasonably available control measures that would advance a region’s attainment date. However, regions are obligated to adopt only those measures that are reasonably available for implementation in light of local circumstances. In the Preamble, the EPA provided guidelines to help states determine which measures should be considered reasonably available:

If it can be shown that one or more measures are unreasonable because emissions from the sources affected are insignificant (i.e. de minimis), those measures may be excluded from further consideration...the resulting available control measures should then be evaluated for reasonableness, considering their technological feasibility and the cost of control in the area to which the SIP applies...In the case of public sector sources and control measures, this evaluation should consider the impact of the reasonableness of the measures on the municipal or other government entity that must bear the responsibility for their implementation.

On July 2, 2002, the United States Court of Appeals upheld the EPA’s definition of RACM, including the consideration of economic and technological feasibility, ability to cause substantial widespread and long-term adverse impacts, collective ability of the measures to advance a region’s attainment date, and whether an intensive or costly effort will be required to implement the measures.

Control Strategy Development Process

The control strategy development process served as a mechanism to review a large number of control measures for feasibility. The Texas Commission on Environmental Quality (TCEQ) contracted with the Houston-Galveston Area Council (H-GAC) to identify possible control strategies for on-road and non-road mobile sources and with Lamar University to identify possible control strategies for point and area sources. Stakeholders in the Houston-Galveston-Brazoria (HGB) area were provided an opportunity to learn about and comment on the possible concepts as they were being analyzed by the contractors. Between March and June 2006, H-GAC and Lamar University and their subcontractors held six stakeholder meetings to give HGB area stakeholders the opportunity to hear about the progress of the potential control strategy identification work and to provide comment. The subcontractor for the H-GAC and Lamar University, ENVIRON International (ENVIRON), compiled comprehensive draft control strategy catalogs and evaluated each potential strategy against the EPA’s criteria for SIP creditability (i.e., surplus, quantifiable, permanent, and enforceable). The subcontractor then evaluated each strategy meeting the EPA criteria against a second set of criteria, including feasibility, public acceptability, emissions benefit, and cost effectiveness. After presenting the short list of strategies for public comment, ENVIRON quantified the reductions associated with the high-ranking strategies (where possible) and placed them on a finalized list. The TCEQ evaluated the finalized list of strategies for feasibility and chose a subset of the strategies for further analysis and sensitivity modeling purposes. Please see Chapter 4, Control Strategies, for detailed information on the emission reduction measures that were ultimately selected for this SIP revision.

On-Road and Non-Road Mobile Sources

The TCEQ contracted with the H-GAC to evaluate and quantify potential on-road and non-road mobile source control strategies for the HGB eight-hour ozone SIP. H-GAC subcontracted with ENVIRON to perform the control strategy development work.

To initiate control strategy development, ENVIRON first compiled master lists of potential control strategies. These master lists were derived from a master list of control strategies previously developed by Environ for the North Central Council of Governments for the Dallas-Fort Worth Area. The master lists were developed through consultation with a number of sources including the South Coast Air Quality Management District (SCAQMD) 2003 Air Quality Management Plan, the EPA ozone Early Action Compact control measures, the Port of Long Beach, the TCEQ control strategies developed for previous SIP revisions, the control strategies developed in 2004 by the Texas Transportation Institute, the Port of Los Angeles, the Lake Michigan Air Directors' Consortium, the Ozone Transport Commission, and various other sources.

The initial master list consisted of 628 potential on-road mobile control strategies and 89 non-road mobile control strategies. Some of these control strategies were broad categories that could include a number of different specific measures. These master lists were posted on the H-GAC website on February 6, 2006, and comments were solicited.

Each control measure on the master list was analyzed based upon emission reductions, technical feasibility, public acceptability, relative air quality effect and cost effectiveness. A Draft Short List was developed based upon this initial review and made available on the H-GAC website for a second round of comment on February 24, 2006.

A series of three stakeholder meetings were held in Houston on March 22, 27 and 28, 2006, in order to get feedback on the Draft Short List. The Draft Short List was revised after the stakeholder meetings, and a preliminary draft of the Post-Stakeholder Short List consisting of strategies deemed most promising for the HGB area was provided to the public via the H-GAC website on April 17, 2006.

On April 28, 2006, the Transportation Policy Council for the Houston-Galveston Transportation Management Area signed a resolution in support of expanded appropriation of Texas Emission Reduction Plan program and Low Income Repair and Assistance Program funds.

The Draft Final Report, *Evaluation of Mobile Source Control Strategies for the Houston-Galveston-Brazoria State Implementation Plan*, was posted to the H-GAC website in May 2006. It is attached in Appendix D. In June 2006, the regional Air Quality Leadership Task Force Group of local elected officials, business and environmental leaders and the H-GAC Board of Directors recommended removal of some measures that were on the draft final report and endorsed a final draft short list of potential mobile source control measures (see Appendix E). Subsequently they passed a resolution endorsing this revised list for modeling purposes, additional analysis, and public comment.

Subsequent analysis and discussions with H-GAC resulted in the on-road and non-road mobile control strategies listed in Chapter 4, including the Texas Low Emission Diesel fuel Marine rule in Section 4.2.1 and the voluntary mobile source emission reduction program measures in Section 4.2.3 and Appendix A.

All reasonably available on-road and non-road mobile control measures are being implemented for the 2009 target date.

For more information on this analysis go to:

<http://www.h-gac.com/HGAC/Departments/Transportation/Air+Quality/default.htm>.

Point and Area Sources

Consistent with the United States District Court's opinion and EPA guidance, the TCEQ has defined specific criteria for the evaluation of potential RACM measures in the HGB eight-hour

ozone nonattainment area. In order for an individual measure to be considered RACM, the measure must meet the following criteria:

- The measure will reduce emissions in the HGB area prior to the beginning of the 2009 ozone season;
- The measure can be implemented before January 1, 2009;
- The measure is enforceable;
- The measure is technically feasible;
- The measure is economically feasible;
- The measure would not create substantial or widespread adverse impacts within the region; and
- Emissions from the source being controlled exceed a *de minimis* threshold.

Collectively, any RACM measures must meet the following criteria:

- The measures will enable the region to reduce ozone below 85 parts per billion prior to the beginning of the 2009 ozone season; and
- The measures can be implemented without intensive or costly effort.

These criteria were used to evaluate all of the point and area source control measures intended to reduce nitrogen oxide (NO_x) and volatile organic compound (VOC) emissions that were suggested during the control strategy development process. Table 1: *Point and Area Source NO_x RACM Analysis for the Houston-Galveston-Brazoria Eight-Hour Ozone Nonattainment Area* and Table 2: *Point and Area Source VOC RACM Analysis for the Houston-Galveston-Brazoria Eight-Hour Ozone Nonattainment Area* present the results of the RACM analysis. The RACM analysis includes a brief description of each control measure, a determination as to whether or not the measure will advance the attainment date, and either justification for not implementing the control measure or the proposed state rule that would implement the control measure. The conclusion from this analysis is that all reasonably available control measures are being implemented. The Lamar University and ENVIRON point and area source control strategy development documentation is included as a courtesy to the reader in Appendix F.

Table 1: Point and Area Source NO_x RACM Analysis for the Houston-Galveston-Brazoria Eight-Hour Ozone Nonattainment Area

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Agricultural Operations	Restrict the sale/use of high nitrogen content fertilizers.	No	9
Airport Operations	Control emissions from airport terminals.	No	1
Airport Operations	Control emissions through facility energy conservation programs.	No	1
All Point Sources (excluding electric generating units (EGU))	Extend NO _x mass emission cap and trade (MECT) program to combustion sources located outside of the HGB nonattainment area. Inclusion could be limited to larger, more numerous industrial sources (industrial-commercial-institutional boilers, process heaters, large engines, large turbines, smelter furnaces, cement and brick kilns, etc.) or could include the same source categories covered by the HGB SIP.	No	2
All Point Sources (excluding EGU)	Implement separate NO _x MECT program for sources located outside of the HGB nonattainment area.	No	2
All Point Sources (excluding EGU)	Lower NO _x MECT cap by reallocating allowances based on lower emission specifications for attainment demonstration (ESAD) (1999 SIP values or other).	No	2
All Point Sources (excluding EGU)	Lower NO _x MECT cap by reallocating allowances though across-the-board reductions.	No	2

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
All Point Sources (excluding EGU)	Revise or eliminate some or all exemptions (as listed in 30 Texas Administrative Code (TAC) §117.203) for NO _x MECT applicability, including: temporary sources (such as engines in test cells), sources in limited use applications (e.g. exemptions for emergency generators and diesel engines installed prior to October 1, 2001), heat treat and reheat furnaces rated less than 20 million British thermal units per hour (MMBtu/hr), incinerators rated less than 40 MMBtu/hr, boilers and process heaters rated 2 MMBtu/hr or less, dryers and ovens, chemical processing gas turbines and flares.	No	2
All Point Sources (excluding EGU)	Extend NO _x MECT program to include non-stationary engines.	No	4
All Point Sources (excluding EGU)	Extend NO _x MECT program to stationary sources that are currently not subject to program requirements (i.e., facilities where no ESAD has been established).	No	2
All Point Sources (excluding EGU)	Eliminate the distinction between major and small sources, applying the ESAD found in 30 TAC §117.206 to all sources regardless of site-wide potential to emit.	No	2 and 9
All Point Sources (excluding EGU)	Eliminate the exemption for sources with uncontrolled emissions at design capacity of less than 10 tons per year.	No	2
All Point Sources (excluding EGU)	Improve identification and integration of affected stationary sources that are currently operating outside of existing NO _x MECT program requirements.	No	2
All Point Sources (excluding EGU)	Provide additional financial incentive for reducing emissions by increasing the annual fee paid on NO _x emissions.	No	2
All Point Sources (excluding EGU)	Provide financial incentives for existing NO _x sources to relocate outside of the HGB nonattainment area.	No	4 and 5

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
All Point Sources (excluding EGU)	Eliminate NO _x MECT program and revert to source-by-source emission limitations with limits set equal to Lowest Achievable Emission Rate (LAER) technology or other. (Note: source-specific control measures for sources currently subject to the NO _x MECT program are not addressed in Section B.)	No	2
Commercial and Residential	Issue emission reduction credits (ERC) or discrete emission reduction credits (DERC) for reductions in emissions from commercial and/or residential combustion sources.	No	6
Commercial and Residential	Provide financial assistance for performing energy audits and/or implementation of energy saving measures that reduce demand and emissions from EGU and/or heating systems. Examples include the Louisiana Home Energy Rebate Option for individual homes and an energy fund for implementation of energy conservation measures at publicly-funded institutions.	No	5
Commercial and Residential	Revise building codes to require energy-efficient designs and materials that reduce demand and emissions from EGU and/or heating systems. Measures could include more insulation, use of reflective glass, use of reflective paints, use of multi-paned glass, use of white or reflective roofs. For example, the International Energy Conservation Code (IECC).	No	5
Commercial and Residential	Mandatory public building compliance with IECC.	No	5
Commercial and Residential	Provide additional incentives for the implementation of the EPA's Energy Star program in homes and businesses.	No	5
Commercial and Residential	Require that a certain percentage of power purchased for public facilities come from renewable or non-emitting sources.	No	5

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Commercial and Residential	Provide incentives for energy conservation measures such as timed lighting for parking lots, outdoor advertisements and buildings, occupancy sensors for office lighting, and for turning off computers.	No	5
Commercial and Residential	Provide incentives for using energy efficient PC networks – shutdown of computers when not in use.	No	5
Commercial and Residential	Require that heated swimming pools be covered during the winter to reduce heating demands.	No	5
Electric Generating Units (EGU)	Restrict the operation of peak-shaving EGU in the HGB nonattainment area.	No	1
Electric Generating Units (EGU)	Provide financial incentives for demand-side management.	No	5
Electric Generating Units (EGU)	Provide financial incentives for investment in lower-polluting or non-polluting power generation technologies.	No	5
Electric Generating Units (EGU)	Provide financial incentives to relocate existing EGU outside of the HGB nonattainment area.	No	5
Electric Generating Units (EGU)	Extend NO _x MECT program to EGU outside of the HGB nonattainment area.	No	2
Electric Generating Units (EGU)	Implement separate NO _x cap-and-trade program for sources outside of the HGB nonattainment area.	No	1
Electric Generating Units (EGU)	Provide additional financial incentive for reducing emissions by increasing the annual fee paid on NO _x emissions.	No	2
Electric Generating Units (EGU)	Include engines located at EGU in NO _x MECT program.	No	2
Electric Generating Units (EGU)	Eliminate NO _x MECT program and revert to source-by-source emission limitations with limits set equal to LAER technology or other.	No	2
Electric Generating Units (EGU) Outside the HGB Area	Adopt emission limits based on retrofit best available control technology (BACT) level of 0.07 - 0.1 pounds per million British thermal units.	No	2

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Electric Generating Units (EGU) Outside the HGB Area	Apply emission limits based on proposed best available retrofit technology requirements – 80 percent reduction.	No	2
Electric Generating Units (EGU) Outside the HGB Area	Adopt a 90 percent reduction from uncontrolled emissions.	No	2
Oil and Gas Production	Establish requirements or provide incentives for the use of NO _x emission reduction software.	No	4 and 5
Plant Operations	Limit repair, maintenance, cleaning, and other non-production related activities on ozone alert days.	No	9
Plant Operations	Restrict the testing of emergency generators and other support equipment on ozone alert days.	No	1
Power Generation and Transmission	Provide additional incentives for the use of low-emitting, distributed power generating systems such as wind, solar, microturbines, fuel cells, etc., reducing the demand and associated emissions from EGU.	No	5
Power Generation and Transmission	Provide additional incentives for the capture of landfill gas for use in combustion turbines to generate electricity, reducing the demand and associated emissions from EGU.	No	2
Power Generation and Transmission	Explore technologies and opportunities to reduce transmission line losses with resulting reductions in demand and associated emissions from EGU.	No	8
Programmatic and Policy	Provide incentives and opportunity for area sources to opt into the NO _x MECT program and/or the highly-reactive volatile organic compounds (HRVOC) (or any future expanded VOC) cap-and-trade program.	No	2
Programmatic and Policy	Issue ERC or DERC to area sources for energy conservation or energy efficiency projects that reduce demand and emissions from EGU and/or heating systems.	No	6

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Programmatic and Policy	Partner with local governments in efforts to reduce urban heat island effects and, thus, reduce EGU demand and associated emissions.	No	5
Programmatic and Policy	Investigate opportunities to improve local policies toward energy efficiency.	No	8
Programmatic and Policy	Implement efficiency-based natural gas rates to reward conservation.	No	5
Programmatic and Policy	Provide incentives for companies to buy energy efficient products.	No	5
Programmatic and Policy	Provide sales tax relief for the purchase of Energy Star products.	No	5
Programmatic and Policy	Provide incentives for companies and individual consumers to replace older, energy-inefficient appliances with new Energy Star products.	No	5
Programmatic and Policy	Provide incentives for companies and individual consumers to replace energy-inefficient heating and air conditioning systems with new, more efficient units.	No	5
Programmatic and Policy	Implement public awareness campaigns.	No	5
Programmatic and Policy	Provide incentives for cities and counties to promote and encourage development patterns that reduce emissions of air pollutants.	No	5
Programmatic and Policy	Implement a ban on new developments that would result in any increase in air pollutants.	No	9
Programmatic and Policy	Establish mitigation fees for land development and other projects that result in additional area source emissions that are proportional to the anticipated increase in NO _x and/or VOC emissions.	No	5
Programmatic and Policy	Promote/require the planting of trees (reduce EGU demand and emissions) and the use of plants that require less maintenance (reduced emissions from landscape maintenance equipment).	No	5
Programmatic and Policy	Require mitigation of trees removed during development.	No	5
Programmatic and Policy	Provide financial incentives to developers and homeowners to use or convert to plants that require less maintenance (reduced emissions from landscape maintenance equipment).	No	5

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Residential Combustion Sources	Establish requirements and/or provide incentives for the replacement of hot water heater pilot ignitions with electronic ignitions.	No	2
Residential Combustion Sources	Establish requirements and/or provide incentives for the use of low-NO _x hot water heaters.	No	1
Residential Combustion Sources	Establish requirements and/or provide incentives for the replacement of hot water heaters with on-demand heat exchange systems.	No	2
Residential Combustion Sources	Establish requirements and/or provide incentives for the replacement of pilot lights on gas stoves with electronic ignition systems.	No	2
Residential Combustion Sources	Prohibit or restrict the sale and use of wood burning fireplaces and wood burning stoves in the HGB nonattainment area.	No	7
Residential Combustion Sources	Establish requirements and/or provide incentives for the replacement of residential combustion sources with lower emitting sources (e.g., replacing natural gas-fired units with electric units).	No	2
Explanation of Reasons Given for RACM Determination			
1. The commission has already established reasonable controls or is proposing a separate or similar measure.			
2. The control measure will not advance attainment in the time provided.			
3. Current photochemical modeling analysis indicates the control measure will not advance attainment.			
4. The control measure is not enforceable.			
5. The control measure is not quantifiable or not demonstrated.			
6. The control measure does not reduce surplus emissions.			
7. There are no significant emission sources in this category.			
8. The control measure does not exist or is not well defined.			
9. The control measure has potential adverse impacts.			
10. The commission is proposing a different control measure for this category.			
11. The control measure would not result in sufficient emission reductions to advance attainment.			

Table 2: Point and Area Source VOC RACM Analysis for the Houston-Galveston-Brazoria Eight-Hour Ozone Nonattainment Area

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Agricultural Operations	Manage livestock wastes by transporting them out of the HGB nonattainment area for management and/or requiring the use of air pollution control systems.	No	7
Agricultural Operations	Require the use of air pollution control systems at feedlots and animal waste lagoons.	No	7
Agricultural Operations	Provide incentives for improved management techniques to reduce the frequency and quantity of pesticide applications.	No	5
Agricultural Operations	Provide incentives for manufacturers to reformulate pesticides to reduce the VOC content.	No	5
Agricultural Operations	Limit the allowable VOC content of pesticides. Identify lowest achievable limits through review of California and Ozone Transport Commission regulations.	No	2
Agricultural Operations	Manage composting operations. Potential control measures could include, but are not limited to, 1) registration of composting, chipping and grinding facilities; 2) establish holding and/or processing time requirements for green waste; 3) establish VOC emission control requirements.	No	7
Airport Operations	Control emissions from airport terminals.	No	1
Airport Operations	Control emissions through facility energy conservation programs.	No	1
Airport Operations	Control emissions from aircraft maintenance operations.	No	1
All Point Sources	Expand applicability of the HRVOC cap-and-trade program beyond flares, process vents, cooling towers and process fugitive emissions.	No	2 and 7
All Point Sources	Extend current HRVOC cap-and-trade program to other VOC, trading emissions based on reactivity.	No	2

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
All Point Sources	Expand application of cap-and-trade concept to other sources of VOC: storage tanks, loading racks, wastewater treatment operations, barge/ship loading operations.	No	2
All Point Sources	Eliminate the HRVOC cap-and-trade exemption for sources with potential emissions of less than 10 tons per year.	No	2
All Point Sources	Revoke the HRVOC cap-and-trade exemption for sources located in the HGB nonattainment area outside of Harris County.	No	2
All Point Sources	Extend HRVOC cap-and-trade program to sources located outside of the HGB nonattainment area.	No	2 and 3
All Point Sources	Implement separate HRVOC or VOC cap-and-trade program for sources located outside of the HGB nonattainment area.	No	2 and 3
All Point Sources	Lower HRVOC cap. Reallocate allowances using existing allocation procedures but lower annual emission caps.	No	2
All Point Sources	Establish source-by-source emission limits (not cap-and-trade) on HRVOC and/or other VOC for sources located outside of the HGB nonattainment area.	No	2 and 3
All Point Sources	Extend 1,200 pound per hour HRVOC emission limit to sources located outside of the HGB nonattainment area.	No	2 and 3
All Point Sources	Implement HRVOC program-type monitoring requirements for other VOC emissions from flares, cooling towers, and/or process vents.	No	2
All Point Sources	Expand HRVOC fugitive monitoring requirements to other VOC.	No	2
All Point Sources	Expand applicability of the industrial wastewater regulations beyond the list of affected source categories in 30 TAC §115.140(1).	No	7
All Point Sources	Make existing industrial wastewater regulations more stringent (e.g., revise VOC reduction requirement from 90 percent to 95 percent).	No	2

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
All Point Sources	Account for future-year VOC emission reductions resulting from implementation of remaining 40 Code of Federal Regulations (CFR) 63 (maximum achievable control technology (MACT)) standards. Examples include chemical plants affected by the miscellaneous organic national emission standards for hazardous air pollutants (40 CFR 63, Subpart FFFF, with compliance date of 11/10/2006), and surface coating operations affected by the Miscellaneous Metal Parts and Products standard (40 CFR 63, Subpart MMMM, with a compliance date of 01/02/2007).	No	6
All Point Sources	Account for future-year VOC emission reductions resulting from implementation of revised 40 CFR 63 (MACT) standards issued in response to the residual risk requirements (§112(f)) of the FCAA.	No	6
All Point Sources	Account for future-year VOC emission reductions resulting from implementation of new and/or updated 40 CFR 60 New Source Performance Standards.	No	6
All Point Sources	Application of MACT-type standards to VOC sources in the HGB nonattainment area and, potentially, surrounding areas. A typical MACT standard sets emission limits for process vents, storage tanks, loading operations, wastewater treatment operations, and fugitive emissions with exemptions based on mass, flowrate and/or concentration.	No	2
All Point Sources	Provide additional financial incentive for reducing emissions by increasing the annual fee paid on VOC emissions.	No	2
All Point Sources	Eliminate the HRVOC cap-and-trade program and control emissions exclusively through source-by-source emission limitations.	No	2
All Point Sources	Improve identification and integration of affected stationary sources that are currently operating outside of existing VOC emission control requirements.	Yes	Proposed §115.112 - 119 §115.541 - 549

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
All Point Sources	Provide financial incentives for existing HRVOC and/or other VOC sources to relocate outside of the HGB.	No	4 and 5
All Point Sources	Develop and implement more stringent guidance on BACT requirements for New Source Review authorizations issued to sources in the HGB nonattainment area and, potentially, sources outside the HGB nonattainment area.	No	2
Asphalt Paving and Roofing	Increase the stringency of existing control requirements in 30 TAC Chapter 115, Subchapter F, Division 1.	No	2
Asphalt Paving and Roofing	Provide incentives to convert from cutback asphalt to low-emission emulsion asphalt and hot-mix asphalt.	No	5
Asphalt Paving and Roofing	Adopt SCAQMD content limit for emulsified asphalt (50 percent reduction).	No	2
Asphalt Paving and Roofing	Restrict or prohibit the use of VOC-based parking lot sealers.	No	2 and 7
Asphalt Paving and Roofing	Require the use of emission controls on cutback asphalt application equipment used by commercial roofers, etc. Controls could include the use of close fitting lids and restrictions on operating temperatures and/or require the use of afterburners on the kettles.	No	2 and 7
Asphalt Paving and Roofing	Extend 40 CFR 63, Subpart LLLLL, MACT emission limitations and control standards to larger set of asphalt processing and roofing operations (not just major sources of hazardous air pollutants).	No	2 and 7
Bakeries	Revise control requirements in 30 TAC §115.122 from 80 percent to 90 percent or greater.	No	2
Bakeries	Lower or eliminate the 25 ton per year threshold for requiring controls.	No	2
Breweries	Implement housekeeping practices to minimize spillage during filling, keg cleaning and waste beer processing.	No	2 and 7
Breweries	Develop and implement source-specific wastewater treatment requirements. Alternatively, subject source to industrial wastewater regulations.	No	2 and 7

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Breweries	Establish VOC emission limitation from fermentation tanks.	No	2 and 7
Coatings and Solvents	Increase stringency of existing surface coating VOC limits in 30 TAC Chapter 115, Subchapter E, Division 2. Identify lowest achievable limits through review of California and Ozone Transport Commission regulations.	No	2
Coatings and Solvents	Eliminate or reduce the scope of the surface coating emission limitation exemptions found in 30 TAC §115.427.	No	2
Coatings and Solvents	Apply 40 CFR 63 MACT-like emission standards to VOC emissions from surface coating operations. Related MACT standards include: Auto & Light Duty Truck Surface Coating (Subpart IIII), Large Appliances (Subpart NNNN), Magnetic Tape (Subpart EE), Metal Can (Subpart KKKK), Metal Coil (Subpart SSSS), Metal Furniture (Subpart RRRR), Miscellaneous Metal Parts and Products (Subpart MMMM), Paper and Other Web (Subpart JJJJ), Plastic Parts (Subpart PPPP), Printing and Publishing (Subpart KK), Shipbuilding and Ship Repair (Subpart II), Wood Building Products (Subpart QQQQ), Wood Furniture (Subpart JJ).	No	1
Coatings and Solvents	Require the use of or provide incentives for using ozone-destroying catalyst coatings.	No	4 and 5
Coatings and Solvents	Consider VOC reactivity in establishing VOC coating content or requiring the use of air pollution controls.	No	2
Coatings and Solvents	Review existing list of 30 TAC Chapter 115, Subchapter E, Division 2, regulated sources and establish emission limits for those sources currently excluded.	No	2
Commercial and Residential	Require that lawn clippings be bagged and disposed of in managed municipal landfills.	No	7
Commercial and Residential	Prohibit or restrict the burning of burning of leaves and yard clippings or require the application of emission controls.	No	7

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Consumer Products	Establish new consumer product VOC limits per California Air Resources Board (CARB) – CONS 1, CONS 2.	No	2
Consumer Products	Adopt SCAQMD Phase III VOC limits. Additional legal authority may be required.	No	2
Consumer Products	Adopt CARB rules regarding mid-term and/or long-term limits on VOC content of consumer products.	No	2
Consumer Products	Provide incentives for the substitution of non VOC-based cleaners for VOC-based cleaners.	No	5
Consumer Products	Require the use of or provide incentives for the reformulation of VOC-bearing commercial products such as paints, cleaners, etc.	No	2
Consumer Products	Limit automotive windshield washer fluid to less than the 23.5 percent VOC currently allowed by 30 TAC Chapter 115, Subchapter G, Division 1.	No	2
Consumer Products	Adopt Ozone Transport Commission Model Rule with additional product coverage and more stringent VOC limits.	No	2
Cutback Asphalt	Require the control of emissions from dryers and heaters.	No	2 and 7
Degreasing	Increase stringency of existing control requirements in 30 TAC Chapter 115, Subchapter E, Division 1. This could include measures requiring the use of low-VOC solvents for cold cleaning operations or replacement with wipe cleaning.	No	2
Dry Cleaning	Put contingency rules in 30 TAC Chapter 115, Subchapter F, Division 4 into effect.	No	7
Dry Cleaning	Increase solvent recovery requirement in 30 TAC §115.552(a) from 85 percent to 90 percent or greater. Contingency rules must be put into effect first.	No	2 and 7
Dry Cleaning	Lower or eliminate the 2,000 gallon per year use exemption in 30 TAC §115.557. Contingency rules must be put into effect first.	No	2 and 7

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Dry Cleaning	Extend 40 CFR 63, Subpart M, MACT-like emission limitations and control standards to additional dry cleaning facilities.	No	2 and 7
Equipment Leaks	Make the requirements of 30 TAC Chapter 115, Subchapter D, Division 2, more stringent (e.g., similar to HRVOC monitoring requirements).	No	2
Equipment Leaks	Lower leak detection limits.	No	11
Equipment Leaks	Require instrument monitoring of connectors.	No	2
Flares	Require that existing flares be retrofitted to conform to 40 CFR 60.18 design standards.	No	2
Food Processing and Cooking	Establish emission control requirements for food product manufacturing and processing operations.	No	1 -- Bakeries 7 -- Others
Food Processing and Cooking	Require the use of catalytic oxidizers or equivalent controls on chain-drive charbroilers.	No	7
Food Processing and Cooking	Establish limits for the VOC content of charcoal lighter fluid.	No	2
Food Processing and Cooking	Eliminate or restrict the use of charcoal for barbecuing.	No	4
Fueling Activities	Replace fuel dispensing hoses to reduce permeation.	No	1
Fueling Activities	Extend Stage I vapor recovery system requirements to counties outside of the HGB nonattainment area.	No	1
Fueling Activities	Eliminate or reduce the Stage I vapor recovery exemptions in 30 TAC §115.227.	No	2
Fueling Activities	Adopt CARB enhanced vapor recovery Stage I requirements (98 percent control) in HGB nonattainment area and, potentially, surrounding counties.	No	2
Fueling Activities	Extend the transport vehicle leak test provisions of 30 TAC Chapter 115, Subchapter C, Division 3, to counties outside of the HGB nonattainment area.	No	1
Fueling Activities	Eliminate or reduce the transport vehicle leak test exemptions in 30 TAC §115.237.	No	11

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Fueling Activities	Extend Stage II vapor recovery system requirements to counties outside of the HGB nonattainment area.	No	2
Fueling Activities	Eliminate or reduce the Stage II vapor recovery exemptions in 30 TAC §115.247.	No	2
Fueling Activities	Implement a “stop at the click” awareness program to discourage overfilling of vehicles during refueling.	No	5
Fueling Activities	Implement an off-road equipment fuel tank program.	No	8
 			
Hair and Nail Salons	Develop and implement emission control measures.	No	2
 			
Landfills and Composting	Extend municipal landfill emission control requirements to counties outside of the HGB nonattainment area.	No	2 and 11
Landfills and Composting	Regulate emissions from the excavation of landfills.	No	5
Landfills and Composting	Require the use of co-composting operations to limit VOC emissions. Includes the mixing of biosolids or manure with bulking agents.	No	7
 			
Loading Operations	Revise control requirements in 30 TAC §115.212 from 90 percent to 95 percent or greater.	No	11
Loading Operations	Require the use of low volume quick disconnects for railcar and tanker truck loading and unloading operations.	No	1
 			
Metal Production	Require the implementation of work practices to minimize VOC in furnace charge material or require use of gas-fired preheater where the flame directly contacts the scrap charge.	No	2
 			
Oil and Gas Production	Establish emission limits or control requirements for glycol dehydration units. Emission limits could build upon emission limits established by 40 CFR 63, Subpart HH, to control HAP emissions from glycol dehydration units.	No	1
Oil and Gas Production	Establish emission limits or control requirements for flash emissions from upstream crude oil and gas condensate separators and storage tanks.	Yes	Proposed §115.112 - 119

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Oil and Gas Production	Require implementation of instrument-based fugitive emissions monitoring and leak repair programs at oil and gas production facilities.	No	1
Painting	Restrict indoor and outdoor painting during ozone alerts.	No	4
Plant Operations	Limit repair, maintenance, cleaning and other non-production related activities on ozone alert days.	No	9
Printing	Establish more stringent VOC content limitations and/or emission control requirements for rotogravure and flexographic printing operations than specified in 30 TAC Chapter 115, Subchapter E, Division 3.	No	2
Printing	Eliminate or reduce the rotogravure and flexographic printing emission control exemptions in 30 TAC §115.437.	No	2
Printing	Establish more stringent VOC content limitations and/or emission control requirements for offset lithographic printing operations than specified in 30 TAC Chapter 115, Subchapter E, Division 4.	No	2
Printing	Eliminate or reduce the offset lithographic printing emission control exemptions in 30 TAC §115.437.	No	2
Process Vents	Revise process vent control requirements in 30 TAC §115.122(a)(1) to require at least 95 percent control.	No	2
Programmatic and Policy	Provide incentives and opportunity for area sources to opt into the NO _x MECT program and/or the HRVOC (or any future expanded VOC) cap-and-trade program.	No	6
Programmatic and Policy	Implement public awareness campaigns.	No	5
Programmatic and Policy	Provide incentives for cities and counties to promote and encourage development patterns that reduce emissions of air pollutants.	No	5
Programmatic and Policy	Implement a ban on new developments that would result in any increase in air pollutants.	No	9

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
Programmatic and Policy	Establish mitigation fees for land development and other projects that result in additional area source emissions that are proportional to the anticipated increase in NO _x and/or VOC emissions.	No	5
Programmatic and Policy	Promote/require the planting of trees (reduce EGU demand and emissions) and the use of plants that require less maintenance (reduced emissions from landscape maintenance equipment).	No	5
Programmatic and Policy	Provide financial incentives to developers and homeowners to use or convert to plants that require less maintenance (reduced emissions from landscape maintenance equipment).	No	5
Publicly-Owned Wastewater Treatment Facilities	Establish emission control requirements for publicly-owned wastewater treatment facilities.	No	2 and 7
Residential Combustion Sources	Prohibit or restrict the sale and use of wood burning fireplaces and wood burning stoves in the HGB nonattainment area.	No	7
Storage Tanks	Make control requirements in 30 TAC §115.112 more stringent.	Yes	Proposed §115.112 - 119
Storage Tanks	Restrict landing of floating roofs; specify management and/or control requirements (e.g. venting to 40 CFR 60.18 flare or equivalent control) if roof is landed.	Yes	Proposed §115.112 - 119*
Surface Coating operations	Lower allowable VOC content of surface coatings in 30 TAC Chapter 115, Subchapter E, Division 2.	No	2
Explanation of Reasons Given for RACM Determination			
1. The commission has already established reasonable controls or is proposing a separate or similar measure.			
2. The control measure will not advance attainment in the time provided.			
3. Current photochemical modeling analysis indicates the control measure will not advance attainment.			
4. The control measure is not enforceable.			
5. The control measure is not quantifiable or not demonstrated.			
6. The control measure does not reduce surplus emissions.			
7. There are no significant emission sources in this category.			

Source Category	Control Measure Description	Will this advance the eight-hour 2010 attainment date?	Reason or 30 TAC Specification Implementing the Control Measure
8. The control measure does not exist or is not well defined.			
9. The control measure has potential adverse impacts.			
10. The commission is proposing a different control measure for this category.			
11. The control measure would not result is sufficient emission reductions to advance attainment.			
* The commission is not requiring this specific technology, but it might be used by owners or operators to comply with the proposed rules.			