

## OZONE REDUCTION STRATEGIES

### Short-Term Measures for Discussion

October 29, 2007

The purpose of this document is to provide options for discussion on ozone reduction strategies that can be implemented and, for the most part, effective prior to the start of the 2008 Summer Ozone Season. The document includes voluntary and regulatory options. In addition, it accounts for currently adopted programs and regulations that will become effective in 2008.

#### > Present Measures that Provide Additional Emission Reductions in 2008

Strategy	Brief Description	Implementation	Questions / Comments
HB1302-06 High-Emitter Pilot Program	Implementation of high-emitter pilot program, which identifies high-emitting vehicles on the road and requires emissions-related repairs	Revisions in Reg. 11 passed in October 2007; begin implementation in early 2008 and increase through 2008 Ozone Season	Estimated emission reductions, based on repair of 225 vehicles: 10 tpy HC, 7 tpy CO and 0.5 tpy NOx
Vehicle Scrappage Program	High-emitting vehicles that are beyond repair will be scrapped and vehicles owners offered a cash sum in its place	\$150,000 for implementation in 2008; determine ongoing funding sources to implement and expand program	Estimated emission reductions, based on 25 vehicles scrapped: 1 tpy HC, 7 tpy CO and 0.05 tpy NOx
Continued Vehicle Fleet Turnover	Federal emission control programs continue to be phased in and will achieve vehicle emission reductions as older vehicles are replaced by newer vehicles	Ongoing	Reductions from 2007 to 2008: 5.8 tpd VOC Vehicle fleet 9.6 tpd NOx Vehicle fleet
Statewide Oil and Gas Regulations in Reg. 7	Implementation of new thresholds in current Reg No. 7 for condensate tanks (Section XVII.C.1 & C.2) and dehydration units (Section XVII.D)	Effective date: May 1, 2008 Control uncontrolled emissions ≥ 20 tpy - condensate tanks ≥ 15 tpy - dehydration units	Emission Reductions: Approximately 20 tpy VOC reduction state-wide (outside ozone control area)
Reciprocating Internal Combustion Engine (RICE) Controls Statewide in Reg. 7	Implementation of new standards in current Reg No.7 for RICE (Section XVII.E.) and phase in of tighter standards 2007-2011 for new & relocated from out-of-state	100-500 HP new standards eff. date 1-1-08 phase in by 1-1-11 ≥500 HP new standards eff. date 7-1-07 phase in by 7-1-10	NOx, CO and VOC emission reductions statewide

Off-Road and Non-Road Engine Standards	Federal engine standards will achieve emission reductions as older off- and non-road vehicles are replaced by newer vehicles	Ongoing	Reductions from 2007 to 2008: 2.8 tpd NOx NRM fleet 2.6 tpd VOC NRM fleet
Diesel Retrofit Program	Ongoing diesel retrofit program, which utilizes catalysts, anti-idling equipment and crankcase filtration units to reduce tailpipe and crankcase emissions	\$1.7 million in 2008 for 450 oxidation catalysts, 250 crankcase filtration and 300 engine pre-heaters	Estimated reductions for 2007-2008 program: 591 tpy HC, 5,633 tpy CO and 27 tpy NOx
Voluntary Ozone Education and Awareness Campaign	Ongoing information and education campaign to increase understanding of ozone issues and encourage sustainable behavior change	Ongoing	Seeking additional funding for 2008 and beyond; 1 tpd reduction in VOCs if full funding is provided
Use of Ethanol (E85) in Flex-Fuel Vehicles	Ongoing efforts, driven mainly by the Governor's Biofuels Coalition, to increase the market share and usage of E85 fuel for flex-fuel vehicles	Ongoing	

> **Voluntary Measures**

<b>Strategy</b>	<b>Brief Description</b>	<b>Implementation</b>	<b>Questions / Comments</b>
Voluntary Reduction in Reid Vapor Pressure (RVP) of Gasoline	Suppliers voluntarily commit to reduce the volatility (RVP) of gasoline below 7.8 pounds per square inch (psi), below 8.8 psi for ethanol blends, during the critical summer months (June—August)	Need individual commitments from suppliers to Denver/NFR area	3.5 tpd reduction in VOCs assuming a 0.5 psi reduction
Voluntary Reduction in RVP of Gasoline in North Front Range	Suppliers provide same RVP gasoline in North Front Range as provided in metropolitan-Denver region	Need individual commitments from suppliers to Denver/NFR area	0.8 TPD reduction in VOCs
Retrofit, Replacement & New Installation of High-Bleed Valves to Low-Bleed and/or No-Bleed Valves for Oil & Gas Systems	Receive voluntary commitments to install new and retrofit existing high-bleed valves to low- or no-bleed pneumatic actuated valves	Implement early Spring 2008 for immediate effectiveness	This strategy achieves a co-benefit; it reduces VOCs and methane, a greenhouse gas  Safety considerations where appropriate
Green Completions for Oil and Gas Well Development	Use of equipment to capture natural gas and VOCs through the completion of well-drilling activities	Early Spring 2008	Benefits to be determined

Residential Lawn Mower Trade-Out Program	Implement large-scale residential lawn mower trade-out program to recycle gasoline-powered equipment and replace with newer, lower-polluting alternatives	Implement early Spring 2008 for immediate effectiveness	At least \$100,000 in funding required to implement large-scale program; \$25,000 secured for Weld County program; 0.8 tpy VOC reduction based on 500 mowers recycled
Municipal "Green" Landscaping Pilot Program	Local government entities voluntarily utilize solar and/or electric equipment and/or services for the maintenance of parks and other public areas	Implement early Spring 2008 for immediate effectiveness	May need funding incentives to encourage participation and maximize effectiveness

**> Regulatory Measures**

Strategy	Brief Description	Implementation	Questions / Comments
Tighten Vehicle Inspection/Maintenance Program Cut Points in Reg. 11	Lower cut points for VOCs and NOx to increase the number of high-emitting vehicles screened through the current Inspection/Maintenance program	Implement prior to start of 2008 Ozone Season for immediate effectiveness	Emission reductions based on Jan. 1 implementation: 0.23 tpd VOC, 3.5 tpd CO and 0.65 tpd NOx. Based on June 1 implementation: 0.0 tpd VOC and NOx

**> Additional Measures for Future Consideration**

Many additional measures will be considered for implementation over the next two years through the RAQC's current Ozone SIP Stakeholder Involvement Process. Several additional measures initially were considered for possible implementation in 2008 but were deferred for future consideration since they could not be implemented and become effective in 2008 because of legal or regulatory requirements. Examples included petition to EPA to implement Federal Reformulated Gasoline, petition to EPA to remove 1.0 psi ethanol waiver, legislation to establish a motor vehicle control fund and revisions to Regulation No. 7 to expand Reasonably Available Control Technology requirements to the entire nonattainment area. These measures will be considered in 2008 along with other measures during the stakeholder process.