Appendix I

Control Option 22

Off-Road and Small Engine California Standards (NOx, VOCs, PM)

Description:

California has its own off-road engine emission standards that in some instances are currently more stringent than EPA's off-road standards - particularly in the small (<50hp) engine category. These more stringent CA standards cover engines used in small hand held equipment, lawnmowers, and construction equipment to name a few.

The federal Clean Air Act Amendments of 1990 (CAA) preempt California's authority to control emissions from new farm and construction equipment under 175 hp [CAA Section 209(e)(1)(A)] and require California to receive authorization from the federal EPA for controls over other off-road sources [CAA Section 209 (e)(2)(A)].

With regard to small engines, States are not permitted to incorporate CA standards for spark-ignition off-road engines below 50 horsepower. See Public Law 108-199 Section 428(c) – "No State or any political subdivision thereof may adopt or attempt to enforce any standard or other requirement applicable to spark ignition engines smaller than 50 horsepower."

Under Section 209(e) a State that has a State Implementation Plan (SIP) can adopt and enforce the CA standards for certain non-road engines that have been authorized by EPA. However, there are some parts of CA's off-road vehicle rules that have not received authorization from EPA. In addition as noted above, currently no State can adopt emission standards for spark ignited engines less than 50 horsepower. EPA is proposing national small engine (< 50 hp) standards in the near future that will be comparable to CA's standards.

Benefits:

Since off-road engines, especially small (<50hp) engines, are numerous in the Front Range area, any reduction of NOx emissions from these sources would be beneficial for reducing the nitrogen deposition rates at RMNP. Generally the CA small engine standards are more stringent than current federal standards, and require quicker implementation. For example, the CA standards for 25 hp and below spark ignition engines (model year 1999 and newer) are 3.2 g/hp/hr NOx plus hydrocarbon. Whereas the current EPA standards for the same type engines (model year 1997 and newer) are 10 to 12 g/hp/hr NOx plus hydrocarbon. See EPA's Emission Standards Reference Guide for Heavy-Duty and Non-road Engines. [See http://www.epa.gov/otaq/cert/hd-cert/stds-eng.pdf]

Using an estimate of the inventory of these sources in the Front Range, an upper range estimate of potential NOx reductions from implementing the CA standards could be calculated.

CDPHE Front Range NOx Emission Inventories (tons per average summer day):

Source Category	2002 Base (tons/day)	2007 Base (tons/day)	2007 Control (tons/day)	2012 Control (tons/day)
Lawn & Garden	10.4	10.4	10.5	10.4
Other Off-road	94.2	82.1	82.8	74.1

Total Anthropogenic	452.7	406.6	388.4	349.4

[Referenced from Rocky Mountain National Park Air Quality Initiative Regulatory and Non-Regulatory Options, March 4, 2005 – Attachment 4 http://www.cdphe.state.co.us/ap/rmnp/policyoptions.pdf]

Based on CDPHE's Front Range NOx inventory, lawn & garden and other off-road engines comprise approximately 24% of Front Range NOx emissions. Therefore, implementation of CA-type small engine standards in the Front Range could result in a significant reduction of overall Front Range NOx emissions.

These reductions could be used by Colorado to control growth related increases in NOx emissions, statewide or in the Front Range counties, in order reduce nitrogen deposition rates at RMNP consistent with the stated resource management goals. This would be a State only program and not be incorporated into Colorado's SIP.

For larger non-road engines CA may no longer have more stringent standards than EPA. EPA's most recent standards may be as stringent, or more stringent, than comparable CA standards, which may not have been updated recently.

Feasibility:

Although CO could adopt and enforce the CA non-road standards that have been authorized by EPA, it is not clear what benefit that would have since EPA's non-road standards for larger engines are as stringent, or more stringent, than comparable CA standards.

CO would not be permitted to incorporate into regulation CA standards for spark-ignition off-road engines below 50 horsepower. However, this control option could be used as a voluntary program where manufacturers of CA compliant small engines are asked to sell these lower emitting units in CO. For example, a program modeled on EPA's "Blue Sky" engine standard could be implemented in CO. This program is designed to provide an incentive for manufacturers to voluntarily certify their engines to a new, more stringent (at least 40% lower) standard earlier than required or to certify to an even lower standard once a new, more stringent standard takes effect. This can provide an opportunity for clean labeling and incentives.

See http://earth1.epa.gov/nonroad/2002/f02036.pdf for more information on the Blue Sky Program.