Appendix H

Control Option 21

Control Options Analysis for Rocky Mountain National Park Initiative

Proposed Implementation of California Low Emission Vehicle (LEV II) Standards Statewide

Purpose

Purpose: This analysis presents the pros and cons of implementing the California LEV II motor vehicle emission standards in Colorado. In California, LEV II emission standards are being phased-in over the 2004 through 2007 model years. In September 2004, the California Air Resources Board (CARB) approved regulations to control greenhouse gas emissions from new LEV II vehicles beginning with the 2009 model year.

Cost/Benefit

Costs: Costs will be determined through a detailed analysis of the most recent information.

Costs: An analysis by the Mass. State Department of Environmental Conservation said it would take one to five years for drivers of cars, smaller sport utility vehicles and pickup trucks to make up for the higher initial cost of their more fuel-efficient vehicles, assuming a gas price of $2 a gallon. For drivers of heavier S.U.V.'s and pickups, it would take one to three years

Benefits: The CA LEV II standards are intended to reduce green house gas (GHG) emissions and may provide some reduction in motor vehicle NOx emissions beyond the federal Tier II emission standards.

Benefits: The current federal emission standard (will be fully phased-in by the 2009 model year) allows vehicle manufacturers to produce autos/light trucks (<10,000 GVWR) that must fall within a range of 8 certification bins but must average 0.07 g NOx/mile. The California LEV II standard for passenger cars and light-duty vehicles < 8,500 GVWR requires all vehicles meet the 0.07 g NOx/mile. Thus, looking beyond 2009, both standards achieve 0.07 g NOx per mile for most vehicle classes except that CA LEVII includes some ZEV (zero emission vehicles) and the federal standard is stricter on vehicles in the 8,500 to 10,000 GVW class which includes most pick-up trucks and sport utility vehicles. A study in North Carolina indicated that CA LEVII would provide a 10% NOx reduction over Federal Tier II by 2030. A similar analysis is necessary to best characterize the benefits of the CA LEVII program using MOBILE 6 modeling.

Implementation

The non-GHG CA LEV II standards could implemented in the 2009 model year time-frame. The GHG requirements would have to be phased in until 2016 to allow vehicle manufacturers adequate time to develop the technologies necessary to comply with the GHG portion of the CA LEV II standard.

Viability

The actual benefits of a CA LEV II would require MOBILE6 modeling to attempt to quantify the full extent of the NOx emissions reduction.

Additional Details

Federal Tier II Emission Standards (phased in over 2004-2009 model year)

(Tier II includes Tier I light-duty vehicles and medium-duty passenger vehicles and any fuel type)

	50,000 miles [grams/mile]					120,000 miles [grams/mile]				
2009 Model Year - Permenant Bins	NMOG	CO	NOx	PM	HCHO	NMOG	CO	NOx	PM	HCHO
8	0.100	3.4	0.14	-	0.015	0.125	4.2	0.20	0.02	0.018
7	0.075	3.4	0.11	-	0.015	0.090	4.2	0.15	0.02	0.018
6	0.075	3.4	0.08	-	0.015	0.090	4.2	0.10	0.01	0.018
5	0.075	3.4	0.05	-	0.015	0.090	4.2	0.07	0.01	0.018
4	-	-	-	-	-	0.070	2.1	0.04	0.01	0.011
3	-	-	-	-	-	0.055	2.1	0.03	0.01	0.011
2	-	-	-	-	-	0.010	2.1	0.02	0.01	0.004
1	-	-	-	-	-	0.000	0.0	0.00	0.00	0.000

Notes:

1. Tier I vehicles includes passenger cars, light light-duty trucks (LLDT below 6000 lbs GVWR), heavy light-duty trucks (HLDT above 6000 but < 8500
2. In addition to Tier I vehicles, Tier II includes a new class of vehicles "medium-duty passenger vehicles" (MDPV) rated between 8,500-10,000 GVWR and are used for personal transportation
3. Vehicle manufacturers have a choice to certify particular vehicles to any of the 8 "certification bins", the average NOx emissions for all the bins must meet 0.07 g/mi.

California Low Emission Vehicle II (LEV II) Standard

(CA LEV II standard is applicable to all passenger cars and LDV < 8500 lbs that applies to both gasoline & diesel fueled engines)

Light-Duty Vehicles	50,000 miles/5 years [grams/mile]					120,000 miles/11 years [grams/mile]				
Category	NMOG	CO	NOx	PM	HCHO	NMOG	CO	NOx	PM	HCHO
Low Emission Vehicle (LEV II):	0.075	3.4	0.05	-	0.015	0.090	4.2	0.07	0.01	0.018
Ultra Low Emission Vehicle (ULEV):	0.040	1.7	0.05	-	0.008	0.055	2.1	0.07	0.01	0.011

Medium-Duty Vehicles	50,000 miles [grams/mile]					120,000 miles [grams/mile]				
Category	NMOG	CO	NOx	PM	HCHO	NMOG	CO	NOx	PM	HCHO
8,500-10,000 lbs LEV II	-	-	-	-	-	0.195	6.4	0.2	0.12	0.032
10,001-14,000 lbs LEV II	-	-	-	-	-	0.230	7.3	0.4	0.12	0.040
8,500-10,000 lbs ULEV	-	-	-	-	-	0.143	6.4	0.2	0.06	0.016
10,001-14,000 lbs ULEV	-	-	-	-	-	0.167	7.3	0.4	0.06	0.021