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TRANSPORTATION AND LAND USE SECTOR GHG REDUCTION POLICY OPTIONS

PREPARED FOR TECHNICAL WORKING GROUP (TWG) CALL #5, JANUARY 10, 2006

Potential Emission Reductions <u>1/</u>	Potential Cost or Cost Savings <u>1/ 2/</u>
High (H): At least 1 Million Metric Tons (MMT) carbon dioxide equivalent (CO ₂ e) per year by 2020 (~1% of current NM emissions), at least 10 MMT CO ₂ e by 2050	High (H): \$50 per Metric Ton CO ₂ e (MTCO ₂ e) or above
Medium (M): From 0.1 to 1 MMT CO ₂ e per year by 2020, or 1-10 MMT CO ₂ e by 2050	Medium (M): \$5-50/MTCO ₂ e
Low (L): Less than 0.1 MMT CO ₂ e per year by 2020, or 1 MMT CO ₂ e by 2050	Low (L): Less than \$5/MTCO ₂ e
Uncertain (U): Not able to estimate at this time	Uncertain (U): Not able to estimate at this time
<u>1/</u> Several measures may overlap in terms of emissions reductions and/or cost impacts. Estimates assume measures would be implemented independently from other measures.	
<u>2/</u> Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.	

Definition of Priorities for Analysis:

- **High:** High priority options will be analyzed first.
- **Medium:** Medium priority options will be analyzed next, time and resources permitting.
- **Low:** Low priority options will be analyzed last, time and resources permitting.

** Options marked with a double asterisk (**) indicate options that are at least partially “base case” policies, i.e., that have been considered or undertaken at some level in New Mexico.

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Option No.	GHG Reduction Policy Option	Priority for Analysis	Potential GHG Emissions Reduction	Potential Cost or Cost Savings	Ancillary Impacts, Feasibility Considerations	Notes
1.	PASSENGER SECTOR					
1.1	Vehicle Technology					
1.1.1	California GHG Emission Standards for Light-duty Vehicles	H	H	L	Opinions vary sharply on cost. Legal challenge pending.	Need to determine NM's eligibility to adopt these standards.
1.1.2	California LEV-2 Emission Standards (option: w/ or w/out Advanced Technology Component)	H	L	L/M		
1.1.3	State R&D on Low-GHG Vehicle Technology (e.g., fuel cell)	M/L	L	?	Probably best coupled w/ federal dollars.	No State agency in NM is currently capable of this; could partner with Sandia Labs or piggyback on California R&D efforts. This option could be attractive for the long-term
1.1.4	Promote Add-on Technologies (Low Friction Oil, Low-Rolling Resistance Tires)	L	L	Cost Savings/L	This measure has PR benefits; gets public involved; potential cost savings could get people doing this right away	
1.1.5	Procurement of Efficient Fleet Vehicles**	H	M	Cost Savings/L		State already has directive from governor to do this, so State effort already underway. However, opportunity exists for local government fleets and private fleets to take initiative on this measure.

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1.1.6-8	Incentive/Disincentive Options <i>[To be analyzed as a bundle]</i>	H				Group recommended bundling the next three options as an incentive/disincentive package, with an overall high priority ranking. Also noted that potential emission reductions could be higher depending on market penetration of options.
	Feebates (state-specific or regional) <i>[Charge a fee on purchases of relatively high-emitting vehicles and give a rebate on the purchase of relatively low-emitting vehicles. Overall, fees/rebates are revenue neutral.]</i>	M	?	?	Considered in many states but not adopted.	Group has interest in revenue-neutral aspect of this option.
	GHG-based registration fees	M	L	?		NM already has registration system based on vehicle weight; could modify system to a GHG basis. Some concern for also factoring in vehicle use (e.g., commercial work vehicle versus personal use vehicle)
	Tax Credits for Fuel Efficient Vehicles**	H	L	?		Federal tax code provides tax credits for alternative fuel vehicles. State has tax exemptions for new hybrid vehicles. Interest in expanding current exemptions to a fuel economy (mpg) base.
1.1.9	Vehicle Scrappage	M	L	L/M		Pilots undertaken in several cities.

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1.2	Fuel [to be handled as Alternative Fuels Bundle]					
1.2.1	Low-GHG Fuel Standards (e.g., minimum ethanol content)	H	H	L/M		Emphasize State R&D. Good for economic development. Caution on use of corn for ethanol—net energy loser. State could promote use of locally grown crops—sugar beet, chilies, etc.
1.2.2	Low-GHG Fuel for Public and/or Private Fleets (e.g., ethanol, biodiesel, compressed natural gas (CNG))**	H	M	L/M		
1.2.3	Promote Expansion/Availability of Low-GHG Fuels (CNG, LPG, ethanol) **	H	L	L/M		Emphasize renewable resources (e.g., fuels based on grown vs. mined resources). Be sure to capture emissions caused by supply of energy source.
1.2.4	Expand Alternative Fuel Infrastructure Development (e.g. hydrogen, CNG)	H	L	?		
1.3	Operation					
1.3.1	Enforce and/or Lower Speed Limits	L	L	?		
1.3.2	Vehicle Maintenance, Driver Training	L	L	?		
1.4	Demand – Land Use/Location Efficiency [to be treated as a bundle]					
1.4.1	Infill, Brownfield Re-development **	H	H	?		
1.4.2	Transit-Oriented Development	H	H	?		
1.4.3	Smart Growth Planning, Modeling, Tools**	H	H	?		
1.4.4	Targeted Open Space and Croplands Protection	H	H	?		

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1.4.5	GHG Offset Requirements for Large Developments <i>[Require developer to offset GHG emissions attributable to a development]</i>	H	?	?		
1.5	Demand – Transit Alternatives <i>[to be handled as a Multimodal Transportation Bundle]</i>					Bundle Options 1.5.1 through 1.5.6 as Multimodal Bundle.
1.5.1	Make better use of CMAQ funds	H	L	L		
1.5.2	Transportation System Management	H	L	?		Moved from 1.3.3. Includes synchronization of lights, reversible driving lanes, congestion management, etc.
1.5.3	Expand Transit Infrastructure (rail, bus), Improve Transit Marketing and Service (frequency, convenience, quality)	H	H	M/H		
1.5.4	Integrated Aviation, Rail, Bus Networks	H	?	?		
1.5.5	Transit Prioritization (signal prioritization, HOV lanes)	H	L	?		
1.5.6	Bike and Pedestrian Infrastructure	H	L	?		Some localities have been removing bike lanes.
1.5.7	“Fix-it-First” <i>[Earmark transp. funds for adapting existing transp. network toward additional transit uses (e.g., bike/ped/low speed vehicles/public transit)]</i>	M	L/M	?		
1.5.8	Telecommute and Live-Near-Your-Work	M	L	?		
1.5.9	Car sharing / pooling	M	L	?		
1.5.10	E-Commerce	M	L	?		

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1.5.11	Employer-provided Commuter Incentives (transit passes, , vanpools, preferential parking) <i>[includes "Parking Cash Out" -- an employer that offers free parking also offers the parking subsidy in cash]</i>	M	L	?		
1.5.11	Low speed vehicles and infrastructure <i>[mostly electric bikes with maximum speed of 25 mph; highly efficient; can only travel on roads with speed limits of 35 mph or lower]</i>	M				
1.5.12	Support for State funding of public transportation <i>[e.g., dedicated revenue stream to subsidize operations]</i>	M				
1.6	Demand – Market Mechanisms					
1.6.1	VMT Tax <i>[tax on miles driven]</i>	L/M	L/M	?		
1.6.2	Pay As You Drive Insurance <i>[part of a vehicle's insurance premium is determined by annual miles driven]</i>	L/M	?	?		Revenue neutral to drivers as a whole
1.6.3	Increased Fuel Tax (w/ targeted use of revenue towards travel alternatives)	L/M	L	?		
1.6.4	Congestion Pricing (or tolls) (w/ targeted use of revenue towards travel alternatives)	L/M	?	?		
1.6.5	Parking Pricing or Supply Restrictions	L/M	?	?		
1.6.6	Benefits for Low GHG Vehicles (e.g., preferential parking, use of HOV lanes)	L/M	?	?		
2.	FREIGHT					

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2.1	Technology					
2.1.1	Vehicle Technology Improvements (e.g., engines, aerodynamics)	L/M	L	?		New EPA emission standards for heavy-duty engines take effect in 2007.
2.1.2	Voluntary diesel retrofit program	L/M	L	L/M		See EPA National Clean Diesel Campaign
2.1.3	Black carbon control technologies (e.g., use of particulate traps, other complementary technologies)	L/M	?	M	Large co-benefits in PM reduction	
2.1.4	Procurement of Fuel Efficient Fleet Vehicles (public, private or other)	L/M	M	Cost Savings/L		
2.1.5	Incentives to Retire or Improve Older Less Efficient Vehicles	L/M	L	L		
2.2	Fuel					
2.2.1	Promote and/or Require Low-sulfur diesel	H	L	H		New EPA low-sulfur diesel stds take effect in 2006. To be considered with Alternative Fuels Bundle (Option 1.2)
2.2.2	Low-GHG Fuel Standards (e.g., minimum biodiesel content)	H	L	?		To be considered with Alternative Fuels Bundle (Option 1.2)
2.2.3	Promote Expansion/Availability of Biodiesel, CNG	H	L	?		To be considered with Alternative Fuels Bundle (Option 1.2)
2.3	Vehicle Operation <i>[these options sometimes bundles for analysis]</i>					
2.3.1	Freight Logistics Improvements/GIS	L/M	L	Cost Savings/L		
2.3.2	Enforce Speed Limits	L/M	L	?		
2.3.3	Improve Traffic Flow	L/M	L	?		

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2.3.4	Increased Size & Weight of Trucks	L/M	L	?		
2.3.5	Pre-clearance at Scale Houses	L/M	L	?		
2.3.6	Promote Truck Stop Electrification <i>[reduces idling]</i>	L/M	L	M		
2.3.7	Maintenance and Driver Training <i>[to improve fuel efficiency]</i>	L/M	L	Cost Savings/L		
2.3.8	Enforce Anti-Idling	L/M	L	Cost Savings/L		
2.4	Demand					
2.4.1	Intermodal Freight Initiatives <i>[increase rail use through better intermodal connections]</i>	L/M	L	?		See e.g. EPA SmartWay program
2.4.2	Increased Truck Tolls or Highway User Fees	L/M	?	?		
3.	AVIATION, OFF-ROAD					
3.1	Aviation					
3.1.1	Aircraft emissions <i>[improved operation of aircraft and runway management]</i>	L	L	?		
3.1.2	Use of Alternate Fuels in Airport Ground Equipment	L	L	?		
3.2	Off-Road Vehicles (construction equipment, out-board motors, ATVs, etc)					
3.2.1	Incentives for Purchase of Efficient Vehicles/Equipment	L	L	?		
3.2.2	Improved Operations, Operator Training	L	L	?		
3.2.3	Maintenance Improvements	L	L	?		
3.2.4	Increased Use of Alternative Fuels or Low Sulfur Diesel	L	L	?		