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MATRIX OF GHG REDUCTION POLICY OPTIONS IN THE TRANSPORTATION AND LAND USE (TLU) SECTOR

The matrix below provides a broad range of policy options to reduce GHG emissions in the transportation and land use sector. The matrix is not exhaustive and additional options can be added. The goal is to provide a starting point for the deliberations of the TLU work group.

Key to Indicators: We will develop indicative results, as defined below, for potential emission reductions and costs of the options. These will be rough estimates based on experience or studies in New Mexico or elsewhere and are intended to start off the TWG discussion of the priorities for analysis. New Mexico-based estimates will be developed for options that stakeholders decide to pursue in more detail, and may differ significantly from the preliminary indicators.

<u>Indicative Potential Emission Reductions -</u>	<u>Indicative cost (\$/tCO₂e)</u>
High (H): Potentially capable of saving at least 1 Million Metric Tons CO ₂ e per year by 2020 (~1% of current NM emissions)	High (H): \$50/tCO ₂ e or above
Medium (M): Potentially capable of saving from 0.1 to 1 Million Metric Tons per year by 2020	Medium (M): \$5-50/tCO ₂ e
Low (L): Unlikely to yield more than 0.1 Million Metric Tons CO ₂ e per year by 2020	Low (L): \$5/tCO ₂ e or lower
Uncertain (U): Too many unknowns to hazard a guess	Negative (Neg): option yields net benefits
<i>Several measures overlap in terms of the emissions they would reduce. They may target the same emissions sources, but using different implementation pathways. The estimates shown here will assume that measures would be implemented independently from, or instead, of other measures.</i>	

Indication of Priorities:

- **High:** High priority items are deemed deserving of considerable further analysis.
- **Medium:** Medium priority items will be carried forward, with the extent of further consideration and analysis to be determined later.
- **Low:** Low priority items will be moved to a separate list as options to be potentially considered at a later time.

		Priority: High, Med, Low	Implement . Level & Lead	Potential Emission Reductions	Indicative Cost (\$/tCO2 removed)	Other Information, Co-benefits, Feasibility Consideration, Examples of Current Activities (currently only includes the latter)
1.	PASSENGER VEHICLE GHG EMISSION RATES					
1.1	Vehicle Technology					
1.1.1	California GHG Emission Standards for Light-duty Vehicles					Opinions vary sharply on cost. Legal challenge pending.
1.1.2	California LEV-2 Emission Standards (option: w/ or w/out Advanced Technology Component)					May be attractive as SIP option due to reduction in conventional air pollution
1.1.3	State R&D on Low-GHG Vehicle Technology (e.g., fuel cell)					Best coupled w/ federal dollars
1.1.4	Promote Add-on Technologies (Low Friction Oil, Low-Rolling Resistance Tires)					
1.2	Vehicle Operation					
1.2.1	Enforce and/or Lower Speed Limits					
1.2.2	Vehicle Maintenance, Driver Training					
1.2.3	Transportation System Management					
1.3	Incentives & Disincentives					
1.3.1	Procurement of Efficient Fleet Vehicles					
1.3.2	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>					Considered in many states but not adopted.
1.3.3	GHG-based registration fees					
1.3.4	Tax Credits for Fuel Efficient Vehicles					Federal tax code provides tax credits for alternative fuel vehicles
1.3.5	Vehicle Scrappage					Pilots undertaken in several cities.

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1.3.6	(Additional option, if/as suggested)					
2.	LAND USE AND LOCATION EFFICIENCY					
2.1	General <i>[these options sometimes bundles for analysis]</i>					
2.1.1	Infill, Brownfield Re-development					
2.1.2	Transit-Oriented Development					
2.1.3	Smart Growth Planning, Modeling, Tools					
2.1.4	Targeted Open Space Protection					
3.	INCREASING LOW-GHG TRAVEL OPTIONS					
3.1	Increase Transportation Funding for Efficient Modes <i>[these options sometimes bundles for analysis]</i>					
3.1.1	Make full use of CMAQ funds					
3.1.2	Improve Transit Service (frequency, convenience, quality)					
3.1.3	Transit Marketing and Promotion					
3.1.4	Bike and Pedestrian Infrastructure					
3.1.5	Expand Transit Infrastructure (rail, bus, BRT)					
3.1.6	HOV lanes					
3.1.7	"Fix-it-First" <i>[Earmark transportation funds toward the repair of existing transportation network before funding new transportation infrastructure]</i>					

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3.1.8	Transit Prioritization (signal prioritization, HOV lanes)					
3.1.9	Telecommute and Live-Near-Your-Work					
3.1.10	Car sharing					
3.1.11	E-Commerce					
3.2	Incentives & Disincentives [these options sometimes bundles for analysis]					
3.2.1	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>					
3.2.2	VMT Tax <i>[tax on miles driven]</i>					
3.2.3	Pay As You Drive Insurance <i>[part of a vehicle's insurance premium is determined by annual miles driven]</i>					Revenue neutral to drivers as a whole
3.2.4	Increased Fuel Tax (w/ targeted use of revenue towards travel alternatives)					
3.2.5	Location-Efficient Mortgages <i>[favorable mortgage terms reflecting lower cost-of-living in mixed-use communities near public transportation]</i>					
3.2.6	Congestion Pricing (or tolls) (w/ targeted use of revenue towards travel alternatives)					
3.2.7	Parking Pricing or Supply Restrictions					
3.2.8	Transit Pricing Incentives					
3.2.9	GHG Offset Requirements for Large Developments <i>[Require developer to offset GHG emissions attributable to a development]</i>					

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3.2.10	Benefits for Low GHG Vehicles (e.g., preferential parking, use of HOV lanes)					
3.3	Fuel Measures					
3.3.1	Low-GHG Fuel Standard (e.g., minimum ethanol or biodiesel content)					
3.3.2	Low-GHG Fuel for State Fleets (e.g., ethanol, biodiesel, compressed natural gas (CNG))					
3.3.3	Biofuel expansion (biodiesel, CNG, LPG, cellulosic ethanol)					
3.3.4	Expand Alternative Fuel Infrastructure Development (e.g. hydrogen, CNG)					
4.	FREIGHT					
4.1	Vehicle Technology					
4.1.1	Vehicle Technology Improvements (e.g., engines, aerodynamics)					New EPA emission standards for heavy-duty engines take effect in 2007.
4.1.2	Voluntary diesel retrofit program					See EPA National Clean Diesel Campaign
4.1.3	Low-sulfur diesel					New EPA fuel standards for low-sulfur diesel take effect in 2006.
4.1.4	Black carbon control technologies (e.g., use of particulate traps, other complementary technologies)					Large co-benefits in PM reduction
4.2	Vehicle Operation <i>[these options sometimes bundles for analysis]</i>					
4.2.1	Freight Logistics Improvements/GIS					
4.2.2	Enforce Speed Limits					
4.2.3	Improve Traffic Flow					
4.2.4	Increased Size & Weight of Trucks					
4.2.5	Pre-clearance at Scale Houses					
4.2.6	Promote Truck Stop Electrification <i>[reduces idling]</i>					

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4.2.7	Enforce Anti-Idling					
4.2.8	Intermodal Freight Initiatives <i>[increase rail use through better intermodal connections]</i>					See e.g. EPA SmartWay program
4.3	Incentives & Disincentives					
4.3.1	Procurement of Fuel Efficient Fleet Vehicles (public, private or other)					
4.3.2	Incentives to Retire or Improve Older Less Efficient Vehicles					
4.3.3	Maintenance and Driver Training <i>[to improve fuel efficiency]</i>					
4.3.4	Increased Truck Tolls or Highway User Fees					
4.4	Intercity Travel: Aviation, High Speed Rail, Bus					
4.4.1	High-speed Rail					
4.4.2	Integrated Aviation, Rail, Bus Networks					
4.4.3	Aircraft emissions <i>[improved operation of aircraft and runway management]</i>					
4.4.4	Use of Alternate Fuels in Airport Ground Equipment					
4.5	Off-Road Vehicles (construction equipment, out-board motors, ATVs, etc)					
4.5.1	Incentives for Purchase of Efficient Vehicles/Equipment					
4.5.2	Improved Operations, Operator Training					
4.5.3	Maintenance Improvements					
4.5.4	Increased Use of Alternative Fuels or Low Sulfur Diesel					