



**Transportation and Land Use GHG Reduction Policy Options:  
Votes for Analysis Priority**

Prepared for Technical Working Group (TWG) Call #5, July 18, 2006

**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 an asterisk (\*) indicate options that are at least partially “base case” policies, i.e., that have been considered or undertaken at some level in North Carolina.

\*\* Options marked with a double asterisk (\*\*) indicate options that are included as recommendations in the September 1, 2005 NC DENR Report under the Clean Smokestacks Act of 2002.

Total number of options in this catalog: 72. Goal ~10 to recommend to CAPAG.

Option No.	GHG Reduction Policy Option	Priority for Analysis	Potential GHG Emissions Reduction	Potential Cost or Cost Savings	Ancillary Impacts, Feasibility Considerations	Notes
TLU 1.	<b>PASSENGER VEHICLE GHG EMISSION RATES</b>					
TLU 1.1	<b>Vehicle Technology</b>					
TLU 1.1.1	Tailpipe GHG Emission Standards **	AT, DB, MN, LR	H	L	Opinions vary sharply on cost. Legal challenge pending.	Assume California GHG standards (Pavley).
TLU 1.1.2	ZEV/LEV-2 Implementation **	DB	L	L/M	Primary benefit is CAA emissions reductions.	
TLU 1.1.3	R&D on Low-GHG Vehicle Technology (e.g., fuel cell, low-weight vehicles, alt vehicles like Segway)		L	U	Best coupled with federal dollars	
TLU 1.1.4	Add-on Technologies (Low Friction Oil, Low-Rolling Resistance Tires)		L	Savings/L	Most available now	
TLU 1.2	<b>Vehicle Operation</b>					

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TLU	1.2.1	Enforce Speed Limits	DB, DC	L/M	L		DC: For analysis, should be combined with 4.2.2.
TLU	1.2.2	Vehicle Maintenance, Driver Training	DC	L/M	U		DC: For analysis, should be combined with 4.4.3.
TLU	1.2.3	Transportation System Management and Design, including ITS; TSM	LH,DC,MN	M	L		DC: For analysis, consider with 4.2.3, Improving Traffic Flow for Freight.
TLU	1.2.4	Roadway materials use; concrete versus asphalt	DB				
TLU	1.3	<b>Incentives &amp; Disincentives</b>					
TLU	1.3.1	Procurement of Efficient Fleet Vehicles **	DC,MN, SL	L	L/M		SL: I would analyze this along with contract procurement for the construction industry using incentives. DC: For analysis, combine with 4.4.1.
TLU	1.3.2	Feebates (state-specific or regional) **	AT, DB,DC, SL,LR	L/M	Split; should be revenue neutral	CO2 benefits overlap substantially with Pavley	AT: Should not be revenue neutral: state needs funding source to provide grants for ghg/air quality/renewable energy projects. Combine 1.32-1.34 DC: Bundle these two (1.3.1 and 1.3.2) they are essentially similar.
TLU	1.3.3	CO <sub>2</sub> -based registration fees	AT,DC	L/M		“; could accelerate turnover.	
TLU	1.3.4	Tax Credits for Efficient Vehicles **	AT, SL	L			
TLU	1.3.5	Vehicle Scrappage		L	L/M		

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<b>TLU 2.</b>	<b>LAND USE AND LOCATION EFFICIENCY</b>					SL: Many of these are very similar in their analysis; may wish to analyze as a group since synergistic effects will be larger than individual applications.
TLU 2.1	<b>General</b>					
TLU 2.1.1	Infill, Brownfield Re-development	AT, DB,DC, RS, LR	H	L	Riegel will lead/champion.	DC: These three should be a "smart growth" bundle: 2.1.1, 2.1.2, 2.1.3.
TLU 2.1.2	Transit-Oriented Development *	AT, LH, DB,DC,MN, RS, LR	H	L/M		AT:Combine with 2.1.1 & 2.1.3
TLU 2.1.3	Smart Growth Planning, Modeling, Tools **	AT, LH,DC, SL,RS, LR	H	L		LR: Please combine 2.1.1-3.
	2.1.4 Limiting loops	MN,RS				
	2.1.5 Using NC land for nuclear power generation	SY,RS	H			SY: NM reportedly has one such power plant in process; NC should follow ASAP to power itself and as much of America's East Coast Megalopolis as is practical. NOTHING is more important to NC's or America's GHG future—not even close!!!
TLU 2.1.6	Targeted Open Space Protection	AT,RS, LR	M	M		AT:Some of the feebates can go to purchasing open space to let the trees absorb some of our GHGs
<b>TLU 3.</b>	<b>INCREASING LOW-GHG TRAVEL OPTIONS</b>					

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TLU	3.1	<b>Increase Transportation Funding for Efficient Modes</b>					SL: Need to have appropriate land use first to make a major impact in almost all NC municipalities for almost all these suggestions.
TLU	3.1.1	Maximize co-benefits from CMAQ funds in nonattainment areas		L	L		
TLU	3.1.2	Improve Transit Service (frequency, convenience, quality) **	AT, LH, DC, MN, RS	M	M		AT: This should be combined with 3.13  DC These five should be a "transit improvement" bundle – 3.1.2, 3.1.3, 3.1.4, 3.1.5, & 3.1.8
TLU	3.1.3	Transit Marketing and Promotion *	AT, DB, DC, LR	M/H	L		DC Particularly personal marketing LR: Can be combined with many of the other related ideas to make it work.
TLU	3.1.4	Bike and Pedestrian Infrastructure	DC, SL, RS, LR	L			
TLU	3.1.5	Expand Transit Infrastructure (rail, bus, BRT) *	LH, DC, MN, LR	M	M/H	DC: BRT in particular	
TLU	3.1.6	HOV lanes		L	H		
TLU	3.1.7	"Fix-it-First"		L/M	L		
TLU	3.1.8	Transit Prioritization (signal prioritization, HOV lanes)	LH, DC	L	L/M		
TLU	3.1.9	Telecommute and Live-Near-Your-Work	LH	L	L		
TLU	3.1.10	Car sharing		L	L	Commercially provided at a profit; needs mostly just public access (parking)	
TLU	3.1.11	E-Commerce		L			

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TLU	3.2	<b>Incentives &amp; Disincentives</b>					LR: These aren't really options, but ways to make our recommended options implementable.
TLU	3.2.1	Commuter Choice/Parking Cash Out	DB,DC	H	L		DMC bundled with 3.2.7 & 3.2.8
TLU	3.2.2	VMT fee	AT,DC,SL,RS,LR	H		AT:Fee should be used to fund transportation alternatives and options that reduce GHGs	DC Should be compared with 3.2.4
TLU	3.2.3	New investment / funding strategies		L			
TLU	3.2.4	Pay As You Drive Insurance	DC,SL	H	L		DC Should be compared with 3.2.2
TLU	3.2.5	Increased Fuel Tax (w/ targeted use of revenue towards travel alternatives)	AT,LR	M		AT:This is important but not very politically feasible- NC has 5 <sup>th</sup> highest gas tax	
TLU	3.2.6	Location-Efficient Mortgages		L	L	Available now; need additional promo	
TLU	3.2.7	Congestion Pricing (or tolls) (w/ targeted use of revenue towards travel alternatives)	DC	L			DC These two should be bundled as two parts of a holistic approach to managing volume (creating disincentives) and to create incentives bundle with 3.2.1
TLU	3.2.8	Parking Pricing or Supply Restrictions	DC	H			DMC See above with 3.2.7 and 3.2.1
TLU	3.2.9	Transit Repositioning		M			Combine with other transit, esp. 3.1.2-3?
TLU	3.2.9	Transit Pricing Incentives *		M	L		
TLU	3.2.10	VMT/GHG Offset Requirements for Large Developments		L/M	L		

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TLU	3.2.11	Benefits for Low GHG Vehicles (preferential parking, use of HOV lanes, tolls)		L	L		
TLU	3.3	<b>Fuel Measures</b>					
TLU	3.3.1	Low-GHG Fuel Standard (e.g., renewable)	DB	L-H		Emissions benefits will vary widely with renewable fuel type.	Need to ensure that emissions from alt-fuel production do not exceed benefits from use; may need additional R&D.
TLU	3.3.2	Renewable Fuels Motor Fuels Tax Exemption / credit	AT,LR			<b>AT:Currently under consideration by NC Legislature for biodiesel</b>	AT: On a life cycle analysis both biodiesel and ethanol reduce GHGs and are easy to implement. Many ancillary benefits including job creation, economic dev from not importing petroleum
TLU	3.3.3	Low-GHG Fuel for State and commercial Fleets (e.g., CNG, biodiesel) *		L		<b>“. Some CNG bus expansion in the baseline in transit, schools, airports</b>	Biodiesel has various issues with both performance and fuel economy.

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TLU	3.3.4	Biofuel [alternative] expansion (biodiesel, CNG, LPG, cellulosic ethanol)	AT,DC,SL,LR	L		<b>AT: Biofuel expansion option should not include CNG &amp; LPG as these are not biofuels Change this option to Alternative Fuel expansion</b>	AT: Refer to notes in 3.3.2 High benefit, low to moderate cost- technologies /fuels available today  Combine with 3.3.5, Alternative Fuel Infrastructure Development.  SL: You may wish to speak to Hickory, NC, that just switched their entire bus fleet over to B20.  DC: Particularly low carbon and cellulosic ethanol.
TLU	3.3.5	Alternative Fuel Infrastructure Development *	LH,SL,RS				
TLU	3.3.6	Purchase CO2 offsets for fuel use / Public facilities fee for fuel		L/M	L		
<b>TLU</b>	<b>4.</b>	<b>FREIGHT</b>					
TLU	4.1	<b>Vehicle Technology</b>					
TLU	4.1.1	Vehicle Technology Improvements (e.g., aerodynamics)		L		New EPA emission standards for heavy-duty engines take effect in 2007	
TLU	4.1.2	R&D on Low-GHG Vehicle Technology		L			
TLU	4.1.3	Low-sulfur diesel		L		New EPA fuel standards for low-sulfur diesel take effect in 2006.	

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	4.1.4	<b>SL</b>				<b>SL Might include incentives for replacing wood-burning stoves to pellet-burning or other for residential uses.</b>
TLU	4.2					
	<b>Vehicle Operation</b>					
TLU	4.2.1		L			
TLU	4.2.2	<b>DC</b>	L-M			DMC Combined with 1.2.1 Possibly lower speed limit for freight
	4.2.3		L			DC Combined with 1.2.3
TLU	4.2.4		L	L	<b>Emissions benefits offset by mode shift from rail.</b>	
TLU	4.2.5		L			
	4.2.6	<b>SY</b>				
TLU	4.2.6	<b>AT, LH,DC, SY, LR</b>	M		<b>Skip says this one alone.</b>	AT:Combine with 4.2.8 for long distance trucks
	4.2.8	<b>AT,DC, LR</b>	M			
	(+ passenger idling, school bus idling)					
TLU	4.3					
	<b>Increasing Low-GHG Travel Options</b>					
TLU	4.3.1		L-M			
	Intermodal Freight Initiatives **					
TLU	4.3.2		L			
	Feeder Barge Container Service					
TLU	4.4					
	<b>Incentives &amp; Disincentives</b>					
TLU	4.4.1	<b>LH</b>				AT: already being implemented in the state fleet.
	Procurement of Efficient Fleet Vehicles (public, private or other)**					
TLU	4.4.2		L			
	Incentives to Retire or Improve Older Less Efficient Vehicles					

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TLU	4.4.3	Maintenance and Driver Training	DC				DC Combined with 1.2.2
TLU	4.4.4	Increased Truck Tolls or Highway User Fees		L unless large enough to mode shift			
TLU	4.5	<b>Intercity Travel: Aviation, High Speed Rail, Bus</b>					
	4.5.1	<b>High-Speed Rail</b>	MN				
	4.5.2	<b>Integrated Air, Rail, Bus networks</b>	MN, LR				
TLU	4.5.3	Aircraft emissions		L			
TLU	4.5.4	Airport Ground Equipment		L			
TLU	4.6	<b>Off-Road Vehicles (construction equipment, out-board motors, ATVs, etc)</b>					
TLU	4.6.1	Incentives for Purchase of Efficient Vehicles/Equipment		L			
TLU	4.6.2	Improved Operations, Operator Training		L			
TLU	4.6.3	Maintenance Improvements		L			
TLU	4.6.4	Increased Use of Alternative Fuels or Low Sulfur Diesel		L			