



www.mtclimatechange.us

TLU DRAFT POLICY OPTIONS
2/7/07

The table below lists the options that the Transportation and Land Use (TLU) Technical Working Group (TWG) is tasked with developing and analyzing, based on the CCAC meeting on 12/14/07. In the right column of the Table are proposed names of TWG members who might work together to prepare descriptions and designs for the option.

In the pages that follow, “policy templates” for each TLU options are provided. CCS has prepared draft text of a “Policy Description” for each option. In this next round of activity, TWG members should modify Policy Descriptions to reflect their thinking, and fill in the sections titled “Policy Design”, “Implementation Mechanisms”, and “Related Policies/Programs in place”. An accompanying document, “Sample Policy Options” illustrates how the templates should be filled in with additional information. When these steps are completed, CCS and the TWG will turn to analysis of the option as designed.

**Transportation and Land Use (TLU) Technical Working Group
Summary List of Policy Options**

Option No.	Option Title	<i>Proposed TWG Members to Develop Options</i>
TLU-1	Light Duty Vehicle Clean Car Program	<i>Gary Perry, Garrett Budds, Wayne Freeman</i>
TLU-2	Fuel Efficient Replacement Tires	<i>Gary Perry, Garrett Budds, Wayne Freeman</i>
TLU-3	Vehicle MPG Consumer Information	<i>Mike Kress, Candi Beaudry, Paul Ferry, Tim Davis</i>
TLU-4	Financial and Market Incentives for Low GHG Vehicle Ownership and Use	<i>Tim Davis, Candi Beaudry, Paul Ferry, Mike Kress</i>

TLU-5	Growth and Development Bundle	<i>Candi Beaudry, Paul Ferry, Mike Kress, Tim Davis</i>
TLU-6	Alternative Fuels Bundle	<i>Gary Perry, Garrett Budds, Wayne Freeman</i>
TLU-7	Heavy Duty Vehicle Emissions Standards and Incentives	<i>Garrett Budds, Wayne Freeman, Gary Perry</i>
TLU-8	Truck Anti-Idling and Truck-stop Docking and Electrification	<i>Gary Perry, Garrett Budds, Wayne Freeman</i>
TLU-9	Procurement of Efficient Fleet Vehicles	<i>Paul Ferry, Candi Beaudry, Mike Kress, and Tim Davis</i>
TLU-10	Transportation System Management	<i>Sandra Straehl, Matt Elsaesser, Jim Evanoff</i>
TLU-11	Vehicle Backhauling Efficiencies	<i>Wayne Freeman, Garrett Budds, Gary Perry</i>
TLU-12	GHG Emissions Reductions from Off-Road Engines and Vehicles	<i>Sandra Straehl, Matt Elsaesser, Jim Evanoff</i>
TLU-13	Reduced GHG Emissions from Aviation	<i>Sandra Straehl, Matt Elsaesser, Jim Evanoff</i>

TLU-1 Light Duty Vehicle Clean Car Standards

Policy Description:

Adopt the State Clean Car Program (also known as the “Pavley” standards or California GHG Emission Standards) in order to reduce GHG emissions from new light-duty vehicles. The standards, which must still be approved by US EPA, would take effect in Model Year 2011 (calendar year 2010). Other Clean Car Program elements include standards requiring reductions in smog- and soot-forming pollutants, and promoting introduction of very low-emitting technologies into new vehicles.

New cars and light trucks in all states must comply with Federal emission standards, and, generally speaking, states have the choice of adopting a stronger set of standards applicable in California. In 2005, California finalized a set of standards that would require reductions of GHG emissions of about 30% from new vehicles, phased in from 2009 to 2016, through a variety of means. Eleven states (11) already have adopted the California Clean Car Program standards: California, Connecticut, Maine, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e

Net Present Value (2006-2020)	\$ Million
Cumulative Emissions Reductions (2006-2020)	MMtCO ₂ e
Cost-Effectiveness	\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-2 Fuel Efficient Replacement Tire Program

Policy Description:

Improve the fuel economy of the light duty vehicle (LDV) fleet by setting minimum energy efficiency standards for replacement tires and requiring that greater information about Low-Rolling Resistance (LRR) replacement tires be made available to consumers at the point of sale.

Manufacturers currently use LRR tires on new vehicles, but they are not easily available to consumers as replacement tires. When installing original equipment tires, carmakers use low rolling resistance tires as a way to contribute to meeting the federal automobile fuel economy (CAFE) standards. When replacing the original tires, consumers often purchase less efficient tires. Currently, tire manufacturers and retailers are not required to provide information about the fuel efficiency of replacement tires.

An appropriate State agency would initiate a fuel efficient tire replacement program. The program could include consumer education, product labeling, and minimum standards elements. These programs would be developed under a rule development process that would incorporate the best scientific information, including the results from tests of tires conducted by the tire manufacturers, the California Energy Commission, and other data reviewed by the National Academy of Sciences.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved Invovled:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-3 Consumer Information on Vehicle Miles Per Gallon (MPG)

Policy Description:

Provide consumers with information about the fuel efficiency in relation to the purchase, maintenance, and operation of their vehicles. Consumers would receive real-time information on the miles per gallon (MPG) while their vehicles are in operation. In addition, consumers would receive public education and information relating to the impact that vehicle maintenance practices have on the operation of their vehicles. Finally, consumers would be encouraged to consider the mpg of vehicles before and at the time of purchase of their vehicles.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved Invovled:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-4 Financial and Market Incentives for Low GHG Vehicle Ownership and Use

Policy Description:

Several components may be studied and developed under this option that would create financial incentives for the purchase and operation of vehicles that emit lower levels of GHG. The CCAC recommends that Montana further study and develop policy options that create incentives and disincentives for the purchase and operation of vehicles with varying fuel economy. The range of policies to be studied and developed include:

1. *Feebates*. A multi-state “feebate” program, including the neighboring states of California and Montana. Feebate proposals usually have two parts: a) a fee on relatively high emissions/lower fuel economy vehicles; and b) a rebate or tax credit on low emissions/higher fuel economy vehicles.
2. *GHG – based Excise Taxes*. A change in new vehicle excise taxes that increases taxes for relatively high-emitting vehicles and reduces taxes for relatively low-emitting vehicles. Overall, excise tax revenue would remain the same.
3. *Vehicle Registration Fees* – The state would give local counties and cities the authority to vary local registration fees in order to incentive the ownership and use of light duty vehicles. The purpose of the varying fees would be to incentive use and ownership of low GHG vehicles.
4. *Increased Fuel Tax*. Increases in Fuel taxes would be considered in order to fund other programs that reduce ghg emissions from the transportation sector.
5. *Other light duty vehicle operational use incentives* The state of Montana would consider other incentive programs not otherwise listed in order to provide a financial and/or market incentive for low-GHG operation and ownership of light duty vehicles.

Taken together, these incentives could change the vehicle fleet technology mix through a combination of demand- and supply-side changes.

Policy Design:

- **Goal levels:**
- **Timing:**

- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-5 Growth and Development Bundle

Policy Description:

This bundle of options encompasses five components related to reducing GHG emissions through promotion of multi-modal transit options and land use practices and policies. These policies contribute to GHG emission reductions by reducing vehicle trips and total vehicle miles traveled.

Potential actions include the following programs and program elements:

- Infill and Brownfield redevelopment.
- Transit-oriented development.
- Smart growth planning, modeling, and tools
- Targeted open space protection
- Expanding transit infrastructure and service

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
--	-------------	-------------	--------------

GHG Emission Savings	MMtCO ₂ e
Net Present Value (2006-2020)	\$ Million
Cumulative Emissions Reductions (2006-2020)	MMtCO ₂ e
Cost-Effectiveness	\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-6 Alternative Fuels Bundle

Policy Description:

This policy option seeks to increase market penetration of biofuels in Montana by a mixture of policies (voluntary and/or mandatory) to achieve feasible goals. Offset fossil fuel use (gasoline) with production and use of starch-based and cellulosic ethanol.

Offsetting gasoline use with ethanol can reduce GHGs to the extent that the ethanol is produced with lower GHG content. Use of biodiesel offsets the consumption of diesel fuel produced from oil (fossil diesel). Since biodiesel has a lower GHG content than fossil diesel, overall GHG emissions are reduced.

The elements of a strategy to increase alternative fuels use would include:

- Fuel Quality Standards
- Low Carbon Fuel Standards
- State Government Fleet ‘Leadership’ Programs for adoption of Alternative Fuels
- Alternative Fuel Infrastructure Development

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
--	-------------	-------------	--------------

GHG Emission Savings	MMtCO ₂ e
Net Present Value (2006-2020)	\$ Million
Cumulative Emissions Reductions (2006-2020)	MMtCO ₂ e
Cost-Effectiveness	\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-7 Heavy Duty Vehicle GHG Emissions Standards and Incentives

Policy Description:

The State of Montana would seek to work with other states to advance GHG emissions standards for heavy-duty vehicles. The state would also advance incentive programs to encourage the use of lower GHG emission heavy-duty vehicles. The state would also adopt programs to encourage the early retirement of older, less efficient engines and vehicles.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- **Data Sources: TBD**

- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-8 Heavy Duty Vehicle Anti-Idling/Truckstop Docking/Electrification

Policy Description:

Develop and implement a statewide ordinance banning idling by heavy-duty vehicles in most situations. The State should also set up truck stop electrification stations at key truck stops and truck rest areas along major highways.

This policy option involves reducing the amount of time that vehicles idle through the combination of a statewide anti-idling ordinance and by promoting and expanding the use of technologies that reduce long-term heavy-duty vehicle idling, with an emphasis on encouraging the use of innovative truck stop electrification. Anti-idling control measures reduce fuel consumption and emissions from stationary freight vehicles (potentially wasted energy).

With truck stop electrification, truck drivers can shut off their engines and obtain heating, cooling, electrical outlets, and communication and entertainment options through a delivery tube provided in electrified truck stop spaces that connect to the truck through a window adapter. In addition to truck stop electrification, other available technologies that reduce heavy-duty vehicle idling include automatic engine shut down/start up system controls; direct fired heaters (for providing heat only); and auxiliary power units.

Develop and implement a statewide ordinance banning idling by heavy-duty vehicles in most situations. The ordinance should be designed to be easily enforceable by the appropriate state and local agencies. It is critical that a dedicated state funding stream for enforcement be identified for this measure to be successful in reducing vehicle idling and the resulting reductions in GHG emissions. The ordinance would also need to limit exemptions as much as possible, to make it easier to enforce. However, idling that occurs for public health and safety reasons (such as emergency vehicles) should be exempted from this rule.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-9 Procurement of Efficient Fleet Vehicles

Policy Description:

Montana state and local government agencies could “lead by example” by enacting procurement policies and or joining the EPA SmartWay program and utilizing the SmartWay Upgrade Kits that result in adoption of lower emitting vehicle fleets. There are three primary components of the EPA SmartWay program: creating partnerships, reducing all unnecessary engine idling, and increasing the efficiency of light duty and heavy duty vehicles, rail, and intermodal operations

The Hydrogen Energy Plan (HJ0026.ENR) has put the State on a path toward increasing the efficiency of, and use of alternative fuels in, the fleets of State and Private-owned vehicles.

Relevant sections of that order require the following:

- By 2020, 100% of state-run vehicles must be powered by alternative/biofuels.
- By 2020, 50% of fuel used in all vehicles must be run by alternative fuels.
- Immediately, new vehicles must have the highest fuel economy for the intended use.

This policy option strengthens Montana’s commitment to reduce GHG emissions through fuel efficiency and use of biofuels in vehicles owned by the state while encouraging private fleets through incentive programs.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-10 Transportation System Management

Policy Description:

The State of Montana would seek to reduce GHG emissions from the transportation sector through improvements to transportation system management. These efforts would focus on the improvement, management, and operation of the transportation infrastructure, with a focus on the roads and highway systems.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- **Data Sources: TBD**
- **Quantification Methods: TBD**

- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-11 Vehicle Backhauling Reduction

Policy Description:

Empty backhauls of freight vehicles consume significant amounts of fuel and produce carbon dioxide emissions. By using backhauls for productive deliveries the overall miles drive per unit freight can be cut, along with fuel use and carbon dioxide emissions.

The state of Montana would seek to find efficiencies in vehicle backhauling for both light duty and heavy-duty vehicles. Efficiencies in backhauling of the light duty sector would focus on ride-matching programs for commute-to-work trips. Efficiencies in backhauling would focus on facilitating improvements to matching of goods movements with available capacity. These goods movement-matching systems would seek to match carriers with empty backhaul capacity with movement needs of shippers and seek to increase the capacity of LTLs (Less-than-Truck-Loads)

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e

Cost-Effectiveness

\$/MtCO₂e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-12 Off-Road Engines and Vehicles GHG Emissions Reductions

Policy Description:

Off road engines are significant emitters of GHG’s and consumers of petroleum based fuels. Emissions from off road engines can be reduced by adoption of emissions standards for smaller engines and off-road vehicles. The State of Montana would seek to reduce GHG emissions from off-road engines and vehicles. The efforts would be expected to be consistent with efforts to reduce off-road emissions of other regulated pollutants. In the state of Montana, these reductions could affect recreational vehicles, airport and seaport vehicles, and personal lawn mowers and other small engines and vehicles.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- Data Sources: **TBD**
- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD

TLU-13 Intercity Travel: Aviation

Policy Description:

The State of Montana would seek to encourage to the federal government to take actions to reduce GHG emissions from the aviation portion of the transportation sector. Since the state and local governments do not have authority over in-air operations of aviation vehicles, the state would work with other states to encourage the United States national government to take significant actions in this arena.

Policy Design:

- **Goal levels:**
- **Timing:**
- **Parties Involved:**

Implementation Mechanisms

Related Policies/Programs in place:

TBD

Estimated GHG Savings and Cost Per Ton:

	<u>2010</u>	<u>2020</u>	<u>Units</u>
GHG Emission Savings			MMtCO ₂ e
Net Present Value (2006-2020)			\$ Million
Cumulative Emissions Reductions (2006-2020)			MMtCO ₂ e
Cost-Effectiveness			\$/MtCO ₂ e

- **Data Sources: TBD**

- Quantification Methods: **TBD**
- Key Assumptions: **TBD**

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

TBD