



**Transportation and Land Use Technical Working Group  
Summary List of Draft Priorities for Analysis**

Option #	Policy Option	GHG Reductions (MMtCO <sub>2</sub> e)			Net Present Value 2007-2020 (Million \$)	Cost-Effectiveness (\$/tCO <sub>2</sub> e)	Level of Support
		2012	2020	Total 2007-2020			
<b>Option #</b>	<b>Transportation and Land Use</b>						
<b>TLU-1</b>	Smart Growth and Related Planning						<b>TBD</b>
<b>TLU-2</b>	Incentives for Purchase and Operation of Low-GHG Vehicles						<b>TBD</b>
<b>TLU-3</b>	Improve and Expand Transit Service						<b>TBD</b>
<b>TLU-4</b>	Heavy-Duty Vehicle Idle Reduction						<b>TBD</b>
<b>TLU-5</b>	Renewable Fuel Standard						<b>TBD</b>
<b>TLU-6</b>	Clean Car Program (Pavley GHG Standards for Autos)						<b>TBD</b>
<b>TLU-7</b>	Transit Marketing, Promotion, and Pricing Incentives						<b>TBD</b>
<b>TLU-8</b>	Fuel or CO <sub>2</sub> Tax						<b>TBD</b>
<b>TLU-9</b>	Parking Management						<b>TBD</b>
<b>TLU-10</b>	Commuter Benefits Programs						<b>TBD</b>
<b>TLU-11</b>	Driver and Consumer Education						
	<b>SECTOR TOTAL AFTER ADJUSTING FOR OVERLAPS</b>						
	<b>REDUCTIONS FROM RECENT ACTIONS (table to be added below)</b>						
	<b>SECTOR TOTAL PLUS RECENT ACTIONS</b>						

## TLU-1. Smart Growth and Related Planning

### Policy Description

Implement land use planning, development, and analysis that supports protection of natural and cultural resources, strengthens communities, creates more compact development, and reduces growth in driving and emissions.

### Policy Design

#### Goals:

- Support and promote public and private planning and development practices, including smart growth planning and infrastructure provision that reduce the number and length of trips and expand travel modes in Colorado.
- Reduce light-duty VMT by XX% statewide by 2020. [Alternative: reduce light-duty VMT in Colorado's metropolitan areas by XX% by 2020.]
- Require that CDOT and MPOs quantify and report GHG emissions from long-range transportation plans by 2010.

[Listing, below, of other states to be deleted or moved after establishing goal.]

North Carolina state Climate Action planning process adopted a goal of 10% reduction in VMT growth from option "TLU 1a Land Development Planning".

New Mexico adopted a goal of reducing growth in VMT by 11% through "Infill, Brownfield Re-development; Transit-Oriented Development; Smart Growth Planning, Modeling, Tools; Multimodal Transportation Bundle; and Promote LEED for Neighborhood Development."

Arizona adopted a goal of reducing growth in VMT by 11% through a similar set of bundles.

Oregon has for several years been implementing a goal of no increase in per-capita metropolitan-area, non-commercial VMT.]

**Timing:** See above.

**Parties Involved:** Municipal elected officials; local and regional planning commissions and staffs; state agencies which have programs/projects that have land use impacts; private developers and contractors; planning, land use, and engineering professionals; public and private organizations with land use, transportation, and environmental interests.

**Other:** Not applicable.

## TLU-2. Incentives for Purchase and Operation of Low-GHG Vehicles

### Policy Description

This option is a compilation of initial TLU policy options 1.7 – 1.10 and has been adapted to encourage low GHG emission vehicle purchases through monetary and convenience rewards and incentives throughout the state:

- (1.7 Feebates) – Fees/rebates for poor/good fuel economy vehicles; this monetary correction to be settled at the time of initial registration/licensing/titling at the State DMV and is applicable to both new and used equipment. The calculation will be determined to manage a small income. The income shall be designated for public awareness campaign. It may also be suitable as a multi-state approach for greater impact and could be implemented through the recently formed 5 state Western Regional Climate Action Initiative;
- AND/OR
- (1.9 Tax Credits for Low-GHG Vehicles) – Include language to maintain a current tax credit program for hybrid, alt-fuel, or low GHG emission standard (i.e. clean car) vehicles;
- AND/OR
- (1.10 Incentives for Low-GHG Vehicles) – Also include language to maintain preferential state controlled infrastructure (HOV lane) access for low GHG emitting, alternative fuel (CNG, electric), or hybrid vehicles.

Tax-funded, non-tax paying entities (state and municipalities) shall be required to purchase the lowest GHG vehicle suitable for the job.

The TLU TWG agreed to package the above items, with the expectation that the CAP will select one or more of the options (or a hybrid of the above options) going forward.

### Policy Design

**Goals:** CO2 surcharge (fees) would impact 100% of vehicle registrations or renewals. Tax credits would remain as income tax credits as defined in state statute but would be extended.

**Timing:** As listed, these items would be inclusive in a bill proposal for legislative consideration and approval and would not be implemented before Jan 1, 2010. Unclear if TABOR issues are triggered on vehicle registration fees.

**Parties Involved:** State legislature, state and municipal fleet managers, Governor (and administration), tax-paying Colorado motor vehicle owners (residents and business, especially if subject to TABOR).

**Other:** Not applicable.

### TLU-3. Improve and Expand Transit Service

#### Policy Description

Improvements to existing transit service and expansion of transit routes can shift passenger transportation from single-occupant vehicles to public transit, thereby reducing emissions. This Policy involves a number of actions to be undertaken by state government, local government, and transit agencies.

#### Policy Design

**Goals:** Implement policies that increase use of public transportation, producing a shift to lower emitting mode choices, by the following policies:

- Improve service frequency on existing transit routes
- Reduce travel times on existing transit routes (signal prioritization, exclusive lanes, etc.)
- Improve service quality on existing transit routes (safety, cleanliness, improvements to shelters/stations).
- Expand transit infrastructure (rail, bus, BRT).

**Timing:** Many programs are in place and are therefore immediately expandable/implementable. Enhancement and continuation can begin short-term. Infrastructure improvements will take 3-5 years at a minimum.

**Parties Involved:** CDOT, transit agencies, Metropolitan Planning Organizations, municipalities, counties

**Other:** Not applicable.

## TLU-4. Heavy-Duty Vehicle Idle Reduction

### Policy Description

This options focuses on reducing idling from diesel and gasoline heavy-duty vehicles, buses, and other vehicles through a combination of statewide anti-idling regulations and by promoting and expanding the use of technologies that reduce heavy-duty vehicle idling. These technologies include truck stop electrification as well as vehicle equipment modifications such as auxiliary power units, direct-fired heaters, and automatic engine shut down/startup system controls.

### Policy Design

Colorado would develop and implement a statewide regulation banning extended idling by heavy-duty vehicles in most situations. The anti-idling regulation should be designed to be easily enforceable by state and local agencies and supported with dedicated state funding for enforcement for this measure to be successful in reducing vehicle idling and GHG emissions. The regulation should limit exemptions as much as possible for easy enforcement. However, idling that occurs for public health and safety reasons (such as emergency vehicles) should be exempted from these requirements.

Colorado would encourage and support the establishment of truck stop electrification stations at key truck stops and rest areas throughout the state. Such efforts would include working with the U.S. EPA, DOE, truck stop owners, and equipment vendors to securing funding for truck stop electrification.

Colorado would also promote reduced idling through programs aimed at increasing voluntary adoption of idling reduction technologies. Components of such an effort should include collaborative outreach and education timed with the implementation and enforcement of a statewide anti-idling regulation and seeking funding for pilot projects and demonstrations as well as funds available through any federal or other programs to evaluate the effectiveness of various idle reduction technologies.

**Goals:** Reduce fuel consumption from extended idling of heavy-duty vehicles by \_\_\_\_\_ by year 2010 and \_\_\_\_\_ by 2020.

Adopt statewide regulation on extended heavy-duty vehicle idling by 2009.

Develop truck stop electrification at 2 locations by 2010 and all major truck stops by 2020.

**Timing:** See above.

**Parties Involved:** Trucking industry, Colorado Motor Carriers Association, CDOT, Truck Stop Owners/operators, School District, Municipalities and Counties

**Other:** Not applicable.

**TLU-5. Renewable Fuel Standard**

**Policy Description**

This policy option seeks to increase market penetration of biofuels in Colorado by establishing mandatory targets for sales of biofuels (e.g., ethanol and biodiesel). The targets would likely be defined as percentages of all gasoline and diesel sold in the state.

Replacing gasoline with ethanol can reduce GHGs to the extent that the ethanol is produced with lower GHG content. Biodiesel has a lower GHG content than fossil diesel, so using biodiesel instead of fossil diesel reduces GHG emissions.

**Policy Design**

The goals for this policy would be phased in to utilize biofuels to replace the specified percentages of gasoline and diesel consumed for transportation throughout Colorado by the specified years, as shown in the table below.

**Goals:**

The goal levels and timing for biofuels implementation are shown in the table below. The Governor and the Legislature would have the authority to change these targets (up or down) based on technical and/or economic feasibility. The Governor and Legislature could also set intermediate targets, or could make achievement of target contingent upon in-state production of a biofuel.

Phase	Year	Percentage of Gasoline to be Replaced by Biofuels	Percentage of Diesel to be Replaced by Biofuels
1	2010	??% (E10 equivalent)	??% (B5 equivalent)
2	2015	??% (E15 equivalent)	??% (B10 equivalent)
3	2020	??% (E20 equivalent)	??% (B15 equivalent)

**Timing:** See above

**Parties Involved:** TBD

**Other:** Not applicable.

## TLU-6. Clean Car Program (Pavley GHG Standards for Autos)

### Policy Description

Colorado would 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. This policy assumed the standards, which must still be approved by US EPA, would take effect in Colorado beginning with Model Year 2011 (calendar year 2010). Other Clean Car Program elements can 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, states have the choice of adopting a stronger set of standards applicable in California. In 2005, California finalized a set of GHG standards for new light duty vehicles, phased in from 2009 to 2016. Eleven states 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:** Adopt GHG emission standards for light duty cars and trucks equivalent to those established by the California Air Resources Board. The California standards phase in during the 2009 through 2016 model years. When fully phased in, the near term (2009-2012) standards will result in about a 22 percent reduction per-mile GHG emissions as compared to the 2002 fleet, and the mid-term (2013-2016) standards will result in about a 30 percent reduction.

**Timing:** To meet federal compliance, a rule writing process would take place by the appropriate agencies so that Colorado can implement the California standards. Regulatory program could begin with vehicle model year 2011.

**Parties Involved:** Applies to Model Year 2011 new cars and light trucks. The law would directly affect automobile manufacturers, car dealers, and consumers.

**Other:** The California standards currently are being litigated. Timing may be affected by the date of enactment of legislation, likely litigation, and the regulatory process.

## TLU-7. Transit Marketing, Promotion, and Pricing Incentives

### Policy Description

This option would promote greater use of public transit and a reduction in automobile travel through various forms of marketing and pricing incentives. Travel patterns are affected by public knowledge and attitudes; therefore marketing becomes an important tool in order to increase transit usage. Instead of merely advertising its availability, transit marketing could be an ongoing dialogue between community partners and transit agencies. Employer-provided transit benefit programs can be an incentive for employees to find another way to work besides driving. This can be a tax-free benefit at low cost to the employer (see TLU-10). Public transit can be made more affordable by offering other price incentives, such as group discounts or discounted pricing for multi-modal purchases.

### Policy Design

**Goals:** Expand number of employers offering pre-tax transit fare programs. Goal of \_\_\_\_\_ transit commuters in state metropolitan areas will participate in pre-tax transit fare programs by 2010 and \_\_\_\_\_ by 2020.

Work with transit agencies to develop and implement new transit marketing programs in metropolitan areas.

Expand availability of discounted fare programs, such as \_\_\_\_\_.

**Timing:** New marketing programs and discounted fare programs implemented by 2009.

**Parties Involved:** Transit agencies, CDOT, MPOs.

**Other:** Not applicable.

## TLU-8. Fuel or CO<sub>2</sub> Tax

### Policy Description

This option could be implemented in one of two forms. The TWG invites the CAP to select Option A or B, below.

#### *Option A*

Colorado would implement a new carbon dioxide [CO<sub>2</sub>] tax on motor fuels, with the proceeds going into a Climate Protection Fund that could be used only for limited purposes related to climate protection. The new tax would be in addition to, and would not affect, federal and state taxes currently imposed on motor fuels. Because CO<sub>2</sub> emissions are directly related to fuel use [e.g., consuming 1 gallon of gasoline produces 20 pounds of CO<sub>2</sub>], a tax vehicle CO<sub>2</sub> emissions would translate directly to a cents/gallon tax on motor fuels. Consumers would have two ways of reducing the impact of the tax on them: by driving fewer miles and/or by driving in higher-mileage vehicles.

The State Legislature would create a special Climate Protection Fund, which would receive all proceeds of the new fuel tax. In setting up this fund, the Legislature would authorize its use for climate protection purposes. Examples of uses for the Climate Protection fund include, without limitation:

- State/regional/local programs that reduce greenhouse gas emissions,
- Reducing the impact of such programs on the poor, and
- Programs that mitigate the impacts of or help Coloradoans adapt to climate change.

#### *Option B*

Colorado would extend the retail sales tax to motor fuels, and use the proceeds to reduce the retail sales tax rate on all taxable goods (revenue neutral). This tax shift would increase the pump price of gasoline by about 19 cents\* per gallon, while the cost of all other goods would drop slightly. State, county, and local retail sales taxes would be affected. The retail sales tax on gasoline would be in addition to, and would not affect, federal and state excise taxes currently imposed on motor fuels. Consumers would have two ways of reducing the impact of the tax on them: by driving fewer miles and/or by driving in higher-mileage vehicles. As consumers save money on fuel costs, greenhouse gas emissions would be reduced.

The State Legislature would adopt legislation that

- Extends the state retail sales tax to motor fuels and lowers the tax rate on all taxable sales
- Refers the matter for a state-wide TABOR vote at the 2008 general election, and
- Instructs local governments to make analogous changes, pending the outcome of the TABOR vote.

\* Why 19 cents? Data: 2006 state taxable sales \$66.4 billion; 2006 motor fuel sales \$1.34 billion; Fort Collins state/county/city retail sales tax rate 7.5 %. \$66.4 billion in taxable sales produces \$4.98 billion at Fort Collins rates. The modified sales tax rate that would produce the same revenue when applied to state taxable sales plus motor fuel sales is 7.35%. If gasoline costs \$3.00/gallon at the pump, or \$2.60 excluding federal/state excise taxes, then a 7.35% tax comes to \$0.191/gallon.

## Policy Design

### Option A

**Goals:** Tax equal to five cents per gallon gasoline [1/4 cent/pound CO<sub>2</sub>] and the equivalent for diesel, natural gas, ethanol, etc., increasing by 1 cent per gallon annually for 10 years.

*[Note to reviewers: These numbers are somewhat arbitrary. The tax rate could also be chosen to create a desired cash flow into the Climate Protection Fund, or to achieve a desired CO<sub>2</sub> reduction.]*

**Timing:** The CO<sub>2</sub> tax would become effective in 2010 [allowing two years for state legislation, a TABOR vote on the new tax, and working out administrative details]

**Parties Involved:** State Legislature, Colorado citizens [TABOR vote], Governor [administration], potential funding recipients

**Other:** Not applicable.

### Option B

**Goals:** 19 cent increase in gasoline pump price, and the equivalent for diesel, natural gas, ethanol, etc.

**Timing:** The retail sales tax would apply to motor fuels in 2010 [allowing two years for state legislation, a TABOR vote on the new tax, and working out administrative details]

**Parties Involved:** State Legislature, Colorado citizens [TABOR vote], Governor [administration], County governments, Municipal governments.

**Other:** Not applicable.

## TLU-9. Parking Management

### Policy Description

The location, supply, and pricing of parking can have a major impact on travel decisions, including choice of mode. Managing parking by restricting parking availability or encouraging market rate pricing will encourage more transit usage, ridesharing, bicycling, and walking. Requirements for parking supply can also discourage infill and transit-oriented development by raising the cost of projects. This option would encourage innovative parking management by local governments as a way to reduce automobile use and encourage infill and transit-oriented development.

### Policy Design

**Goals:** TBD

**Timing:** TBD

**Parties Involved:** TBD

**Other:** TBD

## TLU-10. Commuter Benefits Programs

### Policy Description

Employers can significantly reduce automobile travel by their employees when they offer commuter benefits programs. Such programs often include free or low cost transit passes, strong telework programs, carpooling matching and vanpool subsidies, guaranteed ride home services, parking cash-out, amenities for bicyclists, and other benefits. State and local government agencies can offer these programs to their employees and can encourage private employers to offer such programs.

### Policy Design

The ultimate goal of this option is to shift commuters from SOVs to alternative modes of transportation.

- Ensure employer support and participation.
- Have state commit XX dollars to the program by 2010.

**Goals:** By \_\_\_\_, all employers in Colorado over 250 employees will offer a commuter benefits program.

By 2010, \_\_\_\_ employers in Colorado will participate in the national Best Workplaces for Commuters program. (Currently, approximately 160 Colorado employers participate.)

By 2010, all state agencies, all colleges and universities, and \_\_\_\_% of local governments (over \_\_\_\_ size threshold) will offer a commuter benefits program with benefits no less than those established for the national Best Workplaces for Commuters program.

*[Note: Nationally 15% of employers offer a commuter benefits program.]*

**Timing:** Implement by 2010.

**Parties Involved:** CDOT, MPOs, municipalities, employers, state legislature.

**Other:** Not applicable.

## TLU-11. Driver and Consumer Education

### Policy Description

Education is the first step to successful implementation. Drivers will voluntarily reduce fuel use and GHG emissions from their activities when they have the information necessary to make proper decision.

The option would involve development and implementation of a curriculum that addresses limiting of GHG in transportation through:

- Improved vehicle maintenance – regular vehicle tune-ups; fuel efficient tires; coolest temperature fueling; etc.
- Improved vehicle operation – turn off vehicle while parked; speed limit observation; elimination of ‘jack-rabbit’ starts
- Improved transportation choice – low- GHG emitting vehicles; right size vehicle; car-pooling; use of alternative fuels; walking; biking; telecommuting; mass transit

This curriculum would be a requirement for all driver training programs with questions pertinent to training included on the written/driving portion of state licensing tests. (There are currently driver training programs in Utah and Arizona incorporating this type curriculum in classroom setting.) In addition, programs including this curriculum to be mandated for both state and municipal fleet operators. All GHG saving application methods included in the curriculum would be enforced at state and municipality fleet levels.

In the interest of time and expense, it is recommended that existing curriculum from such entities as DOE or National Energy Foundation be examined for application and modified as needed.

### Policy Design

**Goals:** Reduce transportation GHG emissions through education to promote intelligent transportation purchasing choices and vehicle operation

Consumer information program would begin in 2008, with program expansion as resources are made available.

By 2009, the State or appropriate agency would develop a marketing program for fuel efficient replacement tires and energy efficient driving practices and devices.

By 2010, the State or appropriate agency would ensure that a training be delivered for all state and municipal fleet operators.

**Timing:** See above.

**Parties Involved:** Driver training programs; DMV; State and Municipal Fleets.

**Other:** Not applicable.