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**Transportation and Land Use Technical Work Group  
Summary List of Pending Priority Policy Options for Analysis**

	Policy Option	GHG Reductions (MMtCO <sub>2</sub> e)			Net Present Value 2007–2025 (Million \$)	Cost-Effectiveness (\$/tCO <sub>2</sub> e)	Status of Option
		2010	2025	Total 2007-2025			
TLU-1	Improved Planning and Development Strategies	<i>Not Quantified</i>					Pending
TLU-2	Improved Infrastructure	<i>Not Quantified</i>					Pending
TLU-3	Biofuels	<i>Not Quantified</i>					Pending
TLU-4	Infrastructure Management	<i>Not Quantified</i>					Pending
TLU-5	Climate-Friendly Transportation Pricing	<i>Not Quantified</i>					Pending
TLU-6	Adopt CA Clean Car Standards	<i>Not Quantified</i>					Pending
TLU-7	“Fix-it-First” (Repair before new infrastructure)	<i>Not Quantified</i>					Pending
TLU-8	Update Road Standards	<i>Not Quantified</i>					Pending
TLU-9	Commuter Choice/Parking Cash Out/required employer TDM plans	<i>Not Quantified</i>					Pending
TLU-10	Congestion Pricing (or tolls) (w/ targeted use of revenue towards travel alternatives)	<i>Not Quantified</i>					Pending
TLU-11	Truck Stop Electrification	<i>Not Quantified</i>					Pending
TLU-12	Mobile Source Emissions Reduction	<i>Not Quantified</i>					Pending
TLU-13	Reduced Speed Limits	<i>Not Quantified</i>					Pending

## TLU-1. Improved Planning and Development Strategies

### Policy Description

Implement land use planning and development that reduces vehicle miles traveled relative to baseline.

### Policy Design

**Goals:** Vehicle miles traveled in Minnesota are equal in the aggregate to the amount driven in 2000 by 2013 and are equal to the amount driven in 1990 by 2025.

[Current 2007 estimate - 60 billion VMT; 2000 - 52.6 billion; 1990 - 38.9 billion]

[No action: 2007 - 60 billion VMT; 2013 - 67 billion; 2025 - 82 billion]

**Minority position/recommendation to MCCAG:** establish goals at a *per capita level* as opposed to a gross reduction in VMT

**Timing:** To achieve VMT goals, policy implementation should commence as soon as possible.

**Parties Involved:** All layers of government: local, county, school districts, regional, state, including elected officials, commissions and staff; Developers & contractors; Employers; Homeowners.

**Other:** None.

### Related Policies/Programs in Place

#### *Recent Actions in MN:*

- Metropolitan Livable Communities Program Tax Base Revitalization Account grants have funded projects throughout the metropolitan area to clean up polluted land and buildings for redevelopment, creating new jobs and affordable housing, and directing growth to central cities and older suburbs where costly infrastructure is already in place.
- Metropolitan Livable Communities Program provides Livable Communities Demonstration Account grants to metropolitan area communities for projects that result in connected development patterns that link housing, jobs and services, and use regional infrastructure efficiently. Many projects served by bus and LRT infrastructure have been funded.
- Minnesota Housing has a priority for housing development located near transportation, including regional and interregional transportation corridors and transit-ways.
- The MC's *2030 Regional Development Framework* and the policy plans that implement it are intended to help accommodate the region's growth in an orderly, efficient manner and guide the expansion of four regional systems: transportation; aviation; water resources (inc. wastewater collection and treatment) and regional parks and open space.
- Minnesota Housing has a priority for housing development in proximity to existing development and services, protecting environmental resources and promoting compact development.

- Some counties have sold bonds to protect open spaces. MC plans to increase regional park and open space system from 53,000 acres to 80,000 acres.

Minnesota Housing supports new development that is not located near wetlands, steep slopes, critical habitat, or on prime farmland or park land.

## TLU-2. Improved Infrastructure

### Policy Description

Reduce GHG emissions by increasing transit ridership, carpooling, bicycling and walking. This strategy will reduce GHG emissions by reducing vehicle miles traveled (fewer vehicle trips and shorter trip distances).

### Policy Design

**Goals:** Implement the Metropolitan Council's transit plan to double transit ridership by 2020, ten years sooner than the current target date of 2030. The Council's transit plan calls for investment in light rail, commuter rail, bus rapid transit and expanded bus service. Also increase bus and pedestrian infrastructure including on-street and off-street facilities that make walking and bicycling safer and more convenient. Increase use of travel demand management strategies.

**Timing:** Begin implementation by 2008 and complete implementation by 2020.

**Parties Involved:** Legislature, Met. Council, MnDOT, Metropolitan Transitways Development Board, counties, cities, freight rail, private sector businesses.

**Other:** TBD

### Related Policies/Programs in Place

#### *Recent Actions in MN:*

- MC/TAB programmed \$95.6 million in Enhancement and STP funds since 1992. Transit for Livable Communities is implementing a \$25 million federal pilot program for bicycling/walking. This year the MC expects to program \$16 million in Enhancements funding and \$92 million in STP funding, a portion of which will go toward bicycle commute infrastructure in the 2007 solicitation.
- MC has a goal of doubling transit ridership by 2030 and increasing it by 50% by 2020. Improvements in clued additions of LRT, commuter rail, BRT and increased regular bus route service to reach this goal. In 2006 Minnesota voters approved a constitutional amendment requiring dedication of motor vehicle sales tax funds to transit which will result in increased finding.

MC region has 2 HOV lanes (I-394 and I-35W). I-394 is a HOT lane which allows SOV's to use the HOV lane for a fee. MC and MNDOT are working on a HOT lane study; construction of I-35W/62 Crosstown commons section beginning this year. MOU between MC and MNDOT to consider additional HOT lanes in future highway improvements.

## TLU-3. Biofuels

### Policy Description

The state can adopt standards that require a certain amount or percentage of fuel sold within the state to be a renewable fuel (e.g., ethanol or biodiesel). This percentage can gradually increase over time. The State can help facilitate transition to renewable fuels by regulating quality standards for fuel blends.

This option also promotes R&D related to biofuels production, such as the use of enzymes for breaking down cellulose to produce ethanol (as opposed to corn-based ethanol, which has a lower life cycle benefit).

**Minority position:** Adopt a low-carbon fuel standard.

### Policy Design

**Goals:** The goal should be to have blended fuels at the maximum level that meet quality standards and are known to not cause harm to the in-use fleet.

MN is one of the leading states in the use of renewable fuels and it would make sense to have in-state R&D work on cellulosic ethanol. The goal should be to get a specified level of funding (\$xx) to explore new enzymes for cellulosic ethanol by 20xx.

**Timing:** TBD

**Parties Involved:** TBD

**Other:**

It is imperative that sufficient testing be done to ensure that all of the vehicles and other devices that use gasoline or diesel engines (such as lawnmowers, gas-powered weed wackers, snowmobiles, etc.) that are already in use can work with higher levels of alternatives in either gasoline or diesel. It is also imperative that any “blended fuel” meets ASTM or equivalent quality specifications. It is important that the Federal government be active in testing existing equipment to determine how it will run with the new fuel blend.

To summarize these concerns, it is important to consider the following five points:

1) infrastructure for the new fuel; 2) price; 3) fuel quality standards; 4) impact to existing equipment; and 5) environmental impact of the new fuel. It is also important that similar fuels be used across regions and across the country so that line-haul trucks can be assured of similar fuels when traveling long distances.

### Related Policies/Programs in Place

*Recent Actions in MN:*

- Metro Mobility uses the highest level of biofuel allowable by operating conditions and vehicle manufacturers.
- B5 used by Metro Transit

- Testing B20
- Considering use of B10 by mid-2007 pending B20 test results.
- Looking for other engine technology that uses other types of renewable fuels.
- Formation of the NextGen Energy Board to determine how state can invest most efficiently to achieve energy independence - \$90 million from 2010 – 2020
- Ethanol. Minnesota established an ethanol production incentive to provide payment to producers to help develop a new market for Minnesota's agricultural products. On the market side, Minnesota requires that all gasoline sold in the state be blended with a 10% ethanol mix. In addition, Minnesota began efforts in 1997 to develop a network of fueling stations for flex fuel vehicles that could run on an 85% ethanol blend. Today Minnesota has over three hundred E85 fueling stations around the state that together sold a total of \$18,160,000 gallons of E85 blended gasoline during 2006. <http://www.pca.state.mn.us/programs/ethanol.html>; <http://www.pca.state.mn.us/programs/ethanol.html#links>

Biodiesel. According the U.S. Department of Energy, biodiesel has the most favorable energy balance of any transportation fuel. For every unit of energy needed to produce a gallon of biodiesel, 3.2 units of energy are gained. As of September 29, 2005, Minnesota requires nearly all diesel fuel sold in the state to contain at least a 2 percent biodiesel blend. It is estimated that the 2% fuels use requirement for Minnesota will replace 16 million gallons of diesel fuel. [Minn. Stat. § 239.77](#); <http://www.pca.state.mn.us/air/cleanfuels.htm>; <http://www.mda.state.mn.us/renewable/biodiesel/default.htm>.

## TLU-4. Infrastructure Management

### Policy Description

Coordinated investment, and operation of, regional transportation infrastructure can improve system efficiency, reliability, and safety, and reduce fuel use and GHG emissions. With the state as a coordinator, build on current efforts to coordinate transportation investments and operations to create a seamless multi-modal system would be substantially increased. Tools to reduce traffic congestion include HOT lanes, roundabouts at intersections, synchronized signals, incident management, real-time information about congestion, transit, and parking, and other forms of integrated intelligent transportation systems (ITS).

### Policy Design

**Goals:** Use infrastructure management to reduce urban-area emissions by 10% by 2025 relative to the baseline.

**Timing:** By 2025.

**Parties Involved:** All state transportation providers.

**Other:** TBD

### Related Policies/Programs in Place

*Recent Actions in MN:*

- With CMAQ funds, Minneapolis has implemented computerized traffic signals for better traffic flow. The 2007 CMAQ solicitation contains a funding program for TSM. Freeway on-ramp metering program.

## TLU-5. Climate-Friendly Transportation Pricing

### Policy Description

Implement a series of policies to change the fixed costs of automobile ownership to reflect the costs related to VMT and emissions, including CO<sub>2</sub>-based registration fees, a fuel tax, VMT tax or pay-as-you drive insurance. Such policies can reduce the cost differential between a SOV trip and a public transit trip and direct financial reward for individuals who reduce VMT or purchase low-GHG vehicles. Additionally, revenue resulting from these policies could, in turn, fund transit and other transportation alternatives for further emissions reductions.

### Policy Design

#### Short-term:

1. Increase the state's fuel tax and registration fees to improve transportation infrastructure and reduce bottlenecks/congestion.
2. To encourage purchase of low-GHG emitting passenger vehicles, institute a "greenhouse gas emission fee" with higher fees charged for higher emitting vehicles. Revenue collected should be dedicated to transit investments.
3. Have insurance companies institute a "pay as you drive" system when figuring premiums of auto policyholders. This should be voluntary, but assumes 50% market penetration by 2015.

#### Long-term:

In conjunction with national efforts, Minnesota should institute a mileage tax, in place of the current funding system for roads. For purposes of this exercise, we assume that happens in 2015.

#### Anytime:

Provide income tax incentives to encourage an increase in the use of low-GHG emitting vehicles and technologies.

**Timing:** Passage of a comprehensive transportation funding package, GHG emission fees and tax incentives during the 2008 Legislative Session, effective July 1, 2008. Mileage tax replacement would be enacted in 2015.

**Parties involved:** Highway and transit users, automobile manufacturers, insurance companies, state departments of commerce, transportation, public safety, revenue, finance, and pollution control, Met Council.

**Other:** Since the motor fuel tax, registration fees, and motor vehicle sales tax are constitutionally dedicated to highways and transportation purposes, any diversion of these for other uses would be prohibited without amending the state's constitution. In addition, offering exemptions/reductions in any of these funding mechanisms to encourage the purchase of low-GHG vehicles would decrease the amount of available transportation dollars, that are already lacking, for road and transit improvements and counter TLU strategies 2, 7 and 8.

### Related Policies/Programs in Place

#### *Recent Actions in MN:*

- MNDOT currently studying the VMT finance mechanism.

## TLU-6. Adopt CA Clean Car Standards

### Policy Description

Tailpipe GHG emissions standards are also known as the “Pavley” standards or the California Clean Car Standards. These standards can be adopted to reduce GHG emissions from new light-duty 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. The standards require manufacturers to meet a declining fleet-wide average standard for GHG emissions per mile.

### Policy Design

**Goals:** Adopt CA’s clean car program if and only if it can be designed to work with MN’s existing biofuels mandates.”

**Timing:** If adopted, the standards would take effect no earlier than the 2011 model year (assuming the legislature would act in 2008).

**Parties Involved:** TBD.

**Other:** Interaction with existing biofuels mandates is unclear.

### Related Policies/Programs in Place

TBD.

## TLU-7. “Fix-it-First” (Repair before new infrastructure)

### Policy Description

Rather than prioritize funding for capital expansion projects, “Fix it First” encourages funding allocation to preservation and maintenance of the existing state and local infrastructure systems.

### Policy Design

**Goals:** Reduce Vehicle Miles Traveled (VMT) over the long term by encouraging redevelopment rather than new development.

**Timing:** Begin in 2009.

**Parties Involved:** MNDOT, Local Units of Government, Met Council, Legislature, Developers, Business Community

**Other:** TBD

### Related Policies/Programs in Place

*Recent Actions in MN:*

- Regional highway plan in MC Transportation Policy Plan states that highway expansion investments are only considered after preservation and management investments have been funded.

## TLU-8. Update Road Standards

### Policy Description

1) Move toward a "complete streets" environment in Minnesota. Ensure, through an inclusive process, that new roads and roads that are being reconstructed are designed to serve all users including vehicle drivers, transit users, pedestrians, freight and truck traffic, and bicyclists.

Pursue an "Urban Preservation Route" street classification, similar to the "Natural Preservation Route" that exists today.

2) Encourage cities and counties to develop bicycle and pedestrian plans to provide information on need and priorities.

3) Encourage round-a-bouts and lower-cost highway expansion projects to eliminate bottlenecks that result in delay and vehicle idling.

### Policy Design

**Goals:** Reduce GHG emissions by making it more convenient and safer for people to use transit, bicycle, and walk, and by reducing bottlenecks that result in excessive vehicle idling.

**Timing:** 2008 and ongoing.

**Parties Involved:** Legislature, city and county engineers, MnDOT, local elected officials, bike, transit, and pedestrian interests, MN Trucking Association, others.

**Other:** TBD

### Related Policies/Programs in Place

TBD.

## TLU-9. Commuter Choice/Parking Cash Out/required employer TDM plans

### Policy Description

- Reduce emissions by focusing on the workplace and reducing Single Occupant Vehicle commutes via:
  - Reducing free parking
  - Providing paid or pre-tax transit passes
  - Providing Guaranteed Ride Home
  - Allowing & supporting (periodic) telecommuting
  - Joining Universal Access program (institutional ID card = transit pass)

Commute benefits need not imply transit use: employers can reward / incentivize any non-SOV commute.

As an incentive to develop and provide such services, a tax credit can be offered to companies.

Employers over 500 employees would be required to develop and implement TDM plans.

### Policy Design

#### Goals:

##### *Commuter Benefits*

1. All MN non-rural employers over 50 employees offer Commuter Benefits (CB) programs
2. All colleges and universities offer CB
3. All government units offer CB, especially the state.
4. State adopts employee parking management and incentive programs

##### *Commuter Choice*

1. State establishes a public/private partnership to develop and run telecommuting centers that offer office-type services in locations close to commuters' residences.
2. State would establish best practices in TDM, and assist employers of over 500 employees in developing and implementing TDM plans.

**Timing:** Implement by 2010.

**Parties Involved:** Met Council, MnSCU, U of M, other colleges, municipalities and transit providers, employers, state legislature.

**Other:** TBD

## Related Policies/Programs in Place

### *Recent Actions in MN:*

- Employee Discount Transit Passes. Metro Transit offers passes for regular route bus service for sale to employers at a 30% special discount rate for their employees to promote mass transit and reduce both congestion and emissions in the Metro area.  
<http://www.metrotransit.org/groupDiscProg/metroPass.asp>.

## TLU-10. Congestion Pricing (or tolls) (w/ targeted use of revenue towards travel alternatives)

### Policy Description

Roadway tolling can be used to price auto use more in line with costs, and to provide revenue for multiple modes. If tolls or other user charges vary with congestion levels (congestion pricing), they can also be particularly effective at reducing congestion. Various forms of VMT-based user fees can also help to discourage unnecessary automobile use. Roadway pricing revenues can help fund needed highway improvements and help manage system-wide demand. In addition, pricing revenues can be used to fund transit and other transportation alternatives within a corridor or region.

### Policy Design

#### 1. HOT Network

- **Goal:** Establish a network of lanes for high occupancy vehicles and transit with tolling to allow single occupancy vehicles to use the lanes in uncongested conditions. The toll for use of these high-occupancy/tolled (HOT) lanes should electronically charged and vary by time of day and traffic conditions to ensure free-flowing conditions at posted highway speeds. The network should consist of the existing HOT lanes on 394, the HOT lanes proposed for 35W, the rest of lanes included in the MnPASS 2030 Vision mapped out in Cambridge Systematics, Inc., MnPASS System Study (November 2005), any other highway expansions identified in MNDOT's Metro District 2008-2030 Transportation System Plan, and all bus shoulder lanes in MNDOT's Metro District.
- **Timing:** The HOT network should be phased in over time and completely operational by 2015. Assume that highway expansions identified in the Metro District's fiscally constrained Transportation System Plan will follow the timing set out by MNDOT. Assume the rest of the highway lanes needed be phased in between 2008 and 2015 by corridor based on highest traffic counts. Assume bus shoulder lanes will be converted between 2008 and 2015 by route based on highest ridership counts.
- **Parties Involved:** Minnesota Department of Transportation, Metropolitan Council.
- **Other:** Assume the proceeds are used according to Minn. Stat. §160.93, Subd. 2 -- (a) first pay back the trunk highway fund and any other funding source for monies spent to establish each lane, (b) then pay all the costs of implementing and administering the toll collection system for that lane, and (c) the remainder, if any, spent one-half for transportation capital improvements within the lane's corridor and the other half must for the expansion and improvement of bus transit services within the lane's corridor beyond the level of service provided on the date the HOT lane is established.

## 2. *Cordon Pricing*

- Goal: Establish a cordon pricing scheme similar to that used in Stockholm and Oslo. All vehicles other than public transit should be charged a fee when entering the Twin Cities' urbanized core on a principal arterial at the 494/694 beltway. The fee should be collected electronically and vary by time of day but in peak periods be at least twice the peak period transit fare then in effect.
- Timing: The cordon pricing scheme should be phased in over time but be completely operational by 2015. The phase-in should be by principal arterial based on highest traffic count.
- Parties Involved: Minnesota Department of Transportation, Metropolitan Council.

Other: All proceeds should be used to support the transit element of the Metropolitan Council's 2030 Transportation Policy Plan.

### **Related Policies/Programs in Place**

#### *Recent Actions in MN:*

- I-394 is HOT lane. MOU between MC and MNDOT to consider additional HOT lanes in future highway improvements.

## TLU-11. Truck Stop Electrification

### Policy Description

Reduce idling-induced emissions from heavy-duty diesel trucks by providing electrical hook-ups to power heating, cooling, and other needs while stopped.

### Policy Design

**Goals:** TBD

**Timing:** TBD

**Parties Involved:** TBD

**Other:** TBD

### Related Policies/Programs in Place

*Recent Actions in MN:*

- Idle Reduction Program. The MPCA, in cooperation with the U.S. EPA, offers loans to help small trucking companies pay for idle reduction devices such as auxiliary power units. This equipment can reduce fuel consumption by 75 percent, which conserves resources, helps achieve energy independence, and reduces the emissions that contribute to soot and smog. During 2006, 30 loans were issued ranging from \$7,500 to a maximum of \$50,000. [http://www.pca.state.mn.us/programs/sbomb\\_loan.html](http://www.pca.state.mn.us/programs/sbomb_loan.html).

## TLU-12. Mobile Source Emissions Reduction

### Policy Description

Support on-going and new reduction options to achieve immediate and direct emissions reduction from mobile sources (e.g., Project Green Fleet school bus retrofit) that can be done without legislation or regulation. This will bolster prior investments of local, state and federal governments in Minnesota and leverage significant federal, private and foundation support.

According to the MPCA, more than a quarter of Minnesota's greenhouse gases and nearly half of all air pollution is generated by mobile sources. From a health-risk perspective, the MPCA calculates that more than half of the elevated risk of cancer from toxic air pollutants comes from mobile sources. In some mobile source areas, the State of Minnesota through Executive Orders is already leading by example and can serve as a model for expansion of emission reduction activities.

Mobile source emission-reduction options gained greater relevance to climate change with the release of a study recently in the journal *Nature*. The study points out the significance of ground-level ozone levels to climate change improvement activities. Mobile sources are one of the primary sources of ground-level ozone precursors. According to the study, "Ozone could be twice as important as we previously thought as a driver of climate change." The study reports that "ozone near the ground damages plants, reducing their ability to mop up carbon dioxide from the atmosphere."

### Policy Design

Support for on-going and new emission-reduction options to achieve immediate and direct emission-reductions from mobile sources (e.g., Project Green Fleet school bus retrofit, EPA SmartWay Transport Partnership) that can be done without mandates or regulation. This will bolster prior investments of local, state and federal governments in Minnesota and leverage significant federal, private and foundation support.

**Goals:** *Double* the quantifiable emission-reductions from these projects, relative to the baseline; increased number of partners and funders for projects.

**Timing:** Immediate; many of these projects are ongoing and will be expanded in the near future

**Parties Involved:** Minnesota Environmental Initiative (Project Green Fleet and Clean Air MN) and multiple public and private funders and partners; Minnesota Trucking Association; Minnesota Chamber of Commerce; Minnesota Center for Environmental Advocacy; GE Fleet Services; MPCA; U.S. EPA; Hennepin County

**Other:** TBD

### Related Policies/Programs in Place

TBD.

## TLU-13. Reduced Speed Limits

### Policy Description

Getting maximum fuel efficiency reduces CO<sub>2</sub> emissions. The speed a vehicle is driven has a major impact on fuel economy. While each vehicle reaches its optimal fuel economy at a different speed (or range of speeds), gas mileage usually decreases rapidly at speeds above 55-60 mph.

### Policy Design

**Goals:** Reduce maximum speeds on Minnesota highways to improve fuel economy. Straw goal: All trunk highways and above will have a maximum speed limit no higher than 65, and those in urban areas, no higher than 55. Any exemptions to be determined case by case by MnDOT.

**Timing:** Change law during 2008 legislative session with an effective date of January 1, 2009 so that there is enough time to educate the public about the change.

**Parties Involved:** Highway users, Minnesota Department of Transportation, Minnesota State Patrol, local law enforcement.

**Other:** TBD

### Related Policies/Programs in Place

TBD.