



# Governor's Action Team on Energy and Climate Change

## State of Florida

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### Transportation and Land Use (TLU) Policy Option Descriptions (POD)

	Policy Option	GHG Reductions (MMtCO <sub>2</sub> e)			Net Present Value 2009–2025 (Million \$)	Cost-Effectiveness (\$/tCO <sub>2</sub> e)	Level of Support
		2015	2025	Total 2009–2025			
TLU-1	Develop and Expand Low-GHG and Alternative Fuels	<i>To be assessed following agreement on policy language</i>					Pending
TLU-2	Add-On Technologies for Existing Vehicles and New Vehicles	<i>To be assessed following agreement on policy language</i>					Pending
TLU-3	Smart Growth Planning	<i>Methods of Analysis to be Discussed</i>					Pending
TLU-4	Improving Transportation System Management (TSM)	<i>Methods of Analysis to be Discussed</i>					Pending
TLU-5	Increasing Choices in Modes of Transportation	<i>Methods of Analysis to be Discussed</i>					Pending
TLU-6	Factoring GHG Emissions into Transportation and Land Use (TLU) Planning Processes	<i>Methods of Analysis to be Discussed</i>					Pending
TLU-7	Incentive Programs for Increased Vehicle Fleet Efficiency	<i>To be assessed following agreement on policy language</i>					Pending
TLU-8	Increasing Freight Movement Efficiencies	<i>To be assessed following agreement on policy language</i>					Pending

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/tCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

Note: The numbering used to denote the above pending priority policy options is for reference purposes only; it does not reflect prioritization among these important draft policy options.

## TLU-1. Develop and Expand Low-GHG and Alternative Fuels

### Peebles Comments on Draft of TLU-1

I have reviewed both the posted draft for TLU-1 proposed from the technical committee members as well as their comments also posted. I hope I am not out of synch, but I feel that there is much too much prescriptive detail in the recommendations

I have attached a draft of a more general policy statement. I would also point out that some of the recommendations proposed have already been passed by both the US Congress and the Florida State Legislature, and there is no need to

#### TLU-1. Develop and Expand Low-GHG and alternative Fuels

Alternative fuels can have a key role in the transformation of the energy sector, climate stabilization, and the renaissance of rural areas.

There are “good” and “bad” alternative fuels depending on how they are produced, used, and traded, which in turn determines their ultimate economic, environmental, and social impacts.

Alternative fuel production, trade and use must be cost effective, equitable, and sustainable.

To develop and expand low-GHG and alternative fuels The TLU-1 recommendations are:

1. Integrate and better coordinate policy frameworks
2. Assess and monitor benefits and impacts of alternative fuels production, trade, and use
3. Address negative indirect effects of alternative fuels production, trade and use.
4. Reward positive impacts and investments including through carbon management
5. Build consensus for new projects by supporting informed and continuous dialogue engaging all relevant stakeholders
6. Increase investments in research, development, and demonstration

Public policy with regard to R&D investments should focus on the production of cost effective second generation alternative fuels; build on sustainability lessons learned from first generation alternative fuels to be used for second generation alternative fuels; increase conversion technology performance; and maximize climate change mitigation.

7. Build capacity to enable producers to manage carbon and water
8. Make sure that trade policies and climate change policies work together.
9. Open competition in the transport sector to all options and methods that can displace carbon and imported oil, including demand reduction

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## **RB Hoover Comments Concerning 7-11-08 Draft of TLU-1**

The title should be changed to “Policies to promote Advanced Biofuel production and enhanced biofuel distribution structure in Florida”

### **Policy Background:**

Add as last paragraph:

Existing federal and the 2006 Florida Energy Act provide incentives (in the form of income and sales tax credits) for investments in the production, storage and distribution of biodiesel and ethanol.

However, the Florida credits terminate on June 30, 2010 and are subject to relatively low statewide caps on the amount of credits allowable.

### **Policy Description:**

Comment:

Requiring that ethanol from non-food materials be purchased and used within the state would seem to require adding an unnecessary administrative structure to enforce this requirement. In addition, the concept of promoting ethanol from non-food sources is already built into the federal renewable fuels standard (RFS) which, starting in 2009, requires an increasing amount of advanced biofuels (defined as “renewable fuel, other than ethanol derived from corn starch, which has greenhouse gas emissions less than baseline”). The RFS also puts a cap on the amount of ethanol from corn commencing in 2015.

I believe that the RFS provides adequate incentives for the purchase of ethanol from non-food sources. If the TWG believes additional incentives are necessary to ensure that the Florida-produced ethanol is purchased and sold in Florida, we could recommend that there be a state tax credit of x cents per gallon for purchasing Florida-produced ethanol and marketing it within the state. This would put most of the administrative burden on the purchaser to prove entitlement to the credit rather than on the state to enforce a purchase requirement.

Dictating the price for the ethanol produced from non-food materials would likewise require a costly administrative structure to monitor compliance. Although the price of ethanol and gasoline generally fluctuate based on their respective supply and demand, there is an increasing correlation between their prices. I believe it inadvisable for us to try to artificially create a Florida advanced biofuel price that might substantially differ from the ethanol price in neighboring states.

### **Policy Design:**

Insert “and distribution infrastructure” after the word “production” in item 1.

**Implementation items:**

Remove items 1 and 2 for the reasons indicated above.

Add:

Amend the 2006 Florida Energy Act by extending the expiration date for the credits and increasing the statewide cap (currently \$6.5 million) on the credits allowed for investments in the production, storage and distribution of biodiesel (B10-B100) and ethanol (E10-E100)

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**TLU-1 Policies to promote Advanced Biofuel production in Florida**

**Policy Background:**

The 10 billion gallons of imported transportation fuel used annually in Florida is responsible for 40% of the greenhouse gas production, also creating a significant imbalance in trade and contributing to our strategic dependence. Oil prices have increased by 100% from 7/02/2007 to 7/01/2008 with no end in sight, increasing the cost of gasoline and damaging the economy of Florida as well as other states. Increased efficiency and the development of renewable alternatives could mitigate these adverse effects. Development of large scale, domestic, renewable fuels will provide a cost-competitive alternative that can stabilize the value of automotive fuels and other petroleum-derived products, and stimulate local economies.

Renewable fuels from biomass, cellulosic residues, and energy crops have been identified by the USDA and DOE as our best near term opportunity to reduce oil dependence and greenhouse gas emissions. The sunshine state of Florida ranks near the top in potential production of energy crops and residues (agricultural, forest, and municipal) for fuel ethanol. Development of this new industry in Florida will require substantial commercial investment and could result in over 200 biomass ethanol plants that would directly employ more than 12,000 individuals around the state.

The 2008 Farm Bill (HR-2419) has an excellent program (Biomass Crop Assistance Program) to mitigate farming risks for energy crops which has not been sufficiently publicized in Florida and will greatly assist the development of this new industry. This Farm bill also defines “advanced biofuels” very broadly to include liquid and gaseous fuels made from any renewable biomass except the starch from corn.

**Policy Description:**

The problems associated with the development of large-scale production of renewable, advanced biofuels are similar in many ways to those for the development of renewable power. Shifting the proportion of power and fuel to renewables is clearly in the best interest of the environment, the state of Florida, and the country.

To effect large-scale changes over time, massive investments of private capital will be required. With both, it is essential to create a large and stable market to mitigate risks and attract long-term investment. Although this has been done in part by legislative mandates in Florida which required Florida to use automotive fuel containing 10% ethanol by 2010, it is hoped that these mandates represent a starting point that can be expanded further to reach the full potential of Florida for renewable fuel production. This will be facilitated by specifically ensuring market access for these fledgling renewable industries by requiring that all fuel ethanol produced from non-food materials be purchased and used to reduce emissions in the state. Finally, it is essential to ensure fair market compensation for the new renewable product to provide market opportunity. For fuel ethanol, pricing should be equal to that of wholesale gasoline on a volume basis. This combined with Federal ethanol and other state incentives should provide sufficient investment opportunity to build this new industry.

### **Policy Design:**

1. Goals: Development of sufficient fuel ethanol production in Florida to replace 30% of petroleum-based automotive fuel by 2030 consistent with the national goal.
2. Timing: Startup of at least one full scale ethanol production plant in Florida by 2012 (>10 mil gal/yr), with rapid expansion to produce up to 100 plants within the state by 2020 and 200 plants by 2030.
3. Coverage of parties: Farmers and other suppliers of feedstocks, infrastructure contractors, ethanol producers, importers, distributors, and petroleum companies.

### **Implementation Items:**

1. To the full extent available, require the purchase of domestic fuel ethanol (or other alcohols) produced from residues (agricultural, forestry, or municipal), trees and cellulosic crops, and other energy crops except starch from corn (consistent with definition of “advanced biofuels” in the 2008 Farm Bill).
2. Require that fuel ethanol produced in accordance with item 1 be purchased at the full value of displaced petroleum (DOE monthly wholesale gasoline price for Florida) on a volume basis plus the benefit of all state and federal incentives.
  - a. With Federal tax incentives, this will place the market value of ethanol to around \$1 above wholesale gasoline prices until this subsidy is phased out.

b. As gasoline increases, so will the value of fuel ethanol, providing further incentive to invest in fuel ethanol production and to develop increasingly efficient processes.

c. Automotive fuel is sold on a volume basis and it is important that ethanol providers receive full value for the renewable fuel to promote construction of biorefineries for alternative fuels and economic development. (This is analogous to requirements that promote PV by requiring purchase of renewable electric power produced during peak loads at the full market value.)

d. In this way, the fuel market will be allowed to determine production costs and values for imported gasoline and home-grown fuel ethanol.

Either of Two approaches suggested for Item 3

3. Provide a \$0.20 per gallon production incentive to ethanol producers for ethanol that is produced in Florida from Florida-grown biomass and used in Florida automotive fuel. Cumulative annual production incentives paid out may not exceed \$50 million. (based on provision widely used in other states).

or

3. Provide a Florida state tax credit in the amount of \$0.20 per gallon to producers during the first 60 months of operation provided the facility maintains a production rate of at least 25% of the nameplate design capacity for at least six months after the first month for which the facility is eligible to receive such credit. Producers are also eligible for an expansion credit of \$0.20 per gallon of ethanol produced in excess of the original nameplate capacity that results from expansion of the facility before December 31, 2012. Beginning January 1, 2013, an ethanol facility is eligible for a credit of \$0.075 per gallon of ethanol, before denaturing, for new production for a period not to exceed 36 consecutive months. (Reference [House Bill 1513](#), 2007, and [Oklahoma Statutes 68-2357.66](#))

4. ADDITIONS -- We need to address infrastructure needs, terminals to plants to pumps.

5. Provide the opportunity to lease public lands for the production of nonfood energy crops at favorable rates.

6. Increase awareness of the USDA Biomass Crop Assistance Program designed to mitigate risk to farmers that produce energy crops.

7. Provide the opportunity for public bonds to be used in the financing of the first 200 million gal/yr of ethanol production in Florida.

8. Provide favorable land taxation for the production energy crops that are used to produce advanced biofuels in Florida.

9. Develop a comprehensive marketing package to assist in the recruiting of advanced biofuel industries into Florida and compare with opportunities provided in other states.

10. Modify one of our Florida energy grant programs to promote and expand the use of advanced biofuels such as ethanol and biodiesel as clean, renewable transportation fuels, and accelerate the commercialization of new renewable fuel technologies and products by providing grants of up to \$100,000 each for the development of business plans, engineering studies, design studies, permit applications, and legal work for potential new biofuels facilities in Florida. (based on the Renewable Fuels Research, Development, and Demonstration Program administered by the Illinois Department of Commerce and Economic Opportunity.) This may overlap our new Florida program ([Florida Statutes 377.804](#)).

11. Require that gasoline sold in the state of Florida contain 10% advanced biofuel once in-state production reaches 1 billion gal/yr for three months and 20% once in-state production reaches 2 billion gal/yr for three months (Modified from Pennsylvania HB 1202)

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

Following is a link to a federal site which does outline all the various state tax incentives:  
[http://www.eere.energy.gov/afdc/progs/in\\_matrx.php](http://www.eere.energy.gov/afdc/progs/in_matrx.php)

### Florida Grant Programs information

#### **Alternative Fuels Production Incentive**

The Innovation Incentive Program is created within the Office of Tourism, Trade, and Economic Development to provide resources for business projects that allow the state to effectively compete for high-value research and development, including alternative and renewable energy projects. To qualify, an alternative and renewable energy project must involve collaboration with an institution of higher education; provide the state a minimum full return on investment within a 20-year period; include matching funds provided by the applicant or other available sources; and be located in the state of Florida. Additional criteria may apply. For the purposes of this incentive, alternative and renewable energy means electrical, mechanical, or thermal energy produced from a method that uses one or more of the following energy sources: ethanol, cellulosic ethanol, biobutanol, biodiesel, biomass, biogas, hydrogen fuel cells, ocean energy, hydrogen, solar, hydro, wind, or geothermal. (Reference [House Bill 7135](#), 2008, and [Florida Statutes 377.804](#))

#### **Renewable Energy Grants**

The [Renewable Energy Technologies Grants Program](#) provides matching grants for demonstration, commercialization, research, and development projects relating to renewable energy technologies, including those generating or utilizing hydrogen or biomass resources. (Reference [Florida Statutes 377.804](#)).

The potential interaction between federal and state policy actions related to the Renewable Fuel Standard (RFS) at the national level and various state and regional Greenhouse Gas (GHG) mitigation policies is worth understanding in order to most effectively formulate state and regional policies within the existing context of federal policies regarding transportation fuels.

The most recently passed federal law, the Energy Independence and Security Act (EISA) of 2007, expanded the federal renewable fuel standard significantly. Under the new law, fuel suppliers are required to blend 9 billion gallons of renewable fuel into gasoline. Fuel suppliers must increase the amount of renewable fuel blended into transportation fuels annually, to reach a level of 36 billion gallons in 2022.

Currently, a significant amount of gasoline in the United States is blended with a relatively small portion of renewable fuel in the form of ethanol. Most light duty motor vehicles in the fleet can handle gasoline blended with ethanol when ethanol makes up 10 percent or less of the volume of the fuel. The nation is quickly moving toward a standard of a minimum of 10 percent ethanol blended into gasoline to serve multiple goals including increasing use of renewable fuels, reducing reliance upon imported petroleum and petroleum products, reducing air pollution by producing cleaner burning fuel, and reducing greenhouse gas emissions from the combustion of transportation fuels.

In comparison with the 9 billion gallon renewable fuel goal for 2008, the United States consumed roughly 5 billion gallons of biofuels in 2006. The United States ethanol industry has successfully increased the amount of production from 1.8 billion gallons in 2001 to 6.5 billion gallons by 2007. The estimated ethanol production capacity for 2008 is 13.4 billion gallons, which exceeds the RFS goal of 9 billion for 2008 and also exceeds the RFS goal of 13 billion gallons for 2010.

The 2022 RFS goal of 36 billion gallons is not likely to be achievable through corn ethanol alone, and the EISA limits the amount of corn ethanol that may be credited toward the RFS goals at 15 billion gallons beginning in 2015. The remainder of the RFS goal – 21 billion the 36 billion gallons - - is expected to be reached through ‘advanced biofuels.’ As a result, the federal policy expects that advanced or ‘second generation’ biofuels will be commercially available in 2015, and will provide the majority of the fuel to meet the federal RFS in the longer term.

State governments and regional associations of state governments are considering and adopting a range of policies to reduce greenhouse gas (GHG) emission from the combustion of transportation fuels. Included in this set of policies under consideration are policies that overlap or interact to some extent with the federal Renewable Fuels Standard (RFS) as formulated in the Energy Independence and Security Act (EISA) of 2007. The Low - Carbon Fuel Standard (LCFS) is the state policy most widely considered by individual states as a means to reduce the carbon intensity of transportation fuels being used.

Two sets of other policies that states are considering that may complement the federal policies are (1) policies that would incentivize or provide for increased capacity for production, blending, and distribution of renewable fuels to the point of fuel stations, and (2) policies that would incentive or provide for increased capacity of the motor vehicle fleet to utilize blends of fuel that reduce the portion of petroleum based products below the 90 % threshold for gasoline and the 95% threshold for diesel fuel and increase the percentage of renewable fuels (corn ethanol, advanced biofuels, and other

renewable) above the 10 percent “E10” threshold for gasoline blends and the 5 percent “B5” threshold for diesel blends. Some policies that fall into this second category include promotion of ‘flex fuel vehicles’ that can safely and effectively use the higher blends of fuels and policies that provide the fuel station infrastructure to pump these higher blends into motor vehicles.

### Estimated GHG Savings and Cost Per Ton

**Table 1.**

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

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

#### Data Sources:

**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 2b. Add-On Technologies for Existing Vehicles and New Vehicles

Low rolling resistance (LRR) tires can reduce vehicle fuel use and associated carbon dioxide emissions by as much as x percent. 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 (CAFÉ) 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. In addition, there is no current minimum standard for fuel efficiency that all replacement tires must meet.

The rolling resistances of the various tires consumers can purchase have significant variations depending on tread design, composition, cross-section geometry, and inflation pressure. State policy can 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.

In addition, other add-on technologies may be considered which result in more fuel efficient operation of motor vehicles. One example of these add-on technologies would be the addition of 'real-time' indicators of MPG (miles per gallon) for those vehicles that do not already provide such information to motor vehicle operators. The installation of technologies that provide drivers with current fuel efficiency (MPG) information has the potential to increase driver awareness of fuel consumption rates under different operating conditions for vehicles.

Independent review of validity of any claims relating to add-on technologies should be provided to assess effectiveness of such claims.

### Policy Design:

- **Goal levels:** Require that replacement tires be LRR tires achieving an average x.x% gain in fuel economy.
- **Timing:** The requirement would begin in 20xx.
- **Parties:** State government, industry

### Implementation Mechanisms

An appropriate State agency would initiate a fuel-efficient tire replacement program. The program could include consumer education, product labeling, and minimum standards elements. The program would include consideration of the technical feasibility and cost of such a program, the relationship between tires fuel efficiency and tire safety, potential effects upon tire life, and impacts on the potential for tire recycling. In addition, the program would exempt certain classes of tires that sell in low volumes, including specialty and high performance tires.

**Related Policies/Programs in Place**

TBD

**Estimated GHG Savings and Cost Per Ton**

**Table 3.**

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

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

**Data Sources:**

**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. Smart Growth Planning

### Policy Description

The essence and intention of smart growth within the context of climate change is to establish a policy framework, clear guidelines, and measurement parameters for the development of new, and the re-development of older, human habitat communities that will have a net-zero carbon effect on the general environment and reduce overall GHG emissions. This can be accomplished through the complex interactions of the three primary elements of community development that have a direct impact on GHG emissions and affect climate change:

- Construction energy and building lifetime energy use—measured by the protocols of LEED, GreenGlobes, and/or the Florida Green Building Coalition;
- Individual VMT generation and other transportation energy use (e.g., deliveries, maintenance, buses, security, health, fire, and safety) necessary to support human communities; and
- The changing of land uses from carbon sequestering land uses (e.g., forests, agriculture, parks, wetlands) to carbon releasing land uses (e.g., building sites, roadways) and development patterns.

In the aggregate, measured at various levels of development from small to large, the balance of carbon sequestering and carbon releasing land uses must *at least* balance and eventually become negative in releasing carbon to reduce GHG emissions and reverse existing adverse trends in our atmosphere.

In accordance with Florida’s schedule of increasing standards for both building energy efficiency and appliance energy efficiency outlined in HB 697 and HB 7135, community development and re-development patterns should follow a similar schedule of reduced overall energy use and increased efficiencies, thereby reducing GHG emissions and the energy and resources necessary to provide all the requisites for human lifestyle support.

Taken singularly in isolated policies, these three factors—land use changes, individual VMT and transportation energy use in necessary daily lifestyle support, and the life cycle energy use of buildings—are not making the necessary reductions in GHG emissions to meet climate change goals. Considered together in an integrated set of policies and guidelines they can accomplish the goal of a carbon neutral footprint of human community activities on the general environment.

### Policy Design

#### Goal levels:

- Require that municipalities increase the penetration of green initiatives into all aspects of their operations and programs by adopting an approach for internal and external stakeholders to work together to develop integrated energy and environmental solutions to reduce GHG emissions through multi-pollutant prevention, environmental improvements, greater operational efficiency, and expanded public acceptance of green initiatives.

- Require that community development proposals submitted for review are certified by LEED, GreenGlobes, Florida Green Building Coalition, or other approved certification to ensure that the new development results in a net reduction in GHG emissions relative to a business as usual baseline scenario.
- Work with LEED, GreenGlobes, and Florida Green Building Coalition to establish both standards and a review methodology to ensure that new development (taken in its entirety) results in a net reduction in GHG emissions relative to a business as usual baseline scenario
- Minimize GHG emissions from development through phased-in approach with short term goal and long term goal.
- Compact Urban Development and Mixed Use Development to be encouraged
- Pedestrian –friendly development and urban infill development to be encouraged

**Timing:** Establish a consortium of universities to provide both research and training to local, regional and state officials as they implement the goal that new development does not increase GHG emissions.

**Parties Involved:** State and local governments, regional governments, private property owners, development companies, investors.

### Implementation Mechanisms

### Related Policies/Programs in Place

TBD

### Estimated GHG Savings and Cost Per Ton

**Table 4.**

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

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

**Data Sources:**

**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. Improving Transportation System Management

### Policy Description:

Transportation System Management (TSM) is the concept of pairing transportation demand with transportation supply to help transportation networks serve the demand in an effective and efficient manner. Effective system management may utilize a variety of strategies based on advanced technologies, market-based incentives, regulations and design standards. Each strategy provides a relatively small benefit to greenhouse gas (GHG) reduction, but when applied in concert, substantial gains can be achieved. TSM strategies attempt to reduce the number of trips being taken by single occupant vehicle (SOV), shorten trip lengths, reduce vehicle delay, increase the reliability of the transportation network and reduce idling and other transportation actions that result in increased GHG emissions. The goal of TSM is to reduce the daily vehicle miles traveled (VMT) per capita on the transportation network. Effective TSM will also reduce vehicle hours traveled (VHT) per capita, which measures the amount of traffic congestion delay. Reduction of either VMT or VHT is highly correlated with a reduction in GHG emission.

TSM attempts to both improve transportation system performance and alter travel behavior through a combination of technological improvements, incentives, design, and restrictions. Technological improvements include traffic signal coordination, lane management, traveler information displays, and other intelligent transportation system applications. Incentives can include policies that financially favor desired behavior or allow users to gain a time advantage and include value pricing and smart parking strategies. System design is also important, since infrastructure and technology can be adapted to encourage less driving and includes access management applications and intersection improvements. Last, users can be barred from performing certain actions that would negatively impact the efficiency of the transportation system. TSM policies can be instituted at every level of government. Some can have a virtually instant affect, while others require many decades to reap full benefits.

### Policy Design:

**Goal levels:** Develop and implement policies and strategies that include program funding, financial and development incentives, infrastructure investment and regulatory requirements to promote transportation system management improvements that result in reduced VMT and/or VHT which in turn result in reduced GHG emissions. These actions, taken in concert with other aggressive transportation and land use policy actions, should be designed to reduce urban area VMT by 7%–10% by 2020 and by 9%–12% by 2050 and VHT by amounts that are associated with these VMT reductions. VHT reduction is recognized as a means of reducing driver delay while also reducing excess fuel consumption in congested traffic.

- Reduce existing and future trips and trip lengths in an effort to reduce both VMT and VHT. Driving less, in terms of both hours and miles driven, will result in a decrease of GHG emissions. This can be achieved through the aggressive implementation of specific transportation demand management strategies and coordinated transportation and land use decision-making.

- Distribute existing and future trips in terms of both time and geography—when trips are taken and where trips are taken—in order to reduce congestion and smooth traffic flow. Reducing congestion and smoothing traffic flow by changing peoples driving patterns—either by changing the time of day that they drive or the route that they take— will result in less idling and stop-and-go driving. This will reduce VHT and GHG emissions. This can be achieved through increased investment in supporting transportation infrastructure, implementation of specific transportation system management strategies and the aggressive implementation of specific transportation demand management strategies.
- Improve transportation system operations to improve travel conditions on the transportation network. This includes traffic signal coordination, real-time traveler information, advanced computerized lane and parking space management, value pricing at toll locations, intersection improvements including round-about conversions, advanced incident management and other traffic operations applications. This will reduce the frequency of transportation actions that contribute to high levels of GHG (e.g., jack rabbit starts, idling, excessive braking). It will require an increased investment in transportation system management related infrastructure and aggressive implementation of non-capacity operational strategies that improve the flow of vehicles on the transportation network.

**Timing:** TSM strategies have a variety of implementation timeframes. Some, such as workplace-based strategies, can begin implementation almost immediately. Others that are based on infrastructure construction will have an implementation timeline of four to ten years. Systemic changes to the urban landscape have the longest horizon, up to 25 years.

**Parties Involved:** State government agencies (DOT, DCA, and DEP), regional government (MPOs, RPCs, and RTAs), Local transportation providers (public transit agencies, airports, seaports and expressway/bridge authorities), and local governments.

### Implementation Mechanisms

Collectively, the implementation mechanisms recommended under this policy attempt to reduce GHG emissions by enhancing system efficiency and modifying travel behavior and conditions through transportation system management strategies. Those strategies will require a combination of program funding, financial and development incentives, infrastructure and technology investment, and regulatory requirements implemented at the state, regional and local level.

**Reduce existing and future trips and trip lengths:** These implementation mechanisms are intended to result either in the reduction of trip lengths or the complete elimination of certain trips. This will result in a reduction of both VMT and VHT that will reduce GHG emissions. Implementation mechanisms intended to reduce trips and trip lengths include:

- Encouraging and/or incentivizing public and private sector employers to implement *telework programs* for eligible employees. This will result in fewer work-based vehicle trips.
- Encouraging and/or incentivizing public and private sector employers to implement *job-sharing* programs for eligible employees. This will result in fewer work-based vehicle trips.

- Encouraging and/or incentivizing public and private sector employers to implement *carpooling/vanpooling* programs for eligible employees. This will result in fewer work-based vehicle trips.
- Requiring and/or incentivizing enhanced *coordination between land use and transportation decision-making* to reduce distances between clusters of affordable housing and employment opportunities. This will reduce work-based vehicle trip lengths.

**Distribute existing and future trips in terms of both time (when a trip is taken) and geography (where a trip is taken):** These implementation mechanisms are intended to change peoples driving patterns and behaviors (either by changing the time of day that they drive or the route that they take) resulting in reduced congestion and smoother traffic flows. Reducing congestion and smoothing traffic flow by will result in less idling and stop-and-go driving which in turn, will result in fewer GHG emissions. Implementation mechanisms intended to change peoples driving patterns and behaviors include:

- Encouraging and incentivizing transportation facility operators to implement *value-pricing policies*. This will encourage travelers to change the time of day they make various types of trips and result in fewer vehicle trips during peak operating hours. Alternatively, this will encourage travelers to change the route by which they make various types of trips and result in a more even distribution of vehicle trips across the transportation network.
- Encouraging and incentivizing public and private parking facility operators to implement *smart parking policies*. This will encourage travelers to change the time of day they make various types of trips and result in fewer vehicle trips during peak operating hours.
- Encouraging and incentivizing local governments and private developers to build up the *supporting transportation network* (e.g., lower functional class street network, local transit routes supporting express bus routes and premium transit options, more sidewalks and bike paths). This will encourage travelers to make appropriate route and mode choices and result in a more even distribution of vehicle trips across the transportation network.
- Encouraging and/or incentivizing public and private sector employers to implement *flex time and compressed time programs* for eligible employees. This will result in fewer work-based vehicle trips during peak operating hours and, in the case of compressed time programs, fewer work-based trips overall.

**Improve transportation system operations to reduce occurrences of transportation actions that contribute to high levels of GHG (e.g., jack rabbit starts, idling, excessive braking):**

These implementation mechanisms are intended to maximize the efficiency of the transportation system through the application of technology and advanced design. Management of the supply of transportation capacity through the application of various technologies and design strategies will result in reduced congestion and smoother traffic flows. Reducing congestion and smoothing traffic flow will result in less idling and stop-and-go driving which will, in turn, result in reduced GHG emissions. Implementation mechanisms intended to change peoples driving patterns and behaviors include:

- Increase investment in *intelligent transportation system (ITS)* technologies at all levels. In particular, investment should be focused on technologies that smooth the flow of traffic (e.g., reducing congestion, braking, idling), resulting in a reduction of VHT and GHG emissions.
- Increase investment in *incident management programs* and technologies. Quickly responding to incidents will reduce the negative impacts that incidents have on the smooth flow of traffic. Incident management can also include roadside assistance programs such as FDOT’s “Road Rangers.” Incident management will result in a reduction in incident related stop-and-go traffic, in turn reducing VHT and GHG emissions.
- Increase investment in *traffic signal coordination*. This will smooth the flow of traffic on the roadway network and result in reduced idling, braking and jack-rabbit starting, in turn reducing VHT and GHG emissions.
- Encourage and/or incentivize *access management programs* at all levels, particularly those that coordinate land use and transportation decision-making. This will reduce conflicts on the roadway and make vehicular movements more predictable (including for transit vehicles, bicyclists and pedestrians). This will result in smoother traffic flows and reduced stop-and-go traffic conditions, reducing VHT and GHG emissions.
- Increase investment in *traveler information technologies*. This will provide travelers with a more predictable travel experience and let them make rational choices that maximize their efficient use of the transportation network. This will result in less congestion and VHT and, in some cases, reduced VMT.
- Increase investment in *managed lanes technology*. Real time lane management allows for the more efficient flow of vehicles through the transportation network, maximizing available capacity and smoothing traffic flow. This will result in less congestion and VHT and, in some cases, reduced VMT.

**Related Policies/Programs in Place**

TBD

**Estimated GHG Savings and Cost Per Ton**

**Table 5.**

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

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

**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. Increasing Choices in Modes of Transportation

### Policy Description:

An important strategy in reducing greenhouse gas (GHG) emissions produced from transportation sources is reducing the growth rate in vehicle miles of travel (VMT) per capita. Providing modal alternatives to the single-occupant vehicle can reduce the number of trips on the highway system and VMT per person. Modal alternatives can include bus transit, rail transit, paratransit, ridesharing, greenways, on and off road bicycle facilities and all manner of pedestrian facilities.

Public transit vehicles generate much lower levels of GHG per person-mile. The challenge is that transit (bus and rail) accounts for only 2 percent of trips made in the United States today, compared with 5% in Canada and 10% in Western Europe.<sup>1</sup> An expansion of transit services will require a substantial increase in funding for both infrastructure and operations. Increased transit use is key to reducing the growth rate of VMT. A higher rate of transit use can be achieved by expanding transit services, increasing transit's competitiveness with other modes, ensuring safety and security of transit systems, and educating the public about transit options available in their community.

Many employers partner with local governments and non-profit agencies to promote and fund local carpooling and vanpooling programs. These rideshare alternatives, combined with employee incentives, telecommuting, and parking strategies are often effective in reducing travel demand and ultimately, VMT. High-occupancy vehicle (HOV) lanes or high-occupancy toll (HOT) lanes on major transportation corridors can encourage ridesharing by providing reduced travel times and/or tolls for vehicles carrying passengers.

Bicycling and walking do not generate GHGs. A convenient and comprehensive bicycle and pedestrian network can be a pleasant, stress free option to driving on congested roadways. Although each modal alternative by itself may not significantly reduce GHGs, an integrated system of bicycle, pedestrian and public transportation facilities could provide a significant benefit in enhancing mobility while reducing the growth rate in VMT.

### Policy Design:

**Goal levels:** Double transit ridership to equal levels found in Canada. Increase the percentage of people that walk, bicycle, carpool, vanpool or telecommute. Develop and implement policies and strategies that include program funding and financial incentives that expand non-automobile infrastructure and provide modal alternatives to single-occupant vehicle travel.

**Timing:** 1–30 years

<sup>1</sup> Making Transit Work: Insight From Western Europe, Canada, and the United States—Special Report 257. Transportation Research Board: Washington, DC. 2001.

**Parties Involved:** Public transit agencies, local governments, metropolitan planning organizations, regional transportation authorities, Florida Department of Transportation and local businesses.

### Implementation Mechanisms

#### Improve availability and accessibility of service:

- Create new public transportation systems and options, including bus rapid transit (BRT). New transit systems and routes can serve areas presently without transit, or they can add new destinations from areas currently served.
- Encourage local governments and developers to provide and expand bicycle and pedestrian networks. A more complete infrastructure will entice travelers to shift from single occupant vehicles to walking or bicycling for appropriate trips. Better bicycle and pedestrian access also promotes transit use, since all transit trips begin and end as a pedestrian.
- Create new rail systems for passengers and freight. Work with rail companies to expand intercity passenger services. Partner with ports and rail lines to expand freight rail facilities to reduce the need for trucks on the roadways and incorporate rail services in the planning and design of new transportation corridors.
- Construct new or expand existing High Occupant Vehicle (HOV) or High Occupant Toll (HOT) lanes. This will encourage travelers to shift from single occupant vehicles to high occupant vehicles for all types of trips, particularly during peak hours. Transit vehicles can also use HOV/HOT lanes to gain a time advantage over operating in standard traffic lanes.

#### Increase the competitiveness of alternative modes:

- Increase investment in public transit systems to provide more frequent service and longer service hours, making transit more time competitive with single-occupant vehicle travel. This will encourage travelers to shift from automobiles because their wait time for their needed bus or train will be shorter.
- Hold steady or decrease the user cost of transit, making transit more cost competitive with single-occupant vehicle travel. As fuel prices increase, people will find significant cost savings in moving to alternative modes. Group discounts and employer pass programs can also reduce the cost to the user.
- Increase capital investment and management procedures to ensure reliability of transit service. Users, particularly those who can afford a car, will be more likely to use transit if the service is reliably on-schedule and on time.
- Simplify and streamline the use of transit through fewer required transfers.
- Allocate preferred and discounted parking spaces to vanpools and carpools.
- Offer “guaranteed ride home” programs to those who regularly use transit, vanpools, or carpools. Under these programs, people who must work beyond their usual shift ending time receive free or discounted taxis or door-to-door transit. This gives flexibility to the worker’s schedule and encourages the use of alternative modes.

**Alternative modes must be safe and secure:**

- Public transportation must be secure. Patrons should be able to observe law enforcement and counter-terror procedures and feel safe while using public transportation services. The public is mindful of the vulnerability of mass transit systems, and is more likely to ride if they feel secure.
- Crime must be kept to minimum on the streets and on transit. If the streets are not safe, people will not walk or ride a bicycle. Similarly, if transit vehicles and stations are unsafe, everyone who can drive will do so.
- Passengers must be safe from injury on the transportation system. This includes traffic control measures, intersection markings, and proper signage.

**Educate and market the availability of alternative modes:**

The benefits of alternative modes must be promoted to the public. Direct mail, traditional advertising, schools, and employers should be utilized to distribute information on transit and bicycle/pedestrian facilities to the public. The more knowledge the public has about their options, the greater share of alternative mode use.

**Related Policies/Programs in Place**

TBD

**Estimated GHG Savings and Cost Per Ton**

**Table 6.**

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

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

**Data Sources:** Making Transit Work: Insight From Western Europe, Canada, and the United States—Special Report 257. Transportation Research Board: Washington, DC. 2001.

**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. Factoring GHG Emissions into Transportation and Land Use Planning Processes

### Policy Description

This option seeks to ensure that local and state land use and transportation planning considers the impact of land use and transportation decisions on the reduction of greenhouse gas emissions. Transportation accounts for the second largest contributor to greenhouse gas emissions in Florida, and represents approximately 40% of emissions in Florida.

Florida has a long history of local government comprehensive planning, the cornerstone of which was the enactment and amendment of the Local Government Comprehensive Planning (LGCP) and Land Development Regulation Act. Each local government is required to adopt a comprehensive plan that contains certain required elements: a capital improvements element; a future land use plan; a traffic circulation element; a general sanitary sewer, solid waste, drainage, potable water, and natural groundwater aquifer recharge element; a conservation element; a recreation and open space element; a housing element; a coastal management element (where appropriate) and an intergovernmental coordination element. Local zoning codes and land development regulations must be consistent with the policies articulated in the comprehensive plan.

In addition to the comprehensive plan, Florida has adopted as the cornerstone of its growth management transportation framework a policy called concurrency. The policy is based on the premise that public facilities shall be in place concurrent with or prior to the impacts of a particular development. “Concurrency in Florida is tied to provisions in the state growth management act, requiring the adoption of level of service standards, elimination of existing service deficiencies, and provision of infrastructure to accommodate new growth reflected in the comprehensive plan. Plans and development regulations must aim at achieving and maintaining the desired level of service, and comprehensive plans are reviewed by the state for consistency between the capital improvement element and the various elements of the plan, including the future land use plan.”<sup>2</sup>

With respect to transportation facilities, the general rule is that transportation facilities needed to serve new development shall be in place or under construction within 3 years after the local government approves a building permit or its functional equivalent that results in traffic generation. The implementation of transportation concurrency has been problematic and the Florida Legislature has adopted a number of exceptions to the general policy. First, in 2005, proportionate fair share mitigation or “pay and go” option for concurrency was adopted that: “allows developments to proceed under certain circumstances, notwithstanding a failure to meet transportation concurrency, where applicants contribute their fair share of the cost of improving the transportation facility.”<sup>3</sup> The improvement must be financially feasible within a 10 year time frame and be in or added to the 5 year capital improvements element. Second, specific

<sup>2</sup> Transportation Concurrency—Best Practices Guide, Florida Department of Community Affairs, p.6.

<sup>3</sup> *Ibid*

exceptions from the concurrency requirement are provided for certain public transportation facilities, infill or redevelopment projects, and projects whose impacts are considered insignificant or de minimis.

It is generally accepted that the implementation of the concurrency policy in Florida has had the unintended consequence of encouraging developers to build outside of existing urban cores because lack of excess transportation capacity within these areas; thereby requiring expensive transportation improvements to meet concurrency standards.

During the 2008 session of the Florida Legislature, the Legislature adopted HB 697 that was signed into law on June 17, 2008. The new law requires local governments to include in their local government comprehensive plans policies that address energy efficiency and the reduction of greenhouse gas reductions. The following elements of the comprehensive plan are amended to require:

- Future Land Use Element—includes energy-efficient land use patterns and greenhouse gas reduction strategies.
- Traffic Circulation Element—include strategies to reduce greenhouse gas reductions.
- Housing Element—address energy efficiency in design and construction of new homes.

The Energy Bill, HB 7035, requires the State Comprehensive Plan to include goals related to energy and global climate change. Also the bill provides that each Metropolitan Planning Organization is encouraged to consider strategies that integrate transportation and land use planning “to provide for sustainable development and reduce greenhouse gas emissions.”

On a broader scale, long-range visioning activities being conducted at the community and regional levels in Florida are identifying alternatives to current growth practices. Regional visioning enable communities to develop a comprehensive approach to planning for future land use, transportation, conservation, economic development, housing and other community needs. They provide an opportunity for regions to alter current growth patterns, thus modifying future transportation needs and associated energy consumption by enabling people to make fewer trips, make shorter trips, or use alternative modes.

In addition, the Department of Transportation (DOT) produces the Florida Transportation Plan (FTP), a long-range plan that identifies the goals and objectives for the next 20 years. The FTP addresses the needs of the entire state transportation system, not just those owned by DOT, and provide a vision for Florida’s transportation and lays out a policy framework to achieve this vision.

A Metropolitan Planning Organization (MPO) is made up of local elected and appointed officials responsible for coordinating transportation planning in a metropolitan area of at least 50,000 people. The 26 MPOs in Florida are responsible for developing long-range transportation plans (LRTPs) and programs, and for setting transportation funding priorities for the metropolitan areas (s. 339.179, F.S.). DOT’s five year work program is developed based on the project priorities submitted annually by the MPOs and county commissions from counties not included

in MPO areas. These LRTPs are developed based upon future land use and growth assumptions contained in the LGCPs.

## Policy Design

### Goal levels:

6.1—By December 31, 2009, all local government comprehensive plans shall be revised to include policies and objectives that address energy efficiency and greenhouse gas reduction strategies, including:

- Policies that increase density within the urban service area;
- Policies that promote compact development and maximize internal trips within the development;
- Policies that promote transit oriented development within urban service area;
- Policies that promote affordable and workforce housing in proximity to major employment centers.
- Policies that target infrastructure investment in greenhouse gas efficient locations.

Florida Department of Community Affairs is initiating a rule-making process to comply with recently passed state law on these issues.

6.2—By December 31, 2009, all local governments shall adopt land development regulations that implement the amended policies that address energy efficiency and greenhouse gas reduction strategies.

6.3—By July 1, 2009, amend the Local Government Comprehensive Planning and Land Development Act to allow local governments to enact mobility fee structures as an alternative to transportation concurrency.

6.4—By December 31, 2010, amend the Florida Transportation Plan to develop goals, objectives and strategies for addressing climate change and reducing greenhouse gas emissions.

6.5—By July 1, 2010, amend the 5-year state transportation work plan to prioritize projects that reduce vehicle miles traveled and consider the greenhouse gas impact of constructing new roads.

6.6—By April 1, 2012, require Metropolitan Planning Organizations to prioritize projects that reduce vehicle miles traveled in the M.P.O. long-range transportation plan. The ETDM (Efficient Transportation Decision Making) process provides a means to implement this goal.

6.7—By July 1, 2009, require all transportation authorities to give priority to projects that reduce vehicle miles traveled and consider the greenhouse gas impact of constructing new roads.

6.8—By date TBD, reduce Vehicle Miles of Travel (VMT) and associated Vehicle Hours of Travel (VHT) within urban service areas by 10% on per capita basis.

6.9—By July 1, 2009, establish growth policies that provide incentives for developing regional visions that integrate transportation and land use planning to provide for sustainable growth and reduce greenhouse gas emissions.

6.10 Impact Fees programs to be assessed for effectiveness and improvements

**Timing:** TBD

**Parties Involved:** TBD

### Implementation Mechanisms

In order to assist local governments in implementing the requirements of HB 697, the Department of Community Affairs should prepare model comprehensive plan policies to address the new policies required in the Future Land Use Element, Traffic Circulation Element and the Housing Element. Provisions in Florida law governing the Florida Transportation Planning Process should be amended to require consideration of the greenhouse gas reduction in the setting and prioritizing of transportation projects. Priority should be given to projects that have the result of reducing greenhouse gas emissions or encourage compact development in urban areas. Regional Transportation Authorities should be required to also consider greenhouse gas reduction in the setting of project priorities.

### Related Policies/Programs in Place

TBD

### Estimated GHG Savings and Cost Per Ton

**Table 7.**

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

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

**Data Sources:**

**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. Incentive Programs for Increased Vehicle Fleet Efficiency

### Under Development

1.3.1	Procurement of efficient fleet vehicles
1.3.4	Tax credits for efficient vehicles
1.4.14	Set up incentive program for major corporate fleet owners including rental car and taxi companies.
1.3.3	CO2-based registration fees and vehicle licensing fees
3.4.1	Procurement of efficient fleet vehicles (public, private, or other)

### Policy Description

### Policy Design

**Goal levels:**

**Timing:**

**Parties Involved:**

### Implementation Mechanisms

### Related Policies/Programs in Place

- New federal CAFÉ standards under development – Notice of Proposed Rulemaking being developed.
- State of Florida Department of Environmental Protection undertaking rulemaking process related to adoption of state clean car GHG standards. State law requires that legislature approve such clean car regulations before going into effect.

### Estimated GHG Savings and Cost Per Ton

**Table 8.**

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

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

**Data Sources:**

**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. Increase Freight Movement Efficiencies

### Under Development

#### Policy Description:

Mode-Shifting policies and strategies

Advanced Technologies for more fuel efficient heavy duty engines and vehicles

#### Policy Design:

Goal levels:

Timing:

Parties Involved:

#### Implementation Mechanisms

#### Related Policies/Programs in Place

Florida Department of Environmental Protection is undertaking rulemaking related to idling reduction for heavy duty vehicles.

62-285.420 Heavy-1 Duty Vehicle Idling Reduction.

(1) Applicability. This rule applies to any heavy-duty diesel engine powered motor vehicle. For the purposes of this rule:

- (a) Heavy-duty diesel engine powered motor vehicle means a motor vehicle:
  1. With a gross vehicle weight rating equal to or greater than 8,500 pounds;
  2. Used on roads for the transportation of passengers or freight; and
  3. Serving a commercial, governmental, or public purpose.

(b) Gross vehicle weight rating means the value specified by the manufacturer as the maximum design loaded weight of a single vehicle.

(2) Requirement. Owners or operators of heavy-duty diesel engine powered motor vehicles are prohibited from idling for more than five consecutive minutes. Idling is the continuous operation of a vehicle's main drive engine while the vehicle is stopped.

#### Estimated GHG Savings and Cost Per Ton

**Table 9.**

	2010	2020	Units
GHG Emission Savings			MMtCO <sub>2</sub> e
Net Present Value (2006–2020)			\$ Million

Cumulative Emissions Reductions (2006–2020)			MMtCO <sub>2</sub> e
Cost-Effectiveness			\$/MtCO <sub>2</sub> e

GHG = greenhouse gas; MMtCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent; \$/MtCO<sub>2</sub>e = dollars per metric ton of carbon dioxide equivalent.

**Data Sources:**

**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