



## Catalog of State Actions Transportation and Land Use Technical Work Group

A catalog of state-level, GHG-reducing actions and policy options based on actions undertaken or considered by state, local and private actors.

### Key to Future Rankings of Options in the Following Tables

Potential GHG Emission Reductions <sup>1</sup>	Potential Cost or Cost Savings <sup>1,2</sup>
<b>High (H):</b> At least 1.0 million metric tons of carbon dioxide equivalent (MMtCO <sub>2</sub> e) per year by 2020	<b>High (H):</b> \$50 per metric ton of carbon dioxide equivalent (tCO <sub>2</sub> e) or above
<b>Medium (M):</b> From 0.1 to 1.0 MMtCO <sub>2</sub> e per year by 2020	<b>Medium (M):</b> \$5–50/tCO <sub>2</sub> e
<b>Low (L):</b> Less than 0.1 MMtCO <sub>2</sub> e per year by 2020, or 1.0 MMtCO <sub>2</sub> e by 2050	<b>Low (L):</b> Less than \$5/tCO <sub>2</sub> e
<b>Uncertain (U):</b> Not able to estimate at this time	<b>Negative (Neg):</b> Net cost savings
	<b>Uncertain (U):</b> Not able to estimate at this time
<sup>1</sup> Several measures may overlap in terms of emission reductions and/or cost impacts. Estimates assume measures would be implemented independently from other measures.	
<sup>2</sup> Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.	

### Definition of “Priorities for Analysis”:

- **High:** High-priority options will be analyzed first.
- **Medium:** Medium-priority options will be analyzed next, time and resources permitting.
- **Low:** Low-priority options will be analyzed last, time and resources permitting.

### Notation of Options:

\* **Options marked in bold and asterisk (\*)** indicate some of the related state actions that are approved or underway, as described further in the companion options description document. Subcommittee members are encouraged to provide information on other relevant actions.

## Catalog of State Actions Transportation and Land Use (TLU) Technical Work Group

Option No.	GHG Reduction Policy Option	Potential GHG Emission Reductions	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes
<b>TLU-1</b>	<b>PASSENGER VEHICLES</b>					
<b>TLU-1.1</b>	<b>PASSENGER VEHICLE TECHNOLOGY</b>					
1.1.1	New Vehicle Standards: Tailpipe GHG and Fuel Economy”					
1.1.2	ZEV/LEV II Implementation					
1.1.3	Research and Development and Bringing to Market Lower-GHG Vehicle Technologies					
1.1.4	Vehicle Add-On Technologies (e.g., Low-Friction Oil and Fuel Efficient Tires)					
1.1.5	Hybrid Buses					
1.1.6	Support Stronger Federal CAFE Standards					This is within federal jurisdiction.
1.1.7	Programs for GHG Emissions: Consumer Information for Newly Purchased Cars					
1.1.8	Develop Infrastructure for Plug-In Vehicles					
<b>TLU-1.2</b>	<b>PASSENGER VEHICLE OPERATIONS</b>					

Option No.	GHG Reduction Policy Option	Potential GHG Emission Reductions	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes
1.2.1	Enforce Speed Limits					
1.2.2	Vehicle Maintenance and Driver Training					
1.2.3	Improved Transportation System Management (e.g., Traffic Signal Synchronization and Intelligent Transportation Systems)					
1.2.4	Driver Information Technologies, Including Pay-As-You-Drive Insurance					Provides feedback on driving habits.
1.2.5	Tune-Up Services, Including Tire Pressure Checks					
1.2.6	Passenger Vehicle Idling Restrictions					
1.2.7	School Education Programs					
1.2.8	Public Education					
1.2.9	Lower Speed Limits					
1.2.10	Reduce Bottlenecks Through Infrastructure Improvements					
<b>TLU-1.3</b>	<b>PASSENGER VEHICLE INCENTIVES AND DISINCENTIVES</b>					
1.3.1	Procurement of Efficient Fleet Vehicles					Includes government and large private-sector fleets.
1.3.2	Feebates (State-Specific or Regional)					

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1.3.3	CO <sub>2</sub> -Based Registration Fees and Vehicle Licensing Fees					
1.3.4	Tax Credits for Efficient Vehicles					
1.3.5	Vehicle Scrappage					This is an incentive to replace low-fuel-economy vehicles sooner.
1.3.6	Emission-Based Tolling (Discounts for Clean Vehicles)					This is an incentive to replace light-duty vehicles sooner.
1.3.7	Establish a Carbon Emission Tax Modeled After the Clean Air Discount Bill					
1.3.8	Establish a Fleet Replacement Grant Program					
1.3.9	Provide a Tax Incentive for Adult Bicycles					
1.3.10	Support Alternative Travel in the Advertising Mainstream					
<b>TLU-1.4</b>	<b>FUEL RELATED MEASURES</b>					
1.4.1	Low-GHG Fuel Standard (e.g. renewable)					Also known as a low-carbon fuel standard.
1.4.2	Low-GHG for State Fleets (e.g., CNG, Biodiesel)					
1.4.3	Biodiesel Expansion (Biodiesel, CNG, LPG, Cellulosic Ethanol)					

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1.4.4	Alternative-Fuel Infrastructure Development					
1.4.5	Fund Research and Development for a Full Range of Renewable Transportation Fuels					
1.4.6	Develop Life-Cycle Analyses of Transportation Fuels to Determine the Appropriate Pathways to Sustainably Protect Natural Resources					
<b>TLU-2</b>	<b>LAND USE EFFICIENCY AND MODAL OPTIONS</b>					
<b>TLU-2.1</b>	<b>GENERAL LOCATION EFFICIENCY</b>					
2.1.1	Statewide Growth Management Plan					
2.1.2	Include GHG Evaluations in State Policies					
2.1.3	Shape Investment To Maximize GHG Reductions					
2.1.4	Provide Technical and Financial Support to Local Agencies					Including training and creating staffing.
2.1.5	Smart Growth Planning, Modeling, and Tools					
2.1.6	Land Use, Zoning, Tax, and Building Code Reform					

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2.1.7	State Congressional Advocates for Federal Action					
2.1.8	Use of Flexible Federal Transportation Funding					
2.1.9	Downtown Revitalization					
2.1.10	Brownfield Redevelopment					
2.1.11	Infill Development					
2.1.12	Transit-Oriented Development					
2.1.13	Traffic Calming					
2.1.14	Targeted Open-Space Protection					
2.1.15	Balance Economic Development With Agriculture, Protection of Natural Resources, and Preservation of Rural Character					
<b>TLU-2.2</b>	<b>INCREASING LOW-GHG TRAVEL OPTIONS</b>					
2.2.1	Make Full Use of CMAQ Funds—With Application Reviews Considering GHG Reductions					

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2.2.2	Improve Transit Service (Frequency, Convenience, and Quality)					
2.2.3	Transit Marketing and Promotion (Including Individualized Transit Marketing)					
2.2.4	Expand Transit Infrastructure (Rail, Bus, Bus Rapid Transit)					
2.2.5	Transit Prioritization (Signal Prioritization, HOV Lanes)					
2.2.6	Guaranteed Ride Home					
2.2.7	Create Regional Multimodal Transportation Centers					
2.2.8	Bike and Pedestrian Infrastructure					
2.2.9	HOV Lanes					
2.2.10	Van Pooling and Car Pooling					
2.2.11	Park-and-Ride Lots					
2.2.12	Car Sharing					
2.2.13	Telecommute, Live Near Your Work, and Compressed Work Week					
2.2.14	Require Government Agencies To Use Telecommuting					

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2.2.15	Telecommuting Centers, Support, and Incentives					
2.2.16	E-Commerce					
2.2.17	Thorough Analysis of Future Infrastructure Capacity Expansion					
<b>TLU-2.3</b>	<b>INCENTIVES AND DISINCENTIVES</b>					
2.3.1	Commuter Choice Programs/Parking Cash-Out					
2.3.2	Adopt Best Work Places for Commuters Policies					
2.3.3	Issue Free Bus Passes to Downtown Workers, Students, and Retired People					
2.3.4	Transit Pricing Incentives					
2.3.5	Free Downtown Parking to Car Poolers					
2.3.6	Reserve Parking Spaces for High-Occupancy Vehicles and Car-Share Programs					
2.3.7	Benefits for Low-GHG Vehicles (Preferential Parking, Use of HOV Lanes)					
2.3.8	Location-Efficient Mortgages					
2.3.9	VMT Charges					

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2.3.10	Increased Fuel Tax (With Targeted Use of Revenue Toward Travel Alternatives)					
2.3.11	Pay-As-You-Drive Insurance					
2.3.12	Congestion Pricing (With Targeted Use of Revenue Toward Travel Alternatives)					
2.3.13	Emission-Based Tolls (With Targeted Use of Revenue Toward Travel Alternatives)					
2.3.14	Urban and Intercity Road Tolls (With Targeted Use of Revenue Toward Travel Alternatives)					
2.3.15	Cordon Pricing					
2.3.16	Parking Pricing, Excise Tax, and/or Supply Restrictions					
2.3.17	VMT/GHG Offset Requirements for Large Developments					
2.3.18	Research the Impact of GHG Emission Reduction Strategies on Transportation Revenue Sources					
2.3.19	Research Alternative Ways to Fund Transportation That Creates Incentives To Drive Less					

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2.3.20	CO <sub>2</sub> Conformity Requirements					
2.3.21	Encourage Coordination and/or Consolidation of Transit Agencies					
<b>TLU-3</b>	<b>HEAVY-DUTY VEHICLES</b>					
<b>TLU-3.1</b>	<b>HEAVY-DUTY VEHICLE TECHNOLOGIES</b>					
3.1.1	Vehicle Technology Improvements (e.g., Aerodynamics)					
3.1.2	R&D on Low-GHG Vehicle Technology					
3.1.3	Black Carbon Control Technologies (e.g., Use of Particulate Traps, Other Complementary Technologies)					Black carbon can affect climate by absorbing sunlight and heating the air, thereby altering large-scale atmospheric circulation and the hydrologic cycle.
3.1.4	Facilitate Adoption of New Clean Technologies—Rail and Marine Engines					
3.1.5	Single-Wide Tires, Low-Resistance Radials, Automatic Tire Inflation					
<b>TLU-3.2</b>	<b>HEAVY-DUTY VEHICLE OPERATIONS</b>					
3.2.1	Freight Logistics Improvements/GIS					

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3.2.2	Enforce Speed Limits					
3.2.3	Improve Traffic Flow					
3.2.4	Increased Size and Weight of Trucks					
3.2.5	Pre-Clearance at Scale Houses					
3.2.6	Truck Stop Electrification					
3.2.7	Enforce Anti-Idling					
3.2.8	Clean Freight Operating Improvements					Example: particulates from freight, including coal train coal dust.
3.2.9	Freight Village/Consolidation Centers					
3.2.10	Lower Speed Limits					
<b>TLU-3.3</b>	<b>INCREASING LOW-GHG HEAVY-DUTY TRANSPORTATION OPTIONS</b>					
3.3.1	Intermodal Freight Initiatives					
3.3.2	Feeder Barge Container Service					
3.3.3	Increase Rail Capacity and Address Rail Freight System Bottlenecks					
3.3.4	Shift Freight Movements From Truck to Rail					
3.3.5	Promote Strategies To Ease the Movement of Freight in More GHG-Efficient Ways					

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<b>TLU-3.4 HEAVY-DUTY VEHICLE INCENTIVES AND DISINCENTIVES</b>						
3.4.1	Procurement of Efficient Fleet Vehicles (Public, Private, or Other)					
3.4.2	Incentives To Retire or Improve Older, Less Efficient Vehicles					
3.4.3	Maintenance and Driver Training					
3.4.4	Increased Emission-Based Truck Tolls or Highway User Fees					
3.4.5	Tax Credits and Incentives for New Equipment					
<b>TLU-4 INTERCITY PASSENGER TRAVEL: AVIATION, RAIL, BUS</b>						
4.1	High-Speed Rail					
4.2	Integrated Aviation, Rail, Bus Networks (Planning, Governance, and Investment)					
4.3	Aircraft Emissions					
4.4	Airport Ground Equipment					
4.5	Intercity Bus Incentives and Subsidies					
4.6	Improved Passenger Rail Service					
<b>TLU-5 OFF-ROAD VEHICLES (CONSTRUCTION EQUIPMENT, OUTBOARD MOTORS, ATVS, ETC.)</b>						

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5.1	Incentives for Purchase of Efficient Vehicles and Equipment					
5.2	Improved Operations, Operator Training					
5.3	Increased Use of Alternative Fuels or Low-Sulfur Diesel					
5.4	Adopt Green Port Strategy (Port Land-Side: Clean Up Port-Dwelling and Cargo-Handling Equipment Operations)					
5.5	Low-Carbon Fuel (Off-Road and Recreational Marine)					
5.6	Locomotive Idling Reductions					
5.7	Inclusion of Idling Reduction Requirements					
5.8	Diesel Cranes at Port-Electrification or Other GHG-Reducing Alternatives					
5.9	"Shore Power" at Port Sites					