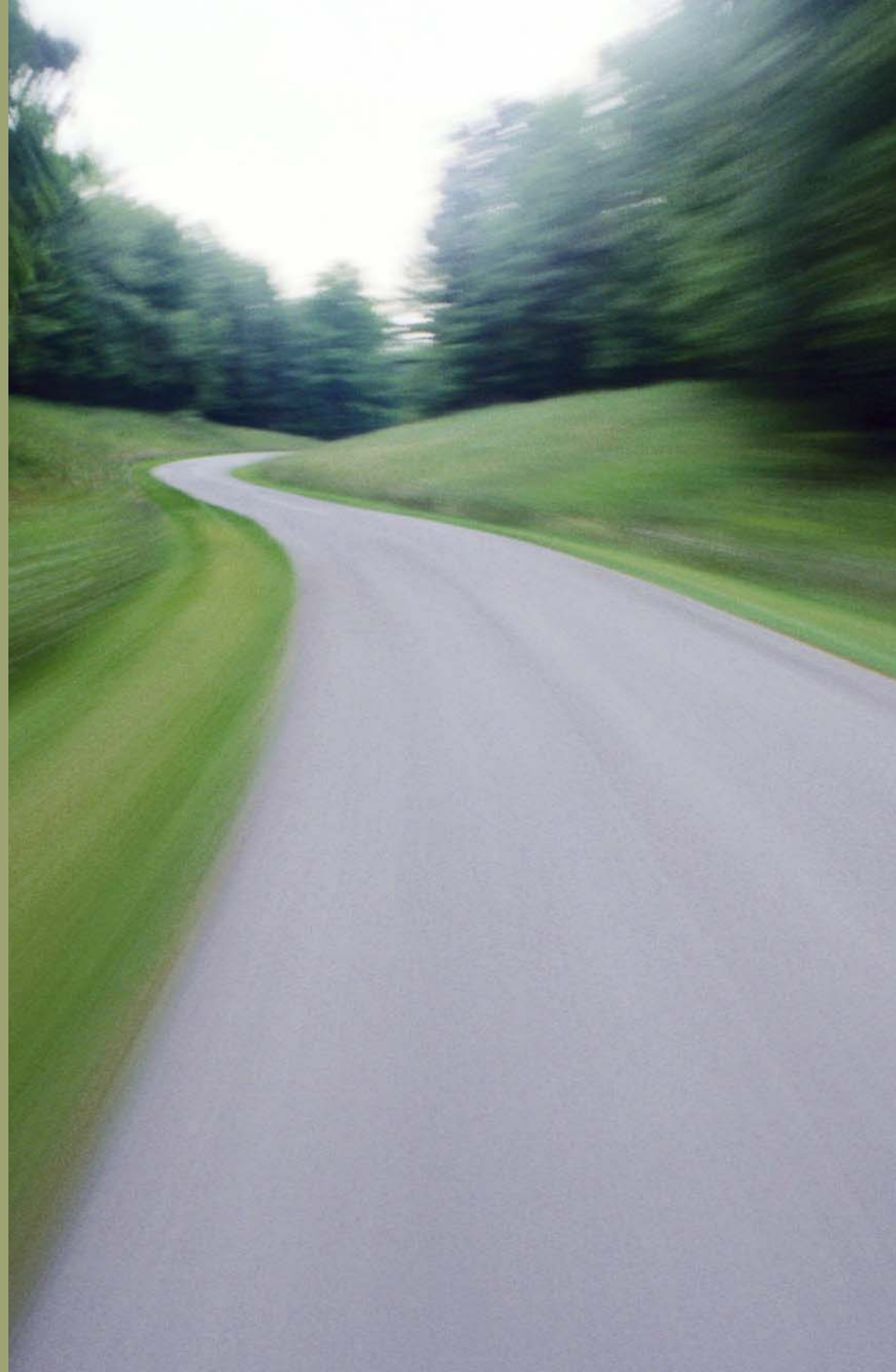


Driving Towards a Cleaner Environment — A Healthier Future

Canadian Automobile Association (CAA)
and
Pollution Probe

November 2006



Driving Towards a Cleaner Environment — A Healthier Future

Table of Contents

| | |
|--|-----------|
| Introduction | 2 |
| The Importance of Mobility to Canadians | 4 |
| Our Impact on the Environment | 6 |
| The Three-Point 'Eco-Mobility' Plan | 10 |
| Eco-Driving | 12 |
| Better, Safer Roads and Highways | 14 |
| Improved Automobile Fuel Efficiency | 16 |
| Conclusion | 20 |

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Our two organizations recognized a need to focus on a significant group that is not yet being addressed as part of the climate change solution — the Canadian consumer. We know from our research that Canadians are environmentally conscious. They know there is a serious problem, and they want leadership and real solutions to help them make a difference.

For this reason, CAA and Pollution Probe have entered into a partnership to help individual Canadians combat climate change. The first product of this partnership is a three-point *Eco-Mobility Plan for Canadians*, which focuses on preserving the benefits of individual mobility while contributing to a healthier environment. Our Report, *Driving Towards a Cleaner Environment — A Healthier Future*, expands on the Plan.

Our Report and Plan provide tangible solutions for a healthier environment. They integrate the motorist, the road system and the vehicle into a solution for cleaner air, fewer emissions and a healthier environment.

We believe this Plan encourages a practical and balanced approach to mobility and the environment and will engage individual motorists, governments and automakers alike.



David Flewelling
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The **Canadian Automobile Association (CAA)** is a consumer-based organization representing 4.9 million Canadians. CAA not only provides a wide range of services for its members, but also works to improve traveling and motoring conditions at home and around the world, including national advocacy efforts on both traffic safety and public policy issues that affect Canadian motorists. www.caa.ca



Pollution Probe is a leading not-for-profit environmental organization actively engaged in initiatives to address air pollution and climate change, including conducting research, engaging partners, implementing projects, holding events and contributing to the development of new policies to honour Canada's commitment to clean air and to reduce greenhouse gas emissions. www.pollutionprobe.org



introduction



Canadians Want Something to be Done About Climate Change

Canadians care about the environment. According to a 2006 Decima Research poll¹ conducted for CAA, 91 per cent of Canadians are concerned about climate change.² They know that climate change and poor air quality threaten their health and prosperity today, and threaten the potential for future generations to live healthy, prosperous lives. The same poll showed that less than half of Canadians think it's a good idea for governments to simply conduct more education and advertising about climate change.³ Canadians want action, and we want to help.

Three Factors Should be Considered

There is a very real challenge that we must face: How do we resolve our need to take action on climate change with both our deeply-ingrained culture of personal mobility and our reliance on automobiles to provide that mobility? The key is to adjust our thinking about personal mobility and reduce the emissions produced by automobiles by minimizing the amount of fuel they burn. There are three factors that primarily govern fuel consumption:

- Automobile use and the use of transportation alternatives
- Road conditions
- Automobile fuel efficiency

CAA and Pollution Probe have joined together to prepare this report, because we believe that by addressing each of these factors in a coordinated manner, the environmental benefits can be maximized. We call this approach “Eco-Mobility” since it encompasses more than cars and roads. Rather, it is about preserving the benefits of individual mobility while contributing to a better environment. Eco-Mobility is an approach that evolves to meet society’s changing transportation and environmental needs. For example, as transportation technologies develop, the ways in which governments support these technologies and the ways people use them must develop accordingly, to ensure that the potential environmental benefits are fully realized. Our approach focuses on providing environmentally sound choices to Canadian consumers.

CAA and Pollution Probe Have a Plan that Addresses the Three Factors

As a launching point, CAA and Pollution Probe propose that the federal government implement a three-point plan, consisting of:

1. **“Eco-Driving”**: The development and support of consumer-focused programs. These programs promote fuel conservation through choosing fuel efficient automobiles, enhanced driving and maintenance practices, and using more energy efficient transportation options (such as public transit, car pooling, walking and biking).

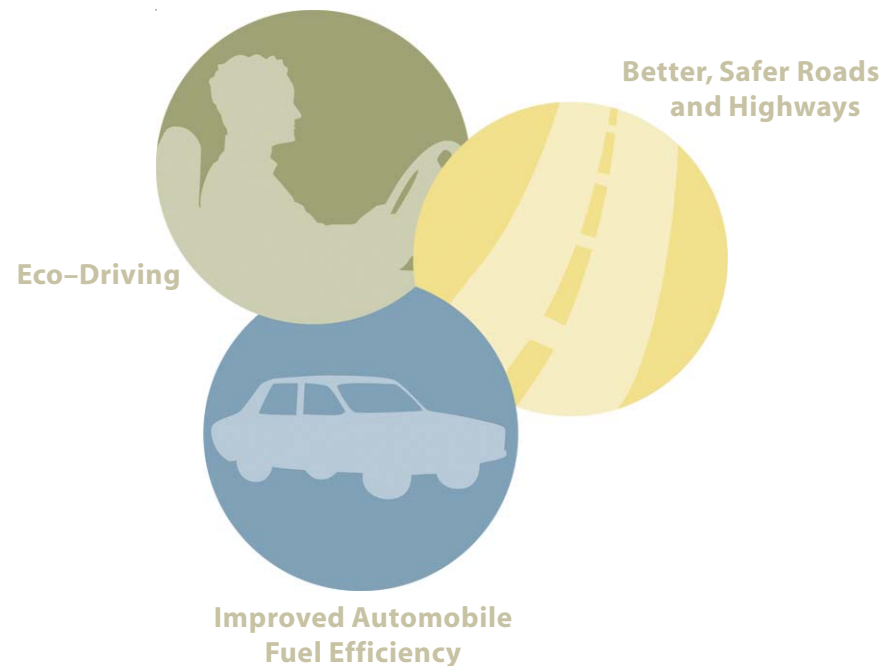
“Canadians care about the environment. Ninety–one per cent of Canadians are concerned about climate change.”

- 2. Better, Safer Roads and Highways:** Investment in road and highway infrastructure that leads to better and safer driving conditions. Better highway design and the use of advanced traffic management systems can support smoother traffic flow and reduce congestion — all of which help motorists conserve fuel — and have the benefit of making roads safer too.
- 3. Improved Automobile Fuel Efficiency:** Develop and implement effective fuel efficiency standards for automobiles sold in Canada. Support the development of automotive and fuel technologies that will lead to reduced greenhouse gas emissions from the light-duty vehicle fleet. Increasing fuel efficiency levels in Canada will align our market with the growing demand for fuel efficient automotive products around the world, thereby supporting the competitiveness of our auto industry.

We see *Eco-Driving*, *Better and Safer Roads and Highways* and *Improved Automobile Fuel Efficiency* as integrated and concurrent elements of the proposed plan. In other words, greater progress towards a cleaner environment can be leveraged through improvements in all three areas than in one alone. Conversely, progress will be limited if synergies among the elements are not fully appreciated.

This partnership between CAA and Pollution Probe is a new one. But both organizations share a common value: finding and promoting solutions that work. We believe our three-point plan represents a new, holistic approach that engages individual motorists, governments and automakers alike, recognizing that we all have a role to play in contributing to a cleaner environment and a healthier future.

Eco-Mobility for a Cleaner Environment



the importance of mobility to Canadians

Canada is a Big Country with a Small and Dispersed Population

Canada is a very big country, geographically speaking. Canada's population, in contrast, is small in proportion to the size of its land mass. Most of Canada's estimated 33 million people⁴ live in or close to cities and towns that are located parallel to the southern border and spread along its six thousand kilometre length.

Mobility is Vital to our Economy and Living Standards

The ability to traverse this country's vast distance is important to Canadians. To be independent, to connect with family and friends, to visit Canada's tourist destinations and to conduct business, people need safe and reliable mobility options. Personal mobility is an essential element in the quality of life of Canadians. Commerce within Canada and across its provincial borders also depends on effective

transportation systems for the movement of goods and for commuting workers.

Roads and highways support the majority of transportation activity in Canada, mainly because road and highway infrastructure directly connects more people and places than any other mode of transportation, by far. The National Highway System is the backbone of Canada's interconnected roads and highways, carrying 30 per cent of the nation's traffic. Moreover, about 80 per cent of Canada's trade in goods with Mexico and the U.S. travels by roads and highways.



Canada's National Highway System

The private automobile has become the primary mode of personal mobility for Canadians. According to Statistics Canada, over 80 per cent of Canadian households have a personal vehicle. Among those 9.3 million households, there were 19.4 million vehicles registered in Canada in 2005, of which 18.1 million (94 per cent) were passenger cars.

Canada's Future Prosperity Linked with Mobility and Support for Infrastructure

Canada's economic system, our continued prosperity and our quality of life are based on the mobility of its people and the flow of trade. However, mobility is only as effective as the infrastructure that supports it. Roads and highways in certain areas have become bottlenecks — and with dire consequences not only to the environment, but also to our prosperity. For example, the Greater Toronto Services Board estimates that \$2 billion annually is lost, just in the Greater Toronto Area, to traffic congestion and inadequate infrastructure that delay shipments and reduce productivity.

To thrive and grow, Canada needs a transportation system that evolves to meet the needs of its people. By investing in existing transportation infrastructure to improve overall safety and effectiveness, and by expanding support for a range of more flexible mobility options, the federal government can contribute to the prosperity — and ultimately, the health — of Canadians.

- There is a \$22 billion, and growing, deficit in our National Highway System. The by-product of this deficit is ever-increasing congestion, not only among vehicles stuck idling in traffic, but in trade as well. The Council of the Federation estimates that the federal government is spending, at best, only \$441 million per year to make our roads safer and more efficient.
- Census data for 2001 reveal that almost 81 per cent of all Canadians get to their job each day either by driving their own vehicle or as a passenger in a vehicle driven by someone else.
- According to a 2005 study by the Ontario Chamber of Commerce Borders and Trade Development Committee, by 2020, delays at the border have been estimated to cost Canada more than \$450 million a year in productivity losses related just to tourism if conditions are not upgraded.

our impact on the environment



The Environment is a Global Issue

Climate change, clean air and water are global issues, requiring global co-operation, national leadership and local action. The term “climate change” is sometimes used to refer to all forms of climatic inconsistency, and results from global warming. Global warming results from the build-up of human generated gases in the atmosphere that trap the sun’s heat. This enhanced greenhouse effect causes changes in weather patterns on a global scale. The impacts include changes in rainfall patterns, sea level rise, potential droughts, habitat loss, and heat stress.

Canadians Care About the Environment

In Canada, climate change is bringing an unprecedented warming of 0.2°C per decade.⁵ While it may appear to be a minor variation, very profound changes can and will likely result from such a steady rise in temperature.

Some regions will experience more extreme heat, while others may cool slightly, with flooding, drought, and intense summer heat as the result. We could also see an increase in violent storms and other extreme weather events resulting from the increased energy stored in our warming atmosphere.

Obviously, the environment is under threat. Solutions are needed that not only will address this problem today, but also will generate long-term benefits for our families and future generations.



Canadians are concerned that not enough is being done to protect the environment.⁶ Our health and prosperity depend upon clean air and clean water — life sustaining services that a healthy environment provides to us free of charge.

More than half of Canadians are either extremely (23 per cent) or very (32 per cent) concerned about climate change and global warming, according to a recent poll conducted for CAA by Decima Research Inc. Only eight per cent are not at all concerned.⁷

Canadians Want the Government to Act

There is broad support for a range of solutions to reduce greenhouse gas emissions in Canada.⁸ Measures supported by a majority of Canadians include economic incentives to encourage the use of more fuel efficient automobiles, increasing research into alternative energy sources, and information on practical ways they can reduce energy use. In contrast, fewer than half of Canadians believe that educational activities and advertising measures alone will be effective in reducing emissions.

Canadians Support International Cooperation on Climate Change

Canadians also support Canada's commitment to meet internationally agreed upon reductions in greenhouse gas emissions that contribute to climate change and global warming. Four out of five Canadians believe that signing the Kyoto Protocol was a 'good thing'.⁹

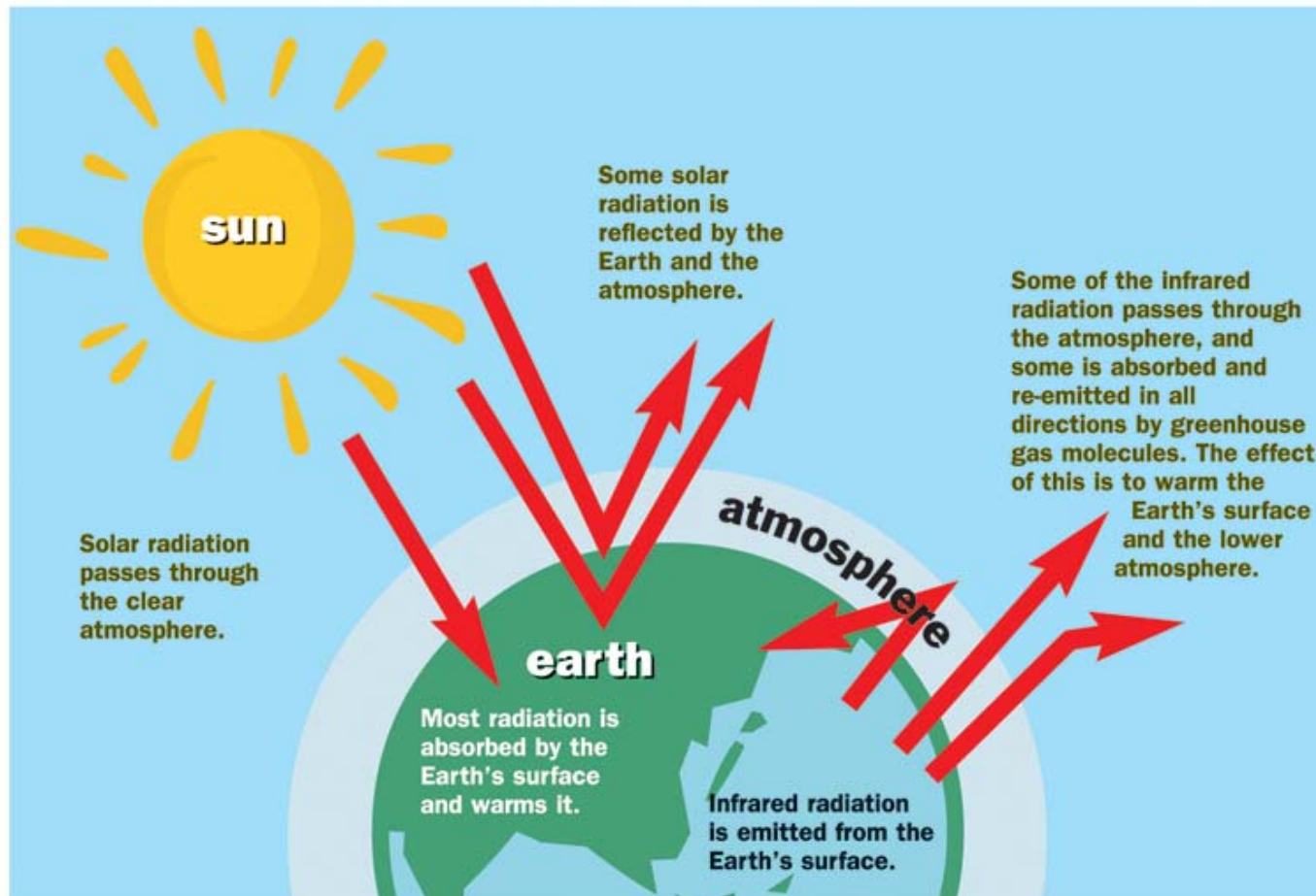
Canadians, of which 4.9 million are CAA members, care about the environment and are ready to do their part. There is nothing to be gained for the environment by further delay. Now is the time for the Federal Government to take the lead on practical solutions.

- Gases in our atmosphere sustain life on earth by trapping the sun's heat. Without naturally-occurring, heat-trapping gases — mainly water vapour, carbon dioxide and methane — Earth would be too cold to sustain life as we know it. The danger lies in the rapid increase of carbon dioxide and other greenhouse gases (GHGs) that intensify this natural greenhouse effect. Human industrial activity, including burning fossil fuels, deforestation, and intensive agriculture, has tipped the balance and added huge quantities of carbon dioxide and other greenhouse gases. Today's atmosphere contains 32 per cent more carbon dioxide than it did at the start of the industrial era.
- The global average temperature has risen 0.6°C over the past 100 years, and is continuing to rise faster than at any time since the industrial age began due to the increase in greenhouse gases.

our impact on the environment



The Greenhouse Effect



Source: US Global Change Research Program. www.usgcrp.gov.

- The 1990s was the warmest decade on record; experts project that average global temperatures could rise by as much as 1.4 to 5.8°C during this century.
- Experts predict that increasing temperatures will lead to changes in many aspects of weather, such as wind patterns, precipitation, and the severity and frequency of extreme weather events.
- There is a role for the motorist to play: while industry accounts for the largest share of Canada's greenhouse gas emissions, about 25 per cent still come from transportation activities. Half of that (one eighth of our total emissions) is from personal vehicle use, such as passenger cars and light trucks. Light trucks include pickup trucks, cargo vans, minivans, and SUVs.
- "Smog" refers to a noxious mixture of air pollutants, including vapours, gases and particles that can often be seen as a yellowish-brown haze in the air — a visual indication of poor air quality. Smog is formed when the burning of fossil fuels in factories, power plants, transport vehicles and automobiles releases pollutants into the air. Some smog-forming pollutants are also greenhouse gases.
- The medical evidence is overwhelming that air pollution and smog are causing severe health impacts in Canada.¹⁰

The phrase "Think Globally, Act Locally" was originated in 1979 by Rene Dubos, an advisor to the 1972 United Nations Conference on the Human Environment. Dubos suggested that ecological consciousness should begin at home, and that global environmental problems can turn into action only by considering ecological, economic and cultural differences of our local surroundings.

the three-point “Eco-Mobility” plan

The Eco-Mobility Plan is a New Approach

Eco-Mobility is a new way of thinking about personal transportation in which minimizing environmental impact is factored into the mobility choices people make. We recognize that for many people, in most circumstances, the private automobile may be the preferred (or only) personal transportation option. Recognizing that the motorist, the road and the automobile are parts of an integrated system that contribute to overall emissions, the three-point plan proposed by CAA and Pollution Probe addresses each of these elements to produce a solution.

The Plan

The three-point plan is composed of the following elements:

1. Eco-Driving
2. Better, Safer Roads and Highways
3. Improved Automobile Fuel Efficiency



Eco-Driving

CAA and Pollution Probe call upon the Federal Government to be an active and leading partner in promoting Eco-Driving. The government can do this by building a partnership of interested groups and agencies. This partnership can develop programs making drivers more aware of fuel efficient vehicles and techniques to conserve fuel and reduce automobile emissions, as well as promoting the widespread adoption of those techniques. Types of support to consider include economic incentives, such as tax rebates on fuel efficient vehicles, as well as providing resources and expertise for communications and program coordination among the Eco-Driving partnership.

Individual Canadians can also conserve fuel and reduce emissions by using alternatives to single-occupancy automobile travel (such as public transit, car pooling and car-sharing) and active transportation options (e.g., walking, cycling). Thus, we recommend that the federal government build upon its existing financial support for mobility alternatives (including but not limited to public transit) by working with other levels of government and local commuter groups to further expand mobility options for citizens — and promoting those options accordingly.

“The motorist, the road and the automobile are parts of an integrated system that contribute to overall emissions.”

Better, Safer Roads and Highways

CAA and Pollution Probe call upon the Federal Government to make investments in road and highway infrastructure that lead to better and safer driving conditions. As well as making roads safer, better highway design can contribute to smoother traffic flow and less congestion, helping motorists to conserve fuel and reduce emissions from their automobiles. Development and implementation of Intelligent Transportation Systems (ITS), which integrate information technology and sophisticated traffic management strategies, can lead to additional emissions reductions.



Improved Automobile Fuel Efficiency

CAA and Pollution Probe call upon the Federal Government to implement mandatory automobile fuel efficiency standards for Canada. Automobiles can be much more fuel efficient, and effective government policy is needed to make it happen. We urge the government to commence with the development of a fuel efficiency standard that will generate long-term reductions in greenhouse gas emissions and air pollutants from the light-duty vehicle fleet in Canada. Through consultation with industry, standards can be designed to reduce emissions while preserving industry competitiveness and encouraging technology innovation.

A Memorandum of Understanding (MoU) currently exists between the Federal Government and the Canadian Auto Industry to work towards reductions in greenhouse gas emissions. CAA and Pollution Probe support the implementation of the MoU. However, we recommend starting the policy development process for an effective fuel efficiency standard now, so that the Federal Government has new measures in place when the MoU ends in 2010. The fuel efficiency standard should build upon progress made under the MoU.

We see value in the government’s continued support for research and development of advanced automotive and fuel technologies that ultimately lead to reduced fuel consumption and greenhouse emissions. Support for this work already exists through various entities, such as the Auto21 Networks of Centres of Excellence, Sustainable Development Technology Canada and the CANMET Energy Technology Centre.



What is Eco-Mobility? *Eco-Mobility is an integrated approach to personal transportation that considers the environmental impacts of the motorist, the vehicle and the road. Eco-Driving is a subgroup of Eco-Mobility that focuses on personal transportation choices from an individual's perspective.*

Eco-Driving means choosing the most environmentally sustainable mode of transportation that is available and practical. Primarily, it relates to the role of the individual in contributing to a healthier environment by reducing fuel burned and emissions generated. From planning daily commutes to running occasional errands, Eco-Drivers seek to make smart choices that reduce the energy needed to be mobile.

Using active transportation options (such as walking and cycling) and public transit are healthy and environmentally sensible choices. For many Canadians, however, automobiles are often the only practical mobility option. In these cases, Eco-Driving is about conserving fuel by driving in a safe and efficient manner, maintaining your automobile in peak condition and planning your trips to minimize the distance traveled.

Eco-Driving is also about using the most fuel efficient automobile that serves the mobility needs of the driver and passengers. When shopping for a new or used car, Eco-Drivers consider fuel efficiency ratings as an important factor in their choice. Likewise, when renting or leasing a car, fuel efficiency is important to Eco-Drivers. By car-pooling or participating in car-sharing programs — and recognizing how much vehicle one actually needs — fuel use and emissions can also be minimized — that's Eco-Driving too!

Driving to conserve fuel also increases the safety of the driver, the passengers and others that share the road. After all, aggressive driving in city traffic saves very little time and greatly increases fuel consumption and emissions. It is also hard on the engine and brakes, increasing fuel use. For example, one study showed that aggressive driving behaviour, such as “jackrabbit” starts from traffic lights and hard braking, reduced travel time by only four per cent (the equivalent of 2½ minutes out of a 60-minute trip). However, fuel consumption increased by 37 per cent, and some toxic emissions were more than five times higher.¹¹ Fuel efficiency is better when motorists accelerate smoothly and maintain a steady speed.

The same holds true on the highway. It takes energy to get a vehicle up to cruising speed, and that energy is lost every time the vehicle is forced to slow down unnecessarily — for example, in approaching other vehicles too quickly and having to brake.

Through incentives, the federal government can support Eco-Mobility behaviour and increase the appetite among Canadians for fuel efficient and alternative fuel vehicles, thereby encouraging the renewal of Canada's fleet more quickly than by market forces alone. The result? More Canadians in cleaner, more fuel efficient vehicles, more quickly.

As people make Eco-Driving principles a part of their lifestyle, automakers should respond to the demand for more fuel efficient automobiles. Instead of using technology to boost the power, size and speed of their products, automakers will apply their ingenuity to produce models that are easier on fuel use and on the environment.

Eco-Driving is a behaviour that is learned. In this, the Federal Government has several roles to play: increasing awareness, funding infrastructure and providing incentives. The government can lead the development of Eco-Driving awareness and education programs to be delivered by local groups and agencies across the country. Our transportation infrastructure should encourage Eco-Driving, leading to a cleaner environment and safer travel. Infrastructure for alternatives to single-occupancy vehicle use (such as High Occupancy Vehicle lanes to encourage carpooling, public transit, walking and cycling) should be a funding priority, along with funding for better, safer roads and

highways. Economic incentives that promote and sustain consumer demand for more fuel efficient automobiles are another measure government must consider as part of Eco-Driving.

Recommendations

- Make Eco-Driving a national objective and lead the development of education and awareness programs.
- Increase Eco-Driving options by supporting the expansion of walking, cycling, car pooling, car sharing and public transportation infrastructure.
- Introduce economic incentives to encourage and sustain consumer demand for more fuel efficient automobiles.

What is Car Sharing?

Car sharing is a new alternative to owning a car. For a fee, members of a car sharing organization get self-serve access to personal vehicles without having to own the vehicle directly.

Car sharing is an alternative for those people who only need a personal vehicle some of the time or families that don't need two full-time cars. Car sharing participants also help promote responsible use of personal vehicles by taking into account how much car time they actually need.



Better, safer roads and highways support motorists' efforts to be Eco-Drivers by encouraging fuel conservation and reducing emissions while providing for safer travel. Smoother traffic flow also contributes to economic productivity and trade within the country and across borders.

Unfortunately, today's roads and highways often work against these efforts. Many roads and highways were not designed to accommodate the volume of traffic they carry, which leads to increased congestion and deteriorating road conditions: stop-and-go driving, idling in traffic, wasted fuel and increasing emissions. Such conditions can also contribute to driver aggravation and compromise the potential for safe automobile travel.

Infrastructure investments to reduce bottlenecks and create smooth and efficient traffic flow can help to increase highway safety and economic productivity while reducing automobile fuel use and emissions. Innovative road design, including 2+1 Highways and increased numbers of high occupancy vehicle lanes in high-traffic areas and new transportation technologies can also encourage Eco-Driving and help make roads safer.

As the technology in automobiles improves, road and highway technologies should also become more advanced. Effective synergies should be sought that better integrate the automobile and the road as a system. The increasing sophistication of automobiles should match advancements in traffic control systems to optimize traffic flow in ways that improve the safety and environmental performance of road travel.

2 + 1 Highways — A New Concept

Today, some European countries are operating "2 + 1" highway designs. These highways consist of three lanes in total, with two lanes of traffic flowing in one direction and one lane of traffic traveling in the opposite direction. A safety barrier separates the two lanes. Every two kilometres, the barrier shifts, reducing the two-lane highway to one lane, and widening the opposing one-lane highway to two lanes. This intermittently provides both traffic streams with a safe overtaking zone, allowing traffic to flow smoothly without the additional expense of building more lanes. In Sweden, it is estimated that roads of this type have led to an overall reduction in fatal accidents by 50 per cent.

- Upgrading the National Highway System to eliminate congestion could reduce fuel consumption by as much as 236 million litres per year¹² (roughly equivalent to reducing CO₂ emissions by half a megatonne).
- The annual world market for ITS is estimated to be \$25 billion by 2001 and \$90 billion by 2011. The projected Canadian share of the global market is estimated at \$1.2 billion by 2001 and \$4.7 billion by 2011. Canada has been a leading player in the ITS arena for many years and continues to develop its capabilities in this fast-growing industry. Some of the most recognized ITS developments started in Canada, including the world's first computer-controlled traffic signal system in Toronto.

According to ITS Canada, Intelligent Transportation Systems (ITS) integrate “the application of advanced and emerging technologies (computers, sensors, controls, communications, and electronic devices) in transportation to save lives, time, money, energy and the environment.”

Investment in better, safer roads and highway infrastructure supports Eco-Driving. It is also important to incorporate investment for alternatives to single-occupancy automobile travel. This includes walking, cycling, public transit and car-pooling. Improving environmental health requires that a range of mobility options be available to Canadians where practical and effective.

Recommendations

- Invest in better, safer roads and highways that reduce congestion, fuel consumption and emissions that pollute the air we breathe and contribute to climate change.
- Develop a framework in which planning, research and development, and funding for the deployment of effective traffic management strategies and Intelligent Transportation Systems can flourish.
- Recognize and promote the need for roads to contribute to Eco-Driving as part of an integrated transportation strategy. Such a transportation strategy should also recognize the need to support a variety of mobility options for Canadians, including walking, cycling, public transit and other less-energy-intensive forms of transportation.



For each litre of gasoline burned, approximately 2.3 kg of carbon dioxide is produced. For each litre of diesel burned, 2.7 kg of carbon dioxide is produced. The only practical way to reduce carbon dioxide emissions from automobiles is to burn less fuel.

Improving the fuel efficiency levels of new automobiles is a key step towards improving the health of the atmosphere and reducing global warming.

More fuel efficient automobiles require less fuel to travel from one place to another. Since less fuel is burned, there are less greenhouse gas emissions that contribute to climate change and less air pollutants that contribute to smog.

As with *Eco-Driving* and *Better, Safer Roads and Highways*, improving automobile fuel efficiency helps Canadians use less fuel, thereby reducing their fuel expenses and helping them save money.

Cost-effective technologies that improve automobile fuel efficiency without sacrificing safety and functionality should be a priority. Such technologies exist, but consumer choice factors into how these technologies are used. Based on historical trends in automotive sales, consumers have tended to place a premium on speed, power and size. Accordingly, automobile manufacturers have, for the most part, applied their new technology efforts to boost engine horsepower and acceleration rates, and to accommodate increases in vehicle weight.

The challenge is in encouraging consumers to choose vehicles that fit their needs, while placing a premium on fuel efficiency, and to ensure that the supply of more fuel efficient and affordable vehicles is available to meet this increased demand.

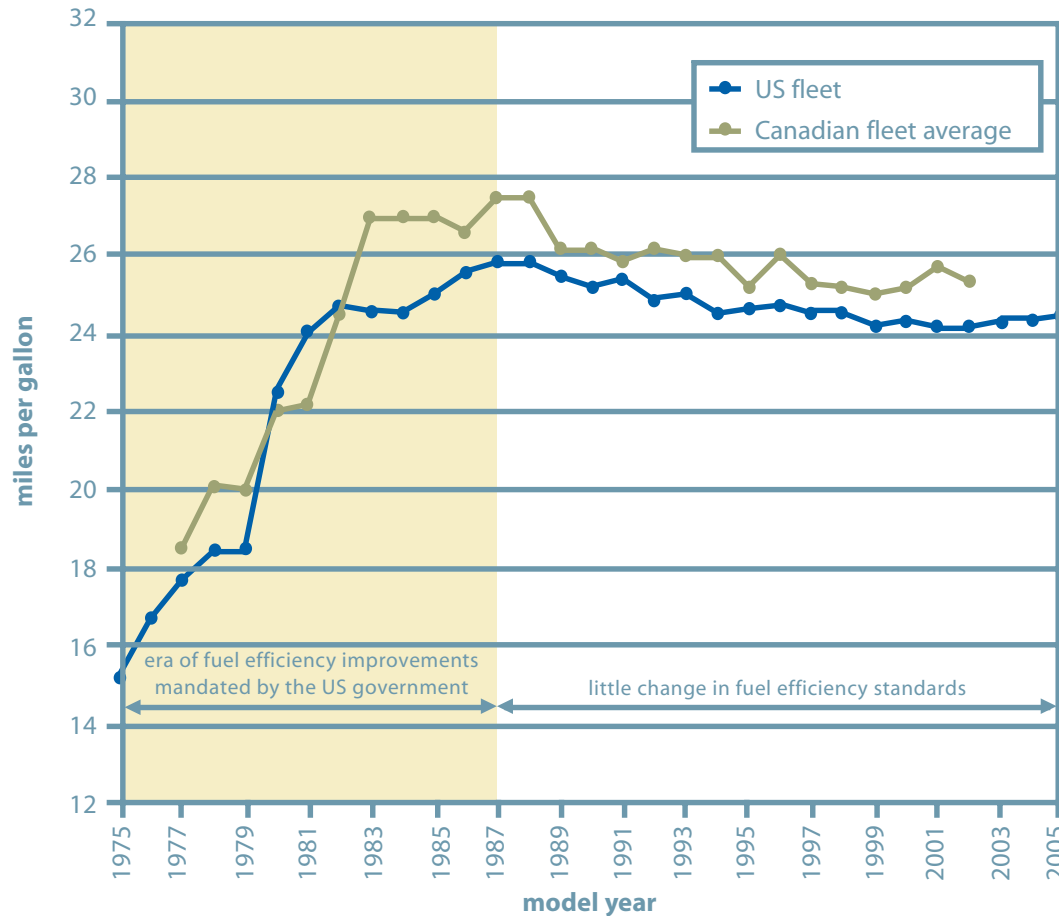
Through Eco-Driving and a larger attitudinal shift predicated by incentives and awareness, we can anticipate that Canadians will gradually move towards considering vehicles that fit their needs, and cite fuel efficiency as a selling point. Fuel efficiency will become a stronger draw for consumers when making vehicle choices, but not without federal leadership.

Fuel efficiency standards are an effective way to ensure that new technology is brought to market in ways that benefit drivers and the environment. The adoption of Eco-Driving can help create demand, and greater fuel efficiency can be mandated to ensure that supply will meet that demand.

In 1975, the US government regulated automobile fuel efficiency standards. The regulations required that new automobile fleets sold in the US met a minimum average fuel economy level of 27.5 miles per gallon by 1985. This was roughly double the fuel economy levels of automobiles prior to 1975.

Automakers successfully achieved this goal, which led to a peak in fuel efficiency levels in 1987 and 1988.

**Average Fuel Economy Levels of New Light-duty Vehicle Fleets
(unadjusted EPA values)**



Source: US data from US Environmental Protection Agency. *Light-Duty Automotive Technology and Fuel Economy Trends: 1975 Through 2006*; Canadian data from Natural Resources Canada

However, fleet-wide fuel efficiency levels have since declined and are now five per cent lower than in 1988, according to the US-EPA.

There are two key reasons why average fuel economy levels have dropped:

1. Passenger car fuel efficiency levels have not been updated in more than 20 years.
2. There has been an increase in popularity and in sales of light trucks (including SUVs and minivans), which are held to lower standards than passenger cars.

Past experience shows that fuel efficiency standards can be very successful in reducing fuel use and stimulating automotive technology development. This can improve industry competitiveness and create jobs (for example, two of the most popular and fuel efficient vehicles in Canada, the Toyota Corolla and the Honda Civic, are also built in Canada).

Today, a range of new technologies, including hybrid drive systems, variable cylinder control, clean and efficient diesel engines, advanced fuel combustion, and lighter components are entering the marketplace. Fuel efficiency standards would ensure that more of these technologies are brought to market to improve fuel efficiency levels,

Compared to the fleet in 1986, horsepower levels in the 2006 US fleet are 92 per cent higher and vehicle weight and acceleration performance are up by 28 per cent each.

reduce greenhouse gas emissions, improve air quality and help protect the economy from volatile fuel prices. Without standards, the potential benefits of these technologies may be sacrificed.

In 2005, the Government of Canada and the Canadian Auto Industry took an important step forward on the road to better fuel efficiency. A Memorandum of Understanding¹³ (MoU) was negotiated between government and industry to reduce greenhouse gas emissions from new vehicles in Canada so that by 2010, annual emissions reductions would reach 5.3 megatonnes. Due to the nature of this voluntary agreement, however, the degree of improvement in fuel efficiency levels is not certain.¹⁴ Moreover, the voluntary agreement ends in 2010, but significant improvements in fuel efficiency will still be needed in the years beyond.

Fuel efficiency standards for Canada will build upon the existing MoU and provide clear goals for automakers to work towards in the future. By ensuring standards are put in place, automobile manufacturers will also be able to respond to an increase in demand from the Canadian marketplace, driven by Eco-Driving and leveraging further benefits from investment in better, safer roads and highways.

The European Union, Japan, China, Australia and several US states led by California are each pursuing various forms of automobile standards to reduce greenhouse gas emissions from their fleets.

Canada can prosper by participating in the global shift towards more fuel efficient automobiles and automotive products. Standards can help align Canada's automotive market with the emerging global demand for higher fuel efficiency.

- The US Environmental Protection Agency reports that the average fuel efficiency of the 2006 model year fleet is four per cent **lower** than the 1986 model year fleet. The EPA also estimates that automobiles sold in 2006 will comprise the heaviest, fastest and most powerful US fleet on record.
- A study¹⁵ out of the University of California has suggested that the impact of Canada's MoU on new automobile fuel efficiency levels could be as little as a three per cent improvement.

- Emissions of many air pollutants are regulated under federal law. In compliance with regulations, automakers are achieving considerable reductions in air pollutants from new automobiles (compared to pre-regulation levels, several pollutant emissions from new automobiles can be more than 95 per cent lower). Catalytic converters, first introduced in the late 1960s, are an important technology that has helped automakers achieve outstanding emission reductions. However, catalytic converters cannot reduce carbon dioxide emissions — the primary greenhouse gas in automobile exhaust.

The government should also support a competitive fuels marketplace in which conventional and alternative fuels can compete based on environmental performance.

To that end, support must be provided for advanced automotive and fuel technologies that reduce both fuel consumption and greenhouse gas emissions. We also need to ensure that Canada provides a competitive marketplace for such technologies to flourish, and to help Canada become a leader in the development of non-traditional fuel sources. This means support for research and development, delivery, and marketing to the Canadian populace.

Recommendations

- Develop effective fuel efficiency standards for implementation by 2010 in Canada.
- Report progress made on reducing greenhouse gas emissions under the MoU with the Canadian Auto Industry.
- Support continuing research and development of advanced automotive and fuel technologies in Canada that can help to significantly reduce fuel consumption and greenhouse gas emission levels.

conclusion



CAA and Pollution Probe have partnered to produce this three-point Eco-Mobility Plan to address the concerns of Canadians in an era of global climate change and high levels of pollution. We believe it is not only a sensible, but a fully implementable strategy. It requires real leadership from the public, governments and industry, as well as cooperation across Canada on an integrated approach.

Canadians can and want to do their part — but so must the federal government. The reality today is that Canadians are well-educated on environmental issues. Now they want to see leadership that will help them — and all Canadians — make the changes that will make a difference.

CAA and Pollution Probe believe that the motorist, the road and the vehicle all must be addressed, holistically, to ensure a real difference. Through the points addressed in this Plan, the federal government can ensure that every Canadian is part of the solution.

The benefits will be both environmental and economic, leading to a cleaner and healthier planet and a more innovative and competitive economy for Canada. And action must begin today. As we have seen, the cost of inaction is increasing every day that we wait.



Further Reading

CAA. 2005. *Warning Signs: Canada's Deteriorating Roads and Highways*. www.canadasroads.com

CAA. 2006. *Roads and Highways: Critical to Canada's Competitiveness*. www.caa.ca/eco-mobility/english/PDF/CAA_Driving_Towards.pdf

Pollution Probe. 2005. *Complementary Measures: A Report of the Pollution Probe Workshop to Scope Measures that Promote and Encourage Consumer Demand for More Fuel Efficient Vehicles*. www.pollutionprobe.org/Reports/complementarymeasures.pdf

Pollution Probe. *Questions and Answers: Greenhouse Gas Emissions and Automobile Fuel Efficiency*. www.pollutionprobe.org/Reports/FuelQA.pdf

Pollution Probe. 2005. *Greenhouse Gas Emissions And Vehicle Fuel Efficiency Standards For Canada*. www.pollutionprobe.org/Reports/vehiclefuel.pdf

Endnotes

¹ Decima Research. 2006. *CAA Public Affairs Report: An Analysis of Canadian Attitudes and Opinions about Public Infrastructure, Government Priorities and Climate Change*. pp.23–31.

² Decima Research. 2006. *CAA Public Affairs Report: An Analysis of Canadian Attitudes and Opinions about Public Infrastructure, Government Priorities and Climate Change*. pp.24.
Q: How concerned are you personally about the issue of climate change or global warming? A: Extremely concerned – 23%, very concerned – 32%, somewhat concerned – 36%, not at all – 8%.

³ Decima Research. 2006. *CAA Public Affairs Report: An Analysis of Canadian Attitudes and Opinions about Public Infrastructure, Government Priorities and Climate Change*. pp.26–27.

⁴ Statistics Canada. www.statcan.ca/english/edu/clock/population.htm

⁵ David Suzuki Foundation. www.davidsuzuki.org

⁶ Decima Research. 2006. *CAA Public Affairs Report: An Analysis of Canadian Attitudes and Opinions about Public Infrastructure, Government Priorities and Climate Change*. pp.23–31.

⁷ Decima Research. 2006. *CAA Public Affairs Report: An Analysis of Canadian Attitudes and Opinions about Public Infrastructure, Government Priorities and Climate Change*. pp.23–24.

⁸ Decima Research. 2006. *CAA Public Affairs Report: An Analysis of Canadian Attitudes and Opinions about Public Infrastructure, Government Priorities and Climate Change*. pp.24–25.

⁹ Decima Research. 2006. *CAA Public Affairs Report: An Analysis of Canadian Attitudes and Opinions about Public Infrastructure, Government Priorities and Climate Change*. pp.28–29.

¹⁰ Pollution Probe. 2004. *Moving Together: Towards a Healthier and More Sustainable Future*.

¹¹ Taken from “Fuel-efficient Driving.” *Eartheasy*. 2001–2004. August 8, 2004. http://eartheasy.com/live_fuel_efficient_driving.htm

¹² In 2005, Canadian drivers consumed an estimated 39.8 billion litres of gasoline. www.statcan.ca/Daily/English/060608/d060608e.htm

¹³ For information on the MoU, go to <http://oee.nrcan.gc.ca/transportation/ghg-memorandum/index.cfm>

¹⁴ Nicholas P. Lutsey. 2006. *Impact of Canada's Voluntary Agreement on Greenhouse Gas Emissions from Light Duty Vehicles*. UC Davis. <http://repositories.cdlib.org/itsdavis/UCD-ITS-RR-06-02>

¹⁵ Nicholas P. Lutsey. 2006. *Impact of Canada's Voluntary Agreement on Greenhouse Gas Emissions from Light Duty Vehicles*. UC Davis. <http://repositories.cdlib.org/itsdavis/UCD-ITS-RR-06-02>