

Municipalities Idleless:

Idling Reduction Options

What follows is a summary of work completed in 2010 by the Ecology Action Centre with funding support from the Union of Nova Scotia Municipalities' Municipal Sustainability Office. Complete copies of the full document, *Municipalities Idleless: Idling Reduction Options*, are available at <http://www.ecologyaction.ca/content/transportation-publications>.







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Communities across Canada are increasingly aware of the detrimental effects of vehicular idling, both on the health of citizens and on the state of the environment. Needless idling adds carbon dioxide emissions to the air which contribute to increased greenhouse gas emissions (GHGs), a major factor in climate change. In 2002 alone, Canadians generated 22.96 tonnes of carbon dioxide per capita.¹

GHG emissions attributable to the transportation sector, which includes both the movement of goods and people, are increasing. In Nova Scotia, the transportation sector accounts for 28.1 per cent of the province's GHG emissions.² Reducing vehicular idling alone will not cut emissions enough to "save the planet". However, eliminating needless idling can save energy and energy-related expenses, while improving the environment and the health of individuals.

In Canada, the provincial and federal governments share responsibility for managing air quality. Nova Scotia, through the *Environmental Goals and Sustainable Prosperity Act* of 2007, has committed to reduce its GHG emissions 10 per cent below 1990 levels by the year 2020. It is only with the help of Nova Scotian municipalities that this goal will be reached.

While municipalities in Nova Scotia do not have a delegated mandate to manage air quality, they have been given power under the *Municipal Government Act* to regulate for the health of their citizens. Section 2 of the Act states that one of the functions of the municipality is to "develop and maintain safe and viable communities."³ This section gives broad authority to municipalities to act in a manner consistent with ecologically sound principles.

This means that municipalities, as well as the provinces, have a responsibility to their residents to ensure that the environment in which they live is clean and does not pose a threat to their well-being.⁴ To this end, there are numerous options municipalities can take to reduce carbon emissions in the transportation sector. Possible actions are divided into four categories:

1. Education
2. Policy
3. Regulation
4. Management of Traffic Flow

Used together, these options can maximize energy and emissions savings. Pre- and post-action measurements are essential to gauge the success of any program.



1. Education

Needless idling is an ingrained behaviour. Although people are aware of the negative effects of vehicular idling, they exhibit a disconnect between their knowledge and actions. A recent survey revealed that while 87 per cent of people surveyed believe that not idling is “the right thing to do” most continued to idle anyway.⁵

Communities can combat these ingrained attitudes with information campaigns. These campaigns aim to educate and induce a shift in behaviour within a target audience. Catherine Ray, an official with Natural Resources Canada who has researched idling for more than 10 years, thinks that such a shift will occur “once people understand the impact of their driving habits and the importance of shutting off an engine on a car.”⁶

Information campaigns are low-cost, easy to manage and create a more knowledgeable and receptive public. For example, before the Town of Kentville enacted an idling restriction by-law, it mounted a two-year education campaign to prepare the community. Its Eco-Kings committee informed people of the negative effects of idling before a by-law was ever mentioned.

However, while there have been many successful information campaigns across Canada, education is only one step. Behaviour change theorists believe information by itself is an insufficient motivator for change.⁷ Change is often difficult and without the proper incentives to act, many education campaigns are likely to be ineffective. Community-based social marketing has proven successful in encouraging shifts in behaviour by also offering incentives and focusing on eliminating barriers that can stand in the way of change.

For example, fleet driver re-education campaigns, such as Natural Resources Canada’s Fleet Smart program give professional drivers the information needed to make more fuel-efficient and environmentally sustainable driving choices. These programs must overcome drivers’ resistance to changing driving habits and reluctance to the increased monitoring necessary to gauge fuel efficiency. However, the economic and environmental benefits are demonstrable: reduced engine wear, reduced fuel consumption and lower emissions.⁸

Driver re-education campaigns can take place within a municipality or as part of a bigger program such as Fleet Challenge Ontario. A fleet challenge pits one municipality or group against another to create behaviour change by actively engaging drivers in a competition with their peers to reduce idling. As demonstrated by Fleet Challenge Ontario, a successful fleet challenge incorporates the involvement of management, voluntary participation, information sessions, and the use of technology to track fuel efficiency, all within a reward system that celebrates success. A plan to sustain improved performance is also integral to a successful challenge.⁹

According to behaviour change theorists, people seek consistency in their beliefs and actions.¹⁰ For this reason, pledges or commitments to reduce idling, integrated into larger campaigns, can be effective tools to increase both the breadth and intensity of any public outreach. For the greatest impact, pledges should be made in a public form and pledgers should be reminded of their commitment.



2. Policy

A municipality can reduce GHG emissions by establishing vigorous idling restriction policies that target its fleet of vehicles or employees that use their own vehicles on government business. These policies can control the type of vehicles driven as well as the length of their operating life.

Many fleet managers and drivers are unaware of the waste that results from unnecessary idling.¹¹ However, it has been estimated that between 30 and 50 per cent of the running time of municipal service fleets is spent idling during normal operations, whether in traffic or simply because a driver leaves the engine running.¹² Effective idling restriction policies and practices can therefore reduce greenhouse gas emissions, contribute to a healthier environment and make cost-efficient use of resources. They also provide municipalities with the opportunity to demonstrate leadership on environmental issues.

Idling restriction policies can also raise awareness and support for improved fuel efficiency and sends a message to employees and the wider public that idling is unacceptable. For example, Grey County, Ontario implemented an idling restriction by-law in 2009. The policy applies to municipal drivers but the county hopes that the fuel-saving message will spread to all county residents.¹³

Selecting the most appropriate vehicle for the job can also effect a reduction in emissions. Fleet “right-sizing” is a process that analyzes operational requirements and fuel efficiency when purchasing vehicles. By determining the function that a specific vehicle is used for 90 per cent of the time and the fuel efficiency of vehicles in that class, the most appropriate vehicle can be selected. While selection formulas do remove some purchasing discretion from fleet managers, better informed purchasing decisions lower costs and GHG emissions as well. In 2009, Halifax Regional Municipality adopted a sustainable procurement policy that included a right-sizing component and a life-cycle cost analysis.¹⁴

A policy on alternative fuels is another tool to increase fleet cost efficiency and reduce GHG emissions. While petroleum remains the most common fuel, vehicles are no longer designed to run exclusively on petroleum; flex fuel vehicles, natural gas engines, propane conversions and electric vehicles are increasingly common.

Switching to alternative fuels is not strictly an idling reduction measure, but alternative fuels often are less carbon intensive than gasoline, so fewer greenhouse gas emissions occur when these fuels are used.

Alternative fuel technology can be more expensive because vehicles may need to be converted to run on alternative fuel. However, lifetime fuel savings can offset the additional expenses. The challenge may lie in the availability of alternative fuels.

Blue Line Transportation Ltd. in Hamilton, Ontario began converting its entire taxi fleet from gasoline to alternative fuel in the 1980s and today uses natural gas. This conversion has resulted in significant economic and environmental savings.¹⁵

Goal-setting and measurement are key components of any successful idling reduction campaign. Without knowing where you've been or where you want to be, it is impossible to measure how far you've come. Targets may be challenging but must also be achievable. For the community to accept the target, the possibility of reaching that goal must exist. Breaking the overall goal into reasonably achievable targets also helps the larger task appear possible.

Beginning from a measured starting point, progress can be evaluated at regular intervals. Campaigns should be re-evaluated and adapted if progress is not occurring.

Stratford, P.E.I. has adopted a Sustainability Decision Making Framework, designed to ensure that the town's decisions and actions reflect its commitment to the four pillars of sustainability: social, cultural, economic and environmental. Through the framework, decision-makers are asked to consider how each proposal contributes to reducing greenhouse gas emissions.¹⁶ Having each move that Stratford Council considers evaluated by its contribution to GHG emission reductions will likely result in more environmentally sustainable decision-making.

Proper fleet management is another tool, although one that does not directly impact idling. However, vehicle monitoring, driver education and regular vehicle maintenance does affect the amount and type of emissions released while a vehicle is engaged in limited but necessary idling. Restricting idling does affect the operating life of an engine. For example, one hour of idling is equivalent to two hours of driving and results in more frequent servicing and replacement of parts.¹⁷

While adopting best practices for fleet vehicles may increase maintenance costs in the short term, these expenses should be recouped in fuel savings.



3. Regulation

Regulation is the strongest tool available to governments to reduce idling. Legislation signals to residents the limits of acceptable community behaviour. By enacting idling restriction by-laws, municipalities emphasize the importance of reducing energy consumption, the seriousness of climate change, and the desire to have healthy residents.

Communities in British Columbia, Alberta, Ontario and Nova Scotia have adopted idling restriction by-laws. Some cities such as Burlington and London in Ontario are now looking to strengthen already existing legislation. In 2008, Kentville became the first (and, to date, only) community in Nova Scotia to adopt an idling restriction by-law. Annapolis Royal and Antigonish are considering by-laws.

Idling restriction by-laws may encounter community opposition so it is important to engage in public awareness campaigns to educate the public about the negative effects of idling. Town Councillor Eric Bolland credits the success of Kentville's idling restriction by-law to the two-year-long education and public awareness campaign that preceded it.

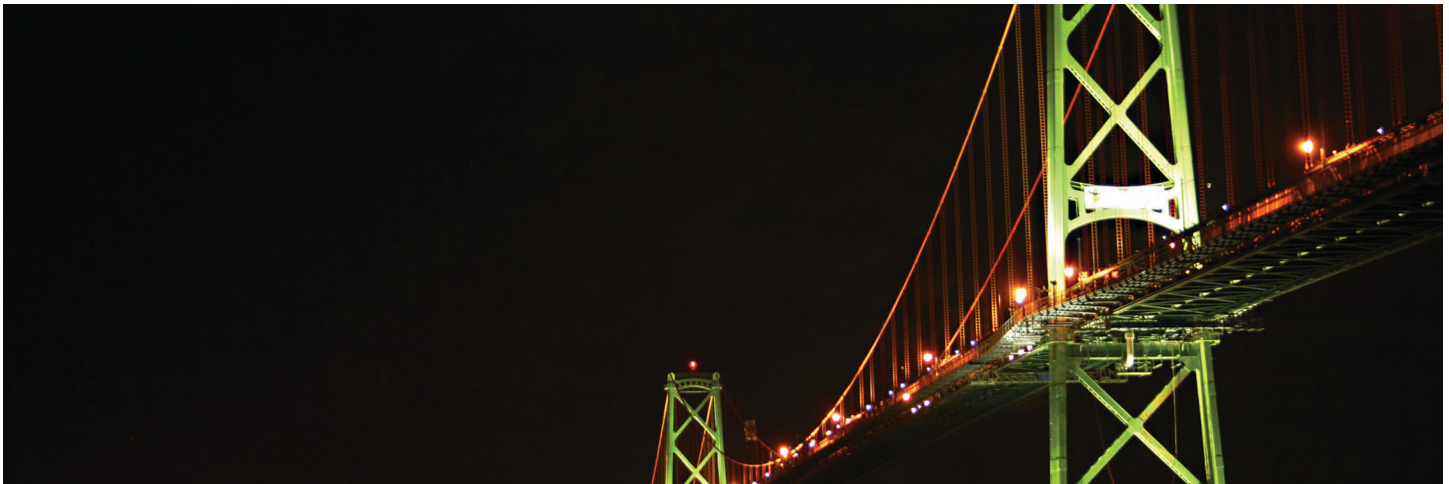
Another challenge is the enforcement of specific allowable idling times since enforcement officers would need to time possible offenders.

Municipalities also have the option of using zoning to determine the type of business, residential or industrial use permissible on parcels of land within the community. Land-use restrictions can be used to segregate "incompatible" uses or mould the type of development within municipal boundaries.

Take, for example, the unnecessary idling associated with drive-through facilities. The average drive-through transaction takes approximately three minutes to complete. If every Nova Scotian driving a light duty vehicle were to pick up one order at a drive-through every day for a year it would result in 31,468 tonnes of GHG emissions.¹⁸

To reduce idling within their boundaries, some municipalities including North Vancouver and Calgary have placed limits on the number of new drive-throughs that can be built. Comox, B.C. has gone further by preventing the building of any new drive-throughs.

The elimination of drive-throughs may mean people have to forego a perceived convenience. Some may also see the restriction as an infringement on free market activities. However, as Calgary alderman Brian Pincott said, "We've got to start designing and building our city for people and drive-throughs are not about people, they're about cars."¹⁹



4. Managing Traffic Flow

Traffic management, specifically intersection improvements, is a powerful tool to reduce needless idling that does not require drivers to shift their habits or alter their modes of transport. This tool can be useful where sustainable transportation options such as transit, cycle paths or carpooling are not readily available, as in most rural areas in Nova Scotia.

These structural intersection improvements include roundabouts, traffic signal synchronization and the creation of caution.

Modern roundabouts are circular intersections with traffic flowing in a single direction with a circular median at the centre. Although often confused with rotaries, roundabouts are different in the way they are designed and driven. With the rotary, the vehicle entering the circle has the right-of-way. In the modern roundabout, vehicles inside the circle have the right-of-way. Roundabouts are slower and involve fewer and less severe accidents than rotaries. They can accommodate more vehicles while at the same time reduce traffic stops and delays as well as vehicle emissions.²⁰ Roundabouts have been cited as being safer than intersections with traffic signals.²¹ They are adaptable to city streets, arterials, small towns and rural areas. In England, 1000 roundabouts are built each year. In 2009, Halifax's Armdale rotary was converted to a modern roundabout.

However, roundabouts have a public perception problem as they are often associated with older, inefficient and confusing rotaries.²²

Municipalities can also reduce idling through traffic signal synchronization. By coordinating traffic signal timing, a traffic authority can minimize the number of stops and delays. This method reduces congestion, travel times, fuel consumption and air pollution. However, traffic signal synchronization requires regular maintenance because it stays effective only as long as the traffic patterns used to calculate the signal synchronization remain reasonably constant.²³

As the result of a traffic signal synchronization project, Davidson County in Metro Nashville, Tennessee improved traffic flow and reduced fuel consumption per vehicle by 11.4 per cent.²⁴

The third option for intersection control is creating caution, that is, replacing traffic lights with signs. Ideal for intersections that are currently four-way or two-way stops, creating caution cuts down on unnecessary stops and starts. Braking and accelerating are fuel-intensive activities, so reducing their frequency reduces fuel consumption and resulting emissions. Evidence suggests creating caution encourages more conscientious driving and increases road safety.²⁵ However, the argument for a reduced number of signals is falling on deaf ears as the North American public continues to view signalized intersections as safer.²⁶



Evaluating Idling Reduction Options

This report has provided numerous solutions to the problem of needless idling. How each possible option can best achieve reductions in idling can be evaluated by considering the following criteria:

1. Purpose of the idling restriction measure
2. Public or publics reached
3. Initial cost or investment needed
4. Time until GHG emission savings are realized
5. Type of campaign, whether behavioural, management, legislative or structural
6. Jurisdiction or level of government that can initiate change



End Notes

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