

# Green Driver Training within the City of Calgary's Municipal Fleet: Monitoring the Impact

Municipalities in Canada own and operate thousands of vehicles to deliver a variety of services to local citizens, with the average Canadian city fleet accountable for 5% of a municipality's total greenhouse gas (GHG) emissions (Transportation Canada, 2010).

This 2011 study demonstrates the potential to successfully reduce CO<sub>2</sub> emissions that are generated through the operation of a fleet of municipal vehicles in the City of Calgary, Alberta, through the adoption of **EcoDriver training** and **vehicle monitoring technology**.

The study sought to:

- assess the effectiveness of EcoDriver training towards reducing fuel consumption and CO<sub>2</sub> emissions;
- examine the relative effectiveness of two EcoDriver training methods;
- and evaluate emission differences between conventional and hybrid fleet vehicles.

## Methodology



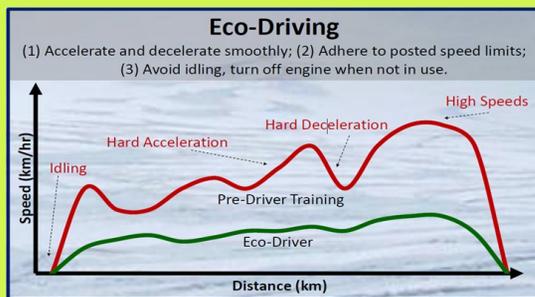
- **Phase I:** Baseline data was collected prior to eco-driver training by installing Davis CarChips® into 15 fleet vehicles (11 gasoline, 4 hybrid) in the Department of Development and Building Approvals in the City of Calgary. The CarChips recorded data from the vehicle's diagnostic computer, including: average and total daily trip times; average and total trip distance; number of accelerations and decelerations; and idling time.
- **Phase II:** Fleet drivers received EcoDriver training provided by Green Communities Canada. The majority received one hour in-class training, while a sample received additional in-vehicle training.
- **Phase III:** The CarChips were reinstalled to assess the effectiveness of the training on improving driver behaviour.



## Key Findings

### EcoDriver training effectively lowered vehicle emissions for both gasoline and hybrid vehicles.

- During the in-vehicle training, drivers showed an immediate 18% improvement in fuel efficiency.
- When extrapolated annually, the sample of 11 gasoline vehicles would reduce the incidences of hard decelerations by 5943, and eliminate 859 hours of idling (a 4% decrease). This would reduce CO<sub>2</sub> emissions by 2,761kg and save \$1,447 in fuel costs. When extrapolated annually, the sample of 4 hybrid vehicles would reduce idling by 817 hours, decreasing CO<sub>2</sub> emissions by 1,414kg and saving roughly \$741 in annual fuel costs.
- When viewed across the Department of Development and Building Approvals' entire fleet (115 gasoline, 39 hybrid), projected annual results equate to \$19,000 in fuel savings from eliminating 13,000 hours of idling, equivalent to 37,000 kg of CO<sub>2</sub> emissions.
- Hybrid fleet vehicles were more efficient overall, using far less gasoline; however, having eco-trained hybrid drivers further enhances these benefits, optimizing the use of the electric motor over the gasoline motor to reduce overall fuel consumption.



- This study demonstrates that EcoDriver training can be a cost-effective fleet management practice, as it reduces climate-altering CO<sub>2</sub> emissions while simultaneously saving money and improving the livability of the City. Best practices from this study may be useful to other municipalities.

**My Sustainable Canada greatly acknowledges** the staff at the **City of Calgary's** Environmental & Safety Management Department and the Development & Building Approvals business unit for their contributions in time and resources, as well as **Green Communities Canada** for their leadership on designing and delivering the EcoDriver training.



**The City of Calgary** manages over 4,000 vehicles within its municipal fleet. The City is increasing its use of alternative fuels and technologies having minimum environmental impact (i.e. hybrid and biodiesel fuelled vehicles), promoting an idling reduction policy, as well as 'right sizing' vehicles (i.e. employing the right vehicle size for the task) and utilizing preventative maintenance strategies in an effort to 'green' its municipal fleet.



**Green Communities Canada** is an association of non-profits that work to help homeowners, businesses, and municipalities go green. We work together on several joint initiatives, including EcoDriver – a driver-to-driver program that promotes fuel-efficient driving, buying fuel-efficient vehicles, and driving less. EcoDriver delivery agents Green Venture and Environment Network were key partners in this Calgary fleet training project. Visit [www.ecodriver.org](http://www.ecodriver.org)



**My Sustainable Canada (MSC)** is a national not-for-profit organization whose mission is to help Canadians have a positive impact on the environment and society by empowering them with the tools and means to become more sustainable consumers of products and services. MSC has research expertise in vehicle monitoring technology and has used CarChips in several research projects as a means for monitoring and encouraging fuel-efficient driver behaviours. Visit [www.MySustainableCanada.org](http://www.MySustainableCanada.org)