



Engine Idling Reduction Program for Ski Resorts

Executive Summary

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Executive Summary

The Engine Idling Reduction Program (EIRP) offers ski resorts the opportunity to reduce climate-altering greenhouse gas emissions, improve air quality, save fuel, and reduce noise by undertaking initiatives that reduce engine idling practices among ski resort staff (i.e. vans, trucks, snowmobiles and other fleet) and visiting drivers (i.e. personal vehicles, vans, highway trucks, school buses, motor coaches and other fleet).

The purpose of the EIRP is to have participating ski resorts undertake an engine idling reduction action plan that pursues significant reductions in unnecessary idling practices among ski resort staff and visiting drivers. During the 2008-2009 winter season, the EIRP was piloted at the following ski resorts:

- Blue Mountain Resorts Limited (BMR)
- Craigleith Ski Club (Craigleith)
- Glen Eden Ski and Snowboard Centre (Glen Eden)

As participants in the pilot phase, BMR, Craigleith and Glen Eden welcomed a team of graduate and undergraduate level students from the University of Waterloo's Faculty of the Environment and local community members to monitor and record engine idling behaviour at their ski resort.

Sample Size

Over the month of January (2009), the team identified the average potential idling time for each vehicle category (personal vehicles, buses and freight) per drop-off/pick-up area, as well as the total number of vehicles that did or did not idle. The team returned in February (2009) to encourage and measure changes in idling behaviour. Table 1 below summarizes the sample size of vehicles observed.

| Ski Resort | Personal Vehicles | Motor Coaches / School Buses | Freight |
|------------------------------------|-------------------|------------------------------|------------|
| Blue Mountain Resort | 3,165 | 196 | 111 |
| Craigleith Ski Club | 1,114 | 9 | 30 |
| Glen Eden Ski and Snowboard Centre | 1,815 | 50 | 8 |
| Total: | 6,094 | 255 | 149 |

Observed Idling Behaviours

Over the duration of the pilot, the following were idling behaviours commonly observed across all three ski resorts:

- Families with young children were observed taking longer to unload and load their vehicles, leading to increased potential for prolonged idling.
- In idle-free zones where ticket booths were nearby, some drivers of personal vehicles were observed purchasing tickets while letting their vehicles idle.
- During peak periods of the day the guest drop-off and pick-up areas become heavily congested, leaving the drivers to feel pressured to quickly vacate the areas. In these circumstances many drivers were observed leaving their cars idling suggesting a perceived "quick getaway". When drivers perceive to have more time, they are less likely to leave their engines running.
- When guest drop-off/pick-up areas reach capacity, many personal vehicles were observed idling while waiting to use these areas.

Average Time Spent Loading and Unloading

Drivers of personal vehicles, motor coaches and school buses were observed spending more time loading than unloading their vehicles in all idle-free zones. To demonstrate this difference, the following are the longest average loading times and the shortest average unloading times observed among all idle-free zones:

- Personal vehicles: 7 minutes loading and 3 minutes unloading
- School buses: 17 minutes loading and 15 minutes unloading
- Motor coaches: 46 minutes loading and 25 minutes unloading
- Freight: 20 minutes unloading

Findings: Rates of Idling and Greenhouse Gas Emissions

When contrasting incidences of idling, the following are the lowest and highest rates of idling during the pre-launch phase among all idle-free zones at the 3 participating ski resorts compared with the post-launch findings:

Pre-launch

- 48% to 64% of personal vehicles
- 56% to 89% of motor coaches and school buses
- 42% to 50% of freight

Post-launch

- 37% to 62% of personal vehicles
- 0% to 57% of motor coaches and school buses
- 21% to 67% of freight

In terms of greenhouse gas emissions, the following compares the projected rates of CO₂ emissions based on the average loading and unloading times and the incidences of idling observed during the pre-launch and post-launch phase:

Pre-launch

- 136kg to 264kg of CO₂ per 1000 personal vehicles observed among idle-free zones at the 3 participating ski resorts
- 156kg of CO₂ per 100 freight observed at BMR
- 483kg of CO₂ per 100 motor coaches observed at BMR
- 23 kg of CO₂ per 10 school buses observed at BMR

Post-launch

- 136kg to 190kg of CO₂ per 1000 personal vehicles observed among idle-free zones at the 3 participating ski resorts
- 79kg of CO₂ per 100 freight observed at BMR
- 320kg of CO₂ per 100 motor coaches observed at BMR
- 21 kg of CO₂ per 10 school buses observed at BMR

Notably, projected rates of CO₂ emissions at Craighleith and Glen Eden were not made for freight, motor coaches and school buses due to small sample sizes.

As for reductions in greenhouse gas emissions, the following are estimates when the projected rates of CO₂ emissions pre-launch and post-launch are compared:

- 6% to 49% reduction in CO₂ emissions from all vehicle types across all idle-free zones at Blue Mountain with one exception
- 13% reduction in CO₂ emissions per 1000 personal vehicles observed at Craighleith Ski Club
- 42% reduction in CO₂ emissions per 1000 personal vehicles and 100% reduction in CO₂ emissions from school buses visiting Glen Eden Ski and Snowboard Centre

Estimated Reach of EIRP Pilot

Several actions were taken to promote the EIRP and encourage changes in engine idling behaviour among ski resort staff and visiting drivers. In terms of promotion, a broad audience of over 54,000 individuals (i.e. public and ski resort staff) received information on the EIRP through ski industry newsletters, e-mails and websites. In addition, a press release highlighting the efforts of the EIRP was written and subsequently picked up locally by a television station, 2 radio stations and 3 newspapers.

Numerous materials were developed to encourage changes in engine idling behaviour including: idle-free signage, parking passes, information and pledge cards, reminder decals, stickers, and colouring sheets. These materials were estimated to have reached over 126,000 visiting drivers and guests during the 2008-2009 ski season.

Case studies profiling the results of the EIRP were circulated to over 300 individuals within the Ontario ski resort industry and other interested stakeholders. Through the creation of the EIRP web portal (<http://www.mysuscan.org/communitie/engineidli>) and the promotion of the EIRP on the OSRA website (<http://www.skiontario.ca/>), efforts to promote the EIRP will be ongoing.

Lessons Learned and Recommendations

Data Collection:

- The sample sizes of freight, motor coaches and school buses observed were small. It is recommended that future data collection efforts focus primarily on freight, motor coaches and school buses.

Education and Marketing Campaign:

- A driver survey revealed that the idle-free signage was seen by 25% of all drivers.
- Access to a lounge area and the provision of food and beverage discounts encouraged a significant number of bus drivers to turn off their engines and wait indoors. In future initiatives, incentives such as food and beverage vouchers are recommended to reward drivers of various vehicle types that do not idle.
- Private ski clubs have a strong sense of community, and naturally lend themselves to continual communication and engagement activities with their guests. Such activities can incorporate reminders to reduce idling and thereby foster long-term behaviour change. A similar outreach effort can be made through enrolment programs (e.g. weekly lessons, racing events, school trips etc.) offered at ski resorts.

Operational Efficiency:

- The flow of vehicles in and out of drop-off/pick-up areas was observed to impact the duration and incidences of engine idling. From an operational efficiency perspective, it is recommended that the flow of vehicles be examined on a regular basis and where possible, measures be taken to ease congestion during peak times.
- The data collected for the EIRP contributed to providing a clear and relevant picture of the current state of engine idling behaviours at ski resorts. It is recommended that further efforts be placed on developing easy-to-use tools that ski resort managers can use to not only track the number of visiting drivers and their idling behaviours, but also serve as a means to identify measures that will enhance the guest experience and increase operational efficiency.