



A Study on
**VPD Patrol
Officers' Idling
Behaviour**

Katie O'Callaghan, Greenest City Scholar
Kristie McCann, Planning & Policy Advisor

Planning, Research & Audit Section
June 2012



Vancouver Police Department
3585 Graveley Street
Vancouver, British Columbia
V5K 5J5

This document is the property of the Vancouver Police Department and may contain proprietary or sensitive information. This document shall not be duplicated, disseminated, disclosed or reclassified without prior consent of the Vancouver Police Department. This document may be used by the authorized recipient solely for purposes related to law enforcement.

ACKNOWLEDGEMENTS

My involvement as a Greenest City Scholar was a truly rewarding experience and I would like to thank the Vancouver Police Department, the City of Vancouver and the University of British Columbia for providing me with the opportunity. I would especially like to thank all those that helped me. Without them, I could not have completed the project.

Daryl Wiebe, Superintendent VPD
Rob Rothwell, Fleet Manager VPD
Kristie McCann, Planning and Policy Advisor VPD
Lindsey Jones, Planning and Policy Advisor VPD
The Planning, Research & Audit Section, VPD
Scott McIlveen, Practicum Student VPD
Ashley Forsberg, Practicum Student VPD
Amy Fournier, Sustainability Co-ordinator City of Vancouver

TABLE OF CONTENTS

Introduction	5
Background	6
Research Design: Approach and Methodology.....	6
Results	8
Discussion of Findings.....	11
Recommendations.....	13
Conclusion.....	15
Appendix A. Coding Document	17
Appendix B. Observation/Discussion	Error! Bookmark not defined.
Appendix C. Wood Dale Police Department Policy	18

Introduction

Patrol officers rely on their vehicles for operational and safety needs which can result in excessive amounts of idling and high operating expenses. As a result, police departments across the country are looking for solutions to reduce idling and find alternatives to status quo as the cost of fuel continues to rise. In 2006, a pilot project was conducted, by Bronson Consulting, for Natural Research Council Canada (NRCan) to determine whether installing new technologies could reduce or eliminates the need for engine idling to meet equipment and environmental demands in police vehicles (National Research Council Canada, 2006). This research was done to assess the impacts of anti-idle equipment and identify opportunities for Fleet Managers to decrease fuel inefficiencies and reduce the overall cost of operating a large fleet (NRCan, 2006).

The NRCan study collected data from 46 Royal Canadian Mounted Police (RCMP) vehicles and 16 Ottawa Police Service (OPS) vehicles that were equipped with Netistix FleetPulse auxiliary systems to track engine use and idling rates (NRCan, 2006). Both RCMP and OPS vehicles were used to capture differences in idling between enforcement and non-enforcement vehicles. The findings revealed that enforcement vehicles idled the most, due to patrol officers' in-car equipment needs and use of the vehicle as a mobile office (NRCan, 2006). It was also found that the addition of auxiliary technology to maintain vehicle comfort and critical systems power would help reduce idling rates without sacrificing service levels and emergency response times (NRCan, 2006). To test these findings, the Ottawa Police Service partnered with a second organization the National Research Council of Canada, in 2009 to continue the development of anti-idling solutions and further explore the environmental benefits of using anti-idle technology in patrol (Ottawa Police Service, 2011a).

In 2011, the OPS reported that, "the amount of fuel saved annually by one vehicle equipped with the anti-idling equipment was 1,761 litres –enough fuel to drive across Canada four times over" (Ottawa Police Service, 2011b p. 1). This led to a significant reduction in maintenance costs and an offset of 4,235kg in carbon emissions for the department (OPS, 2011b). To install an enforcement vehicle with anti-idle equipment cost the OPS approximately \$2,000, which they expect to recover in eighteen months. Based on the progress, the OPS has decided to continue working with the NRC to finance anti-idle technology and continue to improve their environmental impact.

The Vancouver Police Department recognizes the benefits of anti-idle technology for reducing idling and maintenance costs but understands that there is no one-size fit all approach to sustainability. The particular needs of their patrol officers must be considered contextually rather than comparatively with Ottawa to assess whether anti-idle technology is right for the Department. VPD Patrol officers' rely on their vehicles for patrolling and as an office, yet little is known about their attitudes or their actual behaviour towards idling and sustainability. To address these gaps, a better understanding of how patrol officers use their vehicles and the circumstances in which they idle will help the Department reach a solution that suits the officers needs while reducing environmental impacts and fuel costs. Having a significant level of buy-in from the officers will also be key for ensuring a successful outcome that is supported Department wide.

The main objective of this research was to observe under what circumstances patrol officers at the VPD idle their vehicles and for how long. During the research, officer comments and suggestions were also recorded to gain a better understanding of their attitude towards idling and sustainability. The information from this report will inform the VPD about officers' idling behaviour and guide decisions about vehicle improvements. In addition, this report will address alternative ways to reduce idling that can serve as a complement to anti-idle technology.

Background

The VPD strives to be a sustainable organization that uses innovative approaches to conserve energy and manage waste that continues to set a precedent for other police forces in Canada. They have made a strong commitment to the environment; this is most evident through the creation of their Code Green Program that monitors environmental actions and projects for the department (Wiebe & Patterson, 2011). In addition, they have strategic goals to create a “greener” community and, “manage resources in an environmentally sustainable manner” (Vancouver Police Department, 2012). An area of particular focus for the VPD has been to make improvements to patrol and wagon vehicles that would help reduce the Department’s carbon footprint.

A 2010 study, conducted by the VPD, revealed that each patrol officer generated approximately 3.95 metric tonnes of green house gas emissions (GHG) (Demers & Prendeville, 2010). Of that amount, 61.8% came from the use of patrol vehicles and wagons. In reaction, the Department has added hybrid vehicles into the fleet, replaced prisoner transport trucks with more fuel-efficient Sprinter vans and have continued right-sizing vehicles to better suit the needs of staff (Wiebe & Patterson, 2011). However, little has been done to curb idling rates within patrol vehicles, which is an area that deserves further attention if the Department wants to make a significant reduction in CO₂ emissions. An understanding of how VPD Patrol officers use their vehicles and why they idle will thus become an important element in reducing idling and managing resources in an environmentally sustainable manner.

Research Design: Approach and Methodology

The purpose of this research was to observe under what circumstances patrol officers at the VPD idle their vehicles and for how long. The research sample was comprised of eight Alpha (day) and eight Delta (night) patrol shifts that covered a full even and odd shift rotation over eight days at the beginning of June. Observers were used to collect idling data based off observations and discussions that took place with patrol officers during the ride-alongs. The following section is a detailed account of the approach and methodology that was used to conduct this research.

Research Objectives:

Using observers who participated in 16 ride-alongs over an eight-day period, the objectives of the research were to:

1. Determine the situation and circumstance that patrol officers kept their vehicles idling;
2. Determine the length of time officers generally idled;
3. Determine why officers idle;
4. Determine to what extent weather plays a factor in an officer’s decision to idle;
5. Determine whether the time of day (morning, day, evening, or night) had an affect on the amount of idling; and,
6. Provide recommendations and suggestions for improvements based on information gathered, from patrol officers, during ride-along.

Observers:

The observers referred to in this study were a combination of two employees of the Planning, Research & Audit Section of the VPD and three practicum students working for the VPD this summer. The five observers were used to cover a 24-hour period, over eight days, covering 16 shifts. To prepare for the fieldwork, a meeting was held to go over the research aims, coding form and expectations regarding the project. This meeting was an important step in the preparatory process because it ensured that all observers coded and defined behaviours in the same way and understood the research objectives. Binders were distributed with liability forms, a check list, information about the project, and contact numbers in case of an emergency.

Setting:

A key objective for this research was to ensure that the setting accommodated the patrol officers and took place in their environment. To accomplish this, the data was collected during 16 ride-alongs in Ford Crown Victoria Police Inceptor (CVPI) vehicles. This format was selected to gather the most accurate reporting of the frequency, duration and situation in which patrol officers idled and understand what concerns played a part in why an officer left their car running. Conducting research in the CVPI's also gave observers an opportunity to have in-depth conversations with the officers and make observations on their behaviour in the moment rather than relying on officer recall about their behaviour.

Role of the Observer:

The patrol officers had full knowledge of why the researcher was there and what they would be doing during the shift. This method was used to ensure full transparency in the research design and to ensure that patrol officers felt comfortable with the idea of having an observer in their vehicle. The study was voluntary and officers had the choice to accept or decline a ride-along. Fortunately, the officers were very receptive to the study and as a result, there were no situations where the observers were unable to complete their ride-along shift.

Sample:

The officers observed in this study were from eight Alpha and eight Delta patrol shifts, covering a full even and odd shift rotation that involved all 4 districts. When combined, the shifts covered a 24-hour working period with the exception of a forty-five minute shift switch between 4:00am to 4:45am. In selecting Alpha and Delta shifts, observers were able to gather around-the-clock data that provided information about whether the time, day of the week, weather, or shift affected the outcomes of idling behaviour. By gathering data in all districts, observers could also gain a better sense of how officers used their vehicles in different geographical locations to make some useful comparisons.

Coding Form:

To gather data for the project, a coding form was created to document every instance of idling and the reasoning behind it. On the coding forms there was no information documented about individual officers, their names or specific information about the district. This was done to preserve officer privacy and because it was not relevant to the purpose of the research objectives. On the coding form, the following information was collected: "Situation", "Circumstance", "Reasoning", "Number of Units Responding", "Number of Units Idling", "Total Idle Time", and "Time of Day". The coding form can be found in Appendix A for further reference.

To test the effectiveness of the coding form, a pilot ride-along was done. The team selected for this test was not included in the sample and the data gathered was not included in the report. The purpose of the test was to ensure the form captured appropriate information as well as to look for opportunities for

improvement. An added benefit of doing a pilot ride-along was to improve the observer's knowledge base about Patrol.

Observations/Discussions:

While filling out the coding forms, the observers were asked to keep track of any relevant behaviours, comments or concerns that were seen and heard while participating in the ride-alongs. This was done to capture a more in-depth understanding of what the officers felt about idling and sustainability, which could then complement the statistical data. In many instances, observers switched vehicles during a given shift allowing them to speak one-on-one with several officers. This provided them with an opportunity to hear different perspectives and ideas about idling, vehicle maintenance and managing resources in a more sustainable way. The findings of these observations can be found in Appendix B of this report.

Limitations

This study was conducted over a condensed period of time, which presented some notable limitations for the research.

- The ride-alongs took place over a week period at the beginning of June when the weather was consistently overcast with periods of rain. As a result, it was difficult to tell if temperature had any affect on the officers' idling behaviour because there was no comparison. If more resources were available, a quarterly idling study could be done to identify to what extent weather plays a factor in an officer's decision to idle.
- The sample covered all four districts but did not cover all days of the week in each district. Due to the scope of this project, this was not feasible but could be further explored in the future.
- The sample was limited because it only included Patrol officer's idling behaviour. If more time and resources were available the sample could observe idling behaviour from: patrol wagons, the duty officer, dog patrols, sergeants, and civilians working for the Department to better understanding idling within the organization as a whole.

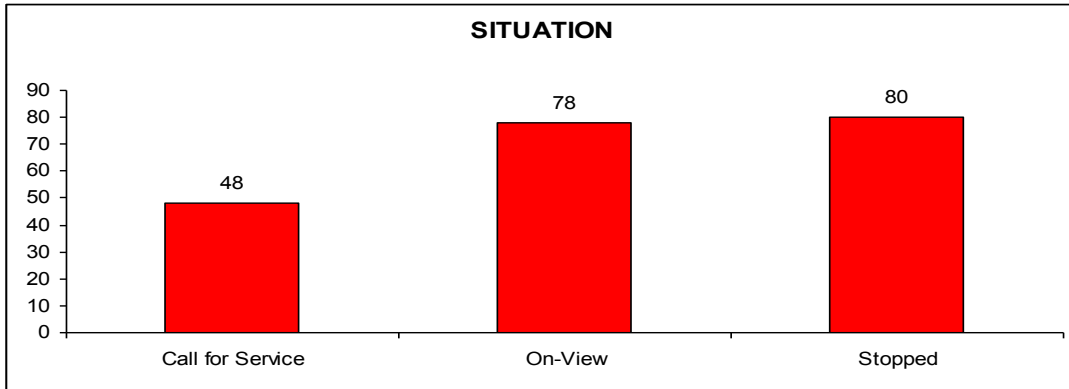
Results

Over the 16 ride-alongs, it was found that VPD Patrol officers routinely left their engines running to perform typical patrol functions and to supply electrical power for emergency lights and in-car equipment. That being said, many instances of idling occurred when the officers were not responding to calls or for reasons that did not necessitate idling for police work. Idling as a result of the computer, heating and safety have been identified as the biggest reason why VPD Patrol officers chose to idle. More investigation of these reasons and how to address them should be taken to reduce idling in police vehicles.

1. Determine the situation that patrol officers idle their vehicles the most.

Overall, VPD officers idle the least when responding to a call for service (n=48). On-view situations were common reasons for idling (n=78); but officers most often idled for other, non-call related reasons (n=80). There was little difference in how often VPD Patrol officers idled during a stopped and on-view situation where in comparison, it was found that officers idled significantly less when they responded to a call for service.

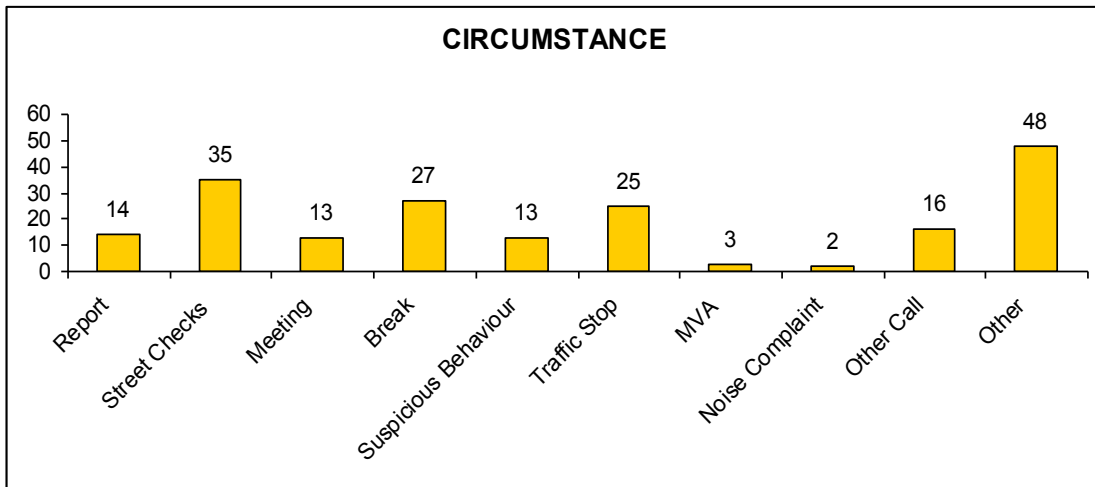
Graph A.



2. Determine the circumstances that patrol officers kept their vehicles idling.

The circumstances in which VPD officers kept their vehicle idling were varied yet consistent with the results mentioned above. The top three reasons why an officer idled were “breaks”, “street checks”, and “other”. To be specific, the “other” reasons included such things as: “picking up partner at Fleet”, “answering cell phones”, “defogging the window” and “picking up documents from the police station”. This data shows that VPD Patrol officers tend to idle more in stopped circumstances to address personal and convenience related matters. Not far behind were “street checks” and “traffic stops” which are common policing responsibilities.

Graph B.

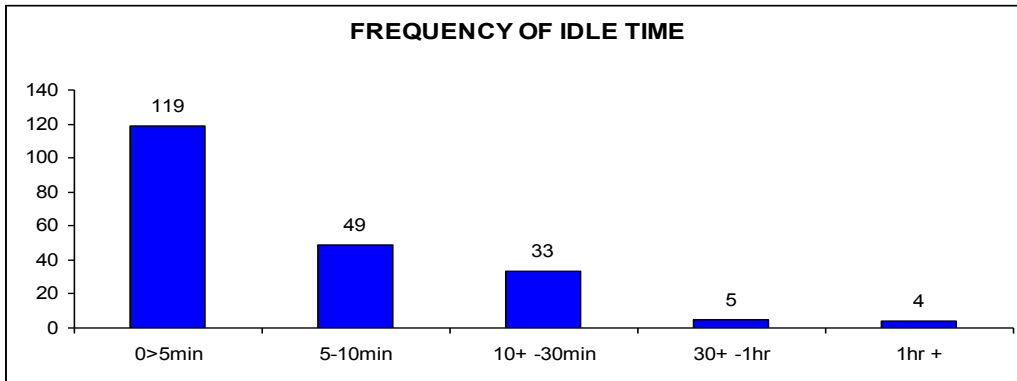


3. Determine the most common duration of idle time.

There was a large number of (>5 minute) instances of idling, revealing that officers idled for short periods of time but frequently. One of the limitations of this study was that police officers would idle for less than five minutes, but there was no category on the coding form to record specific minutes. Regardless, the (>5 minutes) finding is important for the Department because if anti-idle technology becomes activated after 5 minutes most idling would be un-

impacted. However, if it can be activated after one to two minutes of consecutive idling then installing anti-idle technology in every patrol vehicle could prove beneficial for reducing short periods of idling.

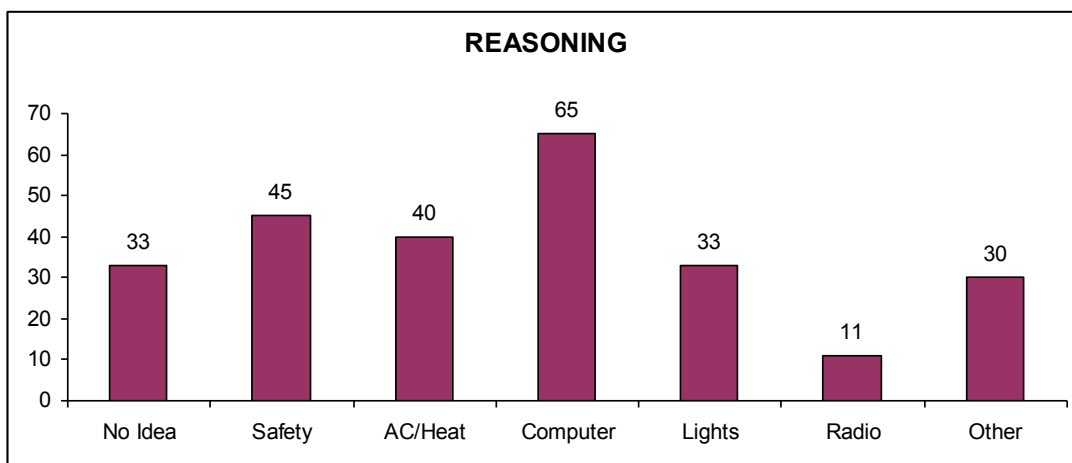
Graph D.



4. Determine the reasons why officers idle.

The most frequent reasons why VPD Patrol officers idle their vehicles were for “computer”, “safety” and “air conditioning and heating” purposes. These findings are duty related and important for ensuring the comfort and protection of the officers while on shift. That being said, the main reason officers gave for leaving their engine running is not consistent with the most frequent idle time. VPD officers claimed that they kept the engine running to charge their computers in order to use them for police matters such as sending messages to the district, running a license plate or an identification card. According to the Panasonic website, the Panasonic CF30 Toughbook Touch screen edition, used in the CPVI vehicles, has an operating time of approximately 12.5 hours and takes about 5 hours to fully charge (Panasonic, 2009). If officers claim that they need to idle in order to charge their laptop for duty purposes then they would need a much longer time frame than the “0>5 minutes” to do so.

Graph C.



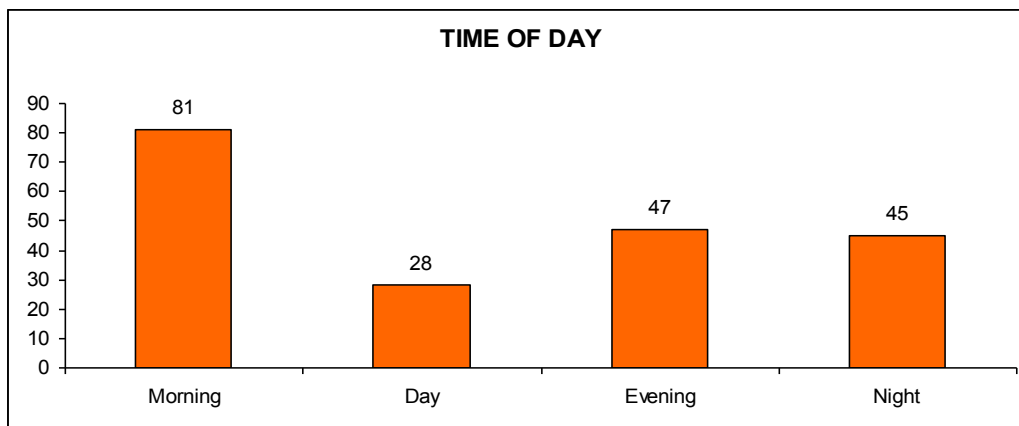
5. Determine to what extent weather plays a factor in an officer's decision to idle.

At the start of every shift, the observers were asked to document the weather conditions and note whether they changed over the course of the 12 hours. The weather for the week, as mentioned previously, was consistently overcast with periods of light to heavy rain. This created a limitation because there was no way to assess whether different types of weather resulted in patrol officers idling less or more. What the findings can suggest is that the use of heating, rather than air conditioning, was needed to de-fog the windows and heat the vehicle for comfort purposes.

6. Determine whether the time of day (morning, day, evening, or night) had an effect on the amount of idling.

Based on the findings, it was found that idling occurred most frequently in the "morning" (n=81) between 1:01am to 12:00pm. This was substantially higher than "day" (n=28) between 12:01 - 4:00pm, "evening" (n=47) between 4:01 – 8:00pm, and "night" (n=45) between 8:01 – 1:00am. A possible reason why more idling occurred in the "morning" could be due to the fact that there were a larger number of hours in the "morning" category or as a result of perceived safety concerns.

Graph E.



Discussion of Findings

1. Finding 1: VPD Patrol officer's idled the least when responding to a "call for service".

VPD Patrol officers idle the most while in "stopped" and "on-view" situations and the least when responding to a "call for service". This reveals that in some situations officers made the conscious effort to turn off the engine when attending to a call. If the VPD's goal is to reduce idling, a further exploration of the reasons why officers choose not to idle will reveal more about officer's idling behaviour than what was captured in this study. This finding also suggests that awareness and education about the effects of idling may be necessary to reduce officers' idling behaviour particularly in situations that do not require a reliable power source for police equipment.

2. Finding 2: VPD Patrol officers left their vehicles idling the most while attending to personal matters and in-car preparations.

Observers found that when patrol officers stopped and idled, they were waiting for their partners, picking something up, or answering a phone call, which are all very common reasons for idling, yet not necessarily related to policing. To help minimize these instances, posting large “anti-idle” signage around Fleet and at police stations can help remind officers to turn off their cars and reduce short occurrences of unnecessary idling. The signs can be a starting point for integrating anti-idling awareness as part of patrol officer’s daily activities.

3. Findings 3: The majority of VPD Patrol officers expressed a concern for idling and the environment, which suggests support for green initiatives and improvements to the CVPI vehicles.

Many observers noted that VPD Patrol officers understood the extent of their idling and its impacts on the environment, indicating significant buy-in for anti-idling solutions. This is important because technical solutions are only one side of the answer and support for sustainable initiatives will be key for reducing idling rates in the long run. If the VPD strives to reduce their carbon footprint then continual involvement of the officers’ behaviour will be necessary for finding a solution. A trial period of any vehicle improvements, awareness campaign, idle policy or additional technology to reduce idling is highly recommended to gain feedback from the officers and ensure that they remain supportive of the process.

4. Finding 4: There are common misconceptions about the battery life of the Panasonic CF30 Toughbook.

Charging and using the computer has emerged as the most common explanations why VPD Patrol officers idle. From the data collected we know the instances of idle time (0>5 minutes) are inconsistent with the officers concerns around charging the battery to maintain its use during shift. This tells us that there is either a problem with Patrol officers using the computer as an excuse to keep their engines running or that they lack information regarding the battery life and maintenance of the computers. If the latter is true, more education and awareness about the battery and performance of the computer is required.

5. Finding 5: VPD Patrol officers require heating for comfort and safety.

During the ride-alongs it was found that cold and rainy weather made an impact on an officer’s decision to idle. Observers noted that during rainy periods officers would keep the car running, while in the stopped position, to heat the vehicle and de-fog the windows. If we are encouraging officers to reduce their carbon footprint than an alternative source of heating or exemptions should be made available to address their safety and comfort needs. When an officer is on shift they are entitled to the same level of comfort as any other office worker and should not be penalized for additional idling due to climatic reasons.

6. Finding 6: VPD Patrol officers idled the most during the morning.

Morning time (from 1:01am to 12:00pm) has been observed as the most frequent time that officers idled. This could be a result of perceived safety concerns and whether or not officer feel more inclined to keep the engine running when it is dark outside and less populated. Exploring officer safety and the perception of safety would give the VPD a better understanding of officers’ idling behaviour and hence why they idle more at particular times of the day.

Recommendations

Based off the findings, the following recommendations have been made to assist the VPD find solutions to reduce idling and assess whether anti-idle technology should be implemented as a simple and safe solution to reduce fuel costs and environmental impacts.

1. It is recommended that the VPD invest more time to address officers' idling behaviour as a way to reduce fuel costs and environmental impacts. If the Department wants to make a long-term commitment to a reduction in CO₂ emissions then Patrol officers' need to understand how their actions play a role and be on board with making small changes to their daily activities to reduce idling. Providing technical solutions is a fast and simple option to reduce idling rates, but it is not conclusive. Based on the results of this study officers idle most when attending to personal matters and during in-car preparations that typically do not relate to policing or exceed five minutes. That being said, investing in expensive anti-idle technology may not be the solution to reducing idling within the Department and exploring alternative options that address Patrols' idling behaviour would prove more beneficial.
2. It is recommended that the VPD follow best practice and create an "anti-idle campaign" to educate their patrol officers about excessive idling and vehicle maintenance. The campaign could address things such as idle behaviour, common misconceptions around idling and the Panasonic CF30 Toughbooks. For example, a commonly held myth was that officers' thought that turning the engine on and off for short periods of time was bad for the engine. In actuality, leaving the vehicle idling is more harmful for the lifespan of the vehicle (Shipchandler, Janssen & Miller, 2008) yet due to misconceptions about idling officers continue to act otherwise. A simple anti-idling workshop to relay the facts coupled with regular reminders and large signage around police stations could help reduce these myths and mitigate short instances of unnecessary idling. To ensure long-term success, it will be important for the Executive to show commitment to the anti-idling goals and should also provide consistent information about officers' idling progress so that they remain engaged in the process.
3. It is recommended that the VPD look into the creation of a "Vehicle Anti-Idle Policy" similar to that of Wood Dale Police Department in Illinois, USA (more information can be found in Appendix C). The Wood Dale's policy prohibits idling of department-owned vehicles when they are not moving or performing work for a period of time longer than (0>5 minutes) within one hour (CMAP, 2011). The policy states it is not acceptable to idle when the vehicle is parked:
 - In and around the police station
 - At a location during a call for service
 - At a place of business during a break
 - During the running of radar at a set location

If officers are caught idling during these circumstances they are subject to a fine anywhere between \$50 to \$150 dollars (Shipchandler et al., 2008). One exception to the aforementioned conditions is that it may be essential for officers to leave the car running for air conditioning and heating purposes during periods of extreme weather. In such cases, the policy is not in effect to ensure the health and safety of the officers. To keep the policy communicated, periodic updates from Wood Dale Deputy Chiefs provided details about when and under what weather conditions the exception to the policy has been changed (CMAP, 2011).

The Wood Dale Police Department's idling conditions are very consistent with findings of when and where VPD Patrol officers idled the most. It would be very advantageous for the VPD to consider adopting a similar hard-line policy to not only show their commitment to reducing idling but also make a significant reduction in CO₂ emissions and maintenance costs for the Department. As a caveat, if the VPD were to adopt a "Vehicle Anti-Idle Policy" it would be important for them to have an efficient way to enforce it, measure its effectiveness and provide regular updates to officers so that they are aware of the success of the policy. Although this type of policy sounds drastic VPD Patrol officers have shown support for reducing their environmental impact and many of them already turn their vehicles off at locations during a "call for service".

4. It is recommended that further research be done to determine whether a certain level of idling can be tolerated to achieve heating comfort as apposed to the provision of costly auxiliary heating equipment. It is difficult to tell, based on this research, whether or not providing auxiliary heating may be necessary for the needs of the Patrol officers. In the NRCan study Bronson Consulting looked at Environment Canada's historical weather data to help determine an indication of the requirement for heating equipment in the Ottawa Police Service. To do this they assessed the number of degree-days where the mean temperature was below 18 °C and made a decision based on the outcomes: in Ottawa's case the requirement was high (NRCan, 2008). To assess whether the benefits of providing an auxiliary heating system outweigh the costs, the same investigation should be done by the VPD to determine whether auxiliary heating is necessary based on Vancouver climate. This will help the Department decide whether it will be useful to provide heating alternatives to reduce idling during harsh winter conditions or if exemptions can be made for short periods of idling specifically to warm the vehicle.
5. It is recommended that more research be done to understand why the time of day has an impact on when VPD Patrol officers idle. It was found during the ride-alongs that between 1:01am to 12:00pm officers idled the most. Further investigation of this would be very helpful for uncovering whether officers idled more because they felt unsafe and whether solutions to their perceived safety could help negate excessive idling. At the moment, there is little research done of this topic and such investigation could provide important information for other police forces in Canada who may experience similar rates of idling during this time of day.

Conclusion

The intention of this research has been to gain a better understanding of how VPD Patrol officers use their vehicles and the circumstances in which they idle. What became apparent was that officers' use their vehicles for safety and in-car operational needs, but also for matters unrelated to policing. Based on the findings, the VPD Patrol officers idle the least during calls for service and the most during street checks, responding to personal matters and when taking breaks. It was found that the most frequent idling occurs between (0>5 minutes) so installing anti-idle technology to reduce idling may not contribute to a significant reduction in savings for the Department. Steps to reduce idling through alternative solutions can be found in awareness campaigns, anti-idling policies, and the provision of auxiliary heating based on need.

Exploring all opportunities to reduce idling and uncovering the reasons why patrol officers idle is key to understanding the whole picture. This report has outlined some key areas where a reduction in idling can occur without investing in anti-idle technology and instead through alternative solutions that are context specific to the VPD. Although, anti-idle technology has been proven successful for many police forces across North American this report suggest that it will only help the VPD reduce longer less frequent instances of idling (i.e. traffic stops and blockades). The anti-idle technology solution will not address misconceptions about engine use and idling for personal matters, which play a strong role in officers' idling behaviour.

References

- Chicago Metropolitan Agency for Planning (CMAP) (2011). *Wood Dale police department anti-idling*. [Electronic Document] Retrieved on July 20th 2012 from <http://www.cmap.illinois.gov/.../20583/74e7cdf6-db19-49ae-a4b8-933ae8f27f56>
- Natural Resources Canada (NRCan). (2006). *Analysis of idling in police vehicles as a result of temperature*. Prepared by Bronson Consulting Group for the *Office of Energy Efficiency*. (pp. 1 – 45).
- Demers, S., & Prendeville, N. (2010). Analysis of the VPD fleet's carbon footprint. Internal document retrieved from *Planning, Research and Audit Section*. (pp. 1 – 21).
- Wiebe, D., Patterson, P. (2011). Goal –To improve the VPD's environmental sustainability and contribute to a greener community. Internal document retrieved from Planning, Research and Audit Section. (pp. 1 -5).
- Ottawa Police Service (OPS). (2011a). Ottawa police service and the national research council of Canada centre for surface transportation technology collaborate on idle reduction system. [News Release] Retrieved on July 10th 2012 from <http://www.ottawapolice.ca/en/mediaroom/newsreleases/11-05-25/996ef371-a886-4ce2-b0a2-488a40685961.aspx>
- Ottawa Police Service (OPS). (2011b). *Idling facts: Green fleet*. [Electronic fact sheet]. Retrieved on July 10th 2012 from <http://www.ottawapolice.ca/en/mediaroom/newsreleases/11-05-25/996ef371-a886-4ce2-b0a2-488a40685961.aspx>
- Panasonic (2009). *Toughbook 30: Powerful, rugged and wireless*. Retrieved July 10th 2012, from https://panasonic.ca/english/office/notebook/pdf/CF30_EN.pdf
- Shipchandler, R., Janssen, J., Miller, G. (2008). Idling reduction programs for the Chicago metropolitan area. Prepared by *the Illinois Sustainable Technology Centre for the Institute of Natural Resources Sustainability*. Retrieved on June 15th 2012 from <http://www.cleanaircounts.org/documents/Idling%20Reduction%20Programs.pdf>
- Vancouver Police Department (VPD). (2012). 2012-2016 Strategic Plan Vancouver Police Department. Prepared by Planning, Research & Audit Section. Retrieved on May 9th 2012 from <http://vancouver.ca/police/assets/pdf/vpd-strategic-plan-2012-2016.pdf>

Appendix A. Coding Document

Situation CFS= call for service	Circumstance R=report S.C=street check M=meeting B=break S.B.= suspicious behaviour T.S.=traffic stop MVA= motor vehicle accident N.C.=noise complaint O.C.=other call O=other	Reasoning NI=no idea S=safety AC/H=air conditioning/heater C=computer L=lights R=radio O=other	# of Units Resp	# of Units Idling	Total Idle Time	Time of Day
<input type="checkbox"/> CFS <input type="checkbox"/> On-view <input type="checkbox"/> Stopped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S S.B M T.S. MVA N.C. <input type="checkbox"/> O.C. <input type="checkbox"/> O _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> N.I. S AC/H C <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> L R O _____			<input type="checkbox"/> 0 > 5 min <input type="checkbox"/> 5 - 10 min <input type="checkbox"/> 10+- 30 min <input type="checkbox"/> 30+ - 1hr <input type="checkbox"/> 1hr+	<input type="checkbox"/> Morning(1:01-12:00pm) <input type="checkbox"/> Day (12:01-4:00pm) <input type="checkbox"/> Evening (4:01-8:00pm) <input type="checkbox"/> Night (8:01- 1:00am)
<input type="checkbox"/> CFS <input type="checkbox"/> On-view <input type="checkbox"/> Stopped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S S.B M T.S. MVA N.C. <input type="checkbox"/> O.C. <input type="checkbox"/> O _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> N.I. S AC/H C <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> L R O _____			<input type="checkbox"/> 0 > 5 min <input type="checkbox"/> 5 - 10 min <input type="checkbox"/> 10+- 30 min <input type="checkbox"/> 30+ - 1hr <input type="checkbox"/> 1hr+	<input type="checkbox"/> Morning(1:01-12:00pm) <input type="checkbox"/> Day (12:01-4:00pm) <input type="checkbox"/> Evening (4:01-8:00pm) <input type="checkbox"/> Night (8:01- 1:00am)
<input type="checkbox"/> CFS <input type="checkbox"/> On-view <input type="checkbox"/> Stopped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S S.B M T.S. MVA N.C. <input type="checkbox"/> O.C. <input type="checkbox"/> O _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> N.I. S AC/H C <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> L R O _____			<input type="checkbox"/> 0 > 5 min <input type="checkbox"/> 5 - 10 min <input type="checkbox"/> 10+- 30 min <input type="checkbox"/> 30+ - 1hr <input type="checkbox"/> 1hr+	<input type="checkbox"/> Morning(1:01-12:00pm) <input type="checkbox"/> Day (12:01-4:00pm) <input type="checkbox"/> Evening (4:01-8:00pm) <input type="checkbox"/> Night (8:01- 1:00am)
<input type="checkbox"/> CFS <input type="checkbox"/> On-view <input type="checkbox"/> Stopped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S S.B M T.S. MVA N.C. <input type="checkbox"/> O.C. <input type="checkbox"/> O _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> N.I. S AC/H C <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> L R O _____			<input type="checkbox"/> 0 > 5 min <input type="checkbox"/> 5 - 10 min <input type="checkbox"/> 10+- 30 min <input type="checkbox"/> 30+ - 1hr <input type="checkbox"/> 1hr+	<input type="checkbox"/> Morning(1:01-12:00pm) <input type="checkbox"/> Day (12:01-4:00pm) <input type="checkbox"/> Evening (4:01-8:00pm) <input type="checkbox"/> Night (8:01- 1:00am)
<input type="checkbox"/> CFS <input type="checkbox"/> On-view <input type="checkbox"/> Stopped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S S.B M T.S. MVA N.C. <input type="checkbox"/> O.C. <input type="checkbox"/> O _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> N.I. S AC/H C <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> L R O _____			<input type="checkbox"/> 0 > 5 min <input type="checkbox"/> 5 - 10 min <input type="checkbox"/> 10+- 30 min <input type="checkbox"/> 30+ - 1hr <input type="checkbox"/> 1hr+	<input type="checkbox"/> Morning(1:01-12:00pm) <input type="checkbox"/> Day (12:01-4:00pm) <input type="checkbox"/> Evening (4:01-8:00pm) <input type="checkbox"/> Night (8:01- 1:00am)
<input type="checkbox"/> CFS <input type="checkbox"/> On-view <input type="checkbox"/> Stopped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S S.B M T.S. MVA N.C. <input type="checkbox"/> O.C. <input type="checkbox"/> O _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> N.I. S AC/H C <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> L R O _____			<input type="checkbox"/> 0 > 5 min <input type="checkbox"/> 5 - 10 min <input type="checkbox"/> 10+- 30 min <input type="checkbox"/> 30+ - 1hr <input type="checkbox"/> 1hr+	<input type="checkbox"/> Morning(1:01-12:00pm) <input type="checkbox"/> Day (12:01-4:00pm) <input type="checkbox"/> Evening (4:01-8:00pm) <input type="checkbox"/> Night (8:01- 1:00am)
<input type="checkbox"/> CFS <input type="checkbox"/> On-view <input type="checkbox"/> Stopped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S S.B M T.S. MVA N.C. <input type="checkbox"/> O.C. <input type="checkbox"/> O _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> N.I. S AC/H C <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> L R O _____			<input type="checkbox"/> 0 > 5 min <input type="checkbox"/> 5 - 10 min <input type="checkbox"/> 10+- 30 min <input type="checkbox"/> 30+ - 1hr <input type="checkbox"/> 1hr+	<input type="checkbox"/> Morning(1:01-12:00pm) <input type="checkbox"/> Day (12:01-4:00pm) <input type="checkbox"/> Evening (4:01-8:00pm) <input type="checkbox"/> Night (8:01- 1:00am)

Appendix B. Observations/Discussion

An important component of this research was to discuss with VPD Patrol officers about how the Department can reduce idling and gain a better understanding of their attitude towards sustainability. Discussions and observations with the officers took place in all 16 ride-alongs and the two most commonly discussed topics have been summarized below.

Re-introducing the Bike Fleet

- A large portion of officers, both junior and senior, expressed an interest in cycling as a part of their policing duties and as a way to reduce carbon emissions and stay fit. By making it easier for patrol officers to cycle they could improve their fitness levels while reducing fuel costs, CO₂ emissions and improving community relationships. Community policing station could also be outfitted, similarly to Cambie and Graveley, with bike parking and end of trip facilities that would make it easier for officers to bike there and complete their report writing.
- A handful of officers commented that the reason the bike fleet is not active is because of concerns from upper management that a bike fleet could negatively affect response times and safety. However police forces in Ottawa, Montreal, Calgary and Toronto have designated bike fleets and are often seen using their bikes for traffic stops and blockades. In a city like Vancouver, whose cycling infrastructure is one of the best in North America, there is room for improvement. A suggestion would be to conduct a report on best practices from other police forces in Canada, who have bike fleets to better understand some of the challenges and opportunities.
- Officers suggested installing bike racks on the back of patrol vehicles to allow for intermodal transportation that would them the option to have their vehicles but also take the bikes out for street patrol. Accommodating both modes of transportation would have its benefits because the police car gives presence and can easily be accessed during an emergency whereas a bike allows officers to engage with the public in a more approachable fashion while reducing their CO₂ emissions and saving money on fuel.

Vehicle Ownership/Maintenance

- Many VPD Patrol officers expressed a concern that their fellow officers were not taking good care of the CVPI vehicles which was adding to their shorter lifespan. In almost every case officers collect a different car than their previous shift, which was seen by the officers as a problem due to a lack of ownership and accountability. By assigning officers to specific vehicles it could encourage patrol officers to take more notice of the vehicles performance, up-keep and how much fuel they are using.
- Some patrol officers expressed an interest in knowing more about the cars they were driving (make/model/fuel capacity etc). To address this, more education and awareness about the cars could prove useful for preventing wear and tear and keeping the officers up to date about vehicle improvement and how to check things like tire pressure and wheel alignment to reduce carbon emissions.

CMAP

Wood Dale Police Department Anti-Idling

Wood Dale, DuPage County

The problem

On-road vehicles are a significant source of air pollution. According to the Illinois Environmental Protection Agency (USEPA), in 2002 on-road vehicles emitted 578 tons per day of smog precursors in the Chicago metropolitan area, or 31.4% of total man-made emissions.¹ Idling contributes to the problem by consuming fuel and producing volatile organic compounds and nitrous oxide emissions, which lead to smog formation.²

Polluted air affects all citizens, particularly the elderly and children because their lungs are more sensitive. Unnecessary idling around schools, for example, can contribute to asthma and other ailments.³

USEPA’s recommendations to drivers are to avoid idling engines over 30 seconds.⁴ Despite myths to the contrary, idling burns more gas than restarting the engine. For cars, the catalytic converter, which converts pollutants into less harmful emissions, warms up faster when the car is being driven than it does while idling.⁵ Idling also degrades the engine’s ability to operate smoothly and efficiently.

The solution

Reducing idling maximizes fuel efficiency, minimizes vehicular emissions, reduces fuel costs and improves health. Ways to reduce idling include educational initiatives, government regulations and programs, and technology that decreases or eliminates the need to, for example, keep vehicles warm or cool enough inside vehicles. A number of local governments, agencies, and businesses have instituted policies and programs to reduce idling. One example is the Police Department in Wood Dale, Illinois.

The process

The City of Wood Dale’s Clear Air Counts Committee is dedicated to decreasing air pollution in the city. To help the committee achieve its objectives, in 2007 the Police Department adopted a Vehicle Anti-Idling Policy. The policy prohibits idling of department-owned vehicles when not moving or performing work for a period of time greater than 5 minutes in a one hour period. The department may take disciplinary action if vehicles are observed idling unnecessarily. The policy states that it is not acceptable to idle when the vehicle is parked:

- in and around the police station;
- at a location during a call for service;
- at a place of business during a break; or
- during the running of radar at a set location

¹ Illinois Environmental Protection Agency, “Illinois Base Year Inventory for 2002: Draft,” June 2006. See <http://www.epa.state.il.us/air>.

² Riyaz Shipchandler, Jim Janssen, and Gary Miller, “Idling Reduction Programs for the Chicago Metropolitan Area,” Illinois Sustainable Technology Center, University of Illinois, 2008. See <http://www.cleanaircounts.org/documents>.

³ See http://www.afdc.energy.gov/afdc/pdfs/idling_is_not_the_way.pdf.

⁴ See http://www.epa.gov/oar/actions/drive_wise.html.

⁵ See <http://www.transportation.anl.gov/pdfs/EE/642.PDF>.



Overview

In 2008, the Wood Dale Police Department adopted a Vehicle Anti-Idling Policy, a recommendation stemming from the City’s Clean Air Counts Committee. Fuel efficiency increased nearly every month in the year following implementation of the policy.

CMAP Resources

- [Climate Change and Energy Strategy Paper](#)
- [Air Quality Snapshot Report](#)

GO TO 2040 on Livable Communities:

The cumulative choices of 284 municipalities and seven counties determine quality of life and economic prosperity across our region.

For more information:

Mike Rivas, Deputy Chief,
Wood Dale Police Department,
404 North Wood Dale Road,
Wood Dale, Illinois, 60191
email: mrivas@wooddale.com
630-787-3814
<http://wooddale.com/index.asp>

An emergency call for service may supersede this, according to the policy, when time and necessity may be critical. It also states that during times of extreme weather conditions it may be essential to leave the vehicle running, such as when dogs or arrestees are kept in a squad car.

The program is managed by Deputy Chief Mike Rivas. He sends out regular reminders about the policy, which, he notes, is important when you are asking people to do things differently.

Many of the local level approaches in this region have been focused on reducing idling through behavior change. Idling reductions can also be achieved through the use of technology. The USEPA's SmartWay Technology Program was developed after evaluations and research was conducted on various idle reduction technologies. The program defines the technology as a device installed on a vehicle or at a location that reduces unnecessary main engine idling of the vehicle or equipment, and/or is designed to provide services that otherwise would require the operation of the main drive engine while the vehicle or equipment is temporarily parked or remains stationary. A list of USEPA-verified devices can be found at [SmartWay Technology Program](#).

Community concerns

Deputy Chief Rivas said that initially it was necessary to clarify the policy to department staff who had expressed concern about how the policy would affect their ability to keep warm in the winter (the policy is not in effect in extreme temperatures). The periodic reminders provide details about when and under what conditions the policy applies.

Outcomes

In 2008, the first year after the Wood Dale Police Department policy was adopted, fuel efficiency increased nearly every month. Recent measures of fuel efficiency cannot be compared to previous years since the composition of fuel and other factors have changed since that time.

[Research](#) reported by the American Council for an Energy-Efficient Economy (ACEEE) on the outcomes of a Minneapolis Anti-Idling Vehicle Ordinance instituted in June 2008 showed that from 2009 to 2010, fuel consumption by the police department dropped by 16 percent. The article notes that although the drop was influenced by a number of factors, a portion of the savings was due to decreased idling. Newer department vehicles automatically track idling time, and for those vehicles, idling dropped more than 25 percent from 2009 to 2010.⁶

Lessons learned

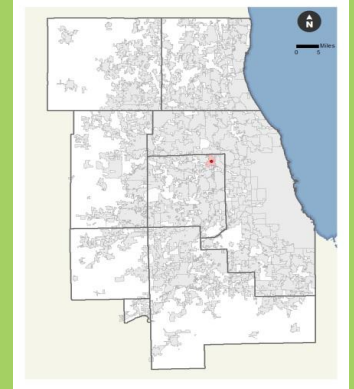
Deputy Chief Rivas says it's important to continue to clarify the circumstances in which the anti-idling policy does and doesn't apply, and to periodically circulate reminders throughout the Department. He considers the program an important component in Wood Dale's efforts to reduce harmful vehicle emissions in the City.

Contact Lindsay Banks (lbanks@cmapp.illinois.gov) to submit a case study.

233 South Wacker Drive, Suite 800 Chicago, Illinois 60606
312.454.0500 info@cmapp.illinois.gov | www.cmapp.illinois.gov

⁶ American Council for an Energy-Efficient Economy, "Minneapolis Anti-Idling Vehicle Ordinance," March, 2011. (See <http://aceee.org/sector/local-policy/case-studies/minneapolis-anti-idling-vehicle-ordin>)

Location Map:



CMAP Photo Contest entry by:
Michael Brown

Additional Resources

- [Clean Air Counts Initiative](#)
- [USEPA SmartWay Technology Program](#)
- [USEPA/IEPA Clean School Bus Program](#)
- [US Dept. of Energy National Idling Reduction Network](#)