



## Vehicle Idling

# What is idling?

- **Legal definition:** *Idling means the operation of the engine of a Boat, Motor Vehicle or Commercial Vehicle while the Boat, Motor Vehicle or Commercial Motor Vehicle is not in motion and not being used to operate auxiliary equipment that is essential to the basic function of the Boat, Motor Vehicle or Commercial Motor Vehicle.*
- **Or: leaving your car engine running when parked**

# Canadians and Idling

- Canadian motorists idle an average of 6 to 8 minutes a day.



- 40 % less in the summer.

# Why is Idling bad?

- Needless idling of vehicles...
  - ▣ Harms the Environment
  - ▣ Contributes to Climate Change
  - ▣ Impacts Human Health
  - ▣ Wastes Money



# Idling and the Environment

- An operating vehicle emits several different criteria air contaminants (CACs) such as;
  - ▣ Volatile Organic Compounds (VOCs)
  - ▣ Carbon Monoxide (CO)
  - ▣ Nitrogen Oxides (NO<sub>x</sub>)
  - ▣ Carbon Dioxide (CO<sub>2</sub>)
  - ▣ Particulate Matter
  - ▣ Plus more



# Air Quality, Idling and Health

**Health Effects**

**Effects of Vehicle Emissions**

- Headaches
- Aggravates Asthma and Allergies
- Lung Disease
- Impaired Learning

Children are especially vulnerable to the effects of vehicle emissions because their lungs and airways are immature. Also, their breathing zone is lower than adults so they are more exposed to vehicle exhausts and heavier pollutants that concentrate at lower levels in the air.

**Vehicle Emissions**

- Carbon Monoxide
- Nitrogen Oxides
- Particulate Matter
- Ground Level Ozone

Vehicle exhaust emits chemicals that have harmful effects. Carbon monoxide diminishes the blood's ability to carry oxygen to the body. Nitrogen oxides irritate upper air passages and the lungs. Other exhaust toxins such as benzene are classified as probable or definite carcinogens.

The infographic features a young boy in a striped polo shirt and blue shorts standing on a path. To his right is a yellow car. The background is a stylized landscape with green hills and a blue sky. The text is arranged in columns and sections, with some items in red text. The overall design is clean and informative.

Image courtesy of the Citizens Environmental Alliance

# Air Quality, Idling and Health

- The Ontario Medical Association estimated that in Essex County there were:
  - ▣ 260 premature deaths
  - ▣ 900 hospital admissions
  - ▣ 2,750 emergency room visits associated with poor air quality



Source:  
Region of  
Durham



# Air Quality, Idling and Health

- Traffic related air pollution has been associated with adverse cardio respiratory effects, including asthma.
- Studies in the Netherlands and California indicated that children exposed to higher levels of traffic-related air pollution at school and home are at an increased risk of developing asthma.

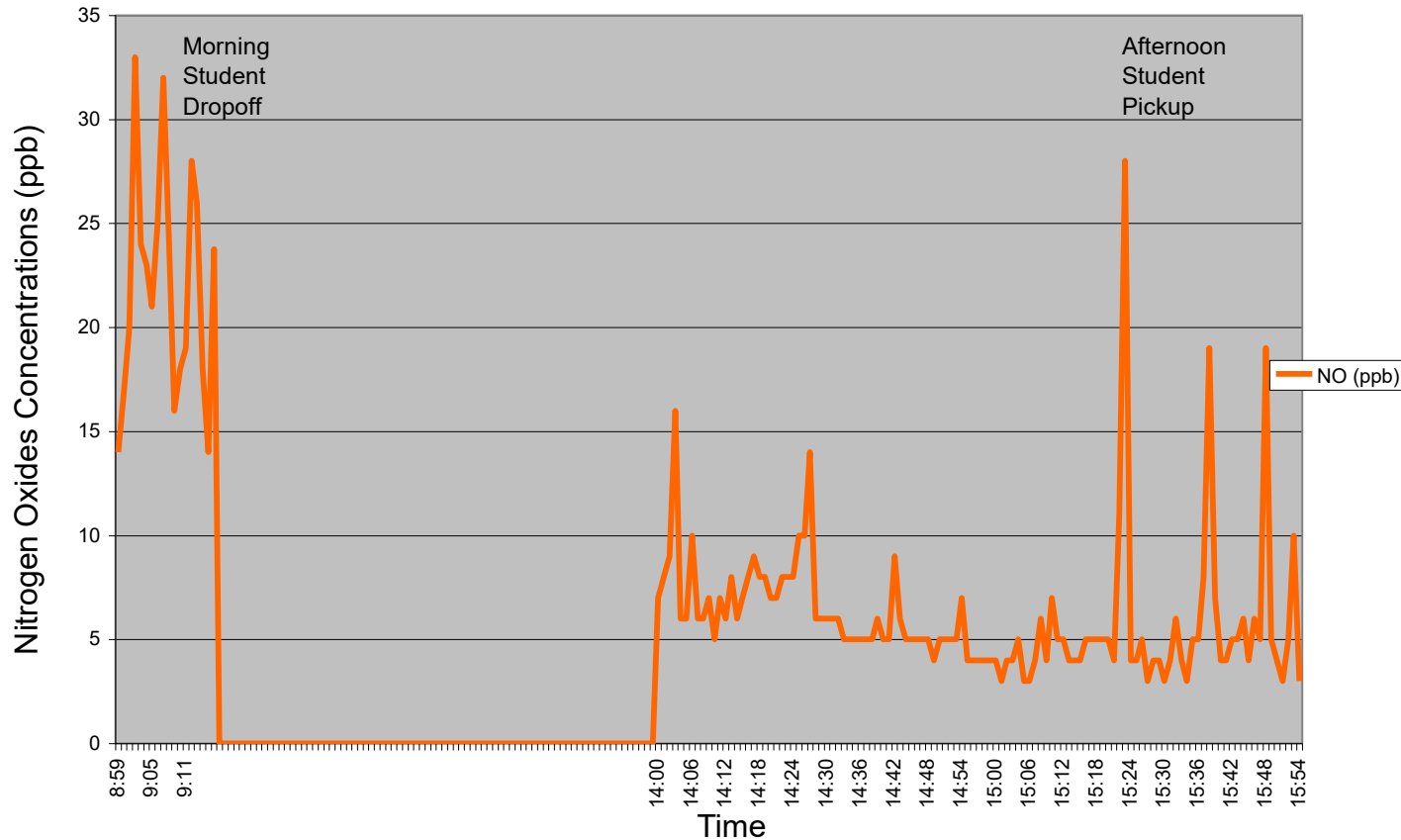


Source:  
Portland , OR



# Air Quality, Idling and Health

## Air Pollution



Source: Vehicle Idling outside schools “ February 28<sup>th</sup>, presented at the Upwind/Downwind Conference Hamilton. Dr. Corr”

# Air Quality and Health

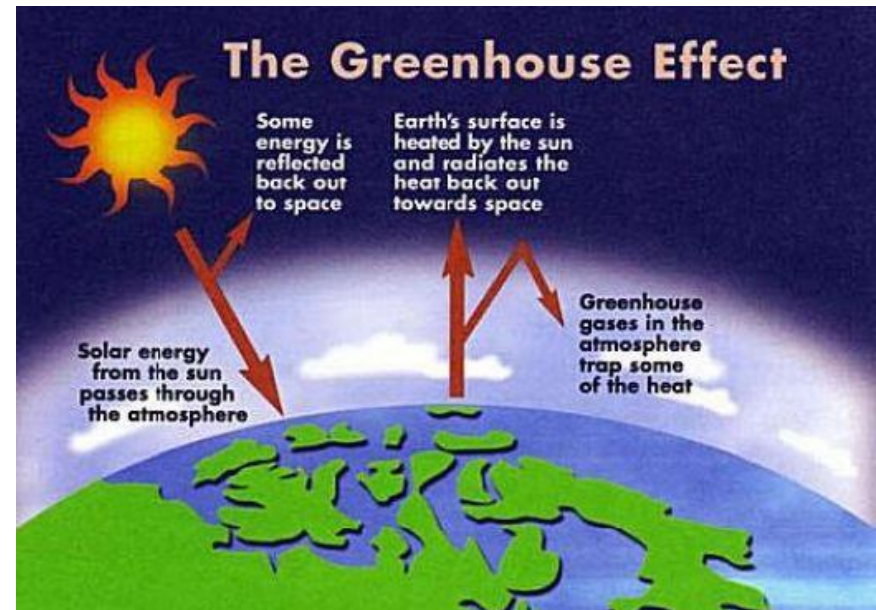
- Ontario introduced the Air Quality Health Index ([AQHI](#)) to help the public determine the health based risk associated with various levels of air pollution.



Source: City of Fort Collins, Colorado

# Idling and Climate Change

- **Climate Change** is the long-term change in weather patterns
- **The evidence is clear.** Rising global temperatures have been accompanied by changes in weather and climate.
- Over the past century, human activities which burn fossil fuels like oil have released large amounts of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases into the atmosphere.
- Greenhouse gases act like a blanket around Earth, trapping energy in the atmosphere and causing it to warm.



# Idling and Climate Change (Cont'd)

- **DID YOU KNOW** that if every driver in Windsor avoided idling for 3-minutes a day, the city would prevent 13,000 tonnes of CO<sub>2</sub>.
- Every litre of gasoline burned, 2.3 kg of CO<sub>2</sub> is emitted (2.7 kg for diesel)
- No technology exists for eliminating CO<sub>2</sub> emissions.



# Idling and Climate Change (Cont'd)

## Calculating CO<sub>2</sub> emissions from a gasoline car

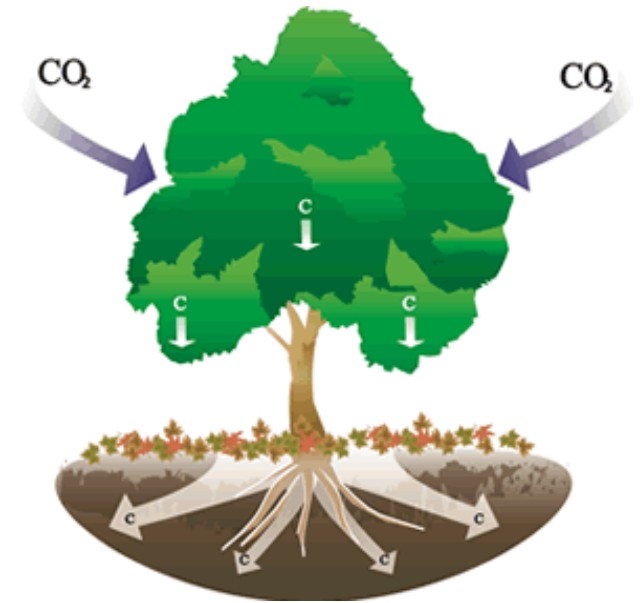
$$\text{CO}_2 \text{ emitted} = \frac{\text{L gasoline}}{\text{min}} \times \# \text{ vehicles} \times \text{idling time} \times \text{days} \times 2.3 \frac{\text{kg CO}_2}{\text{L}}$$

$$\text{CO}_2 \text{ emitted} = \frac{0.03 \text{ L}}{\text{min}} \times 172000 \text{ vehicles} \times 3 \text{ mins} \times 365 \text{ days} \times 2.3 \frac{\text{kg CO}_2}{\text{L}}$$

$$\text{CO}_2 \text{ emitted} = \sim 13,000 \text{ tonnes}$$

# Idling and Climate Change (Cont'd)

- To capture that amount of Carbon we would need to plant 336, 910 trees.
- Or a forest 20 times the size of the Ojibway Nature Complex.



[US EPA Greenhouse Gas Equivalency Calculator](#)

# Idling and Money

- In 2014, approximately \$372.5 million dollars was spent on gasoline and diesel fuels within the City of Windsor.
- If every vehicle reduced idling by 3 minutes a day, we would save \$5.65 million a year.



# Idling and Money (Cont'd)

- Natural Resources Canada identifies that idling for over 10 seconds uses more fuel and produces more CO<sub>2</sub> than restarting the engine.
- To balance additional factors such as wear and tear on car parts idling more than 60 seconds is not recommended.





# TRUE OR FALSE

and 1 multiple choice

# QUESTION # 1

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- Idling wastes fuel and money and impacts the environment?

# QUESTION # 1

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- Idling wastes fuel and money and impacts the environment?

**TRUE**

## QUESTION # 2

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- With the advanced emissions technology used in today's vehicles, carbon dioxide (CO<sub>2</sub>) emissions from an idling vehicle are greatly reduced?

## QUESTION # 2

- With the advanced emissions technology used in today's vehicles, carbon dioxide (CO<sub>2</sub>) emissions from an idling vehicle are greatly reduced?

**False**

# QUESTION # 3

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- **Idling contributes to Climate Change?**

# QUESTION # 3

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- Idling contributes to Climate Change?

**True**

# QUESTION # 4

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- In the winter, the best way to warm up a vehicle is to drive it?



# QUESTION # 4

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- In the winter, the best way to warm up a vehicle is to drive it?

True

[Energy Myths -- Do You Have To Warm Up Your Car?](#)

# QUESTION # 5

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- It is good practice to shut off the engine when your vehicle is going to be stopped for more than 60 s?

# QUESTION # 5

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- It is good practice to shut off the engine when your vehicle is going to be stopped for more than 60 s?

**True**

# QUESTION # 6

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- I should turn my engine off when I'm caught in stop-and-go traffic or at a long stop light?

# QUESTION # 6

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- I should turn my engine off when I'm caught in stop-and-go traffic or at a long stop light?

**False**

# QUESTION # 7

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- Making sure it's safe to drive the vehicle is more important than reducing idling time?

# QUESTION # 7

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- Making sure it's safe to drive the vehicle is more important than reducing idling time?

**True**

# QUESTION # 8

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- 13 % of all Canadian kids have asthma?



# QUESTION # 8

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- 13 % of all Canadian kids have asthma?

True

# QUESTION # 9

- Which of the following are reported in a cross-Canada survey for the most common reasons why Canadians idle?
  - a) Warming up a vehicle
  - b) Sitting in drive-through lanes
  - c) Stopping to talk to a friend
  - d) Waiting for someone
  - e) All the above

# QUESTION # 9

- Which of the following are reported in a cross-Canada survey for the most common reasons why Canadians idle?
  - a) Warming up a vehicle
  - b) Sitting in drive-through lanes
  - c) Stopping to talk to a friend
  - d) Waiting for someone
  - e) All the above

**E**

# Idling in City of Windsor

- The City of Windsor was among one of the first municipalities in Ontario to enact a by-law to prohibit the excessive idling of vehicles and boats. By-law 233-2001 was passed in June 2001.
- This by-law is in the process of being updated, and is expected to prohibit the idling of vehicles beyond 3 minutes.

# Idling in City of Windsor

- Signs are installed to encourage drivers to turn off their vehicles in known areas of excessive idling.
- School Education resources have been created



Photo Source: Windsor Star

# What can ECOSchools do?

- Educate students about the environmental, health and financial costs of idling
- Review the Idle Free Campaign Kit to find a number of great ways to engage the school community about idling
- If Idling is an issue at your school, contact the City of Windsor about getting a free sign.

# What can you do?

- Don't idle
- Spread the word about idling



# On-line Resources

- **Natural Resources Canada – Idle Free Zone**  
(<http://www.nrcan.gc.ca/energy/efficiency/communities-infrastructure/transportation/idling/4397>)
- **US Environmental Protection Agency – Idle Free Schools** – (<https://www.epa.gov/region8/idle-free-schools>)
- **US Environmental Protection Agency – A Student’s Guide to Global Climate Change** – (<https://www3.epa.gov/climatechange/kids/basics/index.html>)
- **City of Windsor – Environmental Master Plan**  
([www.windsorenvironmentalmasterplan.ca](http://www.windsorenvironmentalmasterplan.ca))



# On-line Resources

- **Canadian Environment and Climate Change Air Quality Health Index**  
(<http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=CB0ADB16-1>)
- **Citizens Environmental Alliance**  
(<http://www.citizensenvironmentalliance.org/idlefree/resources.html#Anti-Idling Info>)
- **NASA Climate Kids**  
(<http://climatekids.nasa.gov/menu/weather-and-climate/>)