

Idling Reduction Ordinance - Memo

The City of Ann Arbor’s Sustainability Framework, developed with input from six different boards and commissions and adopted by City Council as an element of the City Master Plan in 2013, provides a framework for sustainability work within the city. The idling reduction ordinance will help the City further at least six goals of the Sustainability Framework, including Energy Conservation, Engaged Community, Safe Community, Clean Air and Water, Healthy Ecosystems, and Responsible Resource Use.

Sustainability Framework Goal Impacted	Benefit of Ordinance
Energy Conservation - Reduce energy consumption and eliminate net greenhouse gas emissions in our community	The ordinance will reduce fuel consumption and associated greenhouse gas emissions and, therefore, reduce GHG’s harmful effects.
Engaged Community - Ensure our community is strongly connected through outreach, opportunities for engagement, and stewardship of community resources	This ordinance will promote stewardship of community resources by lowering community-wide greenhouse gas emissions and improving air quality. Educational components of this ordinance will provide opportunities for outreach and engagement.
Safe Community - Minimize risk to public health and property from manmade and natural hazards	The ordinance may reduce vehicle-exhaust related health conditions within the city.
Clean Air and Water - Eliminate pollutants in our air and water systems	The ordinance will reduce emissions of criteria air pollutants including carbon monoxide, nitrogen oxides, and particulates, and will reduce the formation of ground-level ozone.
Healthy Ecosystems - Conserve, protect, enhance, and restore our aquatic and terrestrial ecosystems	The ordinance may reduce negative impacts of air pollution on city vegetation, including street trees.
Responsible Resource Use - Produce zero waste and optimize the use and reuse of resources in our community	This ordinance will promote zero waste by lowering the amount of fuel wasted by vehicle idling.

Table of Contents

Background	3
What is idling?	3
What is unnecessary idling?	3
Why is unnecessary idling a concern?	3
To date, what steps have been taken to reduce idling in Ann Arbor?	5
Why is the City of Ann Arbor considering an ordinance to regulate idling?	5
What vehicles would the idling reduction ordinance cover?	5
Why focus on commercial vehicles and not personal vehicles?	6
What will the law require?	6
How will the idling reduction ordinance be implemented?	6
How will the idling reduction ordinance be enforced?	6
What is the penalty for non-compliance with the idling reduction ordinance?	7
Have other communities implemented idling reduction ordinances?	7
How did other communities publicize/implement their idling reduction programs?	7
Draft Ordinance (05/20/2015)	9

Background

The proposed Draft Idling Ordinance is based on an Idling Ordinance previously proposed in 2012. Based on feedback from City Council and the Ann Arbor community, that ordinance was modified and narrowed in scope to focus on commercial vehicles and vehicles in designated no-idling zones.

What is idling?

Idling occurs when a vehicle's main engine is running, but the vehicle is not moving.

What is unnecessary idling?

Idling is necessary at times, such as for powering heating and air conditioning in extreme weather conditions or running electronic and communication equipment in emergency vehicles.

Unnecessary idling is an avoidable practice that occurs mostly out of habit. Situations in which unnecessary idling may occur include warming up a vehicle, loading or unloading cargo or passengers, or while waiting in a queue. Unnecessary idling produces little or no discernible benefits, and releases harmful pollutants into the air, wastes fuel, and causes added wear and tear on vehicle components.

Why is unnecessary idling a concern?

Idling can strongly influence outdoor air quality at the local and community level. Unnecessary idling impacts human health, contributes to environmental degradation, and consumes natural and economic resources. The U.S. EPA reports that, "if everyone in the U.S. stopped idling for five minutes a day it would be equivalent to taking five hundred thousand cars off the road and saving 1.6 Million tons of CO₂."¹

Health Impacts

- Vehicle exhaust contains many pollutants classified as hazardous air pollutants by the Clean Air Act, which are a growing concern especially at schools. The U.S. EPA reports that, "monitoring at schools has shown elevated levels of benzene, formaldehyde, acetaldehyde and other air toxics during the afternoon hour coinciding with parents picking up their children."²
- Vehicle exhaust contains carbon monoxide, nitrogen oxides, sulfur dioxide, hydrocarbons, and particulates. These airborne pollutants cause or aggravate pulmonary diseases, including asthma, lung cancer, bronchitis, acute respiratory infections, and emphysema.
- Nitrogen oxides and volatile organic compounds react in the presence of sunlight to form

¹ U.S. EPA. (2014) *Idle Free Schools*. <http://www2.epa.gov/region8/idle-free-schools>. Accessed 4/20/2015

² *ibid*

ground-level ozone. High levels of ground-level ozone can cause respiratory illness and distress, and can trigger asthma attacks.

- Children are especially vulnerable to vehicle exhaust because their lungs are still in the development stage, they breathe on average 50% more air per pound of body weight than adults, they have a higher breathing rate than adults relative to their body weight and lung surface area, and they have narrower airways than adults. Numerous studies have shown that children's asthma symptoms increase as a result of exposure to car exhaust.³
- Given the vulnerability of children to vehicle exhaust, idling by school buses and vehicles outside schools is a serious concern. A study in Connecticut determined levels of fine particulate matter around a school during school days was close to three times higher than the average daily levels for outdoor air in the surrounding community.⁴

Environmental Impacts:

- Unnecessary idling contributes to general environmental degradation by emitting greenhouse gases, hydrocarbons, nitrogen oxides, volatile organic compounds and particulate matter.
- Unnecessary idling contributes to the production of carbon dioxide and nitrogen oxides, greenhouse gases that contribute to global climate change.
- Ground-level ozone, formed by nitrogen oxides and volatile organic compounds in the presence of sunlight, impacts plants and ecosystems. It makes sensitive plants more susceptible to disease, insects, and other stresses, and damages the leaves of trees and other urban plants, adversely impacting their appearance and function.
- Nitrogen oxides and other pollutants emitted in vehicle exhaust contribute to acid rain formation.

Economic Impacts:

- Idling wastes fuel. An idling vehicle gets the worst fuel economy: zero miles per gallon. An idling car wastes up to 0.5 gallons of fuel per hour while an idling medium-duty truck wastes 0.4-0.6 gallons of fuel per hour.⁵ According to the U.S. Department of Energy it is more fuel efficient to turn off the engine and restart it if the vehicle will be idling for more than 10 seconds.⁶
- Idling to warm up a vehicle in cold weather wastes fuel, causes excessive wear on engine components, and emits pollutants. According to the U.S. EPA, current vehicles need to warm

3 American Academy of Pediatrics Committee on Environmental Health. 2004. *Ambient Air Pollution: Health Hazards to Children*. Pediatrics. 114:1699-707.

4 Wargo and Brown. 2002. *Children's Exposure to Diesel Exhaust on School Buses*. Environmental and Human Health Institute, Inc. North Haven, CT.

5 U.S. Department of Energy. (2014) *IdleBox toolkit for Idle-Reduction Projects*. <http://www1.eere.energy.gov/cleancities/toolbox/idlebox.html>. Accessed 4/20/2015.

6 Gaines, Rask, and Keller, U.S. Department of Energy. (no date). *Which Is Greener: Idle, or Stop and Restart?* http://www.afdc.energy.gov/uploads/publication/which_is_greener.pdf. Accessed 4/20/2015.

up for no more than 30 seconds on a winter day.⁷ Vehicles warm up faster when driven gently for the first few minutes rather than when left idling.

- Idling increases wear and tear on vehicle components, often resulting in costly repairs. Common vehicle problems include oil contamination due to residue build-up on the cylinders, corrosion caused by excessive condensation collected in the exhaust system, and decreased peak engine operating temperature due to spark plug residue.

To date, what steps have been taken to reduce idling in Ann Arbor?

- City of Ann Arbor: In 2000, the Ann Arbor City Council adopted the Green Fleets policy with the goal of reducing total gasoline and diesel use by 10% by the year 2012. This policy prohibits unnecessary idling of all vehicles in the city's fleet, including idling to warm up a vehicle.
- University of Michigan (UM) Plant Operations: In 2000, UM Plant Operations included an idling guideline in its division policy guide. The guideline requires all drivers of Plant Operations vehicles to turn off the ignition of their running vehicle if 1) they are going to be away from the vehicle for more than five minutes or 2) they don't know when they will return to the vehicle. Certain vehicles with diesel engines or special setups will be exempt from this policy when temperatures or situations require, and will be marked accordingly.
- Ann Arbor Public Schools (AAPS): The Ann Arbor Public Schools have an idling reduction section included in transportation employee handbooks.
- Public Education: Beginning in 2012, members of the Ann Arbor Environmental Commission and others undertook a city-wide idling-education campaign. This campaign included presentations to school and community groups and the development of the website: <http://motor-smart.org/>, which contains resources to inform community members about the harmful effects of idling and ways to reduce idling.

Why is the City of Ann Arbor considering an ordinance to regulate idling?

The City of Ann Arbor is considering an idling ordinance to address the health, environmental, and economic concerns discussed above, and to improve the quality of life within city limits by reducing the noise and odor associated with idling vehicles.

What vehicles would the idling reduction ordinance cover?

The idling reduction ordinance would apply to commercial vehicles, as well as all motor vehicles in specific "No Idling" Zones, which may be designated in areas where significant idling activity has the potential to impact more

⁷ U.S. EPA (2015) *How much air pollution does a car produce when it's moving and when it's idling?* <http://www.epa.gov/otaq/about/faq.htm#question1>. Accessed 4.20.15

susceptible populations, such as at school and hospital pick-up and drop-off zones.

Why focus on commercial vehicles and not personal vehicles?

Although personal passenger vehicles emissions are often cleaner than other vehicles, there are many more of them on the road, and collectively, unnecessary idling by passenger vehicles has a large impact on air quality. The purpose of this ordinance is to help develop a culture of reducing unnecessary idling by focusing on vehicles that often have high emissions that make many trips, and by focusing on areas where sensitive populations are more likely to be negatively impacted by unnecessary idling. The goal of this ordinance is to quickly reduce unnecessary idling in certain areas with the hope that passenger vehicle drivers will voluntarily reduce wasteful idling elsewhere and/or the community will desire a more comprehensive idling ordinance in the future that includes passenger vehicles throughout the community.

What will the law require?

The law requires that if a commercial motor vehicle or any motor vehicle located in a posted “No Idling” Zone is unoccupied it should not be idling, and that occupied vehicles should not idle for more than 5 minutes. There are many exceptions allowed in the law for safety and emergency reasons. The law also states that other internal combustion engines (e.g., generators) should not be operating unless they are actively in use.

How will the idling reduction ordinance be implemented?

It is anticipated that this ordinance and the associated outreach, signage, and media coverage will serve to raise awareness of unnecessary idling, and will result in behavior change with little enforcement necessary.

Costs to implement include:

- Signage at designated no-idling zones
- Outreach to residents and fleets
- Additional outreach in areas where idling is both prevalent and problematic (e.g., elementary schools, downtown loading areas)

What is the penalty for non-compliance with the idling reduction ordinance?

A vehicle operator that violates the idling ordinance is responsible for the following penalty:

- The minimum fine for violation of the idling ordinance by an operator is \$100.

This fine is within the reported range of values charged by other communities with local idling reduction ordinances.⁸

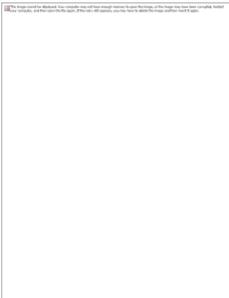
Have other communities implemented idling reduction ordinances?

Nationwide, idling reduction laws have been passed at the local, county, and state levels.⁹ Some laws are comprehensive (i.e., they impose idling restrictions on all vehicles), while others specifically target trucks, commercial vehicles, and/or buses. Several other communities have educational campaigns to encourage voluntary reductions in idling behavior. Currently Detroit, Mount Clemens, Novi, Saugatuck, and Sylvan Lake among the few jurisdictions that appear to limit idling for health reasons in Michigan.

How did other communities publicize/implement their idling reduction programs?

Colorado is using public education campaign in conjunction with local ordinances to bring about changes in idling behavior. www.enginesoff.com

New Jersey has a statewide idling reduction law. Information can be found at www.stopthesoot.org . This is an example of New Jersey's signage.



The Massachusetts Department of Environmental Protection developed an Idling Reduction Toolkit, available here: <http://www.mass.gov/eea/docs/dep/air/community/depikit.pdf>

8 American Transportation Research Institute (2014). *Compendium of Idling Regulations*. http://www.atrionline.org/research/idling/ATRI_Idling_Compendium.pdf. Accessed 04/20/2015.

9 *ibid* This is a useful resource for implementing an idling reduction ordinance that includes example outreach materials including signs and logos.