



Idling cars, trucks, buses, and other vehicles contribute to global warming and air pollution. Idling vehicles release greenhouse gases, which are responsible for climate change. Diesel exhaust from buses and large trucks can be particularly harmful because it contains high levels of small particles that can exacerbate asthma and allergies and cause respiratory problems and lung damage. Government agencies are working to reduce the effects of idling. The EPA now mandates the use of ultra-low sulfur diesel, which reduces particulate emissions, for most diesel vehicles. The Illinois state legislature recently passed an anti-idling law, and the City of Chicago is considering a similar ordinance. Community efforts, however, are essential to ensuring that vehicle operators do not idle.

Idling Facts and Figures

Diesel vehicles emit over 5,000 tons of fine particle matter pollution in the Chicago metro area every year. Idling is estimated to account for nearly 300 tons of these emissions.

Every year in Illinois, diesel exhaust triggers over 19,000 asthma attacks and nearly 1,200 heart attacks and causes almost 900 premature deaths.

(Source: American Lung Association)

With the help of your project team, conduct a survey of idling vehicles around a facility in your community such as a school, hospital, or other community center. Based on your observations, calculate how much pollution is caused by idling around that facility. Educate the institution about your results and then engage them in a campaign to prevent idling. Finally, follow up with another survey to gauge the effectiveness of your campaign.

Timeline:

- **Project Proposal due online:** 2 weeks after the Community Organizing class
- **Part I: Preparation:** ~2-3 weeks, including 1-2 meetings with your project team
- **Part II: Conduct Survey:** At least 1 hour on 1 day (20 minutes for organizing your project team; 30 minutes or more for carrying out the survey; 10 minutes for collecting **Idling Audit Data Sheets** and wrapping up)
- **Part III: Calculate Pollution from Idling:** ~30 minutes – 1 hour
- **Part IV: Create an Anti-Idling Campaign:** ~1-2 months (~3-4 weeks to brainstorm and decide on solutions; ~1 month – 6 weeks to implement solutions)
- **Part V: Follow-Up and Tracking Environmental Benefits:** ~1-2 hours
- **Part VI: Final Project due online:** 2 weeks after your project is complete

Materials:

- Copies of the **Idling Audit Data Sheet**
- **Idling Audit Analysis Worksheet**
- **Tips for Running an Anti-Idling Campaign**
- Stopwatches

Part I: Preparation:

~2-3 weeks, including 1-2 meetings with your project team

1. **Become an expert.** Read through the following guide, including the **Tips for Running an Anti-Idling Campaign** and the **Idling Audit Data Sheet**. Contact your liaison with any questions.
2. **Define your project vision and goals.** What do you hope to achieve by doing this project? How many community members do you hope will participate? What environmental benefits do you plan to achieve?
3. **Gather a project team.** Refer to the **Building Your Project Team** worksheet in your **Project Development Workbook**. For this project, we recommend that you recruit at least 3-4 volunteers for your team.
4. **Find a facility to survey. Choose a business or community organization that is willing to work with you.** Refer to your **Asset Map** for ideas, and ask your project team to help you brainstorm possible



locations. The organization you choose will depend on your team's interests and on where you observe the most idling, but here are some suggestions:

- Local school
- Local hospital
- Other neighborhood community center (e.g., gym, art center, library, church)
- Your office
- Neighborhood event (e.g., festival, parade)

Once you have some ideas, contact the possible organization(s) to see if they're interested. Your project team may be able to help you with contacts. Make sure to contact someone with the appropriate authority. Let them know that you and your team will be doing most of the work, but that you'll need their help to do the following:

- Allow you to do the survey on their property
- Take a look at the results of your survey
- Work with you to brainstorm and implement ways to reduce the idling you observed

5. **Set a date and time for your survey.** Work with your project team and facility managers to find a good time to conduct the survey.

- Find a time that you think will be representative of typical idling around the building. For example, the best time to survey idling around a school would be either immediately before classes start or after they end, since that's when most of the traffic and idling occurs. On the other hand, you could survey a hospital at almost any time during the day, since traffic flow is more consistent.
- Consider surveying on several occasions, and/or splitting team members into shifts so that you can survey the area for a longer period of time. For example, you could survey at several different times during the day to track the pattern of idling, or once on a hot day and once on a cold day to see how idling changes with weather.

6. **Decide exactly what area around the building your team will survey, and how team members will split the area up.** Ideally, you will be able to survey all of the areas where drivers might idle, including loading docks, driveways, parking lots, and surrounding streets. Team members may want to work in pairs, so that one person can time while the other person records observations.

Part II: Conduct Survey:

At least 1 hour on 1 day

(20 minutes for organizing your project team, at least 30 minutes for carrying out the survey, and 10 minutes for collecting Idling Audit Data Sheets and wrapping up)

1. **On the day of your survey, make sure everyone in your project team has the right materials:** a watch and a copy of the **Idling Audit Data Sheet**. Record the Average Midwest Gasoline Price for both unleaded and diesel gas, and write these numbers at the top of the **Idling Audit Data Sheets**. The Average Midwest Gasoline Price can be found at: <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>
2. **Go over the Idling Audit Data Sheet with your team.**
 - During the survey, team members fill out "**Section A: Data Collection**"
 - When team members see an idling vehicle, they should write the type of vehicle, color, and record the amount of time they observe it idling. This information will allow you to calculate how much pollution is caused by the idling you observed.
3. **Start surveying!** Make sure everyone finds their assigned location, and make yourself available to answer questions.



4. **At the end of the survey, collect the Idling Audit Data Sheets and let your project team know when you will be meeting again** to calculate results and/or start planning your anti-idling campaign.

Part III: Calculate Pollution from Idling:

~30 minutes – 1 hour

1. **Calculate Sections B, C, and D, using instructions from the Idling Audit Analysis Worksheet.** You can do this on your own, or with the help of your project team.
 - Use the average values for fuel economy, idling fuel consumption and greenhouse gas emissions that are listed on the **Idling Audit Analysis Worksheet**.
 - Record your results on the **Idling Audit Data Sheets**.
2. **Add up** your team's findings. Compile the total idling time observed and the total annual fuel consumption reduction, fuel cost savings and greenhouse gas emissions reductions.

Part IV: Create and Implement an Anti-Idling Campaign

1-2 months:

(~3-4 weeks to brainstorm and decide on solutions, ~1 month – 6 weeks to implement solutions)

1. **Meet with your project team to discuss the results of your survey and brainstorm solutions.** Consider how long drivers are idling, where they are idling, and why. Come up with some ideas about how you could reduce idling. Your solutions will be specific to the facility's needs, but here are some examples:
 - If the idling vehicles are waiting to pick up or drop off passengers (e.g., parents at a school), post signs asking people to turn off their cars while they wait.
 - Find a place for drivers to wait inside (e.g., school bus drivers).
 - If the idling vehicles are owned by the facility, encourage the organization to create an anti-idling policy for their employees (e.g., a hospital or school).
 - If drivers need to keep their cars running while they wait outside, try to find a location farther from the building to reduce exposure (e.g., move school buses farther from the school).
2. **Set up a meeting with the organization you surveyed and your project team.** At the meeting, present the results of your team's survey and some of your suggestions for reducing idling. Ask the organization what they think, and what their ideas are. Work together to come up with solutions.
3. **Make change.** Work with your team and your organization to implement your solutions.

Idling Facts and Figures

- You do not need to idle your car more than 30 seconds in the morning to warm it up. Most components of cars are designed to warm up only when the car is moving.
- Idling a car for more than 10 seconds uses more fuel than turning the car off and restarting it again. Medium- and heavy-duty diesel engines should be turned off after 30 seconds.
- Repeatedly turning your car on and off does not harm the engine.

Part V: Follow-Up and Tracking Environmental Benefits

~1-2 hours

1. **When you've completed your anti-idling solutions, conduct a follow-up survey** to find out how successful your efforts have been. Refer to Parts II and III to guide you in recalculate the idling that takes place around the facility.
2. **Estimate the environmental and community benefits of your project.** For example, you might estimate:



- How much idling and pollution your project prevented, based on your before and after surveys. (e.g., Prevented 30 minutes of idling a day, saving \$0.75 and 0.3 gallons of gas a day according to the idling calculator.)
 - How many volunteers and community members learned about idling because of your project (e.g., 6 volunteers on project team; ~100 parents who pick up or drop off their kids saw no-idling signs)
3. **Compare your results to your project's vision and goals (see Part I, step 2 above).** Did you achieve the results that you hoped for?

Part VI: Turn in Final Report Worksheet

Within 2 weeks of project completion

As soon as you've calculated environmental benefits, please fill out your **Final Report** online. Corresponding materials such as digital photographs, outreach flyers or posters, press releases, or news clippings should be emailed to conservation@cityofchicago.org. Please also enter the information from your **\$800 Savings Challenge** cards on www.chicagoclimatereaction.org.

Additional Resources

Refer to the following web sites to find more information to include in your anti-idling campaign:

- Illinois Environmental Protection Agency's Illinois Green Fleets program: <http://www.illinoisgreenfleets.org/fact-sheet.html>. The Green Fleets program holds a conference for truck owners/operators, school bus, coach bus, and mass transit companies, government fleet representatives and school districts. The program also offers rebates for using E-85 or biodiesel fuels, or for purchasing vehicles that run on these fuels.
- Toronto Clean Air Partnership's Idle-Free Campaign: http://www.cleanairpartnership.org/idle_free
- Idle Facts (from the Clean Air Partnership): http://www.cleanairpartnership.org/pdf/idle_factsheet.pdf
- EPA's Clean School Bus USA program: <http://www.epa.gov/otaq/schoolbus/antiidling.htm>
- New Brunswick Lung Association's Health School Program: http://www.nb.lung.ca/schools/3000e/ehi_sbi_e.htm
- The EPA and Department of Energy's tool for finding the gas mileage (fuel economy), greenhouse gas emissions, air pollution ratings, and safety information for new and used cars and trucks: <http://fueleconomy.gov/>.



Tips for Running an Anti-Idling Campaign

Whatever kind of campaign your project team decides to implement, you'll want to consider the best way for presenting information about idling. Here are some tips.

→ **Be positive!** Present the findings of your audit and your suggestions in a positive way. Let drivers know that they can make a difference.

- For example, instead of saying that drivers at John Smith High School add 100 pounds of greenhouse gases to the atmosphere every year, you might say:

"By reducing the amount they idle their vehicles, bus drivers and parents at John Smith High School could prevent up to 100 pounds of greenhouse gases from entering the atmosphere every year."

- The greatest idling times are usually observed during dismissal times, when parents and caregivers arrive to pick up students. One way to avoid this is through better communications with parents or guardians regarding pickup times. (*Source: New Brunswick Lung Association*)

→ **Catch their attention!** Provide information that makes the issue of idling compelling. For example:

- Idling is estimated to account for nearly 300 tons of fine particle matter pollution emitted by diesel vehicles in the Chicago metro area every year. (*Source: American Lung Association*)
- Every year in Illinois, diesel exhaust triggers over 19,000 asthma attacks and nearly 1,200 heart attacks and causes 878 premature deaths. (*Source: American Lung Association*)

→ **Be a myth buster!** Let people know the truth about idling. For example:

- You do not need to idle your car more than 30 seconds in the morning to warm it up, even in the wintertime. Thanks to advances in automotive technology since the early 90s, cars no longer tend to stall in the wintertime. Most components of cars are designed to warm up only when the car is moving. (*Source: US EPA*)
- Idling a car for more than 10 seconds uses more fuel than turning the car off and restarting it again. (*Source: Natural Resources Canada*)
- Repeatedly turning your car on and off does not harm the engine.

→ **Encourage Action!** Whenever you inform people about an environmental issue, make sure to back up your information with recommendations about what they can do! For example:

- Ask drivers to pledge to idle no longer than 30 seconds whenever it is safe to do so.

Idling Audit Data Sheet

Names: _____

Date: _____ Time: _____

Outdoor temperature: _____ Weather conditions: _____ Other special conditions: _____

Price of fuel on this date: regular unleaded: _____ diesel: _____ (see <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>)

A. Data collection					B. Vehicle characteristics		C. Fuel	D. Calculations		
Vehicle type (car, minivan, SUV, light truck, bus, or large truck)	Vehicle color	Idling start time	Idling stop time	Total time idling (min)	Idle fuel consumption rate (gal/hr)	Greenhouse gas emissions rate (lbs/gal)	Price of fuel for this vehicle (\$/gal)	Fuel consumed (gal/year)	Greenhouse gases emitted (lbs/year)	Money spent on idling (\$/year)
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
Totals-----						-----				

Idling Audit Analysis Worksheet

Vehicle characteristics

Different sized engines consume gas at different rates and produce different amounts of greenhouse gases (GHG) when they are idling. Insert the following values into **Section B** on your data sheet based on the type of vehicle that you timed idling.

Vehicle type	Idle fuel consumption rate (gal/hr)	GHG emissions rate (lbs/gal)
Car or minivan	0.37	19.4
SUV or light pick up truck	0.50	19.4
Bus or large truck	0.50	22.2

Calculations: Use the data in **Sections B and C** of your data sheet to complete these calculations and fill out **Section D**.

To calculate the fuel consumed per year during idling for each vehicle you timed, use the following formula:

$$\frac{\text{Total time idling (min)}}{\text{day}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \text{Idle fuel consumption} \frac{\text{gal}}{\text{hr}} \times \frac{365 \text{ days}}{1 \text{ year}} = \text{Fuel consumed} \frac{\text{gal}}{\text{year}}$$

To calculate the amount of greenhouse gases emitted during idling per year, use the following formula:

$$\text{Fuel consumed} \frac{\text{gal}}{\text{year}} \times \text{GHG emissions rate} \frac{\text{lbs}}{\text{gal}} = \text{Greenhouse gases emitted} \frac{\text{lbs}}{\text{year}}$$

To calculate the amount of money spent on idling per year, use the following calculation:

$$\text{Fuel consumed} \frac{\text{gal}}{\text{year}} \times \text{Current price of fuel} \frac{\$}{\text{gal}} = \text{Money spent on idling per year} \frac{\$}{\text{year}}$$

Totals Worksheet

Compile your project team's data on this worksheet. If you conduct more than one audit, complete a separate worksheet for each. This will allow you to compare across audits – for example, to compare the amount of idling that occurs before and after school, if doing an audit at a school.

Date and time of audit: _____

	Total
Total time observed idling (minutes)	
Total fuel consumed (gal/year)	
Total greenhouse gasses emitted (lbs/year)	
Total money spent on idling (\$/year)	