Why RU Idling?

A comprehensive study of the effects of excessive and unlawful vehicular and Rutgers bus route idling.

Tag Words: idling, Rutgers buses, NJ idling laws

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Summary

Idling has been shown to produce dangerous pollutants into the environment. In New Jersey, particular laws are in place that restrict the time vehicles are permitted to idle. For buses, the law states that buses are prohibited from idling for “no more than 15 consecutive minutes in a 60-minute period while passengers are actively loading and unloading buses”. This law was used as the foundation for studying idling times of buses around Rutgers University New Brunswick Campus. Results indicate that all buses exceed the 15 minute idling law for New Jersey with particular buses severely violating the law. In particular, the Commuter bus route had the worst idling time of 38 minutes and 45 seconds with about 59% idling within an hour. Conclusions for this study indicate that the New Brunswick buses are in violation of the New Jersey idling law and efforts to reduce the release of dangerous pollutants should be implicated.

Video Link

http://www.youtube.com/watch?v=n-wJ0a2UVVo
The Issue: Idling

Current Idling Laws of New Jersey (CT)
New Jersey, as well as 29 other states in the U.S. have laws against the idling of vehicles over a certain time limit. Idling for more than three minutes is prohibited in New Jersey with very limited exceptions. The exceptions include some diesel vehicles and gasoline vehicles. Sleeping in trucks with sleeper berths was allowed until 2010 while the idling of emergency vehicles (police, ambulance, fire, military) operating in emergency situations was allowed. Because of these exceptions and a large amount of people who do not obey this law, emissions due to idling can affect human health and the environment.

There are other exceptions to these laws that include the use of bus systems and vehicles that must be idle during colder temperatures. The New Jersey laws state that idling is allowed for no more than 15 consecutive minutes in a 60-minute period while passengers are actively loading and unloading buses only if the bus needs to run the heat or air-conditioner for passengers already on-board (StoptheSoot.org, 2007). However, buses cannot idle for extended periods of time while claiming to be waiting for passengers, such as a tour bus on a layover waiting for the group to return. As a result, these vehicles are idling for significant periods of time. Even though the law allows for this allotted time, the damage to health and the environment still occurs.

More exceptions to the law state that when the ambient temperature is below 25 degrees Fahrenheit, a motor vehicle may idle for 15 consecutive minutes when the vehicle has been stopped for three or more hours. Otherwise, idling is limited to three minutes. However, most diesel engines take three minutes or less to warm up. A newly developed law as of May 1, 2008 states that no idling is allowed in a parking space with available electrification technology (StoptheSoot.org, 2007).

Limiting idling will save fuel and money. We can also begin to see increases in health due to particulate matter related illnesses, as well as emitting less pollution into our air and environment. According to the USEPA, the U.S. Department of Energy, and other organizations, the average long-haul truck idles at least 1,830 hours per year, and, in the process, uses $4,400 of unnecessary fuel and emits 17 tons of carbon dioxide, 10 pounds of fine particles and 615 pounds of nitrogen oxides every year. Reducing idling will lower maintenance costs on each vehicle, save fuel and protect public health and air quality. Another fact to think about is that an idling vehicle emits 20 times more pollution than one traveling at 30 miles per hour. Fine particle pollution in NJ may cause more premature deaths than homicides and car accidents combined. Diesel exhaust is a primary component of fine particle pollution and is known to cause or exacerbate a variety of heart and lung ailments (StoptheSoot.org, 2007). These statistics are very important when it comes to adding up the amounts of pollution emitted throughout the state of New Jersey, regardless of idling laws.

The penalties for being caught idling for more than three minutes are quite expensive fines. Idling can be enforced on public roadways and on private property. For commercial vehicle and property owners, the fine is $250 for first violation, $500 for a second violation, and $1000 for third and each subsequent violation (StoptheSoot.org, 2007). Although these fines can get costly, there are hundreds of people in the state of New Jersey alone who get away with idling over the current law’s time limit.
Neighboring states have idling laws that are similar to New Jersey’s. The idling limit in New York state is five minutes, New York City is three minutes with no exceptions, and Philadelphia is two minutes. Although more than half the country is involved in no idling laws, there are still 20 states that do not currently have idling laws. These states include Alabama, Alaska, Arkansas, Florida, Idaho, Indiana, Iowa, Kansas, Kentucky, Michigan, Mississippi, Montana, Nebraska, New Mexico, North Carolina, North Dakota, Oklahoma, South Dakota, Tennessee, and West Virginia (Office of Transportation, 2006). An advantage for the future would be for these state governments to create no idling laws in order to reduce the amounts of air pollution being exhausted from vehicles throughout each state.

Development and Characteristics of Engines (LB)

The evolution of gasoline and diesel engines is considered to be one of the most important advances of science. For centuries, people have relied on transportation to get them places as well as to move around supplies and products no matter how challenging the task was. The early beginnings of self-transportation are known to have started in Italy in the early 1300s when Italian scientists devised wind powered vehicles to move them around. Fast forward to the late 1700s and scientists started producing the very powerful steam engine which was known to revolutionize mechanics at the time. In 1712, Thomas Newcomen produced a steam engine using a cylinder, piston and steam as the condensing agent responsible for producing a vacuum which was designed large enough to be stationary and incapable of moving (Bottorff).

With concerns over practicality, the giant steam engines were under design for the next 100 years during which steam powered trains were used for locomotion around the world. In America, the first four horsepower, single cylinder gasoline engine was produced by Charles and Frank Duryea which also included friction transmission, a spray carburetor and a low tension ignition that made it difficult to use. By 1899 the Olds Motor Vehicle Company of Detroit was designed and established the successful Curved Dash Oldsmobile after early failures with luxury vehicles. The Curved Dash Oldsmobile had a single cylinder engine, tiller steering and a chain drive and sold for $650.00. The manager of this company, Ransom Olds, later went on to be the first mass producer of gasoline powered automobiles in the United States in 1904 (Bottorff).

By 1908, Henry Ford began producing the reasonably priced, reliable and successful Model T Ford which quickly became popular all around America. The durability of the Model T allowed people to drive on rough roads which were previously designed for other modes of transportation, such as horse drawn carriages (Ford). Automobiles were also known to provide adventurous recreational activities allowing people to drive around in all types of weather with only a convertible top for protection. By 1915, recreational sports such as horse and automobile racing became popular as people of all ages started using their mechanical skills to design cars to go faster (Bottorff). By the early 1950s, the automobile became a symbol of popularity and was often a token of status and mobility for students in academia. As the automobile began changing America, so did the concerns associated with their impact on the environment.

Today, scientists are starting to look into the long-term effects of internal combustion and how automobile transmissions damage the environment (Bottorff). Automobile manufacturers around the world are experimenting with fuel conservation and hybrid technologies in order to protect the environment but also make owning a car more economical. Mechanical scientists are not only faced with the challenges of gasoline (four stroke) engines but also need to consider the
impacts produced by diesel and two-stroke engines. Modifications made in mechanical science are dependent on how the engine operates which will be described below.

Four stroke engines are normally gasoline and diesel motors found in automobiles and trucks. The invention of the gasoline engine was in part produced when the Otto cycle was perfected. The four stroke cycle involves: 1) Inflow of air and fuel during the first stroke 2) air is compressed and gasoline/diesel mixes in with the second stroke 3) combustion of the mixture occurs during the third stroke and 4) exhaust is removed from the motor during the fourth stroke (Gasoline Engine). As advances are made to the automobile, the basic components of mechanical action will remain the same including cylinders, pistons, crankshaft, camshaft, valves and connecting rods that all work together to generate torque to power the engine.

Several components of the gasoline engine have seen advancements including iron cylinders to aluminum. This improvement was made due to aluminum's ability to withstand heat around the engine block. Further technological improvements include replacement of the carburetor with the fuel injection system and the widely used computerized chip to control the fuel injection system. Other changes occurring today include the quality of gasoline which undergoes mixing with detergents and additives as the fuel burns. This factor is important for increasing gas mileage and more manufacturers are making changes to make owning an automobile more economical. However, other types of four-stroke engines are more energy efficient even though practicality is lowered (Gasoline Engine).

Diesel engines are another type of four-stroke engine that are considered for the production of larger vehicles such as trucks. Diesel engines structurally operate differently than gasoline engines but are considered to generate more power and work than gasoline engines. Differences between gasoline and diesel engines are based on combustion or the series of small explosions necessary for the energy in fuel to be converted to mechanical energy. In gasoline engines fuel is first mixed with air then compressed by pistons and ignited by the spark plugs. In diesel engines, the air is compressed first as the fuel is injected next; lastly, the fuel is ignited once the air heats up (Brain). Gasoline engines rely on spark plugs to ignite the fuel mixture, whereas diesel engines do not contain spark plugs. Although gasoline and diesel engines are known to have big impacts on environmental pollution other conventional two-stroke engines may be considered worse for emissions.

Two stroke engines are commonly found in smaller machines such as chain saws, jet skis, boats and lawn mowers. There are advantages to two-stroke engines that include convenience and practicality; although, many people are unaware of the environmental effects. Two-stroke engines are simpler to construct since the engine is lighter. They also do not contain valves and provide a more powerful boost of energy since they fire once at every revolution, while four stroke fire at every other revolution. Two stroke engines can operate in several directions, such as in chain saws, where the chain operates in a circular pattern. This type of engine releases more pollutants because of the frequency of stroking (Brain).

Emissions produced by two and four stroke engines are constantly being regulated by the government. The U.S. Environmental Protection Agency (EPA) has estimated that on-road emissions are the major contributor to atmospheric pollutants including 60% of carbon monoxide, 44% hydrocarbons and 31% of nitrogen (EPA). Other statistics indicate that only 15% of the fuel in gas tanks is used to move a vehicle or operate commodities such as air conditioning. The remainder of the energy is lost to idling and engine losses. In urban driving,
significant energy is lost by idling at stop signs or traffic lights. Technological improvements such as integrated starter/generator systems (ISG) are intended to help reduce lost emissions by turning off the engine when the vehicle comes to a stop and instantly restarting it when the accelerator is engaged to act (EERE). In order to study the effects of emission and idling on the environment it is necessary to study the mechanics of how an engine works and how engines developed to where they are today.

Mechanical Wear, Temperature Issues, & Gas Vs. Diesel Idling Problems (MD)
As mentioned in other sections, not only is it illegal to leave your car idling for significant periods of time (with some exceptions) in the State of New Jersey, but also the amount of gas wasted and the wear and tear on your engine is simply not worth it.

It is a common misconception, especially in the wintertime when temperatures are low, that you should idle your car for upwards of 10 minutes. However, studies have shown that idling your car for more than a few minutes is not only unnecessary, but creates unnecessary wear on vehicular components such as spark plugs, cylinders, and your car’s exhaust system. (Not to mention it is a waste of gas!) This is due to the fact that a car’s engine is not running at its normal operating temperature when idling, and this can lead to a buildup of excess fuel residue on engine components. (“Should I Shut Off…”, 2011) Additionally, if you vehicle has a carburetor (no direct fuel injection), “that kind of extended warm-up [Five to ten minutes] can actually cause damage to the engine by diluting the oil with excess fuel” (Berman 2008).

When temperatures are excessively cold, it is recommended that you idle your vehicle. However, according to the Environmental and Protection Agency (EPA), thirty seconds up to about a minute or two is really all you need. It is better to instead drive your vehicle (gently -- no hard acceleration) for a while to warm it up after about thirty seconds or so of idling time. For older vehicles or when it is bitterly cold out (below 15-25º Fahrenheit), one to two minutes is suggested. (“Your Car And…”, EPA)

Another common misconception related to idling your car involves the notion that leaving your car on for a brief period of time (such as while at a store or other business) can actually save gas as opposed to turning your engine on and off. According to various sources (The EPA, Ford Motor Company, & and the Canadian Office of Energy Efficiency), the time when it is actually more fuel efficient to leave your car running rather than to turn it off and on ranges between about ten to thirty seconds, not several minutes as what seems to be the common misconception (Vehicle Idling Q&A, Thetford Energy Com.).

Overall, the situation involving gasoline-powered vehicles is pretty straightforward. There are several misconceptions about idling time, wintertime starting, and some vehicles needing significant amounts of time to warm up. Circulating good information about idling truths and myths would probably be one of the best courses of action to correct the widely accepted misinformation. However, in contrast to gasoline engines, idling related to diesel engines is a much more complex issue, as there many components and exceptions to consider.

Especially in the wintertime, special consideration is often taken for diesel engines and idling. You can even see it in the NJ legislation. In contrast to gasoline engine vehicles, which can only legally idle for 3 minutes in the state of NJ upon startup, Diesel engines are allowed to idle for up to fifteen minutes on cold days if the engine has been off for at least 15 minutes prior. (“Control and Prohibition Of…”, NJDEP 2009)
These special considerations are mainly due to the large amount of paraffin wax that is in diesel engines. When the temperature drops below freezing, this wax can begin to solidify in the fuel causing the diesel to “gel”. However, there are winterizing agents that you can find in any auto parts store as an additive every time you fill up which will eliminate this problem. With other proper winterizing techniques, your diesel car or truck will run quite fine regardless of how cold it is outside. (Worster 2009) Diesels also only require about the same amount of idling time to warm up an engine as a gas engine would (around thirty seconds to one minute)

Other idling concerns related to diesel engines are overnight tractor-trailers. When parked in a designated overnight area (such as an interstate rest stop or other non-residential area), if it is not a truck stop with available electricity, the truck needs to idle so that the battery does not drain overnight while powering climate systems in the sleeper cabin. However, as of 2008 in the state of NJ, the vehicle must be equipped with a working diesel particulate filtering system in order to idle overnight. Also, if the vehicle is parked in an electrified spot, it is not allowed to idle and must used the provided electricity source. (“Control and Prohibition Of…”, NJDEP 2009) This doesn’t seem to explain though the occasional tractor-trailer on campus making a lengthy delivery and leaving its engine running. The NJ idling law, from what I could see, has no clause about delivery vehicles. Idling in a diesel does not save fuel either, so there is no exception as to why larger diesel vehicles on campus are justified in idling for long periods of time either.

Now that the basics about idling have been considered, we next need to look at solutions and motivations as to what will cause people to no longer idle, especially campus vehicles.

One solution to this is to make greater awareness of the cost-benefit analysis to shutting your engine off. Even if the person cares little about carbon emissions, chances are they will be rather interested in saving money and preventing unnecessary wear and tear on their vehicle’s components. A recent study was done that showed on average that if a person with a V8 engine in their car spent five minutes less per day idling, they could save over $60 per year and $30 per year for smaller engines; not to mention all of the saved gas and engine wear. (Hinkle, “Anti idling…””) Cutting out a long startup of 5-10 minutes every cold morning would be a great start! Getting information like this out to the Rutgers community on a broader scale could definitely be used as one method to resolving this issue. There is however another concern: State government vehicles on campus.

One of the biggest problems our group has personally witnessed is the high number of State Government/Rutgers owned vehicles that will idle for quite literally hours sometimes. According to the NJ idling laws, this is not only illegal, but also incredibly wasteful. Unfortunately though, there seems to be little to no enforcement of the idling law in NJ so unless we can find a way to either inform them of the idling laws, or if they do not seem to care much for the law, we need to then seek a solution elsewhere. Possible solutions might be chatting with public safety, the workers’ superiors, or maybe even the RUPD. These vehicles idling for long periods of time serve no purpose other than wasting gas (which we, as students, pay for in tuition.), adding excess wear to the engines (which we, as students, will inevitably pay for), as well as adding unnecessary pollutants into the already dismal air of the new Brunswick metro area (which, we all pay for.).

A final issue directly relating to campus is the busses. As Courtney mentioned earlier, the NJ exemption statute for busses states that, “A diesel bus while it is actively discharging or picking up passengers may idle for 15 consecutive minutes in a 60-minute period.” (“Control and
Prohibition Of…”, NJDEP 2009). One step that our group will take towards resolving this issue on the main busses is riding them and seeing if they are in violation. Particularly at the Livingston Student Center, College Ave Student Center, and the Red Oak Lane bust stop near Passion Puddle on Cook often have busses stopped for quite some time. It often seems to be much longer than 15 minutes as well. However, research into this is needed to see if there are frequent violations of the 15-minute max.

Those are, however, not the only busses on campus. The small Rutgers “DOTS” busses we have witnessed for years will in the back of select parking lots for considerably longer periods of time than 15 minutes. They are also not actively discharging/picking up passengers while idling, so anything beyond 3 minutes then becomes the law. They will often sit there as they are primarily used to escort injured and/or handicapped Rutgers students. However, there is no reason why the bus needs to be running the entire time while that student is attending the class the bus is bringing him or her to and from. This is another issue that will most likely lead back to a lack of education on the bus driver’s part or a lack of enforcement.

Effects of Idling: The Bad, the Worse, and the Ugly. (AH)

Idling a vehicle or machine is, at its core, creating emissions with no actual work being done. It is consuming fossil fuels and creating emissions with no net result. The increased running time of the machines and vehicles creates more total emissions. These correlations were defined in other sections of the Classipedia. There are environmental and health impacts of higher emissions in the air. This section will produce concrete reasons why people should not idle their equipment.

Effects of increased idling on human health have been determined. In a Health Canada study, higher asthma rates and respiratory hospitalization increased on high pollution days. In addition, higher death rates were correlated to high pollution days in the Canadian study (Green Calgary). Idling leads to more air pollution. More air pollution leads to more asthma attacks and hospitalizations. Therefore, idling has a direct effect on the health of the area’s residents. While most effects are minor such as difficulty breathing and minor respiratory effects, chronic exposure to increased levels of air pollution increase susceptibility to lung and respiratory disease such as asthma and bronchitis. Prolonged breathing of this “dirty air” also increases the risk of serious cardiovascular problems as well. In fact, child asthma increased by 400% over the past twenty years. Ailments combined, idling contributes to a lower quality of life and overall a decreased lifespan. Therefore, leaving your car, weedwhacker, blower, lawnmower, or small Rutgers maintenance cart idling directly affects your health. Breathe better, live better, and shut off your engines.

The extra pollution produced from idling has effects reaching far beyond human health effects. Did you know that idling your car at your favorite scenic outlook such as the Grand Canyon reduces visibility? If every visitor to the Grand Canyon idled their car for their entire visit, you might not be able to see the other side! Visibility in the west has been cut from 140 miles to 35-90 miles (depending on ambient atmospheric conditions) while visibility in the east decreased from 90 to 15-25 miles due to air pollution (EPA). Idling a car or other piece of equipment is detrimental to the enjoyment of our national parks. If the scenery can’t be seen due to pollution-related haze, they cannot be enjoyed. Therefore, idling is detrimental to the enjoyment of nature. In addition to the direct effects of idling-related increases in air pollution, there are also many indirect effects. Engine emissions are involved in the creation of ground level ozone. Ozone
affects human health in addition to plant and animal health. Further negative effects on wildlife include acid rain which can stem from diesel emissions of sulfur. Acid rain kills fish and trees in addition to making landscapes unfit for living things. These effects are passed downstream and can affect large areas of land (National Earth). When the environment is affected, people are also affected. Environmental degradation affects the security of our food, water, and clean air supplies across the globe.

Combining the negative effects of air pollution created by additional pollutant release from idling, the results are bleak. Our health is worsened, our environment is degraded, and we can’t see the beauty of our nation’s best sights. There is research to show that an increase in the level of Carbon Dioxide in the atmosphere is contributor to global warming (Science Daily). Idling is a source of additional carbon dioxide emissions. Therefore, each minute that a vehicle or tool is left idling contributes to global warming. While just one idler does not make a significant difference, thousands of machines idling add up to a significant amount of carbon dioxide emission. Global climate change will effects that we do not yet fully comprehend. We need to limit idling engines to prevent any future harm to our way of life.

**The Service Project: Presentation**

**Overview**

Our service project is to gather data about the idling of Rutgers busses around campus and compiling data. This data is crucial to making a fact-based presentation regarding Rutgers bus idling that can convince transportation authorities to reduce idling time on all bus routes. The first step is to collect the necessary data in order to make a credible presentation. A credible presentation relies on facts rather than statements such as “The F bus idles a lot” in order to drive our point across and be heard.

**Data Summary**

In order to obtain idling times for on-campus vehicles at Rutgers several bus routes were used to start data collection. The bus routes were selected based on student popularity and access around the Rutgers University campus. Bus routes departing from Cook/Douglass were used primarily for data collection; however, bus routes among other campuses were included as well. Campuses are indicated as departing points for the buses since several buses travel between campuses for student convenience. Cook/Douglass bus routes include the EE, F, REX B and REX L. College Avenue bus routes include the A and the H and Busch campus bus routes include the C (Commuter) and B routes.

Bus idling data was collected by using a stopwatch and data collection sheet. The stopwatch was started when any bus began idling while picking up passengers including all intermediate stops and endpoints. It was paused while the bus was in motion. All times were recorded in addition to idling times exhibited by the stopwatch. Times recorded were used to calculate all data and idling times. Videos conducted will be used as a supplement to the timed data. All original data sheets were kept and used for reference.

**Results of Idling for Individual Bus Routes**

Several bus routes were analyzed on the Cook/Douglass campus and found to be in violation of the New Jersey law for 15 consecutive minutes of idling within an hour as buses actively pick up
passengers. The REX B bus route was found to idle for 36% per hour with an idling time of 21 minutes and 4 seconds at the two longest stops of Red Oak and Allison Road Classroom (ARC) building. Within an hour the bus completed one and a half full cycles of stops. The REX L bus route was found to complete one and half total cycles of stops within one hour with a total idling time of 23 minutes and 44 seconds. The idling percentage per hour was found to be 43%. The EE bus route was found to have a total idling time of 20 minutes and 45 seconds with an idling percentage of 34% per hour. The F route was determined to complete 1.5 cycles within an hour for a total idling time of 22 minutes and 59 seconds. Idling percentage was found to be 38.3% per hour.

Idling times were also collected for several other bus routes off of the Cook/Douglass campus. The C route (Commuter) that is focused on the Busch campus only was shown to have a total idling time of 35 minutes and 48 seconds with idling totals at the two endpoints (Stadium and ARC) to be 32 minutes and 37 seconds. Total idling percentage for within an hour was found to be 59% for the C route. The B route that is focused between the Busch Campus Center (BCC) and Livingston Campus Center (LCC) was found to idle for a total of 26 minutes. Idling at the two endpoints (BCC and LCC) collectively was determined to be 21 minutes for a total idling percentage of 43% within an hour. The A bus route which is focused between the Busch Campus Center (BCC) and Rutgers Student Center (RSC) was found to have a total idling time of 22 minutes and 49 seconds. Idling percentage within an hour was determined to be 37.5% with 20 minutes of idling at the endpoints (BCC and RSC). The H bus route which is focused between the BCC and RSC was found to have a total idling time of 23 minutes and 36 seconds; thus, idling 38.9% within an hour. Idling at the two longest stops was found to be 20 minutes.

Discussion
Data from these bus routes show that idling for several stops is over the 15 minute time period within an hour allowed by NJ state law. Although idling while picking up passengers between endpoints is hard to avoid; idling at the endpoints is avoidable. Our studies have found that all buses, except the EE, violate the NJ law for bus idling while “actively picking up passengers”. Also, idling percentages for within an hour are between a minimum of 34% and a maximum of 59% suggesting the possibility for considerable pollutants to be released into the environment. However, it must noted that this data is preliminary and only suggests idling times for the specific times and days the studies were conducted. Further studies will be analyzed to determine idling times of the Weekend bus routes (Weekend 1 and Weekend 2), LX and LXc as well extra times and days for all bus routes. Additionally, we will see if there are any sort of national averages for bus idling on normal routes and compare our data to these standards. Data will then be presented to the Department of Environmental Protection as a service project to suggest alternative means of reducing idling times for Rutgers buses. The phone number we called is 877-927-6337. The person we talked to at the Middlesex County department of the DEP was Dara. Dara’s direct number is 609-292-3187. She promptly told us that someone from the department will return our call at sometime in the future. They were not willing to provide information for whom to contact. The state is not very receptive of our requests. We also called the Department of Transportation Services at 732-932-7744. They directed us to email them. We then emailed info@aps.rutgers.edu, the contact information for the RUDOTS. We eagerly await these groups’ responses.

The PowerPoint to be used for the presentation is attached.
References


Editorials

RU Idling?
By: Lauren Barron
Submitted: March 22, 2011

With the constant bustling of Rutgers buses and New Brunswick taxis zipping around town it is no surprise that people around campus have places to go. Indeed, that very one principle is the one that hurts us in the end. With air pollution on the rise and clean air becoming harder to breathe many organizations and government policies are working to raise awareness over the consequences of idling. Although we all idle our cars as we wait for friends or drive through the bank, do we really know how we are damaging the environment around us or even breaking the law? According to New Jersey law, idling is limited to three minutes for motor vehicles. Even though this may not sound long if everyone idles for three minutes the effects of increased air pollution and smog only heighten our health risks.

As the constant battle to fight motor vehicle idling is under way, a common misconception is the effect of other types of idling on the environment. With the warmer months springing upon us more and more people will begin to start enjoying the benefits of the outdoors. Many types of machines that utilize two-stroke engines such as lawnmowers, jet skis and chain saws produce more pollution in the form of emissions than motor vehicles. In fact, more research is beginning to raise awareness about the effects of two-stroke idling on the environment and air we breathe. According to Bryan Willson, a professor of mechanical engineering and the director of the engines and energy conversion laboratory at Colorado State University, "you end up losing a very significant amount of fuel [with two-stroke engines]… In rough terms, each of these is as polluting as 50 modern vehicles".

Although we often think about the toxic effects of emission pollution on the environment, we also need to consider the consequences of engine pollution in our water. Many watercraft utilize this type of engine and the effects of water pollution can damage our sensitive aquatic marine life. Based on how the engine works, most of the unburned oil is released from the
watercraft and contains a mixture of polycyclic aromatic compounds that have the potential to
damage embryos of marine invertebrates, fish, and plant life.

In conclusion, as the warm weather invites more outdoor adventures upon us it is
important for us to remember to be cautious about our use of idling. Although the effects of
motor vehicle and recreational idling may not seem to present immediate consequences today
keep in mind that many people and living organisms share the environment around us and it is
only fair for us to ensure that we can continue to enjoy it in the future.

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Quit Idling about Idling
By: Alexander Harrison
Submitted March 22, 2011

Going into WaWa to grab a quick bite to eat or grabbing a pizza on the way home with
the family? Have you left the car running because you will only be there for a few minutes? Did
you know that in New Jersey idling your car for more than three minutes is illegal in New
Jersey? Not only is idling a car for an extended period of time illegal, but it creates extra
pollution and vehicular costs. Extra gas is used, and wear and tear reduces the lifespan of crucial
engine parts that are not designed to run idle. Idling five minutes per day creates an extra $30-
$60 in fuel costs annually depending on engine size. Another common misconception is that
idling for a brief period of time can save gas compared to restarting the vehicle. This is proven to
be incorrect by the EPA and even the Ford Motor Company. The health effects of vehicle
emissions are also more pronounced due to increased air pollution due to idling.

The facts do not lie. Idling is bad for our wallets and our environment, yet idling is a
common event in the everyday life of a Hunterdon County resident. Idling before leaving home
in the morning, while at the gas station, at the bank, or picking up pizza by thousands of cars
adds up to significant amounts of pollution and significant costs to the drivers. Yet idling is still
prevalent. Car exhaust is linked to asthma forming or flaring up and idling creates more car
exhaust. Yet idling is still prevalent. The environment is our home and filling it up with more
pollution than it already endures only makes the bad worse. To experience more acute affects of
idling, visit Hunterdon Central Regional High School during school bus loading times after 2:00
PM on a weekday after busses start up but before they are allowed to leave. Thankfully busses
are not permitted to idle the entire time, but due to the sheer number of busses, the back busses
are forced to idle for over ten minutes during which air quality takes a nosedive. Individually,
idling has a small effect but collectively idling our vehicles is a serious problem. All it takes is
the turn of a key or the press of a button to turn off the car for the duration of your stop. It is one
simple action with lots of benefits. Quit idling today.

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The Bus Stops Here: The Environmental Dilemma of Rutgers Bussing  
By: Matthew Drews  
Submitted: March 22, 2011

For anyone who lives or commutes through the New Brunswick area, the traffic scene would not be complete without the sight of the big red and white Rutgers University busses shuttling students from campus to campus. Having four different campuses in the New Brunswick area to contend with, managing the state's second largest (NJ Transit being the first) bus system with over 50 busses and 10 routes is no easy task, but lately concerns are have been raised over the amount and methods by which the bus drivers have been seen idling.

There are several stops on the various bus routes that are well known to the vast majority of the student body as "idling stops". Primarily these are 3 different campus center stops, as well as a stop at the intersection of Red Oak Ln and Lipman Dr on Cook Campus. These are where the bus drivers will constantly take their breaks, leaving the busses running while they walk to the restroom, smoke a cigarette, or simply stretch out their legs. Being a commuter, I am aware that driving in New Brunswick is not a exactly a Sunday drive, and that they are certainly entitled to their breaks. NJ law correlates well with this, as it allows for busses to idle for up to 15 consecutive minutes per one hour time frame. The problem is though that while on break, the busses are constantly running, and with several busses on each route using the same stops, it has caused some stops to almost constantly have busses idling at them, occasionally with up to five busses at once.

With the constant emissions of running busses, these stops seem to have almost picked up a semi-permanent aura of exhaust and diesel fumes, not to mention a significant amount of oil accruing on the roadway at these stops. This is especially hazardous at the Red Oak Ln. stop, where the street's runoff directly flows into a creek flowing out of Passion Puddle (a pond on campus), and into the Raritan River.

One solution would be to shut the busses off when they reach these stops to take a break. It's a proven fact that the diesel used to turn on and off these busses is about the equivalent to 30 seconds of idling time, so not only could the cost of fuel be lessened, but the amount of unnecessary pollutants being added to the environment could also be reduced. Of course, converting more of the busses to hybrid electric-biodiesel busses (or another kind of alternative fuel) would improve the emissions problem as well, but that is a much more expensive and long term solution.

Another easier and less expensive solution to the problem with the busses might be to stagger which stops the drivers take their break at. Presently, of the 50-70 busses on the system at any given time, almost all take their breaks at the four stops, with most busses stopping for good amounts of time (10-15 minutes or longer) at two of these as a completion of one loop of the given route. If certain routes were assigned to stop for breaks at a variety of stops, the idle emissions would be more evenly spread. It doesn't reduce the amount of pollution, but ideally this will reduce the much higher and more unhealthy levels at those four stops. Additionally, as some routes take less than an hour to complete, these busses may be in violation of the aforementioned 15 minutes per hour law.
These busses are a lifeline to the Rutgers community and vital for the movement of students, faculty, and staff throughout the New Brunswick area. More should really be done to mitigate the excessive amounts of pollutants at a few of these stops. It's as well a concern, especially at a school with such deep roots to environmental sciences and policy, that needs to be given more attention.

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Why R U Idling?
By: Courtney Tait
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It is common within the Rutgers University campuses to see copious repetitions of buses taking their routes each and every day. The Rutgers buses idle for a minimum of about five minutes each at four of the campus centers throughout the Busch, Livingston, College Ave, and Cook campuses. This constant idling each and every day can contribute negatively to both the environment and human health.

There are currently several laws against idling in the state of New Jersey. Idling for more than three minutes is prohibited in New Jersey with very limited exceptions. The New Jersey laws regarding buses state that idling is allowed for no more than 15 consecutive minutes in a 60-minute period while passengers are actively loading and unloading buses only if the bus needs to run the heat or air-conditioner for passengers already on-board (StoptheSoot.org, 2007). As a result, these vehicles are idling for significant periods of time. Even though the law is allowing this allotted time, the damage to health and the environment is still occurring.

Idling can be enforced on public roadways and on private property. For commercial vehicle and property owners, the fine is $250 for first violation, $500 for a second violation, and $1000 for third and each subsequent violation (StoptheSoot.org, 2007). Although these fines can get costly, there are hundreds of people in the state of New Jersey alone who get away with idling over the current law’s time limit.

Reducing idling will lower maintenance costs on each vehicle, save fuel and protect public health and air quality. Another fact to think about is that an idling vehicle emits 20 times more pollution than one traveling at 30 miles per hour. Fine particle pollution in NJ may cause more premature deaths than homicides and car accidents combined. Diesel exhaust is a primary component of fine particle pollution and is known to cause or exacerbate a variety of heart and lung ailments (StoptheSoot.org, 2007). These statistics are very important when it comes to adding up the amounts of pollution emitted throughout the state of New Jersey, regardless of its idling laws.

As a result, regardless of New Jersey’s idling laws, the amount of time the Rutgers University buses spend idling can in time negatively impact one’s health, the environment, and the overall visibility of the city. It is important to think about these consequences while you board the buses or notice them idling throughout the campuses. If the Rutgers University department of transportation prohibited their drivers from idling buses at each campus center, the
results could positively impact the campus as a whole.

So the next time you board a bus that has been idling for more than three minutes, do not hesitate to ask, “Why R U Idling?”