

A photograph of a busy highway with a long line of trucks and trailers, illustrating the problem of diesel idling. The scene is viewed from an elevated perspective, showing multiple lanes of traffic. On the left side of the road, there are several rows of stacked shipping containers in various colors (blue, orange, yellow). The right side of the road is filled with a dense line of trucks, including semi-trailers and box trucks, all appearing to be in a queue. The sky is overcast, and the overall atmosphere is one of industrial activity and traffic congestion. Streetlights are visible along the road.

A Municipal Official's Guide to Diesel Idling Reduction in New York State

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A Municipal Official's Guide to Diesel Idling Reduction in New York State

Introduction

Idling is the continuous operation of a vehicle's main drive engine while it is stopped. Idling is a common occurrence with personal automobiles, especially during stops at a traffic light. This type of idling is typically short in duration, and therefore has a minimal impact on air quality and fuel consumption. On the other hand, diesel trucks operate differently than automobiles. Diesel trucks, by their very nature, are designed to carry goods over long distances and may idle overnight or while waiting to load or unload.

Truck movement of goods across our country is essential for our economy, and the diesel truck engine is one of the most efficient means to transport these goods. However, the transportation sector has its impacts on our energy independence, environment and public health. Transportation accounts for almost two-thirds of all oil consumed in the United States and about one-third of total carbon dioxide emissions. Specifically, ground freight transportation consumes over 35 billion gallons of diesel fuel each year, creating over 350 million metric tons of the greenhouse gas carbon dioxide annually.

As required by law, truck drivers must rest after driving a certain number of hours. During this period, long-haul truck drivers will usually rest in their sleeper compartment located behind the driver's seat. The sleeper compartment contains a bed and other amenities for living in the truck (e.g., television, refrigerator and microwave). Not every truck driver rests in their truck (some stay in hotels and others have dual drivers that trade off the driving duties), but for the vast majority of long-haul drivers with sleeper berth compartments, their truck is their 'home away from home.' It is common for these drivers to idle their engines for cab comfort needs (electricity and heat or air conditioning), and engine and fuel oil warmth during cold weather. Studies have indicated that truck drivers idle their engines from 6-8 hours per rest period over 300 days per year. In many cases, truck engine idling comprises 40% of the engine's total operating cycle.

Why Idling is a Problem. The U.S. Environmental Protection Agency (EPA) estimates that long duration idling consumes over one billion gallons of fuel annually, at a cost of over \$2.5 billion. Further, truck idling emits, annually, 11 million tons of carbon dioxide (a greenhouse gas), 180,000 tons of nitrogen oxides (precursor to ozone formation), 5,000 tons of fine particulate matter (likely carcinogen), and other harmful air toxics. Idling also increases engine operating costs and shortens engine service life. As for truck drivers, idling emissions have been found to leak into the truck cab creating health and safety concerns for the driver. When trucks idle near residential neighborhoods, while at a private or public truck stop or distribution center, the pollution and noise levels raise serious quality of life concerns. While many truck stops are located outside of major metropolitan areas, the impact on populations still exists. For example, the East Coast has 45 major metropolitan areas, but 70% of the land area is outside of these major metropolitan areas. The population density in these small towns and rural areas is still twice the average density of the rest of the United States. While state and local officials may have concerns about truck idling, it has never been clear what, if anything, they can do about it.

Purpose of Guidebook. Vehicle idling has become an accepted practice in the United States. While we all recognize that truck drivers must rest comfortably, we also realize the significant impacts associated with idling for everyone involved. The purpose of this guidebook is to present basic information and practical solutions for consideration. This guidebook can assist state and local officials in understanding the issues, alternative technologies and approaches, and making sound state and local land use decisions that can contribute towards reducing the impacts of engine idling.

Unlike many problems that state and local governments face, the solution to diesel idling is a win/win for all parties involved - for truck drivers and owners, the environment, neighbors and communities.

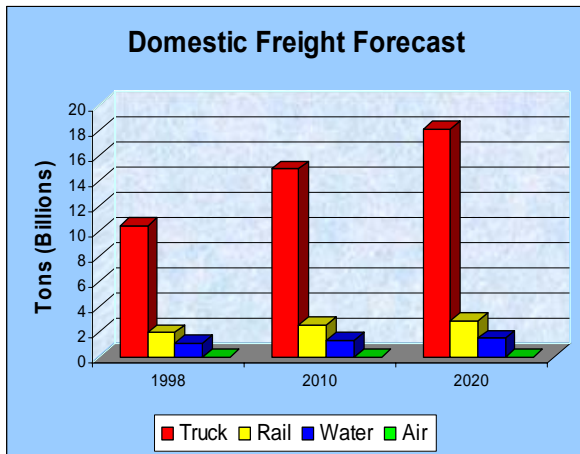
“We have entered a truly unique period, where concerns about the environment, energy security and highway safety line up perfectly with the transportation industry’s own business goals.”

Mitchell Greenberg, EPA SmartWay Transport Partnership

Diesel Idling Facts and Trends

- A Snapshot of Truck Idling -

Throughout the United States, freight transportation is predominantly conveyed by truck. Anywhere from 500,000 - 1 million long-haul trucks move freight along the nation's interstate highway system. The Federal Highway Administration estimates that between 1998 and 2020, the volume of truck-transported freight will increase by a stunning 70%. These projections mean that the demand for diesel fuel – both for transport and idling - will certainly also increase, as will the pollution, noise and other environmental impacts that accompany the burning of fuel.



Truck-idling locations - While diesel trucks can be found idling in almost any location, the heaviest concentrations of idling are at private and public truck stops, travel plazas, rest areas and distribution centers. Idling is also a major concern at marine ports, border crossings and in city centers. Throughout this guidebook, we will refer to all of these sites as ‘truck-idling locations.’

New York has over 8,300 truck parking spaces available at rest stops and travel plazas along the Interstate Highway System. Private truck stops may be found along major highways and close to highway entrances and exits. "Big box stores" have large numbers of trucks – both their own and others - that idle for long periods of time waiting to load or unload. The growing number of big box stores and their distribution centers will see increased idling activity in the foreseeable future, especially in New York.

Truck Idling Practices - Under federal law, the Department of Transportation mandates that long-haul truck drivers can drive 11 hours a day, but must then rest for 10 hours. As mentioned above, long-haul truck drivers often idle their diesel engines to supply heat or cooling – essential for the driver's comfort, especially during weather extremes. However, idling is not solely a reaction to extreme hot or cold temperatures. For example, while the ambient temperature may be in a moderately comfortable range during warmer months, the inside of the truck cab may experience temperatures 10-15 degrees greater due to the solar intensity created by the windows.



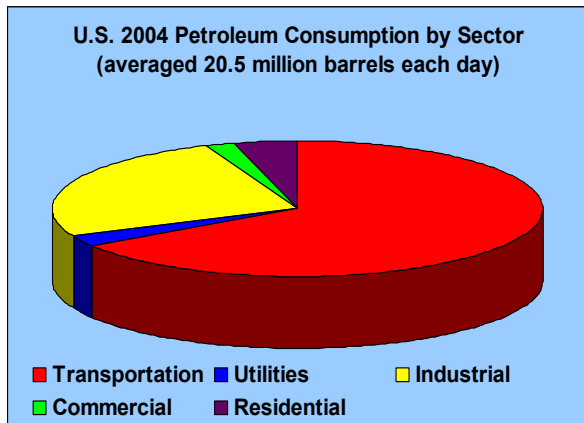
Further, in our homes we may sleep with the windows open to allow for air circulation, but truck drivers rarely sleep with their windows open due to safety concerns. This raises the discomfort level, thereby requiring air conditioning or heat. While idling to operate on-board appliances (e.g., television, telephone, computer or microwave oven) is of relatively short duration, any practical alternative to main engine idling must address this fundamental need to operate appliances. Finally, many truck drivers idle to keep their engine block and oil warm in extremely cold

weather. This is less of a concern with modern electronic diesel truck engines manufactured after 1990. The habit or behavior of idling is so ingrained within the trucking industry that changing this requires education. Clearly, for the long-haul truck driver, engine idling or a practical and cost-effective alternative is a necessary fact of life.

- Adverse Impacts of Diesel Idling -

Fuel Waste and Dependence – Diesel truck idling contributes significantly to energy consumption. The EPA estimates that idling heavy-duty trucks consume and therefore waste almost one billion gallons of diesel fuel annually. In a world of increasingly scarce fuel resources and dependence on other nations for much of our fuel needs, it doesn't make sense to use fuel for needs that can be met in other, more efficient, cost-effective and non-polluting ways.

Air Pollution - Diesel truck exhaust is a major source of air pollution, including more than 40 hazardous air pollutants and considered to be the top toxic air risk in the U.S. today. The EPA estimates that idling trucks generate over 11 million tons of



carbon dioxide and 180,000 tons of nitrogen oxides annually. In hot weather, nitrogen oxides react with ozone to create smog. Meanwhile, carbon dioxide acts as a

greenhouse gas, implicated in global warming. Fine particulate matter in diesel exhaust easily enters lung tissue to aggravate asthma, allergies, chronic bronchitis and emphysema.

Truck drivers themselves and the neighborhoods around truck-idling locations suffer from increased air pollution. These neighborhoods are often lower-income or minority, raising the issue of environmental justice and the fairness of disproportionately exposing these people to toxic air emissions. Diesel idling contributes to some regions not meeting the Clean Air Act ambient air quality standards, thereby jeopardizing potential access to federal transportation funds.

Driver Health – Diesel idling emissions have been found to leak into the truck cab while the truck idles. The presence of these emissions poses serious health and safety concerns, especially over a prolonged period of time typically associated with the truck driver's rest period.

Noise Impacts - Truck idling creates noise and low-frequency vibrations that are thought to degrade the quality of sleep realized by the truck driver and create safety concerns for poorly-rested drivers. Noise associated with idling creates nuisance concerns for others in the area, and particularly, nearby residential neighborhoods. The non-stop, day-and-night nature of noise can be overwhelming for adjacent residents.

Higher Costs - Diesel idling adversely impacts fleet and truck owners by increasing operating expenses for both fuel and maintenance. An hour of idling time consumes about one gallon of diesel fuel. At approximately \$2.60 per gallon for diesel fuel (2006), this represents a direct added cost to

the trucking industry of about \$2.5 billion each year. In addition, diesel idling increases engine wear, requires greater engine maintenance and decreases the mileage that can be achieved during the lifetime of a truck (a truck's main engine gains 10% to 20% added life-span when it is turned off at rest).



Solutions to Reduce Idling

Solutions to reduce truck engine idling involve a combination of legal, technical, land use planning and education efforts. Some of the legal efforts have already occurred in the form of state and local idle-reduction laws.

- Idle Restriction Laws -

For truck engines, EPA publishes regulations establishing emission standards that truck engine manufacturers must meet. However, in the area of vehicle use and behavior (e.g., idling), the states and local jurisdictions have the unique authority to establish such controls within their areas. Thirty states and hundreds of counties and communities throughout the country have promulgated their own idle-restriction laws. The State of New York has a state-wide idle-restriction law and twenty-two local jurisdictions in the State have passed their own idle-restriction laws (e.g., Brighton, Bronxville, Clifton Park, Ithaca, etc). For a complete list of New York State and local idle-restriction laws, consult EPA's list at <http://www.epa.gov/smartway/idle-state.htm>.

New York's State-wide idle-restriction law, which sets forth a five-minute limit for idling of diesel trucks and buses (except when the temperature is below 25 degrees), is part of State Environmental Conservation Law and enforceable by the NY State Department of Environmental Conservation (see Appendix B).

The use of a state or local idle-restriction law is a powerful tool to reduce idling. However, with this power comes responsibility. Idle-restriction laws are only effective if truck drivers comply with the law. If an idle-restriction law is impractical and/or inconsistent with other state and local laws, then compliance may be low. In addition, without some kind of enforcement activity, which is rare due to competing priorities, idling laws are only a partial solution.



To ensure that idle-restriction laws are practical, consistent and ultimately achieve broad compliance, the EPA assisted in the development of a model state idling law (see Appendix C). The EPA hosted a series of public workshops to bring together truck drivers and owners, state air quality and enforcement officials, and environmental and health groups. The purpose of these public workshops was to develop a model state idling law that satisfied all parties and reduces variability in laws from state to state.

If your area already has an existing idle-restriction law, you should determine if it is consistent with New York law and the EPA model law. If it is not consistent, you may want to make it so.

With any type of law, education and enforcement of the law are essential ingredients. Signs should be posted at all locations where idling is a concern, clearly articulating the law and its fines. The state and local authority should implement an educational campaign notifying truck drivers and truck stop parking locations of the law. Appropriate law enforcement officials should be encouraged to enforce these laws or notified when trucks are observed violating the law.

In addition to laws, you may want to consider educating truck stop/plaza owners about voluntary efforts to reduce idling at their locations. One example is EPA's SmartWay Transport Partnership Program. The Partnership includes truck stops. You can assist with recruiting truck stop operators to join the program. As part of this program, truck stop owners create a no-idle zone which prohibits idling at designated parking spaces. Trucks are permitted to use auxiliary engines or plug into electrified parking spaces. By creating no-idle zones at truck stops around the country, the trucking industry will begin to see the growing need for communities to reduce truck engine idling

An additional benefit to this voluntary program is that state and local jurisdictions can also sign on to the partnership agreement.

States can participate by applying "enforcement discretion" or "low enforcement priority" to those participating truck stop partners. States can then focus their attention on those areas not participating in the program. See Appendix D for a copy of EPA's Truck Stop Partnership Agreement and State Addendum.

The combination of laws and voluntary efforts ('carrot and stick') is an important approach when dealing with the trucking industry. Laws, by themselves, have limits and depend greatly on self-compliance and enforcement. By combining the law with a voluntary program, you will be reducing the burden on law enforcement and the trucking industry may look more favorably upon an area that works cooperatively to reduce emissions.

States with idle-restriction laws include all or part of Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Georgia, Hawaii, Illinois, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Missouri, Nevada, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming.

- Truck Technology -

Idle-reduction technologies are necessary when truck drivers must remain parked for long duration periods. Various idling-reduction technologies allow truck drivers to turn the engine off, while providing the same amenities of the main propulsion engine. The technological alternatives to main engine idling can be divided into two camps: mobile on-board and stationary off-board.

Mobile On-Board Technologies

This category can be sub-divided into four categories: (1) Automatic shut-down devices, (2) Heaters, (3) Auxiliary power units or generators, and (4) Battery or alternative powered systems.

- **Automatic shut-down devices** can switch on and off parked truck engines after a predetermined time limit or at an ambient temperature setting. For example, if the state or local law limits idling to 5 minutes, the timer can be set to turn the engine off after 5 minutes of engine idling. Also, the system can be set to turn the engine on or off based on in-cab temperature setting (much like your home's thermostat). These devices are inexpensive and easy to install. However, they simply turn the main engine on and off and should not be considered a viable alternative to reduce idling from long-haul trucks. For example, when set on temperature, the engine will simply keep idling to maintain a comfortable interior temperature. They are best suited for delivery trucks as well as larger trucks without sleeper cabs. The State of California requires a version of this type of control on all trucks operating in their state beginning in 2007. To view California's law go to EPA's list of state and local idling laws.

<http://www.epa.gov/SmartwayLogistics/documents/420b06004.pdf>

- **Direct-Fired Heaters** are small diesel units available both as coolant heaters and as air heaters. Using the same fuel supply as the vehicle, they can be utilized to eliminate warm-up idling or to heat the truck cab and/or sleeper cab while stationary. Direct-fired heaters are relatively inexpensive, easy to install, lightweight, and have been rapidly gaining in popularity. However, since they do not provide air conditioning they are a partial seasonal solution.

- **Auxiliary Power Units (APUs) or Generators** are an in-truck solution to idling for trucks with sleeper cabs that allows the main engine to be shut off. APUs are small engines that can provide integrated heat, air conditioning and power while consuming only a fraction of the fuel that idling consumes. Generators are similar but not necessarily integrated units. Several models of APUs and generators exist on the market, providing a range of services. They are expensive, heavy, require maintenance, and create noise (but not as loud as the main engine at idle). However, they do provide the full amenities found from the main propulsion engine at a fraction of the cost. As for the weight issue, states may exempt the weight of the APU from the legal weight limit.



- **Battery or Alternative Powered** include heating and air conditioning systems that run off battery power, or a stored energy source. The battery powered units do not produce any emissions. However, they are expensive, heavy (additional batteries needed), and

provide power as long as the battery is charged. The stored energy systems are fairly new to the market.

Temporary Devices include portable electric heaters and air conditioners that are shorepower-capable and that can be lent or rented to the trucker at the truck-idling location.

Stationary Off-Board Technologies

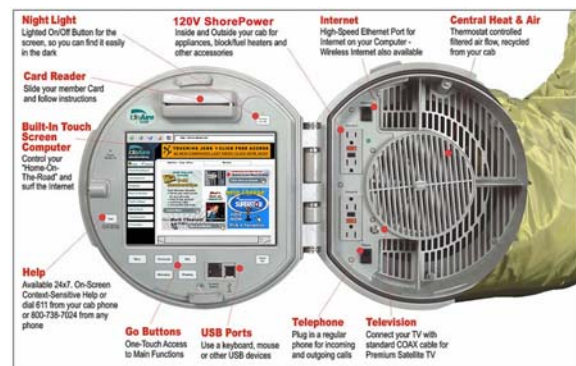
Electrified Parking Spaces (EPS) is an emerging technology that is sometimes referred to as “truck stop electrification.” This technology can be sub-divided into two categories: single unit EPS and dual unit EPS. Both provide grid-supplied electricity. Single unit EPS is a stand alone system and dual unit EPS requires the truck to come equipped with some on-board equipment to connect to the stationary electrical grid.

- **Single Unit EPS** supplies power and climate control from an off-board HVAC unit mounted above each parking space. Single Unit EPS systems are also known as “Full Service” systems, since all services are available from the technology infrastructure and truck modifications are not required. The cost is about \$15,000 per space to install with an hourly charge to the truck driver.



The way this system works is the truck driver pulls into a truck stop parking space, where a long, flexible section of tubing – with an electronic control unit at its end – hangs from above. The driver rolls down the passenger-side window and puts in place an inexpensive plastic window adaptor to allow the truck to be attached to the system.

From the outside, the driver then connects the control unit to the window. In the cab again, the driver uses the touch-screen to select options and a charge card to pay. Some sites provide workers 24/7 to introduce truck drivers to the process and walk them through the steps for the first time.



- **Dual Unit EPS** systems provide power similar to the electrical hookups available at recreational vehicle parks and marinas, but require that HVAC units for climate control be installed on board individual trucks.





Also known as “shorepower” Dual Unit EPS systems split the requirements for installed equipment between the parking space and the parked truck. The cost is about \$5,000 per space to install and electric HVAC units average about \$4,000 per truck.

Most major truck manufacturers offer shorepower connection packages on new trucks and cost-effective retrofit kits are readily available for older trucks.

Additionally, mobile in-truck APUs typically have electric by-pass, which allows them to be shut down and connected to shorepower when it is available.

In general, both styles of EPS replace petroleum with off-peak electricity which directly benefits the power producers in New York State. Typically, there is an excess of electrical generation capacity at night and producers are required to throttle back, which reduces their overall operating efficiencies and increases their operating expenses.

What do Truckers Think?

In January 2006, the American Transportation Research Institute produced a study for the New York State Energy and Development Authority (NYSERDA) in which it researched current use and thoughts on idle-reduction technology among truckers nationally. The

study found that 55% of respondents use automatic engine shutdown devices and 36% of those with sleeper cabs use some combination of on-board idle-reduction technologies – mostly direct-fired heaters and/or battery-powered air-conditioners, but also APUs. When asked about future use of idle-reduction technologies, 32% said they were likely to use battery-powered air-conditioning, 23% replied they were likely to use direct-fired heating and 23% said they would be likely to use an APU.

These results would seem to indicate a growing reliance on mobile, on-board idle-reduction technologies.



Consistency and Compatibility

Until recently, federal law did not permit any charge to the public for goods and services – with a few minor exceptions – at public rest areas along the nation’s interstate highway system. This effectively precluded the use of EPS systems to reduce truck idling at these locations. The 2005 federal Highway Funding Act now permits states to allow companies to install EPS and other idling-reducing technologies at public rest areas. This is an important step forward in increasing the number of high-density truck locations that might use these technologies.

By its very nature, long-haul trucking is regional, if not national. Therefore, consistency and compatibility in both idle-reduction technology and local and state regulations is desirable to promote use of

these new technologies. EPS systems cannot be commercially viable and truckers cannot be expected to comply with new idling limits if technologies and regulations differ substantially across communities and states.

NYSERDA is currently working with the EPA and U.S. Department of Transportation to promote standardized EPS facilities in America.

New York has been the leading the nation in Electrified Parking Spaces (EPS) systems. A first-in-the-nation EPS demonstration project along two primary transportation corridors is now under way. Two off-board EPS sites were built and are now operating at I-90 travel plazas in the Syracuse area, using technology supplied by IdleAire Technologies to accommodate 45 long-haul trucks. Additionally, the first commercial on-board EPS site was installed by Shurepower, LLC at a private truck stop along the I-87 Adirondack Northway.

- Benefits of Reducing Diesel Idling -

Energy Independence – The reduction of diesel idling will extend the availability of our domestic energy supplies and reduce our dependence on foreign sources of oil, creating greater economic predictability and stability.

Additionally, since significant idling occurs at night, electrical power generation in America will benefit substantially from the creation of a new off-peak market demand.



Cleaner Air – Reducing diesel idling will remove thousands of tons of particulates, carbon dioxide, carbon monoxide and nitrogen oxides from our air each year, reducing our exposure to these harmful toxics and their health impacts. Idle-reduction also

lowers greenhouse gas emissions and global warming impacts.

Quiet – When diesel engines are off, nearby residential neighborhoods can again enjoy quiet. Truckers and residents alike can enjoy a good night’s sleep. Others in the area will no longer be disturbed.

Improved Health – Eliminating the presence of diesel emissions inside the truck cab allows for a healthier indoor air quality. More importantly, truck drivers can avoid breathing in harmful pollutants that may impair their driving abilities and contribute to accidents.

Cost Savings for Truckers - By eliminating idling, the truck owner accrues considerable savings. For a typical truck driver idling 8 hours a day over 300 days a year, this amounts to over \$6,000 per year in fuel cost savings alone. If you add the reduced engine maintenance costs, lengthened engine life and reduced health costs, the importance of eliminating idling becomes clear. Industry-wide, these cost savings translate to a competitive advantage for the U.S. trucking industry.

- Financial Incentives -

Financial incentives play an important role in moving the trucking industry towards adopting idle-reduction technologies. While these technologies pay for themselves over time, the up-front capital costs have deterred their purchase. Innovative, sustainable and market based approaches are necessary to assist the trucking industry.

National Initiatives

The Federal government offers a limited number of opportunities to reduce long duration idling. These opportunities come in the form of grants, whereby eligible entities research, develop, evaluate, and/or deploy technologies, strategies and system approaches.

The EPA provides grants under the following voluntary programs:

- 1. The SmartWay Transport Partnership** is a collaborative voluntary program between EPA and the freight industry that will increase the energy efficiency and energy security of our country while significantly reducing air pollution and greenhouse gases. The Partnership creates strong market-based incentives that challenge companies shipping products and the truck and rail companies delivering these products, to improve the environmental performance of their freight operations. SmartWay Transport partners improve their energy efficiency, save money, reduce greenhouse gas emissions and improve air quality. For more information, <http://www.epa.gov/smartway/>
- 2. Clean School Bus USA**, is a national partnership to minimize pollution from school buses. Leaders from corporate America, children's health, environmental and governmental organizations gather to design a plan to reduce children's exposure to diesel exhaust by eliminating unnecessary school bus idling, installing effective emission

control systems on newer buses and replacing the oldest buses in the fleet with newer ones. For more information, <http://www.epa.gov/cleanschoolbus/>

- 3. The Voluntary Diesel Retrofit Program** works to reduce pollution resulting from existing diesel vehicles and equipment by encouraging fleet owners to install pollution-reducing devices on the vehicles and to use cleaner-burning diesel fuel. This involves working with state, local and industry partners to verify the effectiveness of pollution-reducing technology and to create retrofit projects around the country. For more information, <http://www.epa.gov/otaq/retrofit/>

The Department of Transportation operates the Congestion Mitigation and Air Quality Improvement (CMAQ) provides fund to state Department of Transportations, metropolitan planning organizations and transit agencies to invest in projects that reduce regulated criteria air pollutants from transportation-related sources. This program has funded several idle-reduction projects throughout the country and there are several applications pending for future CMAQ-funded idle-reduction projects. For more information, <http://www.fhwa.dot.gov/environment/cmaqpgs/index.htm>

The Department of Energy runs Clean Cities Program which has developed an Idle-Reduction Technology Program to support the use of idle-reduction technologies through education, workshops, outreach documents, grants and monitoring. For more information, <http://www.cities.doe.gov/>

Market-Based Approaches

The number and extent of potential projects to reduce diesel emissions far exceeds the amount of grant funds available today and in the foreseeable future. In fact, reliance on grants to reduce diesel emissions is not a sustainable strategy. What is needed is a sustainable, market-based approach that involves both the public and private sector.

Examples of sustainable, market-based approaches include loans, low-interest loans and revolving loans. Since idle-reduction technologies conserve fuel, the technology should pay for itself over time. This revenue should serve as the basis to support a loan. Private and public entities have the ability to create loans to support the trucking industry's purchase of idle-reduction technologies. Listed below are some examples of state market-based approaches.

- Arkansas and Minnesota offer loans to small businesses for idle-reduction technologies in their states. These programs come out of their small business ombudsman offices (AR: <http://www.adeg.state.ar.us/poa/businessasst.htm> and MN: http://www.pca.state.mn.us/programs/sbomb_loan.html).
- Oregon's Lane Regional Air Pollution Authority (LRAPA), provides low-cost lease-to-own or no-interest arrangements on auxiliary power units for truckers. LRAPA was able to obtain a loan from its state DOE which it parlayed into a sub-loan program. LRAPA received a grant to offer lower or no-interest loans. (<http://www.lrapa.org>).
- California Assembly Bill 1901 would establish a program, until January 1, 2012, in the State Energy Resources Conservation and Development Commission, to help finance, through direct loans, the retrofitting of trucks of large and small businesses with EPA SmartWay Upgrade Kits (includes idle-reduction technology) that would be required to have specified emission control devices and may have other specified equipment. The Bill has been passed by Assembly Committee on Transportation and by the Assembly Committee on Jobs, Economic Development and the Economy. The Bill is currently with the Committee on Appropriations (http://www.aroundthecapitol.com/Bills/AB_1901).
- Performance Contracting Arrangements: States or private institutions could consider setting up programs in which they provide idle-reduction equipment to trucking companies with no up-front cost to the company. The company would then pay for the equipment by returning a portion of its savings from reduced fuel consumption to the state or private entity each month. This type of arrangement would eliminate the problem caused by lack of access to investment capital that is a problem for many small- and medium-sized trucking companies. EPA's SmartWay Transport Partnership is currently studying this type of program.
- DOT – *State Infrastructure Bank* provides revolving infrastructure investment funds for surface transportation projects that are established and administered by states. New York was the first state to utilize SIB funds to support the deployment of an electrified parking space project.

The Importance of Planning and Zoning

While the various solutions described above provide important information about technologies and laws, local authorities make the decisions as to whether and where new or expanded land uses are allowed that will either continue to foster or, alternatively, discourage diesel idling. It will take a partnership approach among truck drivers, truck-idling locations and local officials to ensure that New York's anti-idling laws are followed. If local officials want to see direct benefits to their communities through reduced diesel emissions and noise, they have a key role to play.

- **Public Participation and Education –**

Often, just raising the level of awareness about air quality, noise and energy waste is the first step towards implementing change.

The key here is focusing the message to the appropriate audience and preparing the appropriate message. The goal is to solicit cooperation from your key stakeholders, while avoiding an adversarial position. First, identify the key stakeholders. Typically, they may include some or all of the following:

- Truck stop /plaza owners
- Big box/distribution centers
- Businesses where truck idling has been observed
- Local businesses that operate diesel trucks in the “park and deliver” mode
- Community health experts (e.g., physicians)
- State trucking association
- Neighborhood associations
- Local chamber of commerce
- Local legislators
- Local law enforcement

A fair representation of interests needs to be struck. If there is only representation from one side, the participation of others will be lacking. It is critical to involve someone from your state's trucking association. Every state has its own trucking association (see <http://www.truckline.com/aboutata/federationrelations/>).

Once identified, a relationship with key stakeholders should be established. This can be done on a one-on-one basis, or a community meeting can be organized.

The second step is developing an appropriate message. This is where some background research is needed. Truck idling may or may not be a problem in your area. Go out and conduct your own research. Observe where trucks are idling and the duration of the idling. Investigate truck stops and rest areas, airports, distribution centers, big box stores, downtowns, ports, borders, tourist areas, and any area where trucks are idling. Document the number of trucks and the duration of idling. This information should be presented at your meeting as initial (not definitive) data.

The third step is to begin a dialogue about ways to reduce or eliminate this idling as well as to minimize or prevent idling at new locations. At this point, focus on building a working relationship geared towards a cooperative approach. The trucking industry also wants to reduce idling, for financial reasons, so they have an interest in this subject. Some hints:

- Establish bonds of common agreement(e.g., fuel savings and emission reductions)
- Discuss the merits of specific idle-reduction technologies
- Discuss cost-effective strategies such as waiting rooms or staging areas for drivers
- Agree to meet on a regular basis

Speakers, such as from NYSERDA, the NYS Department of Transportation, and the NYS Department of Environmental Conservation can be invited to address the planning board and answer specific questions. It is especially important to reach out to and hear from those parts of the community that are most directly affected by diesel idling, including any residential neighborhoods near truck-idling locations.

Whenever any new land uses are proposed that involve truck parking or loading, such as distribution centers or shopping centers, you should engage the above stakeholders early in the process, prior to any groundbreaking, to ensure your views are heard.

Part of any education campaign should involve distribution of literature about the impacts of diesel idling, the available alternatives and idling laws. This last part - idling laws - is important. Truck drivers may simply not know about the law. Work with local law enforcement and the state transportation and environmental agencies to erect signs in common idling locations that warn drivers about the law and fines for non-compliance.

If vehicle idling continues after posting signs, contact your local law enforcement office to report this activity.

- Land Use, Truck Traffic and Idling Connections -

Diesel truck routes follow major highways and arterial roads to their destinations. They carry goods from rural areas (including timber, farm products, mineral and aggregate resources) and from industrial sites (including manufactured or value-added products) and transport them to population centers, specifically to business distribution centers, warehouses or directly to highway commercial-related businesses.

While local officials have only limited influence over the planning and maintenance of federal, state and county roads in their jurisdiction, they do have control over most adjacent and other land uses, including many of the places where trucks are likely to idle. That is, communities can restrict the location or expansion of truck parking and loading.



- Effective Comprehensive Planning -

Local planning and zoning are intended to guide future growth and development and to prevent harmful impacts of one land use on another. A comprehensive plan is a tool that allows communities to project future land use and infrastructure needs and to recommend actions that can be implemented through local land use regulations, such as zoning, and other means. Communities with an up-to-date comprehensive plan and land use regulations have a real advantage over other communities in shaping growth patterns and limiting environmental impacts of various land uses.

The comprehensive plan provides the legal basis for zoning and other land use regulations. Communities that are thinking about updating their comprehensive plans should consider how the updated plan could best assist in reducing diesel idling. This can be done by the following:

Inventory and Analysis

The inventory is the primary building block of the comprehensive plan and represents a snapshot in time of existing land uses and resources - what currently exists. The analysis evaluates and weighs the inventory information to consider potential alternative solutions. The inventory and analysis should:

- *Identify and map existing truck stops, travel centers, distribution facilities, warehouses, shopping centers, downtowns and other locations where heavy-duty trucks often idle.*
- *Identify and map an area with a radius of 500 feet around each of the foregoing locations and note any residential neighborhoods, schools, nursing homes, day care centers, playgrounds, hospitals or other similar such 'sensitive' population centers.*
- *Identify any additional areas where new truck parking and loading would be allowed under current zoning to be developed (such as large areas zoned Highway Commercial) and note whether there are any locations within 500 feet of these areas where new sensitive land uses would be allowed under current zoning.*
- *Note whether your community is in a non-attainment area for any regulated air pollutant.*
- *Identify whether any mobile or stationary idle-reduction technologies are in use in your community, and whether truck stop owners*

are willing to voluntarily reduce truck idling through EPA's SmartWay Transport Partnership program.

- *Analyze whether existing truck-idling locations should be allowed to expand at their current locations (considering nearby sensitive land uses, air quality attainment goals and other factors) and, if so, by how much.*
- *Analyze whether zones that would allow new truck parking and loading should continue to allow those uses or whether zones should be reconfigured (considering existing and potential future nearby sensitive land uses, air quality attainment goals and other factors).*
- *Analyze whether any sensitive land uses that would be allowed in the same zone as, or adjacent to, potential future truck parking and loading should continue to be allowed in that zone.*

Goals and Objectives

Goals and objectives set forth the broad values and specific intentions of the community. They are drawn from the inventory and analysis, from public input and from local officials. Goals and objectives reflect community policy and are the basis for a comprehensive plan's recommendations. As they apply to diesel idling reduction:

- **Goals** are broadly-worded statements that indicate the community’s desire and commitment to reducing diesel idling.

- **Objectives** are specifically-worded statements that describe the actions the community will take to achieve its goal.

For instance, a community might adopt a goal to “Promote the increased use of diesel idling technologies to enhance air quality, reduce noise and conserve energy.” Objectives intended to show how the community can meet its goal might include any or all of the following:

- *Evaluate existing zoning for potential conflicts between heavy-duty truck-idling locations and sensitive land uses and adjust allowed uses and/or zone configurations accordingly.*
- *Ensure that planning and zoning direct the largest new truck parking and loading facilities near major transportation corridors and access points.*
- *Post anti-idling signs at all existing and new locations with truck parking or loading facilities for trucks.*

- *Require the use of diesel idle-reduction technology for new or expanded heavy-duty truck parking or loading facilities for trucks.*
- *Adopt setback, buffering, lighting, stormwater and other on-site standards to mitigate adverse environmental impacts of truck idling on adjacent*

Action Strategy

The action strategy takes the plan objectives one step further towards implementation by identifying specific recommendations related to diesel idling. If objectives are specific enough, they can substitute for recommendations. However, the action strategy is important in providing for accountability and ensuring that objectives or recommendations are actually carried out. The action strategy should:

- *Propose specific recommendations, responsible parties and timelines for action.*
- *Include a Future Land Use map that identifies future plan designations that will be the basis for zoning and zone changes and that reflect any changes related to truck-idling locations and sensitive land uses.*

- Updating Local Zoning -

New York law requires local zoning to be consistent with the local comprehensive plan. New York communities have not traditionally regulated diesel idle-reduction, but that is changing. There are three specific ways that communities interested in reducing diesel idling can do this through zoning. Clear definitions of what constitutes a truck-idling location provide clarity to the public and local decision-makers on exactly which uses are being regulated. Appropriate zoning separates areas intended for intensive, potentially pollution-generating uses from sensitive land uses where vulnerable populations live, work and play. A reasonable review process plays a similar role, but provides for a case-by-case evaluation of the appropriateness of heavy-duty diesel truck parking or sensitive land uses at given locations and can require the provision of diesel idle-reduction technologies. Finally, an environmental review through the New York State Environmental Quality Review Act (SEQRA) may be appropriate.

A Definition of Truck-Idling Locations

It is important for communities to carefully define all the potential significant sources of diesel exhaust that they wish to regulate. It is not enough to define truck stops in the traditional narrow way, if the intent is to cover the wider range of locations – such as distribution facilities, big box stores, shopping centers, warehouses and so on - where trucks are likely to congregate.

There must be meaningful definitions that allow a determination of whether trucks at a given location are subject to the regulations. One way to do this would be to have new regulations apply to ‘heavy-duty diesel truck parking or loading’ where trucks idle for more than a set amount of time – say 5 minutes, whether the use is a primary one, such as for a truck stop, or a secondary or accessory use, such as for a shopping center.

A good definition for ‘heavy-duty truck’ and one that is consistent with NY State and federal publications is: *A truck or tractor as defined in the vehicle and traffic law that has a gross vehicle weight rating greater than 8,500 pounds and is powered by a diesel engine.*

Appropriate Zoning

If the comprehensive plan’s Future Land Use map is being changed to reflect changed community wishes about appropriate future locations for heavy-duty diesel truck parking or sensitive land uses around these places, the zoning map should be amended to reflect these changes as well.

Communities should be sensitive to the need for truck parking and loading locations in their community and try to meet the demand, while also protecting the quality of life and health of local residents. Traditionally, single-family residential uses have been well separated from sources of toxic emissions, while multi-family residential uses have often been located close to them. For instance, a community might allow warehouses in a light industrial zone that it considers compatible with adjacent apartments.

However, warehousing could involve significant truck idling, exposing large numbers of residents to toxic emissions. For this reason, communities should be sensitive about issues of compatibility and the desirability of minimizing exposure of residents to toxic emissions.

While mixed-use development is an important goal of many community planning and zoning efforts, it should extend to compatible land uses only, such as residential and neighborhood commercial or light industrial uses. Generally speaking, heavy industrial or highway commercial uses that involve truck parking and loading locations would probably not be compatible with adjacent residential development or sensitive land uses.

A Reasonable Review Process

In addition to, or instead of, changes to the zoning map and text, communities may wish to evaluate the appropriateness of heavy-duty truck parking or sensitive land uses on a case-by-case basis. In addition, there are a variety of ways in which zoning can be used to promote or require the use of idle-reduction technologies and reduce the impacts of idling on adjacent land uses.

Communities may permit new or expanded uses in one of four ways: as an outright permitted use, through a special use permit, through a site plan review process or as a use variance.

Uses that are permitted outright involve no discretionary review by local officials, but rather are approved by the zoning officer through the simple issuance of a building permit. Special uses are uses that are normally considered to be appropriate for a specific zone, but perhaps not in all circumstances or in all locations or as proposed; specific review standards are therefore used by the reviewing body and sometimes special conditions attached. The site plan review process is used not to determine the appropriateness of the use, but to assure that the use is sited appropriately with respect to nearby properties and adjacent uses. The use variance process is used to allow a use that is not otherwise authorized in a specific zone, but is similar in nature to other uses allowed in the zone.

Recommended options that communities should consider using to evaluate new or expanded truck parking or loading so as to reduce the impacts of diesel idling include:

- **Setbacks.** This would involve the creation of specific special use permit or site plan review standards that require new or expanded truck parking to be sited at least a minimum number of feet - say 500 - from any existing sensitive land uses. Specific standards should likewise be created that require new or expanded sensitive land uses to be sited at least the same distance from any existing truck-idling location. Exceptions should be permitted for truck stops employing diesel idle-reduction technologies.



- **Vegetative buffers.** In addition to, or instead of, a required setback for new or expanded truck parking or loading, special use permit or site plan review standards could require vegetative buffers at the property boundary of a specific minimum height and depth to mitigate pollution and noise impacts of idling. Exceptions should be permitted for truck stops employing diesel idle-reduction technologies.

- **Other environmental mitigation measures.** Special use permit or site plan review standards could include specific standards to mitigate adverse environmental impacts of overhead lighting and stormwater runoff on adjacent uses and especially residential neighborhoods. These should apply to new as well as expanded truck parking or loading.

▪ ***Diesel idle-reduction technologies.*** A special use permit or site plan review process could be used to require idle-reduction technologies as a condition of approval for new or expanded truck parking and loading. At a minimum, in air quality non-attainment regions, communities should firmly require the use of this technology. Those using this approach should review their nonconforming use requirements to assure that grandfathered truck parking that is expanded meets the new requirement as well.

Rather than requiring a specific approach to idle-reduction, the applicant should be free to choose among the options – off-board, on-board or in-truck – in demonstrating how any idle-reduction requirements will be met. This could be done as part of a SEQR review, with its provision for mitigation measures to reduce adverse environmental impacts (see below).

While it will likely make sense for larger truck parking and loading facilities to use one of the truck-connection approaches, this may not be economically feasible for smaller facilities. At the same time, these smaller facilities cannot rely on all truckers that visit to have in-truck technology. In these cases, it will probably make most sense for these small facilities to purchase and have on-hand portable heaters and air conditioning units that can be lent or rented out and plugged in using shorepower capabilities. This means, of course, that these facilities will also have to invest in electrical hook-ups to power visiting trucks.

Communities may be able to obtain funding by contacting their respective Metropolitan Planning Organizations to see whether federal or state financial assistance is available.

The particular approach that a community takes to diesel idle-reduction should be imbedded in the specific review standards, rather than left to a discretionary review process. Consistent and predictable decision-

making benefits the community and applicant alike.

While the most effective approach would be one that applies to all heavy-duty diesel trucks regardless of number, communities may also adopt standards that relate to the size of the proposed truck parking and loading facility, SEQR status, the region's air quality status, the proximity of sensitive land uses and other key factors.

For instance, a community might require the use of diesel idle-reduction technology (of the applicant's choice) for proposed parking and loading facilities for 10 or more heavy-duty trucks or for Type I SEQR actions with significant environmental impacts (see below) or both. Alternatively, a community in non-attainment for air quality might use a lower threshold, such as five trucks or either Type I or Unlisted actions with significant environmental impacts or even proximity to a residential neighborhood. At the same time, a community with high air quality and little potential for neighboring sensitive land uses could use a higher threshold, such as 15 or 20 trucks.

Because truck use in New York is projected to continue to grow and because many communities are seeing a continued rise in population and sensitive land uses, it makes sense to reduce diesel idling, even where there is not yet a serious air quality problem. Proactive planning and zoning in this area can help prevent deterioration of air quality, health problems and loss of quality of life.

Whether diesel idle-reduction is required or not, all communities would benefit from the use of setbacks, vegetative buffers and other environmental mitigation measures that reduce adverse impacts of the presence of heavy-duty trucks and residual diesel idling on neighboring properties (some diesel idling technologies reduce but do not eliminate idling).

The SEQR Process

New York's State Environmental Quality Review Act (SEQR) requires the consideration of environmental factors early in the planning stages of any actions that are directly undertaken, funded or approved by local, regional and state agencies. Type I actions are those that are more likely to require the preparation of an Environmental Impact Statement (EIS) than Unlisted actions. Type II actions are not subject to review under SEQR. All actions that are not Type I or Type II are considered Unlisted actions. All of these terms are defined and described in 6 NYCRR Part 617.

Examples of Type I actions that would pertain to future truck parking and loading include any project that involves the physical alteration of 10 acres or more of land. This would include most new distribution facilities and some new truck stops. Other examples of Type I actions would include any Unlisted action that exceeds 2.5 acres and either involves a nonagricultural use in an agricultural district, or is substantially contiguous to any public park, open space area or certain historic structures or sites. A local government also has the discretion to

treat any other Unlisted action as a Type I action.

A facility involving fewer than 4,000 square feet that is consistent with local land use controls is a Type II action and, therefore, not subject to SEQR review.

A SEQR review for truck parking and loading should not be segmented if the use is part of a larger proposal, such as for a distribution center or big box, but, rather, should be considered as part of the overall proposal. Air quality and noise should factor strongly in any review for proposed truck parking and loading that is subject to SEQR.

While use of the full Environmental Assessment form is only required for Type I actions, municipalities may also require its use for Unlisted actions. In the case of future truck parking and loading, use of the full form would give communities the opportunity to describe how adverse impacts could be mitigated through the various options for diesel idle-reduction described above. A chosen mitigation approach could then be made a condition of approval via either an EIS or a Conditioned Negative Declaration.

Summary

Heavy-duty diesel truck idling wastes fuel, creates air pollution, generates noise and costs truckers added expense. Significantly reducing truck idling is an achievable goal that would provide meaningful benefits for communities and for the nation. Reducing idling will promote energy independence, generate cleaner air, provide more quiet and save truckers added fuel and engine maintenance costs.

While New York has an idle-restriction law, only recently has technology begun to provide alternatives to idling that create other options for supplying heat, air conditioning and electrical power. Mobile, on-board technologies include automatic shut-down devices, heaters, auxiliary power units or generators and battery- or alternative-powered systems. Stationary, off-board technologies include Electrified Parking Spaces that can provide power alone or both power and climate control.

Local government officials have an important role to play in encouraging the use of new diesel idle-reduction technologies that can bring valuable community benefits, including cleaner air, less noise and better compatibility with sensitive adjacent land uses. Through land-use planning and zoning, communities can both select the best locations for heavy-duty truck parking facilities and require that these facilities provide for or otherwise accommodate some combination of alternative technologies and other environmental mitigation measures to significantly reduce diesel idling impacts.

In the appendices to this guide, local officials will find a model local diesel idle-reduction ordinance that can be used or tailored to use, if desired. Also included is New York's Idling Prohibition for Heavy Duty Vehicles Law and the EPA's new Model State Idle Reduction Law. These two laws are very similar. While the New York and EPA laws call on truckers to reduce idling, a local ordinance such as is included here can actually help truckers abide by these new laws.

Appendix A

Model Local Diesel Idle Reduction Ordinance

This model ordinance is provided for municipalities as an example only. It is not intended to be adopted without consultation with the municipal attorney. Each community is unique and should feel free to amend the ordinance to meet its own particular needs and goals. Ordinance adoption should ideally be preceded by a comprehensive plan discussion of appropriate future locations for heavy-duty truck parking and loading sites, issues of concern and measures the community supports to reduce diesel idling and its impacts.

Purpose and Intent

The purpose of this ordinance is to establish predictable and balanced regulations for the review of proposed heavy-duty truck parking and loading sites in order to accommodate the needs of the trucking industry while reducing diesel idling and its adverse impacts on public health, safety and welfare. The [name of municipality] desires to regulate 1) the expansion of existing truck-idling locations and the location of proposed new heavy-duty truck parking and loading sites, 2) siting standards to minimize adverse environmental air, noise and lighting impacts on neighboring properties, nearby sensitive land uses and the community as a whole and 3) the operation of these sites to assure that diesel idle-reduction technologies are in use.

Applicability

Should any part of this ordinance be found to be inconsistent with other local ordinances, laws or authorizations, the provisions of this ordinance are expressly intended to and do hereby supersede any such inconsistent provisions. Where this ordinance imposes a greater restriction upon the use of land than are imposed by other local ordinances, laws or authorizations, the provisions of this ordinance shall prevail.

Definitions

1. Diesel idle-reduction technology – Either of two stationary truck-connection Electrified Parking Spaces (EPS) approaches – single systems or dual systems. The single system supplies electricity and climate control from an off-board HVAC (climate control) unit mounted above each parking space. The dual system supplies electricity from the parking space, while the HVAC unit is inside on-board the truck.
2. Heavy-duty truck – A truck or tractor as defined in the vehicle and traffic law that has a gross vehicle weight rating greater than 8,500 pounds and is powered by a diesel engine.
3. Heavy-duty truck parking and loading site – Any site that allows the parking and/or loading of a set number (to be established) of heavy-duty trucks in a 24-hour period, whether or not parking and loading spaces are marked and whether or not the use is principal or accessory to another principal use. Distribution centers, big boxes, shopping centers, warehouses, truck stops, travel centers and downtowns (as well as other places) are all likely locations for heavy duty truck parking and loading sites.

4. Sensitive land use – Any residence, school, day care center, medical facility, park, playground or other similar use within 500 feet of an existing or proposed heavy-duty truck parking and loading site.
5. Truck-idling location – An existing site of any size that allows the parking and/or loading of any number of heavy-duty trucks. As of the date of passage of this ordinance, those truck-idling locations that accommodate sufficient numbers of heavy-duty trucks to be classified as a heavy-duty truck parking and loading site and that do not employ diesel idle-reduction technology (as defined herein) will be considered non-conforming heavy-duty truck parking and loading sites.

Review Authority

The model language provides for the planning board to review applications subject to a special use permit. Alternatively, zoning boards of appeals may review applications and review mechanisms other than special use permits may be used, in which case the following language should be amended accordingly. Municipalities without zoning may use the model language to enact a separate site plan review local ordinance.

1. The Planning Board is hereby authorized to review and approve, approve with modifications or disapprove special use permits for heavy-duty truck parking and/or loading sites pursuant to this ordinance. The planning board shall have the authority to impose such reasonable conditions and restrictions as are directly related and incidental to the proposed heavy-duty truck parking and/or loading site.
2. Except after obtaining a special use permit in conformity with this ordinance, 1) no existing truck-idling location shall hereafter be expanded to meet the definition of a heavy-duty truck parking and/or loading site, 2) no existing non-conforming heavy-duty truck parking and/or loading site or related principal use shall be substantially altered, and 3) no new heavy-duty truck parking and/or loading site shall be constructed, developed or allowed to be used for parking or loading.
3. For purposes of this review, all heavy-duty truck parking and loading sites as defined herein shall be considered to be Type I SEQR actions, requiring a full Environmental Assessment.

Submission Requirements

If the municipality already has general submission requirements that apply to special use permits that it feels are adequate, this section need only make a reference to those requirements. Otherwise, the following language may be used.

1. Provide a narrative description of the proposed heavy-duty truck parking and loading site, including:
 - Applicant and landowner's name and contact information
 - The total number of trucks planned to be accommodated at the site on a daily basis, whether for parking or loading
 - Whether the use is a principal one or is secondary to another principal use, and if so, what that principal use is
 - A completed Environmental Assessment form

2. Provide a detailed, labeled and to-scale site plan that includes the following information:
 - Scale, north arrow, date and name of preparer
 - Project parcel boundaries and lot acreage
 - All existing land uses and improvements, including access and easements
 - Existing vegetative cover, including location, density and type
 - All bodies of water, wetlands, streams and designated floodplains
 - All adjacent 'sensitive' land uses within 500 feet of the project site boundaries
 - All proposed plantings
 - All existing and proposed drainage, erosion control and stormwater management facilities
 - All proposed parking and loading facilities and related structures, including any truck-connection diesel idle-reduction systems and type

Review Criteria

The following approval standards include a full range of review criteria. While municipalities in non-attainment air quality regions would benefit most from their use in full, other communities may want the discretion to use varying combination of review standards, depending on the size of the proposed use, the proximity and extent of adjacent sensitive land uses and the findings of the Environmental Assessment.

1. *Compatibility* - No expanded or new heavy-duty truck parking and loading site shall be located within 500 feet of either a sensitive land use or a zone that allows a sensitive land use, except where approved diesel idle-reduction technology is used. If the proposed heavy-duty truck parking and loading site is accessory to another principal use, the principal use itself is not subject to the 500-foot separation.
2. *Diesel idle-reduction technology* – The applicant shall commit to providing either an off-board or on-board diesel idle-reduction system on site. If an on-board system is proposed, the applicant shall demonstrate that in-truck technology will be shorepower-capable, either because participant truck fleets are shorepower-capable or because the applicant will have shorepower-capable units available on-hand to lend or rent to visiting truckers.
3. *Setbacks* - Expanded or new heavy-duty truck parking and loading sites shall be set back a minimum of 25 feet from all adjacent property lines.
4. *Vegetation and screening* - Vegetative screening shall be provided and maintained along all property lines (including the street right-of-way) that lie adjacent to either i.) existing sensitive land uses or ii.) lands zoned to allow sensitive land uses. Vegetative screening shall be a continuous planting at a minimum depth of 15 feet from the property line of a 50/50 mix of indigenous trees and bushes that on maturation will effectively visually screen the site from neighboring properties.
5. *Lighting* – The mounting height of any light fixtures shall be no more than 20 feet, shall direct light downward only and shall have an average horizontal illumination level on the ground and any vertical surfaces of no more than .5 foot-candle where adjacent to sensitive land uses, 1 foot candle in community centers and 1.5 foot candles in industrial or commercial locations.

6. *Stormwater management* – The applicant shall demonstrate compliance with all applicable local stormwater and drainage requirements.
7. *Parking and loading* – The applicant shall demonstrate compliance with any applicable local parking and loading requirements to the extent that they do not conflict with the provisions of this ordinance.

Appendix B

New York's Idling Prohibition for Heavy Duty Vehicles

(Statutory authority: Environmental Conservation Law, §§ 1-0101, 3-0301, 19-0103, 19-0105, 19-0107, 19-0301, 19-0303, 19-0305, 19-0320, 71-2103, 71-2105; Vehicle and Traffic Law, §§ 301[c], 375.28)

[Original rule effective 9/23/90]

[Revisions to Subparts 217-1, -3, -4, and -5; existing Subpart 217-2 repealed effective 10/30/02]

For administrative information about this posting, contact: [Division of Air Resources](#). The Bureau of Mobile Sources and Technology Development at (518) 402-8292 is the contact for technical questions pertaining to this rule.

§ 217-3.1 Applicability

This Part shall apply to all on-road heavy duty vehicles propelled by diesel fueled and non-diesel fueled engines excluding marine vessels. *Heavy duty vehicle* means a vehicle that has a GVWR exceeding 8,500 pounds and is designed primarily for transporting persons or properties.

§ 217-3.2 Prohibitions

No person who owns, operates or leases a heavy duty vehicle including a bus or truck, the motive power for which is provided by a diesel or non-diesel fueled engine or who owns, leases or occupies land and has the actual or apparent dominion or control over the operation of a heavy duty vehicle including a bus or truck present on such land, the motive power for which said heavy duty vehicle is provided by a diesel or non-diesel fueled engine, shall allow or permit the engine of such heavy duty vehicle to idle for more than five consecutive minutes when the heavy duty vehicle is not in motion, except as otherwise permitted by section [217-3.3](#) of this Subpart.

§ 217-3.3 Exceptions

The prohibitions of section [217-3.2](#) of this Subpart shall not apply when:

- (a) A diesel or non-diesel fueled heavy duty vehicle including a bus or truck is forced to remain motionless because of the traffic conditions over which the operator thereof has no control.
- (b) Regulations adopted by Federal, State or local agencies having jurisdiction require the maintenance of a specific temperature for passenger comfort. The idling time specified in section [217-3.2](#) of this Subpart may be increased, but only to the extent necessary to comply with such regulations.
- (c) A diesel or non-diesel fueled engine is being used to provide power for an auxiliary purpose, such as loading, discharging, mixing or processing cargo; controlling cargo temperature; construction; lumbering; oil or gas well servicing; farming; or when operation of the engine is required for the purpose of maintenance.

- (d) Fire, police and public utility trucks or other vehicles are performing emergency services.
- (e) Trucks owned or operated by persons engaged in mining and quarrying are used within the confines of such person's property.
- (f) A diesel fueled truck is to remain motionless for a period exceeding two hours, and during which period the ambient temperature is continuously below 25°F.
- (g) A heavy duty diesel vehicle, as defined in subdivision 217-5.1(o) of this Part, that is queued for or is undergoing a state authorized periodic or roadside diesel emissions inspection pursuant to Subpart [217-5](#) of this Part.
- (h) A hybrid electric vehicle, as defined in subdivision 217-5.1(r) of this Part, idling for the purpose of providing energy for battery or other form of energy storage recharging.
- (i) Heavy duty vehicles used for agricultural purposes on a farm.
- (j) Electric powered vehicles.

Appendix C

EPA's Model State Idle Reduction Law

(a) **PURPOSE:** The purpose of this law is to protect public health and the environment by reducing emissions while conserving fuel and maintaining adequate rest and safety of all drivers of diesel vehicles.

(b) **APPLICABILITY:** This law applies to commercial diesel vehicles which are designed to operate on highways (as defined under 40 CFR 390.5), and to locations where commercial diesel vehicles load or unload (hereinafter referred to as "load/unload locations").

(c) **GENERAL REQUIREMENT FOR LOAD/UNLOAD LOCATIONS:** No load/unload location owner shall cause vehicles covered by this rule to idle for a period greater than 30 minutes while waiting to load or unload at a location under their control.

(d) **GENERAL REQUIREMENT FOR VEHICLES:** No owner or operator of a vehicle shall cause or permit vehicles covered by this rule to idle for more than 5 minutes in any 60 minute period except as noted in sections (e) and (f), and except as provided in section (c) in the case of a load/unload location.

(e) **EXEMPTIONS:** Section (d) does not apply for the period or periods where:

- (1) a vehicle idles while forced to remain motionless because of on-highway traffic, an official traffic control device or signal, or at the direction of a law enforcement officer.
- (2) a vehicle idles when operating defrosters, heaters, air conditioners, or installing equipment solely to prevent a safety or health emergency, and not as part of a rest period.
- (3) a police, fire, ambulance, public safety, military, other emergency or law enforcement vehicle, or any vehicle being used in an emergency capacity, idles while in an emergency or training mode and not for the convenience of the vehicle operator.
- (4) the primary propulsion engine idles for maintenance, servicing, repairing, or diagnostic purposes if idling is required for such activity.
- (5) a vehicle idles as part of a state or federal inspection to verify that all equipment is in good working order, provided idling is required as part of the inspection.
- (6) idling of the primary propulsion engine is necessary to power work-related mechanical or electrical operations other than propulsion (e.g., mixing or processing cargo or straight truck refrigeration). This exemption does not apply when idling for cabin comfort or to operate non-essential on-board equipment.
- (7) an armored vehicle idles when a person remains inside the vehicle to guard the contents, or while the vehicle is being loaded or unloaded.

(f) **CONDITIONAL EXEMPTIONS:** Subsection (d) does not apply for the period or periods where:

- (1) a passenger bus idles a maximum of 15 minutes in any 60 minute period to maintain passenger comfort while non-driver passengers are onboard. The exemption expires (x) years after implementing a state financial assistance program for idle-reduction technologies or strategies.
- (2) an occupied vehicle with a sleeper berth compartment idles for purposes of air conditioning or heating during rest or sleep period, until (x) years after implementing a

state financial assistance program for idle reduction technologies or strategies, whereupon this exemption expires.

- (3) an occupied vehicle idles for purposes of air conditioning or heating while waiting to load or unload, until (x) years after implementing a state financial assistance program for idle-reduction technologies or strategies, whereupon this exemption expires.
- (4) a vehicle idles due to mechanical difficulties over which the driver has no control; PROVIDED that the vehicle owner submits the repair paperwork or product receipt (by mail; within (x) days) to the appropriate authority verifying that the mechanical problem has been fixed.

(g) AUXILIARY POWER UNITS: Operating an auxiliary power unit, generator set, or other mobile idle reduction technology as a means to heat, air condition, or provide electrical power as an alternative to idling the main engine is not an idling engine.

(1) operating an auxiliary power unit or generator set on all model year 2006 or older commercial diesel vehicles is permitted.

(2) *[reserved for sub- section on operating an auxiliary power unit or generator set on 2007 and subsequent model year commercial vehicles.]*

(h) PENALTIES: The owner and/or operator of a vehicle, and/or the owner of a load/unload location, that is in violation of this law is responsible for penalties as follows.

(1) First offense: warning ticket issued to vehicle driver and owner, and where applicable, the load/unload facility owner.

(2) Second and subsequent offenses: \$150 citation is issued to the vehicle driver; and/or, \$500 citation issued to the registered vehicle owner or load/unload location owner.

Source: EPA420-S-06-001 April 2006

<http://www.epa.gov/smartway/documents/420s06001.pdf>

Appendix D

EPA's Truck Stop Partnership Agreement and State Addendum



Truck Stop/Plaza Partnership Agreement

EPA's SmartWaySM Transport Partnership is a voluntary program that recognizes partners for setting and achieving emissions reduction and energy saving goals. This Partnership Agreement uses the term "truck stop" to apply to any location where trucks park, including private or public truck stops, plazas, or rest areas; distribution centers; ports; and other truck parking areas. As used in this document, the terms "we" and "our" refer to the Environmental Protection Agency, and "you" and "your" refer to truck stop/plaza owners or operators.

With this agreement, _____, joins EPA's SmartWay Transport Partnership and commits to deploy an idle-free zone for the following number or percentage of parking spaces as follows:

Year One: 50 spaces or 25%, whichever is smaller

Year Three: 100 spaces or 50%, whichever is smaller (Logo Use Applies)

Year Five¹: 150 spaces or 75%, whichever is smaller (Logo Use Applies)

IDLE-FREE ZONE: An idle-free zone is an area clearly designated by signs and paint, per EPA's guidelines, by a number or percentage of truck parking spaces wherein trucks are not allowed to idle their main propulsion engines for more than 5 minutes. Truck drivers can comply with this requirement by turning off their main propulsion engine or using an idle-reduction technology, such as an electrified parking space, mobile idle reduction technology (e.g., auxiliary power unit, direct-fired heater), or any other technology that eliminates the need for the truck driver to idle the main propulsion engine.

ACTION PLAN & UPDATES: Within three months from signing this partnership agreement, you agree to provide EPA with an action plan identifying the location(s) that will participate in this agreement. In addition, you agree to provide EPA with an update, in years 1, 3, and 5 (if you decide to accelerate your commitment ahead of schedule, you just need to inform us when this occurs), stating that you have met the goal. Beyond year 5 (or the date upon achieving the 150 space/75% goal), the partnership agreement will remain in effect every year thereafter until you, or EPA, decide to terminate this agreement (See "General Terms").

¹ The 1, 3, and 5 year goals are recommended minimum time frames. You can accelerate your commitment by achieving the goals ahead of these dates.

LOGO USE RIGHTS: EPA will allow use of the SmartWay Truck Stop logo, per EPA's guidelines, upon our verification of meeting the 100 space/50% goal. The SmartWay logo may only be used after obtaining written EPA approval. We reserve the right to periodically verify meeting or maintaining the goal.

SMARTWAY KIOSK: EPA may provide you with an information kiosk, subject to our resources and appropriations, to educate truck drivers about fuel saving and emissions reductions technologies, funding opportunities, and general information about the SmartWay Transport Partnership. You agree to place this kiosk inside your main building or facility.

In return, EPA commits to:

- Promote your participation by listing your company name on the EPA SmartWay Transport Partnership web site and in related educational, promotional and media materials.
- Promote your participation specifically to SmartWay Truck Carrier Partners, and offer truck company partners credit towards their own goal for using SmartWay Truck Stops.
- Assist you in achieving goals by working to address challenges and obstacles, create incentives, and provide technical assistance and support (subject to resources and appropriations).
- Provide you with logo use guidelines and sign/paint guidelines upon joining the Partnership.
- Provide you with kiosk and appropriate materials for display inside truck stop (subject to resources and appropriations).

General terms:

- Any party can terminate this agreement at any time, without prior notification, penalties or any further obligation. You and EPA agree not to comment publicly regarding termination.
- We reserve the right to suspend or revoke your partnership if you fail to accomplish or maintain the specific actions to which you commit to in this agreement.
- You will not claim or imply that your participation in the SmartWay Transport Partnership constitutes EPA approval or endorsement of anything other than your commitment to this agreement.
- You bear your own costs for participation in this program, and you agree not to submit a claim for compensation to EPA on the basis of this agreement.
- You understand that truck drivers using your location must comply with any applicable state or local idle restriction law, and that truck drivers are liable for any violations of such idle-restriction laws.

Authorized Partner Official:

The undersigned, on behalf of _____
understands and agrees to the terms of the EPA SmartWay Truck Stop/Plaza Partnership Agreement.

Signature: _____	Title: _____
Print Name: _____	Date: _____

Designated Partner Representative:

Name: _____		
Title: _____		
Address: _____ _____		
City: _____	State: _____	Zip: _____
E-Mail: _____	Phone: _____	Fax: _____

ADDRESS FOR CONTACTING OR SENDING INFORMATION TO EPA:

SmartWay Transport Partnership
U.S. Environmental Protection Agency
2000 Traverwood
Ann Arbor, MI 48105
Tel.: (734) 214-4767
Fax: (734) 214-4052
E-mail: smartway_transport@epa.gov
May 18, 2006

SmartWay Logo



ADDENDUM
Applicable State Government
Supplemental Agreement
for the SmartWaySM Transport Partnership
SmartWay Truck Stop/Plaza Partnership Agreement

For those Truck Stop/Plaza Partners that join the SmartWay Transport Partnership, the State of _____ agrees to:

- Exercise enforcement discretion, with respect to the State’s anti-idling law, by placing Truck Stop/Plaza location(s) within the State on low priority for enforcement. The low enforcement priority status commences from the date that the State and EPA verify that the Partner has achieved its Year One Goal, and remains in effect for two (2) years, unless the Partner, State, or EPA elect to terminate this Supplemental Agreement.
- The State can extend the low enforcement priority status for an additional two (2) years after the State and EPA verify that the Partner has achieved its Year Three Goal. The low enforcement priority status can be extended another two (2) years after the State and EPA verify that the Partner has achieved its Year Five Goal.
- The State can continue applying its low enforcement priority status to the location(s), on a two year renewable basis, as long as the location continues to comply with the Year Five Goal.
- As noted under the Partnership Agreement “General Terms,” the Partner understands that truck owners/drivers using their location must comply with any applicable state or local idling laws, and that truck owners/drivers are liable for any violations of such idling laws.
- The State and EPA reserve the right to periodically observe or inspect the Partner’s progress toward meeting the goals identified in the partnership agreement.
- Observations made by the Partner of excessive idling at truck parking locations shall be communicated in writing to the State within two weeks from the date of observation at the following address: [fill in your address]

- The Partner, EPA or DEC may terminate this agreement at any time upon written notice by certified mail to the designated representatives of the other two parties at the addresses set forth in the heading in this agreement entitled "Consent By Parties". Termination of this agreement by any party shall relieve all parties to this agreement from any obligations described in this agreement. The Partner, EPA and DEC agree not to comment publicly regarding the withdrawal of Partners.
- Neither the fact of a Partnership Agreement nor anything contained in the Partnership Agreement or in this Addendum (Supplemental Agreement) shall be invoked by a Partner as a defense, or constitute a legal or equitable defense, in any idling enforcement proceeding.
- Except for the main Partnership Agreement, this Addendum (Supplemental Agreement) shall cease to have effect at the end of the two (2) year period described above, unless renewed by the parties per the terms described above.

CONSENT BY PARTIES

Authorized State Official:

The undersigned, on behalf of _____, understands and agrees to the terms of the EPA SmartWay Transport Partnership.

Signature: _____ Title: _____

Print Name: _____ Date: _____

Designated State Representative:

Name: _____

Title: _____

Address: _____

City: _____ State: _____ Zip: _____

E-mail: _____ Phone: _____ Fax: _____

Authorized Partner Official:

The undersigned, on behalf of _____, understands and agrees to the terms of the EPA SmartWay Transport Partnership.

Signature: _____

Title: _____

Print Name: _____

Date: _____

Designated Partner Representative:

Name: _____

Title: _____

Address: _____

City: _____ State: _____ Zip: _____

E-mail: _____ Phone: _____ Fax: _____

Authorized EPA Official:

The undersigned, on behalf of _____, understands and agrees to the terms of the EPA SmartWay Transport Partnership.

Signature: _____

Title: _____

Print Name: _____

Date: _____

Designated EPA Representative:

Name: _____

Title: _____

Address: _____

City: _____ State: _____ Zip: _____

E-mail: _____ Phone: _____ Fax: _____

Appendix E

Transport Refrigeration Units

Diesel-powered transport refrigeration units (TRUs) have been the standard approach used for keeping fresh and frozen foods and other goods cool in transport for many years. Keeping a refrigerated load at its correct temperature is critical. These loads are very sensitive to temperature variation and if they spoil, losses can equate to millions of dollars.



Similar to idling trucks, there are problems associated with diesel-powered TRUs, primarily harmful toxic exhaust emissions, greenhouse gas and particulate matter. Also, operation of the diesel TRU engine creates significant noise pollution. This can be a considerable concern in populated areas, as refrigerated deliveries often occur during the late evening and early morning hours. The on/off cycling of these diesel engines generates the noise most urban areas are attempting to control and as a result, many local communities

as well as State and Federal Governments seek to limit their use. Also, refrigerated warehouse districts are typically located in low-income areas, and the high emissions and noise emitted by diesel-powered TRUs have led to environmental justice concerns. These factors illustrate the need to investigate alternative approaches to conventional TRU designs and operating strategies.

One approach to minimizing these impacts is to use electricity to power the on-board refrigeration equipment. These units can be driven by electricity in two specific configurations, as a hybrid diesel-electric standby TRU (currently available) or as an all-electric TRU (eTRU). The hybrid diesel-electric standby refers to a primarily diesel-driven mechanical TRU with electric plug-in capability while parked. This is different than the configuration of an eTRU; however, they are both similar in operation. The eTRU uses electric powered (versus mechanically driven) components that are powered by either a plug-in connection or, when over-the-road, by a separate diesel generator set providing the required electricity to the eTRU.

Regulations and technology-based idling alternatives have helped address the truck idling issue, but diesel-powered TRUs continue normal operation without any restrictions. Although there currently are no regulations in place to limit TRU operation, the California Air Resources Board has recently proposed tough, new environmental performance standards for any diesel-powered TRUs that come into California, regardless of where the unit is baseplated. The TRU standards, which are even stricter than upcoming federal diesel engine emission mandates, are proposed to be phased-in over time and vary depending upon the age of the engine.

In addition to the current lack of regulations, the electrical infrastructure needed to power stationary TRUs is much more complicated than that used for idling trucks. Consequently, the issue is beyond the scope of this guide.

Appendix F

Glossary

Auxiliary Power Units (APUs) – Small engines that provide integrated heat, air conditioning and power while consuming only a fraction of the fuel that idling consumes.

DOE – U.S. Department of Energy

DOT – U.S. Department of Transportation

Electrified Parking Spaces (EPS) – A technology that provides grid-supplied electricity, and sometimes climate control, to trucks at truck-idling locations. These may be either “Off Board” (Single System) or “On Board” (Dual System), depending on the location of the HVAC unit.

EPA – U.S. Environmental Protection Agency

Heavy-duty truck – A truck or tractor as defined in the vehicle and traffic law that has a gross vehicle weight rating greater than 8,500 pounds and is powered by a diesel engine.

HVAC – A heating, ventilation and air conditioning unit.

NYSERDA – New York State Energy and Research Development Authority

Off-Board EPS – A technology that supply power and climate control from an off-board HVAC unit mounted above each parking space. Also known as Full Service or Single systems, EPS provides all services from the parking lot infrastructure such that truck modifications are not required.

On-Board EPS – A technology that provides power similar to the electrical hookups available at recreational vehicle parks and marinas, but requires that HVAC units for climate control be installed on board individual trucks. Because installed equipment requirements are shared between the parking space and the parked truck, the technology is also known as Shorepower or Dual systems.

SEQRA – New York State Environmental Quality Review Act



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