

# Frequently Asked Questions

These Frequently Asked Questions (FAQs) address general questions about the *2009 MassDEP Diesel Waste Collection Vehicle Retrofit Program* and questions specific to retrofit technologies.

## General Program Questions

### 1. What is the *2009 MassDEP Diesel Waste Collection Vehicle Retrofit Program*?

The *2009 MassDEP Diesel Waste Collection Vehicle Retrofit Program* is a state program run by the Massachusetts Department of Environmental Protection (MassDEP) to reduce air pollution from municipally-owned and privately owned diesel-fueled waste collection vehicles (WCVs) that collect residential waste. Under this 2009 program, MassDEP will install pollution control devices on diesel WCVs at no expense to municipalities or private waste companies. Recycling, garbage, and compost vehicles are all eligible for retrofit equipment, providing the engines meet certain criteria (see Question #4 for criteria).

MassDEP also has a 2008 waste collection vehicle retrofit program that provides grants only to municipalities. MassDEP awarded grants to nine communities to retrofit 41 waste vehicles.

### 2. What does it mean to retrofit a WCV?

Retrofitting a WCV consists of installing one of the following exhaust filtering technologies to reduce tailpipe pollution: a diesel oxidation catalyst (DOC), a flow-through-filter (FTF), or a diesel particulate filter (DPF). These technologies can reduce emissions of particulate matter (PM), carbon monoxide (CO) and hydrocarbons (HC) by the following amounts:

<b>Technology</b>	<b>PM</b>	<b>CO</b>	<b>HC</b>
DOC	20-30%	60%	60%
FTF	50%	60%	60%
DPF	90%	90%	90%

### 3. What are the benefits of retrofitting WCVs?

Diesel WCVs pollute the air with harmful gases and particles. Research indicates that diesel PM is likely to cause cancer and can be associated with Massachusetts' elevated incidence of pediatric asthma—one of the highest in the country. MassDEP is particularly concerned with WCVs because these vehicles spend 70 percent of their time idling or traveling at a slow speed in residential neighborhoods, exposing residents and workers on the vehicles to harmful pollutants. Installing retrofits on WCVs will decrease the amount of these emissions, helping to reduce the risk of asthma attacks, respiratory problems, and other illnesses.

#### **4. Which WCVs are eligible for retrofits?**

A WCV must collect residential waste on a regular basis to be eligible to receive retrofits from MassDEP. It also must:

- Be registered in Massachusetts;
- Be powered by a diesel engine;
- Remain in service in Massachusetts for at least two years after receiving the retrofit;
- Have a model year 1985-2006 engine; and,
- *Not* have manufacturer-installed pollution controls, which are now required on all new WCVs (engine year 2007 or newer).

WCVs with model year 2007 or newer engines already have the most advanced emission controls and do not need diesel retrofits to further reduce emissions. To determine if your vehicle has original emission controls contact the vendors at the telephone numbers and emails listed in Question 6.

#### **5. How does this program work?**

Once you apply for a retrofit through MassDEP, MassDEP will review the applications to determine the grant recipients. Grant recipients will be required to sign a grant agreement, which will be counter-signed by MassDEP. Soon afterward, MassDEP will send data on your WCVs to the retrofit vendors under state contract. These vendors will evaluate your engines based on the data and will contact you to arrange a site visit if they need to obtain more data on the vehicle. At the same time, you will need to decide what kind of retrofit device you want to install in your engine. Depending on the retrofit device you select, the vendors may need to install a temporary data logging device on your WCV's exhaust system to determine its temperature profile.

The vendors will then order the retrofit devices and arrange a time with you to install the retrofit equipment. Vendors will complete the project by submitting payment requests directly to MassDEP for reimbursement.

#### **6. Who are the retrofit device vendors?**

Shuster Corporation and Southworth-Milton are the pre-qualified vendors that MassDEP selected through an open bidding process. These vendors have an extensive background in retrofitting a variety of vehicles. Their contact information is as follows:

Southworth-Milton, Inc.  
Wayne P. Clark  
Emissions Business Manager  
100 Quarry Drive  
Milford, MA 01757  
Ph: 518-877-6813  
[Wayne.Clark@miltoncat.com](mailto:Wayne.Clark@miltoncat.com)

Phil Dutra  
Shuster Corporation  
4 Wright St.  
New Bedford, MA 02740  
508-509-5880  
[pdutra@shustercorp.com](mailto:pdutra@shustercorp.com)

**7. Who decides which tailpipe retrofit technology to install on a WCV?**

You and the vendor make this decision together. DOCs, FTFs and DPFs vary in terms of their expense, emission reduction effectiveness, and maintenance needs. Their suitability depends on the engine model year, the engine exhaust temperature, and other factors of the WCV. Our vendors have extensive knowledge of the retrofit technologies and will recommend the most suitable option for your vehicles.

**8. Do I have to pay anything for the retrofits?**

No. MassDEP will pay for all the retrofit equipment and installation. The only expense you might incur would be to clean the filter periodically if you choose to have a DPF installed. Estimates of the cost to clean a DPF range from \$200 to \$400 or more.

**9. Who can I contact to discuss this program?**

Please contact Susan Lyon at 617-556-1101 or [susan.lyon@state.ma.us](mailto:susan.lyon@state.ma.us) if you have any questions about this program.

## **Retrofit Technologies**

**10. Will the retrofits harm my vehicles?**

No. MassDEP requires that all retrofit devices installed under this program must be verified by the U.S. Environmental Protection Agency (EPA) or the California Air Resources Board (CARB). During this verification process, manufacturers must demonstrate that their retrofit devices not only perform well and reduce a specified amount of emissions but also do not compromise the safety and performance of the vehicle. MassDEP also requires that all retrofit devices installed under this program meet appropriate automotive and equipment manufacturer warranty standards and related certifications. Finally, properly installed and maintained diesel retrofits ensure that your WCVs will continue to operate without harm.

For those municipalities and private haulers requesting DPFs, MassDEP requires that vendors analyze an engine's exhaust temperature to determine its suitability for DPFs. It is particularly important that DPFs are only installed on vehicles that meet minimum exhaust temperature requirements (240 degrees for 40 percent me). It is also imperative that vehicle owners clean the filters of the retrofit device routinely. Installation of DPFs on WCVs that do not meet minimum engine temperature and improperly maintained equipment can lead to excessive engine backpressure which can result in engine damage. Note that all DPFs come with warning lights to indicate when maintenance (cleaning) is required.

To date, more than 500,000 vehicles worldwide have received retrofits and continue to function without issue. For more information on the past performance and safety records of retrofit technologies, consult your retrofit vendor. For a detailed technical description of these technologies, visit the web sites of the Manufacturers of Emission Controls Association (MECA, <http://www.meca.org>) and the Diesel Technology Forum (<http://dieselforum.org>).

**11. Will retrofits affect my vehicle's fuel economy?**

There may be a very slight increase (up to 1 percent) in fuel usage associated with the use of DPFs and FTFs.

**12. How long do retrofits last?**

The retrofits should last from six to eight years as long as the WCVs and retrofits are maintained according to manufacturers' specifications.

**13. Will the retrofits affect my vehicle warranty?**

No. MassDEP requires that products used in this program do not void any part of the engine warranty. In addition, the manufacturers producing the CARB-verified retrofits offered under this program must repair or replace any engine components that can be shown to have been damaged as a result of the retrofit device. Finally, according to MECA, federal law precludes any engine manufacturer from voiding a warranty due to the installation of retrofit emission controls, unless it can prove that the device was responsible for a specific engine failure.

**14. When and where will retrofit installations occur?**

Generally, the retrofit installations will occur at the WCV owners' garages. WCV owners and vendors have up to 180 days from the time the vendor is selected to set up a mutually convenient time and location to install the retrofits. This six-month window allows vendors time to obtain parts and WCV owners to make the vehicle(s) available.

**15. How long does it take for a vendor to install a retrofit device?**

The installation time depends upon the specific tailpipe retrofit technology installed and WCV exhaust and engine configurations. DOCs generally take one to two hours to install and DPFs take from six to eight hours to install depending on the engine and exhaust pipe configurations. WCV owners should consult with their vendors for more precise estimates of the time to install the equipment.

**16. Can I remove the retrofit device or transfer it to another vehicle?**

No. The program's Grant Agreement states that WCV owners must not remove retrofits or move them to other vehicles without first contacting MassDEP. To ensure that retrofits remain on vehicles, MassDEP may visit the municipalities and private haulers to verify that the retrofits have remained on the vehicles.

**17. What specific maintenance is needed for the retrofit devices?**

Generally, DOCs and FTFs, once installed, do not require special maintenance, though periodic visual inspection of the devices is encouraged to ensure that they have not been damaged. The filters on DPFs, on the other hand, require regular cleaning to remove the small particles or “ash” that accumulates from the diesel exhaust. Ash removal frequency varies across vehicles, but an indicator light will inform the bus owner when ash removal should occur. For WCVs, ash removal is typically required at least once every 18 months to two years. DPF vendors can provide filter cleaning services at a cost of approximately \$200 to \$400 per cleaning per vehicle. Filters may also be cleaned manually, following a simple procedure specified by the DPF manufacturer.

**18. What happens if a retrofit device fails to function?**

MassDEP’s contract with the retrofit vendors requires that vendors replace faulty devices for up to five years or 100,000 miles. This warranty and requirement of vendor responsibility applies even if a retrofit device is warrantied by the manufacturer for a period shorter than five years or use less than 100,000 miles. During installation, vendors will inform you how to identify whether a retrofit device is failing (e.g., leaks in the retrofit devices). You are required to notify your vendor and MassDEP if a retrofit device fails to function or is believed to somehow compromise the vehicle’s performance.