

Frequently Asked Questions: Waste Collection Vehicle Retrofits

These Frequently Asked Questions (FAQs) address general and specific questions about the *2010 Diesel Waste Collection Vehicle Retrofit Program* offered by the Massachusetts Department of Environmental Protection (*MassDEP*).

General Program Questions

1. What is *MassDEP's Diesel Waste Collection Vehicle Retrofit Program*?

MassDEP's Diesel Waste Collection Vehicle Retrofit Program is designed to reduce air pollution from municipally-owned and privately owned diesel-fueled waste collection vehicles (WCVs) that collect residential waste at the curbside. With funding available in 2010, MassDEP will install pollution control devices on diesel WCVs at no expense to municipalities or private waste companies. Recycling and waste collection vehicles are eligible for retrofit equipment, providing the engines meet certain criteria (see Question #4 for criteria).

The funding available in 2010 program is the third round of funding. In 2008 MassDEP awarded grants to ten communities to retrofit 43 waste vehicles. In 2009, MassDEP awarded grants to nine private and municipal waste collection vehicle owners to retrofit 132 recycling and refuse trucks.

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:

Technology	PM	CO	HC
DOC	20-30%	60%	60%
FTF	50%	60%	60%
DPF	90%	90%	90%

MassDEP encourages municipalities that contract with private haulers to collect their recycling or waste to contact the haulers and encourage them to apply for these grants.

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's elevated incidence of pediatric asthma - one of the highest in the country. MassDEP is particularly concerned with WCVs because these vehicles can spend up to 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 and help 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 at the curbside 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 model year 2007 or newer and some earlier engine model years).

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 listed in Question 6.

5. How does this program work?

After the close of the grant application deadline, 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(s). 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. Municipalities and private haulers will not be involved in the payment process.

6. Who are the retrofit device vendors?

Shuster Corporation and Southworth-Milton, Inc. 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.
100 Quarry Drive
Milford, MA 01757
Ph: 508-634-3400

Shuster Corporation
4 Wright St.
New Bedford, MA 02740
Ph: 508-999-3261

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 characteristics 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 the purchase and installation of the retrofit equipment. The only expense you would incur would be to clean the filter periodically if you choose to have a DPF installed. The cost to clean a DPF ranges from \$200 to \$400 per filter.

9. Who can I contact to discuss this program?

Please contact Susan Lyon at 617-556-1101 or 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, retrofit manufacturers must demonstrate that their retrofit devices not only perform well and reduce a specified amount of emissions but also do not compromise vehicle safety and performance. MassDEP also requires that all

retrofit devices installed under this program meet appropriate automotive and equipment manufacturer warranty standards and related certifications.

Furthermore, to ensure that each vehicle is suitable for a particular retrofit device, MassDEP provides vendors with engine year, make and model information which vendors use to evaluate a vehicle. For vehicle owners requesting FTFs or DPFs, MassDEP also requires vendors to analyze each engine's exhaust temperature to determine its suitability for the technology. FTFs and DPFs may only be installed on vehicles that meet minimum exhaust temperature requirements (240 degrees for 40 percent of the time). Installation of FTFs or DPFs on WCVs that do not meet minimum engine exhaust temperature and improperly maintained equipment can lead to excessive engine backpressure, which can result in engine damage. There are no minimum temperature requirements for DOCs.

Finally, properly maintained diesel retrofits ensure that your WCVs will continue to operate without harm. The filters of vehicles receiving DPFs must be cleaned periodically. DPFs come with warning lights to indicate when the cleaning is required. FTFs and DOCs do not require filter cleaning.

To date, over 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; www.meca.org) and the Diesel Technology Forum (www.dieselforum.org).

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

There may be a very slight increase (up to one 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 the manufacturer's 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 owner's garage. WCV owners and vendors have until September 30, 2010 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 may 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 require regular cleaning to remove the small particles or "ash" that accumulate 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 warranted by the manufacturer for a period shorter than five years or use less than 100,000 miles. During installation, vendors will train you 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 compromise the vehicle's performance.