

# Construction

## NEDC Clean Construction Workgroup

The NEDC Construction Workgroup brings together government, industry and other stakeholders involved in construction related activities to share information and implement innovative, cost-effective strategies to improve air quality and reduce diesel emissions from construction projects in the northeast states and Caribbean territories. Conference calls are held on the 4th Thursday of every month. *For more information about the workgroup or how to join contact [Gary Rennie](mailto:rennie.gary@epa.gov) at [rennie.gary@epa.gov](mailto:rennie.gary@epa.gov).*

- The construction industry uses more diesel engines than any other sector. Of the 2 million diesel engines currently used in construction equipment across the nation, 31 percent were manufactured before the introduction of emissions regulations.
- These backhoes, cranes, and bulldozers account for 32 percent of all nitrogen oxide and 37 percent of fine particle emissions from mobile sources, and their reputation for remaining in service for decades creates a pollution problem for years to come.



## Reducing Diesel Emissions from Construction

In the Northeast, public agencies and industry have partnered on pioneering emission control technologies and strategies for these workhorses of the economy. Among the successes are:

- [LEED Clean Construction Pilot Credit Available](#). To minimize the health and climate impacts to local communities from diesel engine emissions associated with construction activities, the US Green Building Council announces that a Clean Construction Pilot Credit can be used toward Leadership in Energy and Environmental Design (LEED) certification.
- The 7 World Trade Center reconstruction in New York City included the first retrofit of a large tower crane, demonstrating the effectiveness of combining after-treatment devices and ultra-low sulfur diesel fuel in construction equipment. Several public agencies — Connecticut Department of Transportation, Massachusetts Highway Department, New York Transit Authority, and Massachusetts Bay Transportation Authority — now require retrofits on construction projects.
- Boston's [Central Artery \(Big Dig\)](#) was the country's first major construction retrofit project; 200 engines were retrofitted with oxidation catalysts or PM filters, resulting in a reduction of 8 tons of PM and hydrocarbons annually.
- Through the [I-95 Q-Bridge reconstruction project](#) in Connecticut, the state's Department of Transportation has retrofitted 105 vehicles to date.

The Collaborative is working to expand retrofit requirements for construction contracts to other municipalities, counties, government agencies, and major institutions. NEDC partners are also working with state and local agencies to lead by example by retrofitting their construction vehicles and equipment and participating in demonstrations of new technology.

» [View EPA and CARB Verified Nonroad Retrofit Technologies](#)

## Federal Regulations

EPA's [Nonroad Diesel Rule](#) sets more stringent emissions standards for diesel construction vehicles and equipment beginning with those manufactured in 2008. The rules require clean diesel fuel with a sulfur content capped at 15 parts per million and the use of advanced emission control technology. New engines will be more than 90 percent cleaner than construction equipment in use today. However, these standards will affect only newly manufactured construction vehicles and equipment and will not reduce emissions from current vehicles and equipment.

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## State and Local Regulations

- [New York City's Local Law 77](#), signed into law December 22, 2003, requires "that any diesel-powered nonroad vehicle, fifty horsepower and greater, that is owned by, operated by or on behalf of, or leased by a City agency be powered by ultra low sulfur diesel fuel and utilize the best available technology for reducing the emission of pollutants. Additionally, this legislation requires that any solicitation for a public works contract and any contract entered into as a result of such solicitation include specifications that all contractors in the performance of such contract use ultra low sulfur diesel fuel and the best available technology for reducing the emission of pollutants for diesel-powered nonroad vehicles."

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## State Contract Requirements

To encourage cleaner air around local construction sites, many agencies, organizations, businesses and institutions have initiated construction retrofit programs and are using contract specifications to call for emission control technologies. For specific language used by state agencies, see below:

- [The Connecticut Department of Transportation](#)
- [The Massachusetts Highway Department](#)
- [New York State Department of Transportation](#)

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## Model Contract Language & Best Practices

### [NEDC Model Construction Contract Specification](#)

The NEDC Steering Committee in coordination with representatives from state air agencies, US EPA, emission control manufacturers, environmental organizations, and the construction industry have developed NEDC's newly revised model contract specification. The model contract specification offers guidance to private institutions and public entities interested in addressing pollution from construction sources through future construction contracts. The goal of this document is to encourage institutions and agencies to adopt contract specifications and to promote the widespread use of emission controls in the construction sector.

## NEDC Best Practices for Clean Diesel Construction

["Best Practices for Clean Diesel Construction--Successful Implementation of Equipment Specifications to Minimize Diesel Pollution"](#). The document provides recommendations for states, local governments, public agencies, and private entities to successfully implement clean diesel specifications on construction sites.

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## Related Resources

Breathing Clean by Building Green:  
Clean Diesel Construction

### [Diesel Engine Retrofits in the Construction Industry: A How To Guide](#)

In January 2008, the Massachusetts Department of Environmental Protection issued a comprehensive "how to" guide for retrofitting diesel construction equipment with advanced pollution control technologies. The 56 page document includes the following: an overview of the health and air quality concerns associated with diesel pollution, the Massachusetts state agency construction retrofit requirements, available retrofit technologies, a retrofit "roadmap", and case studies of successful projects.

### [Low-Cost Ways to Cleaner Construction](#)

National Clean Diesel Campaign fact sheet on cost effective ways to reduce emissions from construction equipment for: Construction company owners; Equipment rental companies; and Equipment operators.

### [Emission Reduction Incentives for Off-Road Diesel Equipment Used in the Port and Construction Sectors \(ICF/EPA 2005\)](#)

This report describes and assesses incentive programs to reduce emissions from off-road diesel engines used in the construction industry and port sector. The report focuses primarily on grant programs, tax incentives, modified contracting procedures, and non-monetary incentives implemented at the federal, state, regional, and local level.

### [Evaluating the Occupational and Environmental Impact of Nonroad Diesel Equipment in the Northeast \(NESCAUM 2004\)](#)

This evaluates the potential health risks from nonroad sources by monitoring selected hazardous air pollutant and particulate matter exposures in the cabin of operating nonroad diesel equipment and at the perimeter of the active

work site.

**[Off-Highway Diesel Engine Emissions Overview, Jerry Stewart, Bell Power Systems \(February, 2014\)](#)**

**[MassDOT Diesel Retrofit Program for Non-road Construction Equipment \(May, 2014\)](#)**

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