

# Mobile Sources

## *and Rhode Island*

Fact Sheet #1—The Basics

August 2014

### The Basics

Mobile Source Pollution is a major concern for Rhode Island because it accounts for a majority of all man-made air pollution emitted in the state and throughout the country. This pollution affects human health and the environment.



### What are Mobile Sources?

“Mobile Sources” is a term used to describe a variety of vehicles, engines, and equipment that generate air pollution and that move, or can be moved, from place to place. They can be classified as either on-road mobile sources (e.g. trucks, buses, passenger cars, motorcycles) or non-road mobile sources (e.g. construction equipment, lawn, garden and snow equipment, personal recreation equipment, locomotives, marine vessels, etc.).

### What Pollutants do Mobile Sources Produce?

Mobile Sources pollute the air through combustion and fuel evaporation. These emissions contribute greatly to air pollution and a large portion of the total air pollutants that affect human health and the environment. These include: Carbon Monoxide (CO), Carbon Dioxide (CO<sub>2</sub>), Hydrocarbons, Nitrogen Oxides (NO<sub>x</sub>), Sulfur Oxides (SO<sub>2</sub>), Particulate Matter (PM), and over 1,100 other Air Toxics.

### How Will Mobile Sources Affect My Health and Well-Being?

When a mobile sources’ engine is running, several different types of gases and particles are emitted that can have detrimental effects on the environment and our health. Of particular concern to the environment are carbon dioxide, a greenhouse gas; hydrocarbons – any of more than a dozen volatile organic compounds (VOCs), nitrous oxides; sulfur oxides; particulate matter, tiny particles of solids, such as metal and soot; and carbon monoxide. Greenhouse gases, such as carbon dioxide (CO<sub>2</sub>), trap heat in the Earth’s atmosphere, contributing to global climate change.

#### Vehicle Emissions Effects on the Environment

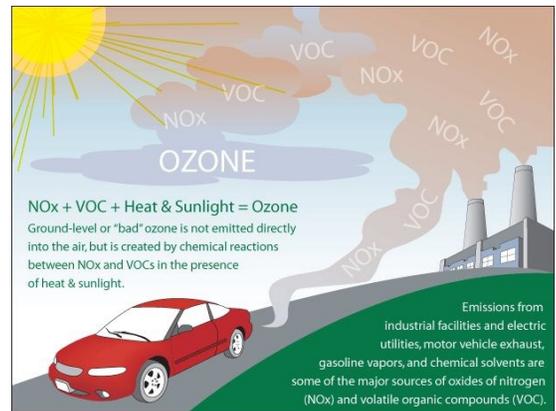
- Emit greenhouse gases, such as carbon dioxide, which contribute to global warming.
- Air pollutants and particulate matter can be deposited on soil and surface waters where they enter the food chain.
- Nitrogen oxides and sulfur oxides contribute to acid rain, which changes the pH of waterways and soils and can harm the organisms that rely on these sources.

# Vehicle Emissions Contribute to Ozone Formation

Ozone, a gas, is a form of oxygen. In the Earth's upper atmosphere ozone plays an important and beneficial role by providing a shield from the sun's ultraviolet rays. Ozone at ground level is a harmful pollutant from man-made emissions. Ozone is not emitted directly from vehicles, but tailpipe emissions from vehicles are the main contributors to ozone pollution. Ozone pollution is formed in the atmosphere

through a complex set of chemical reactions involving hydrocarbons, oxides of nitrogen, and sunlight. The rate at which the reactions proceed is related to both temperature and intensity of the sunlight. Because of this, problematic ozone levels occur most frequently on hot summer afternoons.

For more information on Ozone and Air Quality Alert Days visit: <http://www.dem.ri.gov/programs/benviron/air/ozoneinfo.htm#what>



## What Is Rhode Island Doing?

Addressing mobile source pollution is a complex task. That's why the Rhode Island Energy Office, Department of Transportation, Division of Motor Vehicles, and Department of Environmental Management, along with other agencies are working together to find ways to reduce the emissions of air pollutants from mobile sources.

Great strides have been made in the past decade to reduce pollution from mobile sources. In Rhode Island focus has been on reduced pollution by retrofitting diesel vehicles in the existing fleets; preparing the state for a rapid and seamless integration of electric vehicles (EV) and expanding the availability of EV charging stations; improved vehicle emissions standards; implementation of anti-idling policies and mandatory vehicle emissions inspection and maintenance programs.

### Notable Accomplishments

- **Rhode Island signed ZEV-MOU along with seven other states to put 3.3 million Zero Emission Vehicles on the road by 2025.**
- **Adoption of Zero Emission Vehicle (ZEV) Program—paves the way for the widespread introduction of clean, advanced technology vehicles (such as hybrid-electric and hydrogen fuel-cell vehicles). Will result in dramatic, long-term reductions in carbon emissions.**
- **Adoption of Low Emission Vehicle (LEV) Program to reduce pollutants that contribute to ozone formation and other hazardous pollutants.**

## What Can I Do?

The vehicle that you drive and how you use it may have a greater effect on the environment than any other choice you make as a consumer. You can reduce pollution and emissions from your car by choosing your car carefully, maintaining it properly, driving efficiently, and reducing the number of miles you drive it. For more ideas, see the [Take Action Checklist—Take Action: Reduce Air Pollution from Mobile Sources](#).

# Where Can I Get More Information?

To learn more about mobile sources click on the links below:



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[www.dem.ri.gov](http://www.dem.ri.gov)