Fugitive Dust:
Prevention, Abatement and Control

ARD-18-01

Example of properly-cleaned roadway to eliminate dust from traffic.

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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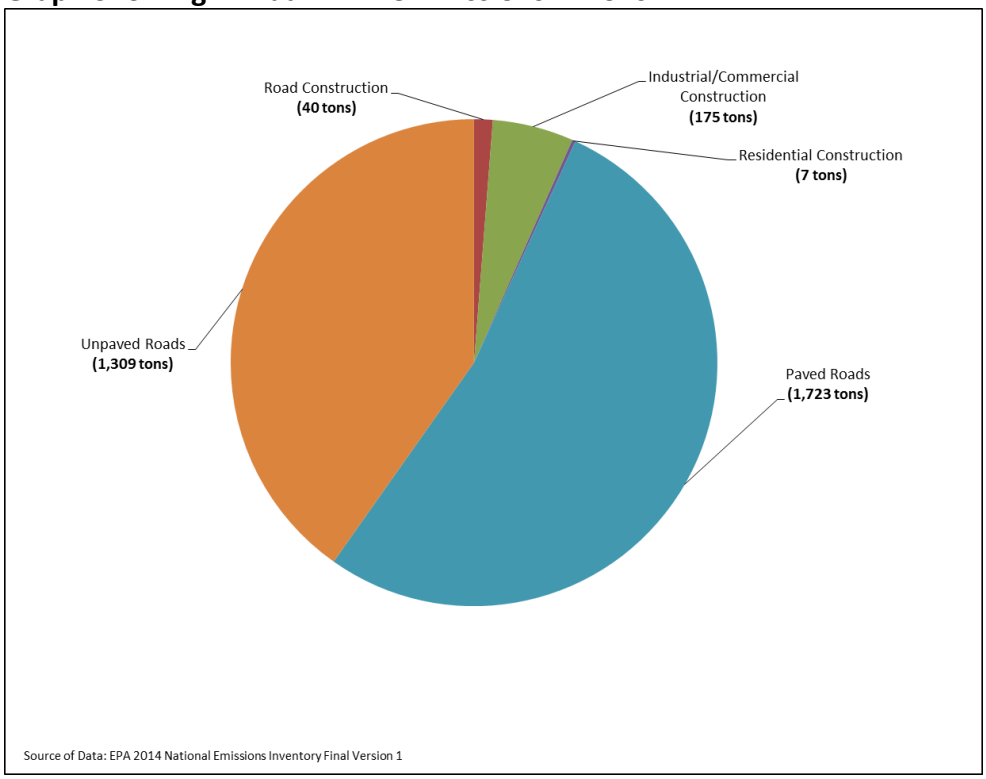
Graph Showing Annual PM 2.5 Emissions in Tons



1. Introduction

Fugitive dust is particulate matter resulting from commercial and business activities that is generated in the open air (e.g., not through a stack). It includes both the visible and non-visible particulate matter suspended in the air.

The New Hampshire Department of Environmental Services (NHDES) regulates fugitive dust pursuant to New Hampshire Code of Admin. Rules Env-A 1002, *Fugitive Dust.* This law provides that *"any person engaged in any activity that emits fugitive dust…shall take precautions throughout the duration of the activity in order to prevent, abate, and control the emission of fugitive dust."* Env-A 1002, requires that dust be controlled on-site and not allowed migrate beyond the property boundary.

New Hampshire law RSA 125-C, *Air Pollution Control*, defines **air pollution** as *"the presence in the outdoor atmosphere of one or more contaminants or any combination thereof in sufficient quantities and of such characteristics and duration as are or are likely to be injurious to public welfare, to the health of human, plant, or animal life, or cause damage to property or create a disagreeable or unnatural odor or obscure visibility or which unreasonably interfere with the enjoyment of life and property."* An **air contaminant**, as defined in RSA 125-C II, includes particulate matter.

2. Health Hazards and Environmental Impacts

Fugitive dust is an air pollutant generated during commercial or business activities such as sand, gravel and rock-mining operations, paving operations, parking lot and roadway cleaning, and earthmoving operations. It is also generated during loading and unloading of materials, wind-blown from material stockpiles and exposed soils, and from vehicular traffic.

Poor Dust Control is a Public Health Risk, and Impacts Vegetation, and the Environment.

Dust contains silica, categorized as being carcinogenic to humans, and may contain other contaminants, based on the source of the dust, such as asphalt compounds, rubber, lead, asbestos, herbicides, pesticides, fertilizers, salt, etc.

Not only is dust a hazard to workers, it is a hazard to the public and affects the environment as explained below.

2.1 Health Hazards

Fine dust inhaled deep into the lungs and has been linked to a variety of health problems, ranging from nose and throat irritation to respiratory illnesses, such as bronchitis, lung-damage and asthma. The silica in dust has been shown to cause silicosis, chronic obstructive pulmonary disease, and renal disease.

Any activity that disrupts settled dust will make it airborne where it will once again become a health concern. Dust contaminated with chemicals can also present a separate health risk.

2.2 Environmental Hazards

Dust can migrate into nearby surface water, where it affects aquatic communities and contributes to the nutrient loading of the surface water ecosystem. Additionally, fugitive dust that settles on nearby vegetation can weaken or kill the vegetation.

Wind generation of dust particles can cause the erosion of valuable topsoil and contribute to the soiling and discoloration of personal property.

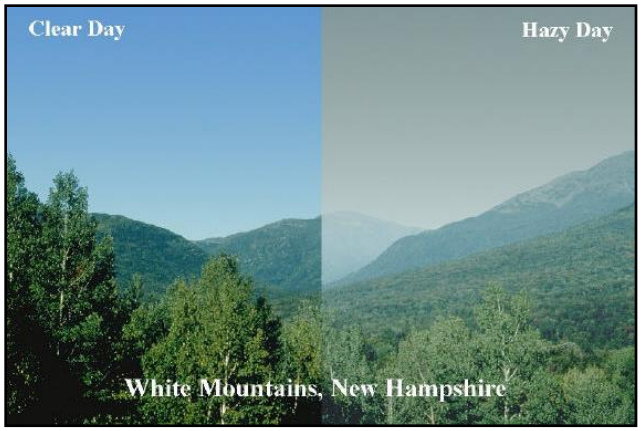
Dust Contains Phosphorus that Leads to Nutrient Loading and Algal Blooms.

2.3 Driving Hazards

Dust restricts visibility at the job site and off-site. Reduced visibility creates a safety hazard to workers and to motorists passing by on adjacent roads.

Dust Results in Poor Visibility & Driving Hazards

2.4 Regional Haze



Dust contributes to regional haze and particulate matter levels in the atmosphere. By law, New Hampshire is required to control sources of particulate matter emissions and to maintain national ambient air quality standards.

3. A Fugitive Dust Control Plan

A fugitive dust control plan is a document establishing procedures to prevent, abate, and control dust. It contains procedures to identify the public and environmental receptors associated with each job, the work activities and equipment used on the job, and what industry best management practices are necessary to protect the health of your workers, the public, and the environment.

By following the procedures contained in the plan, you will significantly reduce dust emissions to the lowest level that a particular piece of equipment or work activity is capable of achieving. Often, achieved using industry best management practices, work site monitoring, communication, and taking quick action to control dust when it is spotted.

Since controlling dust is an everyday job and is everyone's responsibility, your fugitive dust control plan should include training for all staff and on all types of activities that can create dust and what they need to know to prevent, abate, and control it.

3.1 Prevention and Control Measures

Most modern equipment has some type of best available control technology built into it and, if used properly, will prevent dust. However, controlling dust may require implementation of more than one approach based on job site conditions, weather, and other environmental and public considerations.

Some best management practices to prevent and control dust include:

- ✓ Limit the amount of exposed soil.
- ✓ Construct wind barriers or install cover tarps.
- ✓ Apply water to suppress dust.
- ✓ Apply chemical dust suppressants.

- ✓ Use vacuum controls on equipment to keep surfaces clean of debris.
- ✓ Apply soil stabilizers.
- ✓ Establish vegetative cover.
- ✓ Control traffic speed through construction site and over unpaved areas.
- ✓ Apply gravel surface to cover soil along haul road and in storage areas.
- ✓ Pave haul roads and storage areas.
- ✓ Regularly clean up track-out.
- ✓ Limit work on windy days.
- ✓ Never use compressed air or a blower of any sort to clean surfaces.

3.2 Project Monitoring and Corrective Actions

It is everyone's responsibility to monitor and note when activities and conditions are present that support the creation of dust. The dust control plan should be written so that everyone understands their duties, what best management practices must be followed, be authorized to take corrective actions to abate dust, and when to report adverse conditions to the project supervisor. Project supervisors are responsible for monitoring work and ensuring that workers are following the best management practices contained in the fugitive dust control plan. The project supervisor should use a daily log to document what best management practices are being followed and, as necessary, what corrective actions are taken. An example of a daily log is provided below. Project supervisors must not allow any work until appropriate dust control measures are in place.

Poor Dust Control Leads to Poor Visibility & Driving Hazards

Example - Daily Fugitive Dust Monitoring Activity Log

Date	Time	Work Activity	Observations and Dust Control Measures
11/1/17	8 am	Saw Cutting Concrete	Water provided to saw and no visible dust.
11/1/17	9 am	Grinding pavement	Pavement grinder - water and vacuum used to control dust. No visible dust.
11/1/17	3 pm	Sweeping track-out	Roadway traffic through construction area tracked dirt into paved roadway. Dirt on pavement was drying out from sun. Once dust was noted, we immediately brought sweeping in to clean up track-out.
11/2/17	8 pm	Sweeping track-out	Saturday Morning - visited construction site to view if traffic and rain had created track-out. Track-out was observed and a sweeper was moved in to clean it up.

3.3 Training

Remember to Control Dust in Storage Yards.

Training is a critical component to your fugitive dust control plan. Supervisors, workers, and subcontractors must be included in the training. Tailgate briefings are a key component of the training and should be held at the beginning of each day's work. Training should include reviewing the work activities and job site conditions that will create dust, the location of public and environmental receptors within the project area, the proper use of equipment and best management practices to prevent and control dust, and when to take corrective actions.

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