

THE NEW HAMPSHIRE DIOXIN REDUCTION STRATEGY

Executive Summary

As part of its continuing efforts to address *persistent bioaccumulative toxics* (PBTs), the New Hampshire Department of Environmental Services (DES) has begun a new initiative to substantially reduce dioxin contamination in New Hampshire's environment. The term "dioxin" refers to a group of chemical compounds that share certain similar chemical characteristics, and common mechanisms of toxicity. Dioxins are created as unintended by-products of incomplete combustion, or as a contaminant in chemical manufacturing processes. Although dioxin is released into the environment in small quantities, it builds up in soils, sediments and plants, bioaccumulates in animal and fish tissue, and is then passed up the food chain to people.

Dioxin is a potent animal toxicant with the potential to produce a broad range of adverse effects in humans including reproductive effects, developmental effects, suppression of the immune system and cancer. New scientific information now confirms that dioxin is a *known human carcinogen*. In addition, recent research shows that dioxin is far more toxic than originally believed and that the amount of dioxin now found in the bodies of members of the general population closely approaches the levels at which adverse effects may occur. Children are particularly vulnerable to health effects from dioxin. Wildlife is also affected by dioxin exposure resulting in low fertility and reproductive rates, low birth weights and developmental problems.

State and federal regulatory programs to reduce dioxin emissions from several large source categories have been in place for several years and much progress has already been made. But dioxin is still being produced at levels of concern and is accumulating in our environment. As a result, DES developed the [New Hampshire Dioxin Reduction Strategy](#). The goal of the *Strategy* is to identify the major sources of dioxin and recommend actions to substantially reduce dioxin exposure in New Hampshire. The *Strategy* identifies, evaluates and quantifies dioxin releases from more than 20 source categories in New Hampshire, and makes recommendations designed to eliminate or substantially reduce dioxin releases from these sources.

The *New Hampshire Dioxin Reduction Strategy* estimates that over 80% of dioxin emissions to the environment in New Hampshire are emitted from 5 source categories:

- medical waste incinerators,
- wood-fired boilers,
- backyard burning of household waste,
- residential wood combustion, and
- mobile source fuel combustion.

These five sources include not only industries, but also many activities that we as individuals conduct everyday, such as disposing of wastes, driving cars or trucks, and heating our homes.

The *Strategy* makes over 50 recommendations to reduce dioxin from New Hampshire sources. It recommends prompt action from two source categories; **backyard trash burning** and **medical waste incineration**. By addressing these two sources first, DES estimates that almost a 50% reduction in dioxin emissions can be achieved in the next two years.

Other recommendations in the strategy focus on source reductions primarily through pollution prevention, public education, energy efficiency and conservation.

These recommendations include:

Working with sources to remove materials containing dioxin precursors from the waste stream.

Encouraging more stringent federal emissions regulations for new automobiles and trucks.

Ensuring the proper use of chemical pesticides by enforcing state pesticide laws.

Encouraging greater implementation of energy efficiency and energy conservation measures throughout the state.

Encouraging the development of alternative markets for lower value wood and wood wastes produced in New Hampshire.

Encouraging homeowners to replace older, less efficient woodstoves with more efficient pellet stoves and modern, EPA approved woodstoves.

Encouraging expeditious development of less polluting alternative energy sources.

Phasing out existing small municipal waste combustors in New Hampshire as existing units reach the end of their useful lives.

Encouraging fuel conservation, energy efficiency and proper maintenance of home heating systems.

These and other recommendations are expected to result in further substantial reductions in dioxin exposure for New Hampshire citizens.

DES also plans to expand the role of the *New Hampshire Mercury Reduction Task Force* (a stakeholder workgroup created as part of the *New Hampshire Mercury Reduction Strategy* in 1998) to include dioxin and other PBTs. The *Task Force* will focus on implementing the recommendations established in the *New Hampshire Dioxin Reduction Strategy*.

It is expected that as EPA and other states follow New Hampshire's lead in addressing dioxin releases to the environment, new information will become available to more accurately characterize dioxin emissions from various sources. In the future, DES plans to update the *Strategy* every two to three years in order to make use of new information as it becomes available, and to evaluate New Hampshire's progress in reducing dioxin exposure.

By taking the initiative in reducing our own dioxin emissions, New Hampshire is not only doing its part to protect the health of its citizens and environment, but will allow us to insist on similar reductions of dioxin from upwind regions, thus significantly reducing the overall public health and ecological threat of dioxin contamination in our environment.