



**Mount
Sinai** *Children's
Environmental
Health Center*

TESTIMONY

submitted to

The Committee on Energy and Regional Efficiencies

and

The Committee on Environment and Health

of the

The Westchester County Legislature

in support of

The Replacement of #4 and #6 Heating Oils with Cleaner Fuels in Westchester County

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Presented by

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Dear Members of the Committees on Energy and Regional Efficiencies and the Environment and Health,

Thank you for having given me the opportunity to submit a this testimony in support of the proposed replacement of #4 and #6 heating oils with cleaner fuels in Westchester County.

Background. My name is Philip J. Landrigan, MD. I am a pediatrician, epidemiologist, and Dean for Global Health in the Icahn School of Medicine at Mount Sinai. I am also Professor of Preventive Medicine, Professor of Pediatrics, and Director of Mount Sinai's Collaborating Centre in Children's Environmental Health sponsored by the World Health Organization.

I am a 30-year resident of Westchester County, and I reside at 915 Stuart Avenue in Mamaroneck, NY.

For many years beginning in the early 1970s at the Centers for Disease Control and Prevention (the CDC) I have conducted research in public health, and I have published this research extensively in leading peer-reviewed journals including *The New England Journal of Medicine*, *The Lancet*, and *Environmental Health Perspectives*. My research has focused especially on understanding the impacts of environmental pollutants on children's health. I have recently produced the first ever *Textbook in Children's Environmental Health*, a volume of 700 pages and 60 chapters, authored by 85 scientists from five continents and published by Oxford University Press. My biographical sketch is attached to this testimony.

I am a veteran of the United States Public Health Service and the United States Navy. I retired from the Navy at the rank of Captain (O-6). I continue to serve as Surgeon General of the New York Naval Militia, the maritime component of the New York National Guard.

The Health Hazards of Burning #4 and #6 Heating Oils. The combustion of #4 and #6 heating oils – aptly described as “dirty oils” – releases a complex mixture of pollutants to the air of Westchester County. These pollutants include polycyclic aromatic hydrocarbons (PAHs), heavy metals, nickel, sulfur dioxide, nitric oxide, and black carbon. Polycyclic aromatic hydrocarbons

are proven human carcinogens. Sulfur dioxide and nitric oxide are known respiratory irritants. The metals emitted by fuel oil combustion include neurotoxins and human carcinogens.

Combustion of #4 and #6 heating oils is notorious for forming “soot,” fine airborne particulates less than 2.5 microns in diameter composed of a complex mix of toxic pollutants. Because of their extremely small size – approximately 1/30 the diameter of a human hair – PM2.5 particles are readily inhaled. They can penetrate to the deepest regions of the lungs. They can cross from the lungs into the blood stream and be transported to organs through the human body to cause a wide range of health problems.

The pollutants released into the air by the combustion of #4 and #6 heating oils are known to impair human health. Infants and children are uniquely vulnerable to the health effects of air pollution because they breathe in more air pound for pound than adults and because they are closer to the ground where metals and other pollutants settle.¹

In infants, pollutants formed by combustion of dirty heating oil are linked to increased incidence of sudden death syndrome (SIDS).²

In children, these pollutants are strongly linked to asthma³⁻⁵, increased numbers of emergency room visits^{6,7} and increased school absenteeism. According to the Centers for Disease Control and Prevention, 10% of children in the United States suffer from asthma.⁸

In adults, air pollution is linked to increased rates of cardiovascular disease⁹⁻¹¹ and premature death.^{12, 13}

Increasing evidence demonstrates that air pollutants impair development of the nervous system and promote neurodegenerative disease. A recent study found higher autism rates in children who reside in areas with greater levels of PM2.5 and nitric oxide.¹⁴ Striking associations have been observed¹⁵ between long-term exposures to airborne particulates matter and increased risk of Alzheimer’s Disease.¹⁶

The Health Costs of Pollution from Burning #4 and #6 Heating Oils.

Costs of environmentally attributable pediatric asthma in New York's Children were estimated in 2008 to be \$125 million.¹⁷

Preventing the Health Hazards of Burning #4 and #6 Heating Oils. The adverse health effects that result from the combustion of #4 and #6 heating oils are highly preventable. Replacement of #4 and #6 heating oils with cleaner fuels will have positive effects on a wide array of health outcomes.

The benefits of banning of #4 and #6 heating oils and switching to cleaner fuels are clearly evident in the experience of New York City. Reduction in use of #4 and #6 heating oils in New York City began in 2007. While to date only a fraction of New York City buildings have completed the phase out, this action has already resulted in a 69% reduction in nickel emissions and a 23% reduction in soot emissions.¹⁸ Most importantly, the New York City phase-out has resulted in the prevention of an estimated 2,000 emergency room visits and hospitalizations and in the prevention of a staggering 800 deaths.¹⁹

Similar benefits can be expected in Westchester County, which has one of the highest asthma hospitalization rates in the Hudson Valley, at 13.9 per 10,000 residents per year.²⁰

Conclusion. Passage of legislation that requires the replacement of #4 and #6 oils with cleaner fuels will have far-reaching health benefits for the residents of Westchester County and especially for our children. Passage of such legislation will send a strong message that Westchester County has made public health a priority, and that we care about the health of our citizens.

I urge the Legislature to carefully consider the scientific evidence in support of the positive public health impacts that a ban on #4 and #6 heating oil will have. Thank you for the opportunity to submit my professional opinion on this matter.

I will be pleased to answer any questions that you might have.

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