Statement by
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Before the
United States Senate
Committee on Environment And Public Works
On S.1499, the Marine Vessel Emissions Reduction Act of 2007
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Good morning Madam Chair and members of the Committee. I would like to thank you for inviting me to testify here today on the chair's bill, S.1499, the Marine Vessel Emissions Reduction Act of 2007, which I strongly support.

New Jersey is the most densely populated state in the country and home to two of the busiest ports on the eastern seaboard. Our ports are thriving and are expected to continue to grow at an unprecedented rate. However, this activity and growth has been shown to have adverse health and environmental impacts. The communities where the ports are located are disproportionately impacted by emissions from numerous sources, many of which are associated with the economic activities of the port. We, as a nation, must address this environmental justice issue.

Ships are the last major sulfur dioxide (SO_2) source category that burns high sulfur fuels in New Jersey. However, because of the national and international nature of the shipping industry, the reduction of these emissions are best handled on a national or international basis not on a local basis.

Therefore, I commend you, Madam Chair, for sponsoring this legislation along with Senators Feinstein and Whitehouse. I would call on the Congress to pass this important bill without delay. Legislation such as this not only protects the health of our citizens but it helps to keep our ports competitive with each other.

HEALTH IMPACTS

Ships are powered by diesel engines that use a fuel with a very high sulfur content (about 2.7% sulfur or 27,000 ppm). Emissions from diesel sources are linked to cancer, asthma, premature death, and other adverse effects, including reduced visibility. Health studies have shown that there is no clear threshold below which adverse effects are not experienced by at least certain segments of the population. Based on national air toxics data, mobile sources in New Jersey are estimated to contribute two-thirds of the average cancer risk to the residents of the state.

The emissions from these ships include many different pollutants, including particulates, nitrogen oxides, sulfur oxides, and numerous air toxics. Although fine particulate matter generated from all sources can cause serious health impacts, particulate matter generated from diesel combustion is particularly harmful. This is due to the adsorbed toxics, as well as its very small size that can be inhaled very deep into the lungs (most diesel particles

are in the ultrafine size range). Furthermore, depending on local weather conditions, some of the particles may stay in the local neighborhoods for long periods of time.

The health effects associated with exposure to the fine particles that are formed include increased respiratory disease, aggravated existing heart disease, and temporary breathing difficulty, particularly for people with asthma. The elderly and children are at highest risk of health effects from exposure to SO_2.

The oxides of nitrogen from combustion also contribute to the formation of ozone. Ozone causes health problems because it damages lung tissue, reduces lung function, and sensitizes the lungs to other irritants. Ozone has long been known to increase the incidence of asthma attacks in susceptible individuals. Ozone exposure also makes the lungs more vulnerable to lung diseases such as pneumonia and bronchitis. Ozone not only affects people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well.

New Jersey's ports are located in Newark and Camden – two environmental justice communities. The residents of these cities, along with many other urban residents throughout the State, are disproportionately impacted by diesel exhaust. Newark is a transportation hub with its international port, airport, major highways and rail lines. While Camden is a smaller community, it is also adversely affected by many sources of pollution within its boundaries, including those at the port.

According to a report by the New Jersey Environmental Federation in June 2006, "Diesel Hot Spots: A Snapshot of Newark, New Jersey," the county in which the Newark port is located has the highest asthma related mortality rates in the state, with a doubling of the rates within minority populations. Furthermore, a short-term monitoring study commissioned by the same organization found that levels of diesel exhaust at parks and playgrounds along several busy Newark streets were two to five times higher than a quieter street in that same city. At one location, an average of 250-300 trucks passed by per hour. These are just a few examples of the far-reaching effects that the ports can have on environmental justice communities.

While the effects of ship emissions are especially evident in urban areas in and around port communities, the high levels of sulfates formed from burning 27,000 ppm sulfur fuel can travel great distances northward along the entire marine corridor. The wind on the East Coast frequently blows from the southwest to the northeast, right along the eastern seaboard. Hence, the ports have a cumulative impact on air quality as air masses pass over many ports and urban areas.

SO_2 and oxides of nitrogen (NO_x), and the particles formed from SO_2, and NO_x, as well as direct emissions of fine particles, can be transported over long distances and deposited far from their point of origin, contributing to air quality problems far beyond the areas where they were emitted. Emissions from sources in the New Jersey – New York Metropolitan area are blown by the winds along the coast many miles, impacting Rhode

Island, Massachusetts and beyond. This is not just a local air quality problem for New Jersey; it impacts many states.

INVENTORY

Based on the emission data developed by the Port Authority of New York and New Jersey, emissions from ships calling on the North Jersey port contributed significant amounts of air pollution.

Year	NO_x*	$PM_{2.5}$	SO_2
2000	2170	108	2330
2015	2830	140	3030

*Emissions are expressed as tons per year

These emissions are approximately equivalent to having a small to mid-size power plant in your neighborhood.

There are a number of initiatives to reduce emissions from the other source sectors. As we reduce emissions from power plants, industry, motor vehicles and heating oil, port emissions will be a much bigger portion of the air pollution problem in the future. The relative contribution of our ports to the local pollution burden will continue to grow, especially as the economic activity of the port continues to grow.

NJDEP ACTIONS

I am proud to say that New Jersey has been aggressive in its efforts to reduce diesel emissions. We have:

- Passed a law creating the most comprehensive statewide diesel retrofit program in the nation. We are aggressively moving forward in mandating the retrofit of: school buses, garbage trucks, transit buses and government owned diesel vehicles.
- Implemented an extensive idling outreach and education campaign and stringent idling rules that phase out the truckers' "sleeper berth" exemption in 2010.
- Required heavy diesel trucks to undergo an annual inspection for opacity or smoke, the first state in the nation to impose such a requirement.

New Jersey has been equally aggressive in efforts to reduce NOx, SOx, volatile organic compounds (VOC) and fine particulates ($PM_{2.5}$) in anticipation of the 2010 attainment deadlines for the ozone and fine particulate air quality standards.

At this time, New Jersey does not comply with the current federal health standard for ozone. That standard will only be made more stringent in the future as we increase our understanding of the adverse health effects of ozone. Next month, the USEPA is expected to issue a revised standard for ozone, which we expect will be more stringent than the current health standard.

New Jersey is proposing regulations for the following control measures to assist us in attaining the health standards:

- Consumer products (VOC)
- Asphalt paving (VOC)
- VOC stationary storage tanks (VOC)
- Asphalt production plants (NO_x)
- Industrial/ commercial/institutional boilers (NO_x)
- Electric generating units which operate on high electric demand days (NO_x)
- Glass manufacturing furnaces (NO_x)
- Municipal waste combustors (NO_x)
- Boilers serving electric generating units (NO_x, SO_x, PM)
- Petroleum refineries (VOC, NO_x, PM)

New Jersey is also monitoring air quality that does not meet the annual and new daily fine particulate standard (2006).

Taken together, this means that more needs to be done to protect the health and welfare of our citizens.

SUPPORT FOR S.1499

Lowering the sulfur content of the fuel used by oceangoing vessels is an essential strategy and is an important part of a larger port strategy under development by New Jersey. As I mentioned, ships are the last major source of SO_2 in New Jersey that burns high sulfur fuels but are not yet part of a plan to reduce emissions. Your bill would reduce these emissions but will not place any ports at a competitive disadvantage because it will impose the same requirements on all the US ships/ports. S.1499 will level the playing field and would avoid the need for New Jersey or any other state to independently pursue strategies to reduce emissions from the ships.

S.1499 would enhance the ability of the USEPA and the International Maritime Organization (IMO) to come to an agreement on reducing sulfur levels internationally and provide a necessary backstop if they fail to reach an accord. It is my understanding the US proposal to the IMO is consistent with this legislation and thus there is no inconsistency between moving this legislation and concurrently seeking IMO action.

At least one major shipper, who also operates a terminal in New Jersey, already uses low sulfur fuel in container ships calling on California ports. This bill requires the use of low sulfur fuel near shore only, not for the entire transoceanic voyage, which means only a small portion of a vessel's fuel would be affected by this bill.

Further, this bill is consistent with a memorandum of agreement (MOU) recently negotiated amongst the Northeast and Mid-Atlantic states to reduce sulfur in home heating oil. The agreement would require 500 ppm home heating oil in 2012 for New Jersey, New York, Delaware and Pennsylvania. Therefore, the requirements of this bill (1000 ppm fuel) will coincide with our more stringent home heating oil requirements. I

do note that the end of 2012 would be a logical compliance date for the east coast to enable construction of more desulfurization facilities for both heating oil and ship fuel.

In conclusion, I again thank you for this opportunity and strongly support moving this bill forward. It will help address a disproportionate burden placed on our communities by the ports, address emissions that are best addressed on a national and international level and, most of all, protects the health of our citizens.

I am available to answer any questions you may have.