STATEMENT OF
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BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE
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Madame Chairman and members of the Committee, I appreciate the opportunity to discuss the Environmental Protection Agency's efforts to reduce emissions from marine vessels and the Marine Vessel Emission Reduction Act currently being considered by this Committee. I am the Associate Director of EPA's Office of Transportation and Air Quality, and I am leading the United States' negotiating efforts at the International Maritime Organization (IMO). I also serve as the Chairman of the IMO workgroup responsible for negotiation of new marine emission standards under MARPOL Annex VI.

Marine vessels are already a significant source of air pollution in the United States and their relative contribution is rapidly growing. If we consider emissions within the Exclusive Economic Zone of the United States, marine vessels account for approximately 13 percent of NOx emissions, 17 percent of PM2.5 emissions, and 50 percent of SOx emissions. Without further action to regulate engine emissions and fuel quality, we expect that the relative contribution of emissions from marine vessels will grow rapidly as emissions from other sources are subjected to increasingly stringent controls. By 2030, we expect that engines on commercial marine vessels will contribute about 46 percent of mobile source emissions of nitrogen oxides (NOx), 52 percent of mobile source emissions of particulate matter (PM), and 95 percent of

mobile source emissions of sulfur oxides (SOx) in the United States (see attachment). The contribution of ship emissions is most significant in U.S. ports and coastal areas that are subject to heavy maritime traffic. Currently more than 40 U.S. ports are located in non-attainment areas for ozone or fine particulates or both. However, the problem is not limited to port areas alone. Santa Barbara County, which has no commercial ports, estimates that by 2020, 67 percent of its NOx inventory will come from shipping traffic transiting the California coast, although the extent to which these emissions reach land depends on wind and weather patterns.

EPA, in coordination with the U.S. Coast Guard, the U.S. Maritime Administration, and other stakeholders, is working intently to achieve additional emission reductions from marine vessels. For these efforts, we distinguish between very large engines used for propulsion on ocean-going vessels and smaller engines used for auxiliary power or for propulsion on smaller vessels. These large engines -- those with a displacement at or above 30 liters per cylinder -- are referred to as Category 3 engines, while smaller marine engines are referred to as either Category 1 or Category 2.

In April of 2007, EPA proposed a rule to adopt two new tiers of exhaust emission standards for smaller vessels that operate with high and medium speed engines (Category 1 and 2 marine engines). The proposal includes near-term emission standards, referred to as Tier 3 standards, and longer-term Tier 4 standards that reflect the application of high-efficiency exhaust aftertreatment technology. The proposal, when implemented, would result in PM reductions of about 90 percent, and NOx reductions of about 80 percent. We expect this rule to be completed in the near future.

Category 3 engines are most commonly used on ships engaged in international trade and cruise ships. These engines are massive in scale and they represent a significant source of NOx emissions with studies estimating emissions as 18 percent or higher of total NOx emissions worldwide.

As you are aware, the United States is engaged in negotiations currently underway at the IMO to amend the international standards applicable to ship emissions. In February of last year, the United States Government submitted a proposal to the IMO for establishing new, tighter emission standards for ships. This proposal represents the most comprehensive approach ever taken to reducing air pollution from ocean-going ships, and it has gained considerable support from governments across the globe and from numerous non-government organizations. The U.S. proposal is based on performance-based standards that reflect the use of cleaner fuels and advanced emission control technology, including exhaust aftertreatment.

Our current national Tier 1 NOx standards for Category 3 engines are consistent with the existing international standards developed through the IMO for these large engines. The U.S. proposal to the IMO includes two additional tiers of NOx emission standards. The Tier 2 NOx limits would begin as early as 2011 and would result in a reduction of approximately 20 percent beyond the existing Tier 1 standard. Tier 3 standards, beginning in 2016, would require NOx emission reductions of more than 80 percent from Tier 1 levels. These cumulative reductions, if adopted, will result in NOx emission reductions well in excess of 90 percent.

The U.S. proposal to the IMO also includes stringent new SOx and PM reductions to be achieved through the use of cleaner, distillate fuel with a sulfur level not exceeding 1,000 ppm when ships are operated in specified areas near the coast. These standards would achieve SOx reductions as high as 95 percent and significant PM reductions as well, beginning in the 2011 / 2012 time frame.

The most recent negotiating session at the IMO occurred just last week, and it produced considerable progress in reaching an agreement (consistent with the U.S. proposal submitted in February 2007). We are seeing the fruits of our efforts pay off in broadening support for the reductions in ship emissions of NOx, PM, and SOx advocated by the United States. We are also seeing increasing support for a framework that allows for the application of more stringent standards in areas that are subject to severe air quality problems.

While there has been considerable movement at the IMO in support of the U.S. proposals, I should point out that the United States is not yet a party to Annex VI. Indeed, our success in the current negotiations underway at the IMO will be threatened if we fail to submit our instrument of ratification for MARPOL Annex VI, thereby undermining our credibility in the negotiation of the Annex. As you know, the House of Representatives passed the Maritime Pollution Prevention Act of 2007 (H.R. 802) last March. This bill would amend the Act to Prevent Pollution from Ships to provide for the adoption of Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78). The Senate has not yet acted on this bill. Failure to act will mean that the U.S. government will not be able to vote on amendments that we have taken the lead in negotiating at the IMO.

As part of our comprehensive strategy to address emissions from transoceanic ships, EPA Administrator Stephen Johnson signed an Advance Notice of Proposed Rulemaking in November 2007 to establish rigorous exhaust emission standards consistent with our proposal before the IMO. In this notice, we provided an inventory of emissions from ocean-going vessels in the U.S. Exclusive Economic Zone (200 nautical miles off the coast of the United States), describe the proposal submitted to the IMO, and requested public comment on these standards. Comments on the Advance Notice are due by March 6 of this year.

In addition, we are performing extensive technical analysis and modeling to assess the possibility of designating emission control areas along the coasts of North America. Under the proposal being considered by the IMO, ships would be required to meet the most stringent standards in designated emissions controls areas. Our analyses include vessel traffic studies, fate and transport of ship emissions on the West, Gulf, and East coasts, environment and human health impacts, as well as studies concerning the global fuels market and how requirements in North America would affect the market both in terms of price and supply. Any decision on the matter will need to await completion of the analytic studies noted above.

We are also engaged in cooperative programs with stakeholders to address marine emissions through a series of collaborative partnerships. As part of the National Clean Diesel Campaign, EPA's Clean Ports USA has been at the forefront of encouraging innovative diesel emissions reduction strategies at ports across the country. In the past three years, we have funded multiple port-related projects with $1.9 million in federal dollars and $2.5 million in

matching funds provided by our partners. As a result, leading port authorities are reducing air pollution now.

The Marine Vessel Emission Reduction Act of 2007 would amend the Clean Air Act to add a new set of requirements for establishing clean fuel and engine exhaust standards for ocean-going vessels. While the bill is generally consistent with the framework of the U.S. proposal to the IMO, the Administration is continuing to review the bill and does not have an official position at this time.

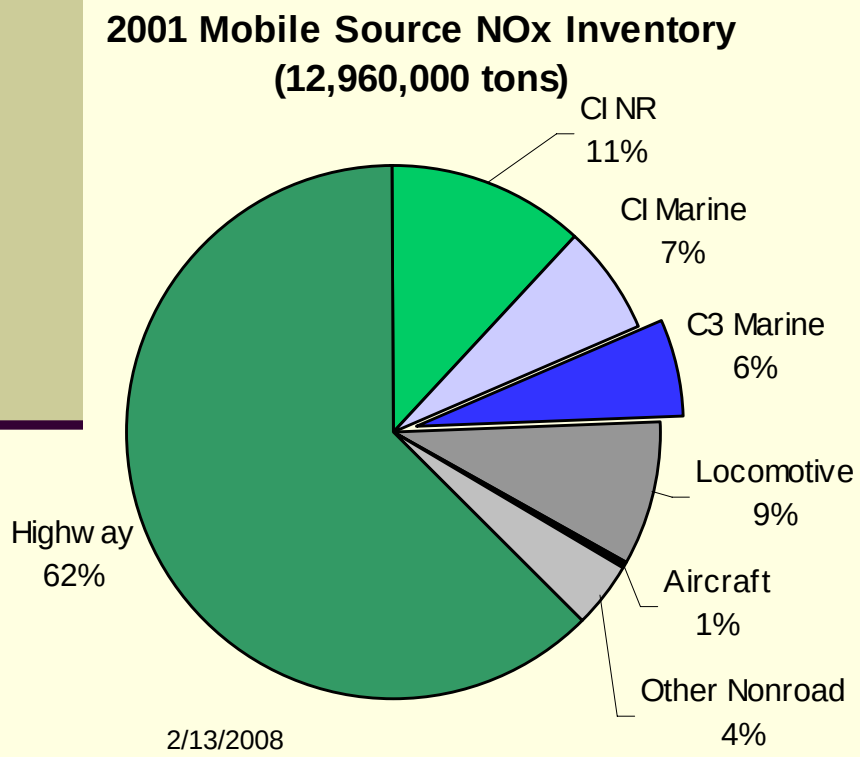
Thank you for the opportunity to testify before the Committee and we look forward to working with you on this important issue.

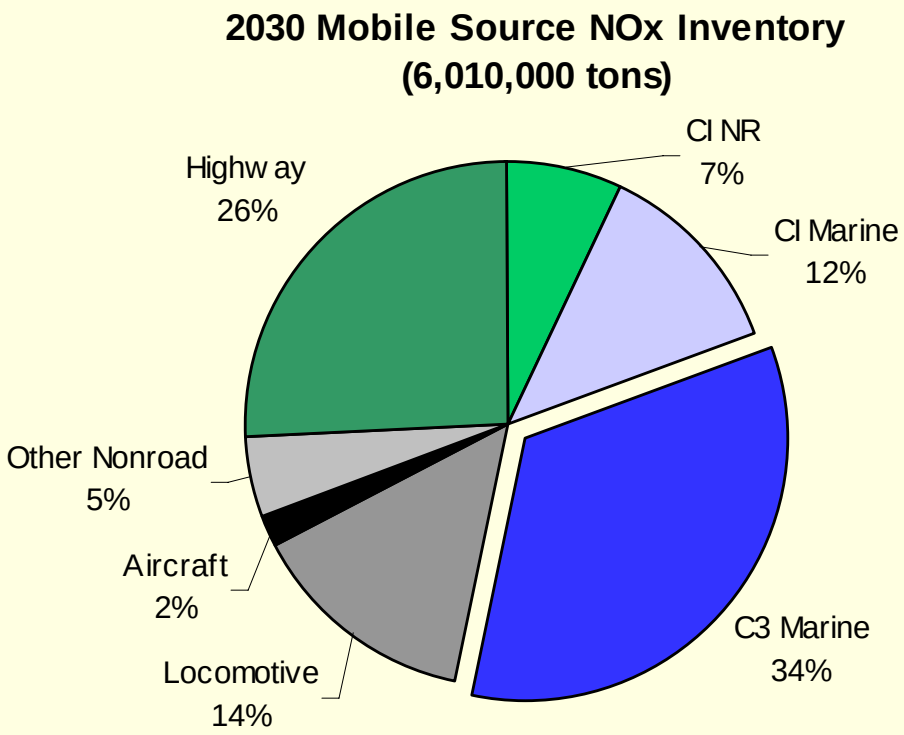
I would be happy to address any questions that you or members of the Committee may have.

Attachment A:

U.S. Marine Emissions Inventory

- Marine diesel engines contribute significantly to mobile source pollution in the U.S.



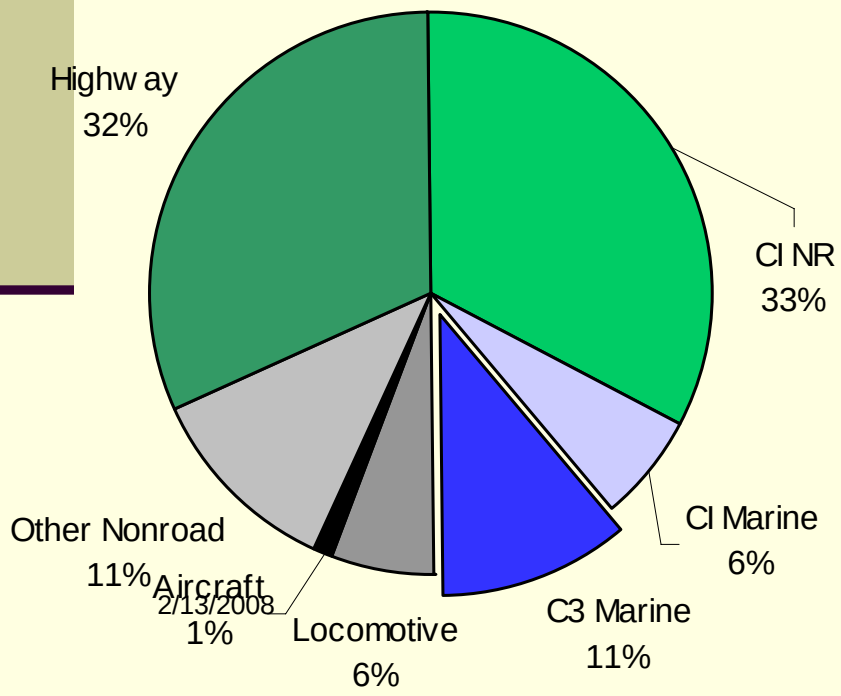


Source of inventory estimates: C3 Marine ANPRM, 72 FR 69522 (Dec 7, 2007)

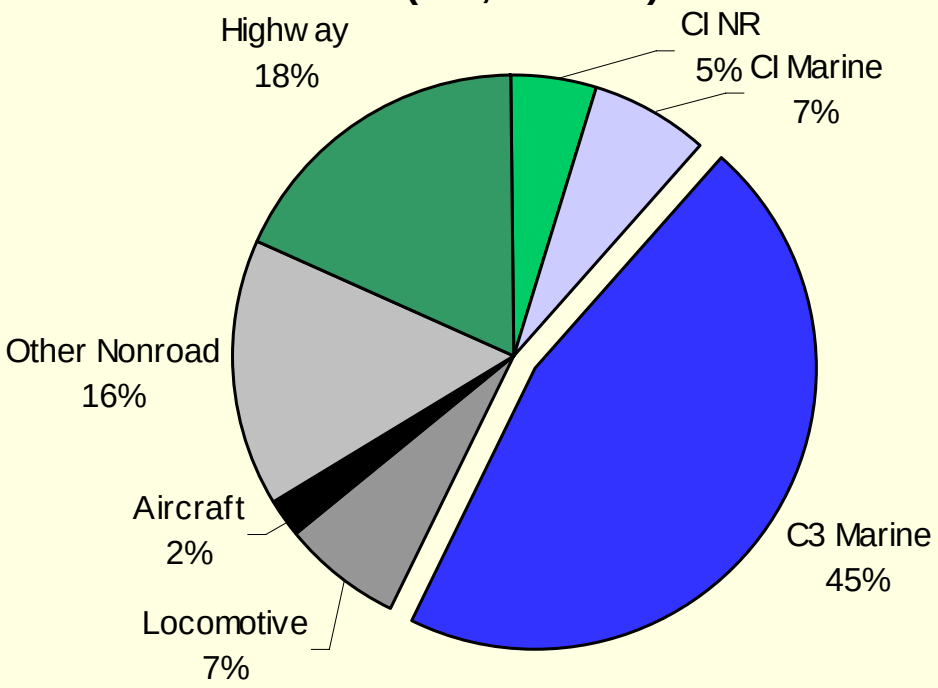
PM 2.5

- The marine contribution is expected to grow as emissions from other sources decrease

2001 Mobile Source PM2.5 Inventory (500,400 tons)



2030 Mobile Source PM2.5 Inventory (366,300 tons)



SOx Emissions

- SOx emissions are high due to the sulfur content of residual fuel used in C3 engines

