Air Quality- Marine Vessel Emissions

SUMMARY OF THE ISSUE

Ocean-going vessels traversing the Santa Barbara Channel produce over 40 percent of the nitrogen oxides (NOx) emissions generated within the County, threatening air quality and public health as well as constraining the County's ability to meet federal and state standards pertaining to ozone and particulates. While progress has been made in achieving regulations such as the Environmental Protection Act introducing standards for new engines starting in 2016 and the International Maritime Organization designating 200 miles off the coast of North America as an Emission Control Area, there are three areas that still need to be addressed:

(1) Efforts to reduce emission from existing engines;

(2) Air quality impacts associated with the existing shipping lanes in the Santa Barbara Channel; and (3) Air quality impacts associated implementing a vessel speed reductions plan in the Santa Barbara Channel.

BACKGROUND

In Santa Barbara, the marine shipping emissions inventory (2005) illustrated that 7,086 transits along the 130 miles coastline of the County produced 14,918 tons of NOx, or 40% of the total NOx emission that year. This inventory also revealed that ten percent of the vessels produced 50 percent of the emissions and 92 percent of the emissions came from foreign flagged ships.[1] The Santa Barbara County Air Pollution Control District has estimated that by 2020, marine vessel traffic in the Santa Barbara Channel will produce nearly 75% of the NOx emission in the County. The increase in vessels transiting the Southern California coast is a result of the State's role as a major point of entry and departure for trade between the US and Asia. In 2009, the Environmental Protection Act (EPA) announced new standards for new engines (Category 3) on U.S.-flagged ships, and also, with Canada, proposed that the International Maritime Organization (IMO) designate up to 200 miles off the coast of North America an Emission Control Area. The IMO approved the proposal on March 26, 2010. These regulatory actions will apply strict new Tier 3 NOx standards starting in 2016 for new engines. Tier 2 standards require 20% NOx reductions for new engines in 2011 and Tier 1 standards require existing pre-2000 engines to reduce their NOx emissions by 15-20% if technically feasible.

PUBLIC BENEFIT/IMPACT

Marine shipping represents a major source of uncontrolled air pollution as ships contribute to worldwide emissions of nitrogen oxides, particulate matter, sulfur, air toxics, greenhouse gases, and ozone-depleting substances. These emissions represent a serious threat to air quality and public health. Moreover, local control is diminished as federal and state laws (Federal and California Clean Air Acts) require adherence to air quality standards.

COST TO THE GOVERNMENT

This is largely a regulatory function, although there are proposals to provide financial incentives to vessel operators as a way to reduce emissions. There may be indirect costs to local governments that are required to maintain federal and state standards for air quality and greenhouse gas reductions, despite having no local control over shipping vessels' emissions.

[1] See "Next Challenge on the Horizon: Air Pollution Emissions from Ships" written by Terry Dressler, Tom Murphy and Anthony Fournier.

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REQUESTED ACTION AND STRATEGY

The County requests its delegation support efforts to reduce emissions from marine vessels through economic incentives and funding for research and development of technology to retrofit existing engines. While Tier 1 standards require emission reductions from existing pre-2000 engines, there is a need for additional research and development on retrofit emissions controls for these ships to implement. In addition, economic incentive programs could accelerate the retrofit of these existing engines by providing financial incentives.

The County also requests assistance in working with other governmental entities and supporting efforts related to analyzing the current shipping lanes and traffic outside of the Channel Islands as well as efforts to reduce the speed at which vessels travel.

The internationally-approved and IMO-designated commercial shipping lanes, also known as traffic separation schemes, currently go through the Santa Barbara Channel. The route outside the Channel is not internationally designated or approved. Concerns about ship traffic outside the Islands since implementation of the new state fuel rule have led the U.S. Coast Guard to announce it will conduct a Port Access Route Study. A regional air quality analysis needs to be conducted to determine the air quality benefits associated with an alternative routing scheme and the scheme should be implemented if public health is improved due to the use of the alternate route outside of the Channel.

Implementing a vessel speed reduction requirement in the Santa Barbara Channel of 12 knots could reduce emissions from these large marine vessels by sixty percent or more. If shipping lanes remain in the Channel, this measure should be evaluated and implemented.

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