

Characterization of the near-source population around five candidate ports on the Eastern Seaboard and Gulf Coast using a multi-modal freight transport perspective

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1. Abstract

Many ports are currently preparing for increased freight traffic, which may result in elevated local air pollution in areas near the port and freight transportation corridors. In this study, a geographical information system (GIS) analysis of areas surrounding five ports – Port of New York and New Jersey, Port of Virginia, Port of Savannah, Port of Miami, and Port of Houston – was conducted to characterize the population that might be affected by air emissions from the freight transportation network and to determine which sources had the potential to affect the most people. Defining “near-source” populations as living within 300 m of the freight transportation network, namely the port and associated truck routes, railroads, and intermodal facilities (e. g. rail yards and warehouses); near-source populations ranged from 37,000 to over a million within 10 km of a port. At the ports considered, the population living within 300 m of the port boundary constituted <10 % of the total near-source population. Sensitive population exposure was also indicated, such as the 81 day care centers and K-12 schools in near-source environments within 2 km of the Port of New York and New Jersey. Minority groups constituted 55 % to 85 % of the near-source populations in the five port areas. For four of the five ports, the mean and median income of the near-source population was lower and the minority percentage was higher than the population living adjacent to the near-source area.