

Footnotes

¹ The reported "cancer risk" in your state, MSA or county, represents the average excess lung risk for the people in your state, MSA or county caused by diesel fine particles (soot). The calculated risk is based on the modeled average fine diesel soot concentrations in your county in 1999. The cancer risk calculation assumes that you are a lifelong resident, exposed to the average levels of diesel PM for 70 years. To calculate excess lung cancer risk for every U.S. county, we used the estimates of ambient air concentrations of diesel PM for 1999 generated from the ASPEN model. The ambient concentrations of diesel PM were then multiplied by the cancer unit risk factor established by the California Air Resources Board (CARB). The California Unit Risk Factor is estimated to be 3 cancer cases in 10,000 people or 300 in a million people for a lifetime of exposure to 1 microgram of diesel PM in a cubic meter of ambient air.

² Cancer risk is portrayed here as the number of times greater than US Environmental Protection Agency's (USEPA) acceptable lifetime cancer risk of 1 in a million as a result of exposure to diesel soot.

³ Individual average lifetime cancer risk due to exposure to diesel soot.

⁴ The ranking of states, metropolitan areas and counties is in descending order by the fine diesel particulate matter conditions. With this ranking system, risk is worst for the jurisdiction that ranks #1. States are ranked among the lower 48 states and the District of Columbia. Thus, New Jersey ranks the #2 state, making it the 2nd highest risk and 2nd highest average statewide diesel particulate matter conditions. Hudson County ranks #1, the worst county in the state.

⁵ Percentiles are used to order the health risks from lowest (0th percentile) to highest (100th percentile). The middle number (50th percentile) is typically referred to as the "median." Thus if you live in a county that is in the 75th percentile, this means that the risk in your county is higher than 75% of all U.S. counties. Conversely, for the 75th percentile, 25% of all U.S. counties have a higher risk.

⁶ Abt Associates, a contractor used by USEPA for regulatory impacts analysis, modeled the health impacts of diesel particulate matter using the approved methodology of USEPA's science advisory board. Complete descriptions of Abt's methodology can be found at: <http://www.catf.us/goto/AbtREMSAD> and <http://www.catf.us/goto/AbtASPEN>. Air quality modeling was performed using two models, the REMSAD model and the ASPEN model. The 1999 ASPEN model (Assessment System for Population Exposure Nationwide) is used by EPA to generate concentrations of air pollutants for the National Air Toxics Assessment (see: <http://www.epa.gov/scram001/tt22.htm#rec.>) ASPEN ambient diesel particulate matter concentrations were generated using only primary (directly-emitted) emissions of diesel particulate matter in 1999, the latest emissions inventory available. The ASPEN 1999 diesel particulate matter concentrations were the bases for county, MSA and state health impacts. The REMSAD (Regional Modeling System for Aerosols and Deposition-see: <http://remsad.saintl.com>) model was chosen for generating 2010 national health impacts as it employs the identical platform and projected 2010 emissions inventory used by EPA for its Clear Skies Act analysis (see: <http://www.epa.gov/air/clearskies/benefits.html>). The same methodology used in this analysis was also used in the 2007 highway and non-road diesel rules to project ambient diesel particulate matter concentrations and attendant damages. The emissions inventory used in the analysis includes direct PM_{2.5}, direct PM₁₀, and primary elemental carbon and particulate matter precursor gas emissions NO_x, SO₂, VOC, and NH₃ from all sources, including non-road and highway diesel in 2010. Particulate matter concentrations from the REMSAD model include both primary (direct) and secondarily formed particles. REMSAD results were combined with PM_{2.5} monitoring data from 2001 to adjust the concentrations based on real-world PM_{2.5} concentrations.

⁷ Abt Associates utilized a program they designed for USEPA's regulatory impact analyses, BENMAP (Benefits Mapping and Analysis Program-see: <http://www.epa.gov/ttn/ecas/benmapdownload.html>), to predict health impacts in each cell of an imaginary grid laid across the U.S. Each county in the U.S. is associated with the modeled air quality concentrations in a particular grid cell area covering that county. To estimate county level impacts, BENMAP combines both REMSAD and ASPEN concentrations, the county population and widely-accepted concentration-health response relationships from the medical research literature for such health endpoints as mortality, asthma attacks and heart attacks.

For more information, visit NJ Environmental Federation's website at: www.cleanwateraction.org/njef