

**Proposal**  
**New Jersey**  
**Diesel Risk**  
**Reduction Program**

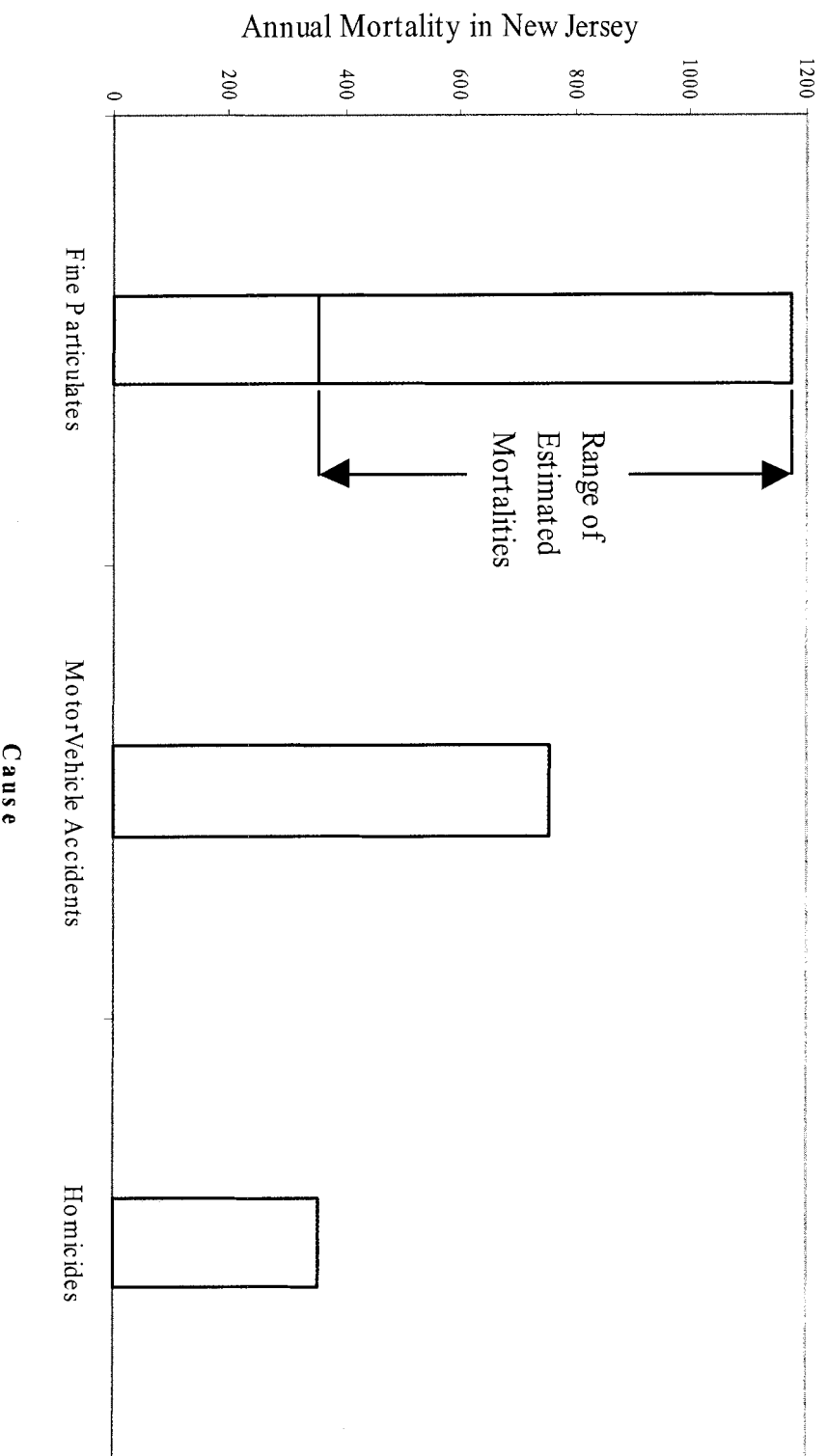
**New Jersey**  
**Department of Environmental Protection**

**December 2003**

Overview of the Fine Particle  
Air Pollution Problem:

- Carries extraordinary health risk.
- Greatest risks are in areas where we want to encourage growth.
- Risks can be substantially mitigated with State initiatives.
- With regional and State initiatives, the air quality health standards are expected to be fully met.

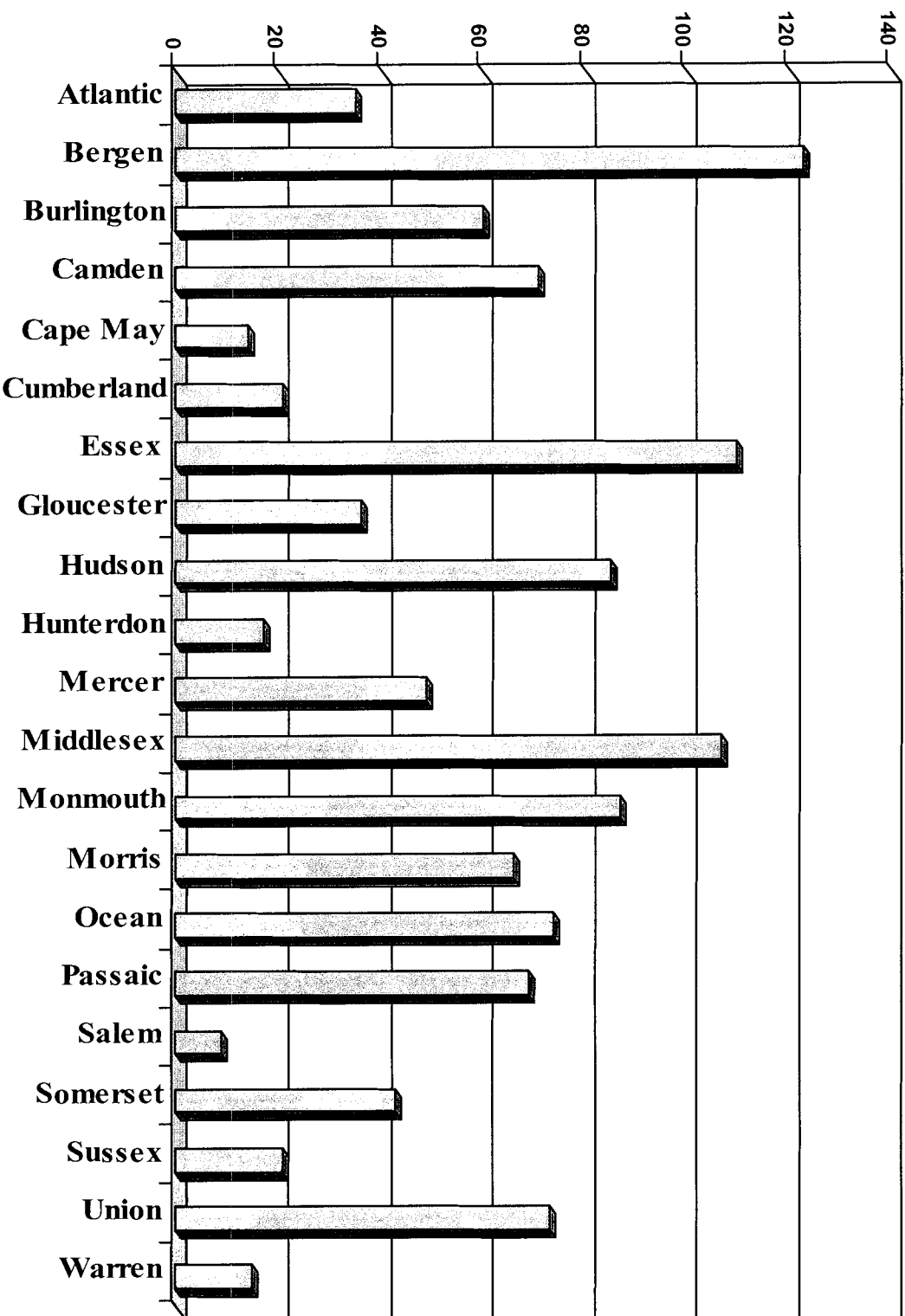
# Estimated Annual Premature Deaths In New Jersey From Fine Particles That Would Be Avoided by Meeting Federal Air Quality Standards



11/25/03

NJDEP-PRELIMINARY - DO NOT QUOTE OR CITE

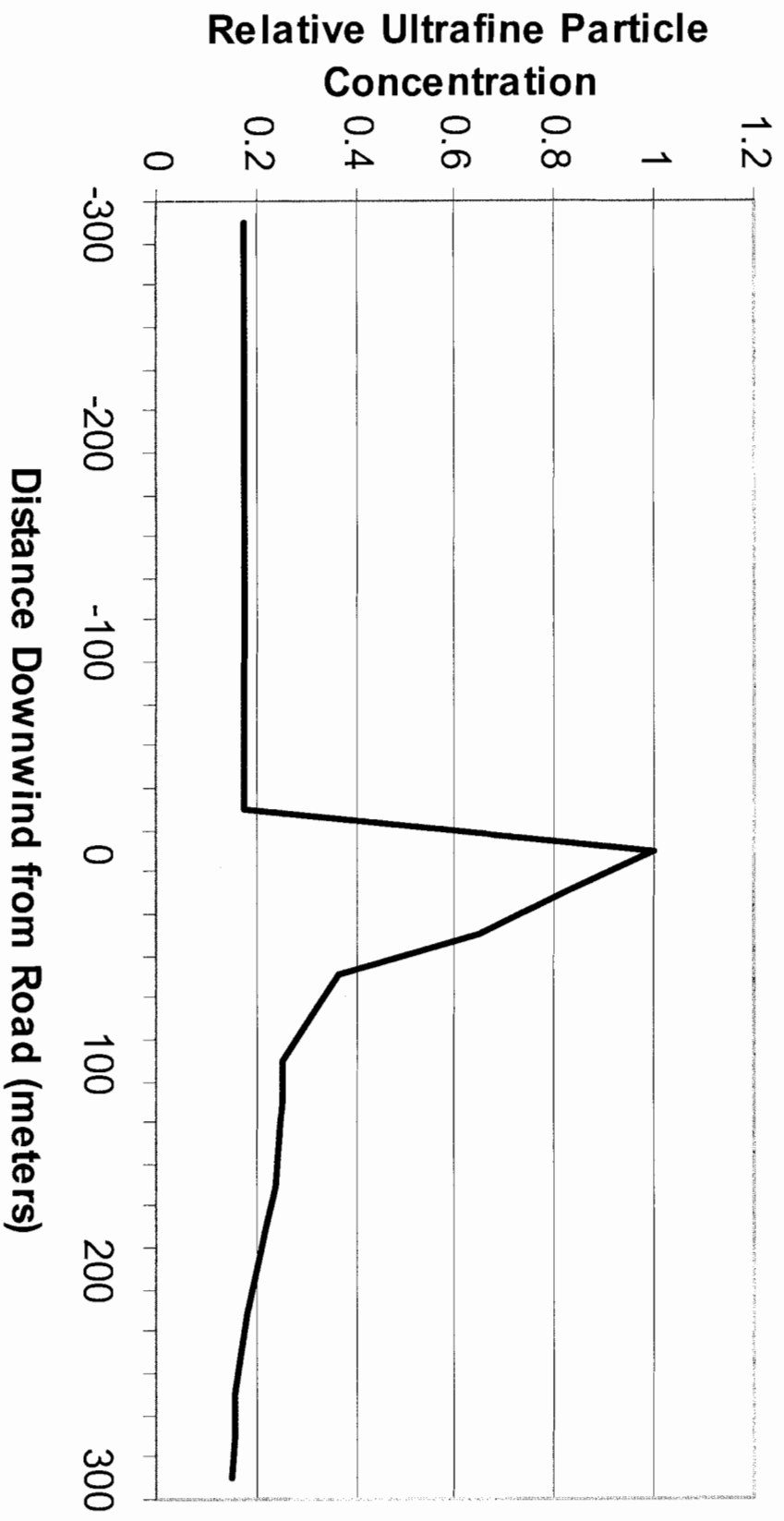
# Estimated Premature Deaths That Can Be Avoided Each Year by Meeting the Fine Particle Standard (by County)



11/25/03

NJDEP-PRELIMINARY - DO NOT QUOTE OR CITE

# Concentration of Ultrafine Particles Near Roadways

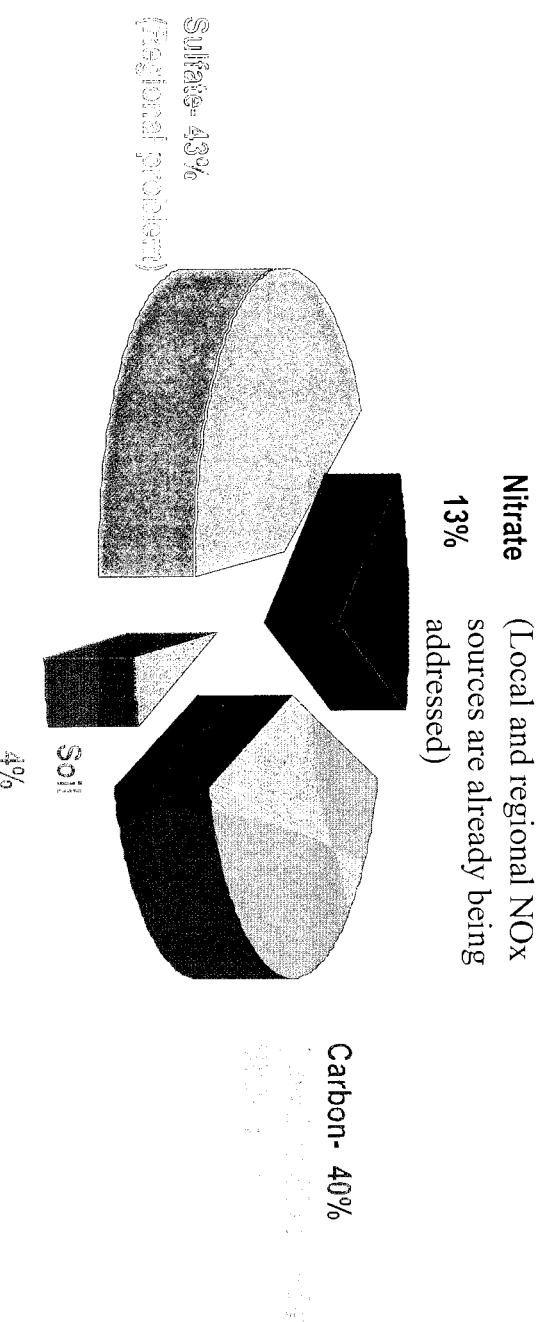


## Other Health Impacts in New Jersey Each Year Due to Exposure to Fine Particles Above the Standard

- Onset of new cases of bronchitis: 500-600 per year
- Increased hospital emergency room visits:  
6,000 per year
- Asthma attacks: 68,000 per year  
(greater than number due to ozone)  
(Giants Stadium seats 79,464 people)
- If the impacts were based on the lower California standards, these numbers would be much greater

# Why Pick Diesel Engines?

## Typical Contributions to Fine Particles in New Jersey



Mobile diesel engines are the major carbon component, and reducing diesel particulates reduces deaths both from heart/lung effects and cancer cases.

# Mobile Diesel Technology Options

## Hardware / Fuels Options

## Typical Price

**Particle Filters With Ultra Low Sulfur Diesel Fuel (ULSD)**

\$2,500-9,500 / Unit  
plus \$0.07-0.10 / Gallon\*

- Highest Particle Reduction (85%)

**Diesel Oxidation Catalysts (DOC)**

\$400-2,600 / Unit

- Lower Reduction (25%) but wide applicability

**Emulsified Fuel without ULSD**

\$0.15 / Gallon\*

- Moderate Particle Reduction (60%), NOx Reductions As Well

**Biodiesel Fuel**

\$0.10 / Gallon\*

- 25% Reduction, But NOx Increases

\* Fuel prices are expressed as incremental prices over standard diesel fuel. The incremental price for ULSD will likely decline and ultimately disappear as ULSD becomes standard fuel for on-road in 2006 and off-road in 2010 (proposed).



## What Will The Diesel Risk Reduction Program Accomplish?

- Will reduce premature deaths and other health effects each year from diesel fine particulate exposures.
- A 25% reduction in mobile diesel emissions is estimated to prevent 450 premature deaths each year; 300 due to heart/lung effects and 150 due to cancer.
- Would be an important element of New Jersey's overall plan to attain the Federal fine particle standard by 2009.
- Contribute to bringing fine particle levels below ambient air quality standards so growth can occur with diminished threat of further exceedences.

## Summary

- Health Risks Warrant State Action
- Will support our Smart Growth Objectives
- Puts the State in a leadership role
- Costs are reasonable
- Requires Legislation