

# Wake County Air Quality Task Force Report



Presented to  
**Chapel Hill Town Council**



# Pollutants of Concern

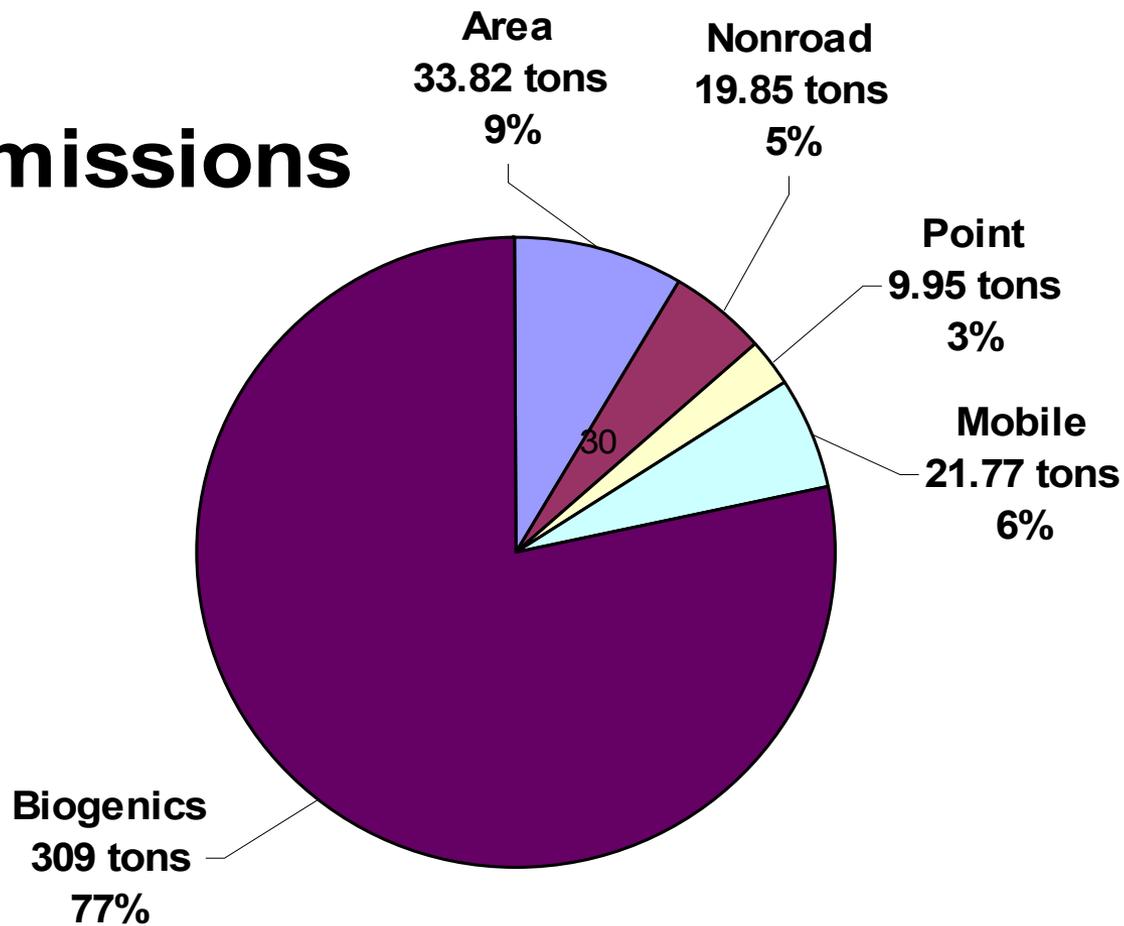
- Ozone
- Fine Particulate Matter - PM



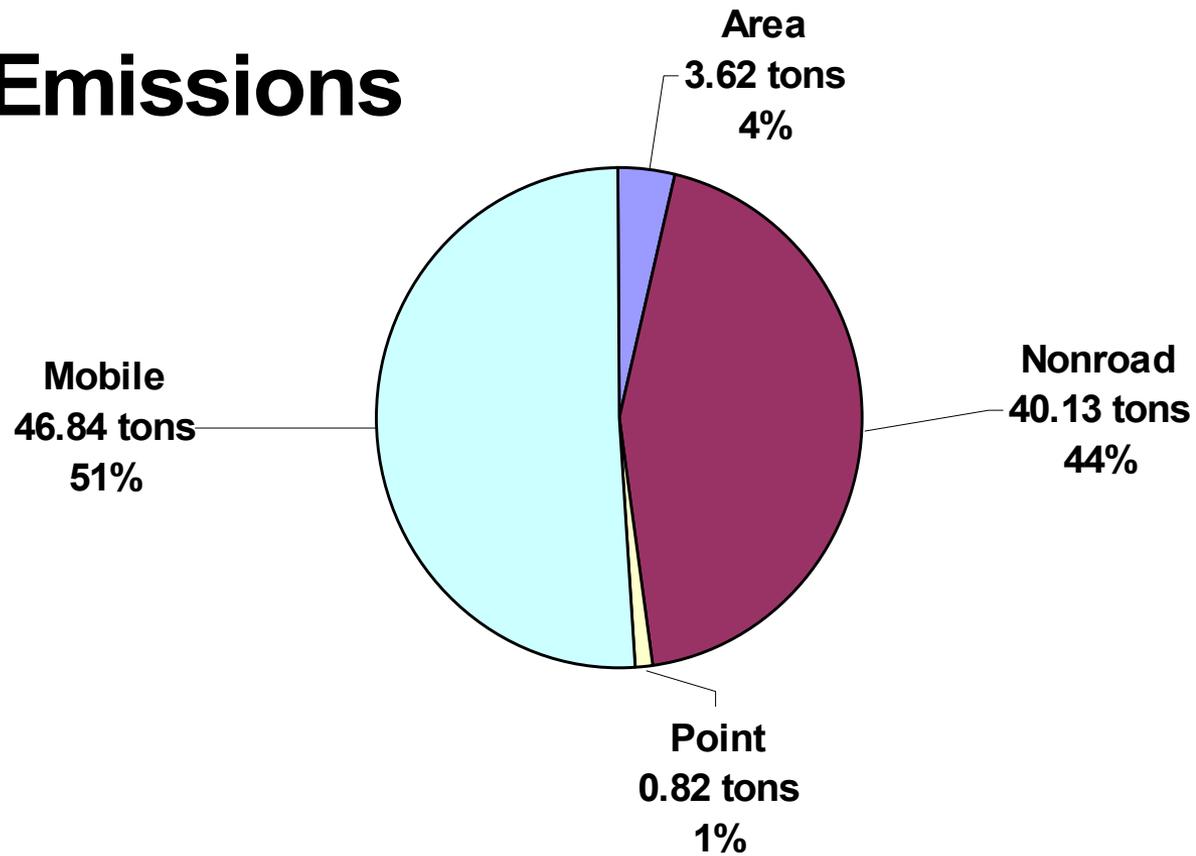
# Ozone= O<sub>3</sub>

- **VOC + NO<sub>x</sub> + Heat + Sunlight = Ozone**
  - **VOC=Volatile Organic Compounds**
  - **NO<sub>x</sub>= Nitrogen Oxides**

# VOC Emissions

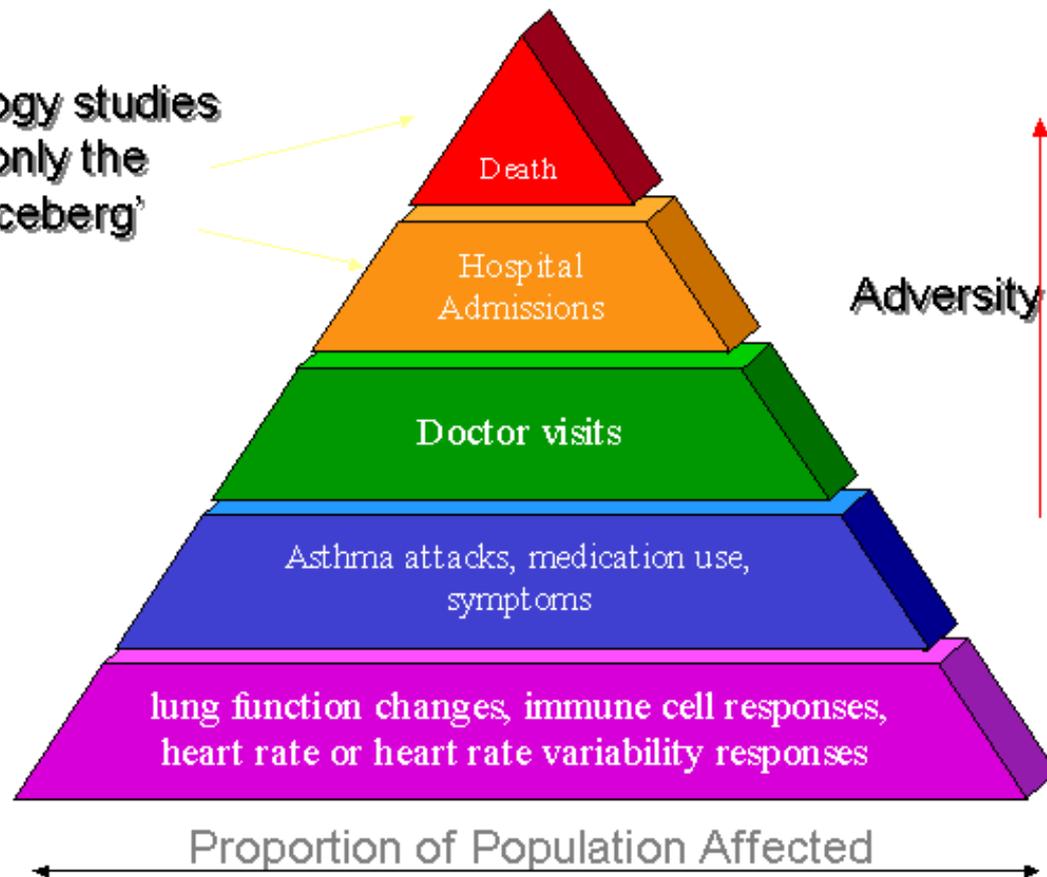


# NOx Emissions

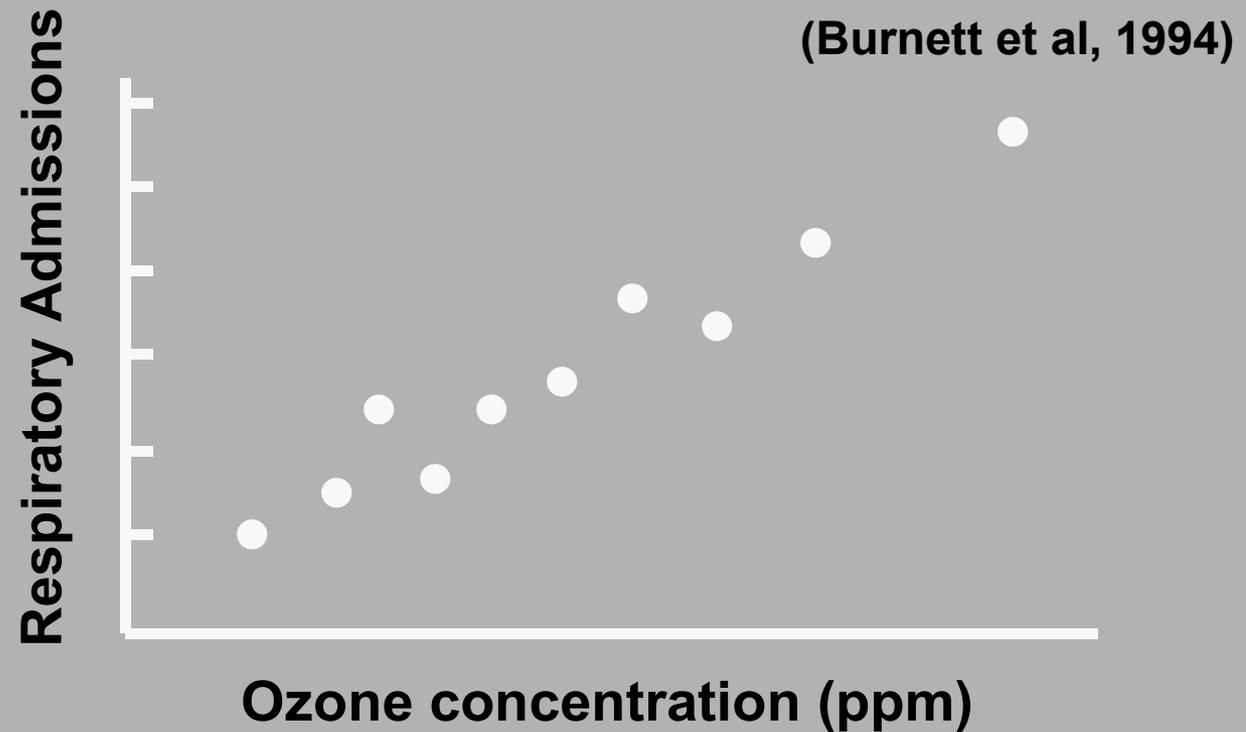


# A Pyramid of Effects

Epidemiology studies  
often see only the  
'tip of the iceberg'



# Higher ozone levels means increased hospital admissions the next day





# Health Effects of Ozone

- Irritates airways
- Inflammation
- Impairs lung defenses
- Increases hospital admissions



# Emerging Evidence of Ozone

- Premature mortality in **elderly**
- Asthma in **children**
- Increased school absenteeism

"The percentage of children with asthma has increased from 8% to 13% and one child in five under five years of age have asthma."

Dr. Peter Morris, MD, Director of Human Services, Wake County



# Groups More at Risk from Ozone

- Children
- Adults active outdoors
- Senior Citizens
- People with lung impairment
- People sensitive to ozone



# Fine Particulate Matter- PM

**PARTICULATE MATTER** includes:

Dust, Dirt, Soot, and Smoke

- **EPA standards:** 2.5 microns in size and smaller- 1/7 the size of a human hair.



# Health Effects of Fine Particulate Matter - PM

## **On the Lungs:**

- Irritate and inflame airways
- Decrease lung function
- Asthma attacks
- Bronchitis



# Health Effects of Fine Particulate Matter - PM

## **On on the Heart:**

- Change heart rate
- Cardiac arrhythmias
- Heart attacks



# Emerging Evidence of the effects of Particulate Matter

- Lung cancer deaths
- Infant mortality
- Developmental problems

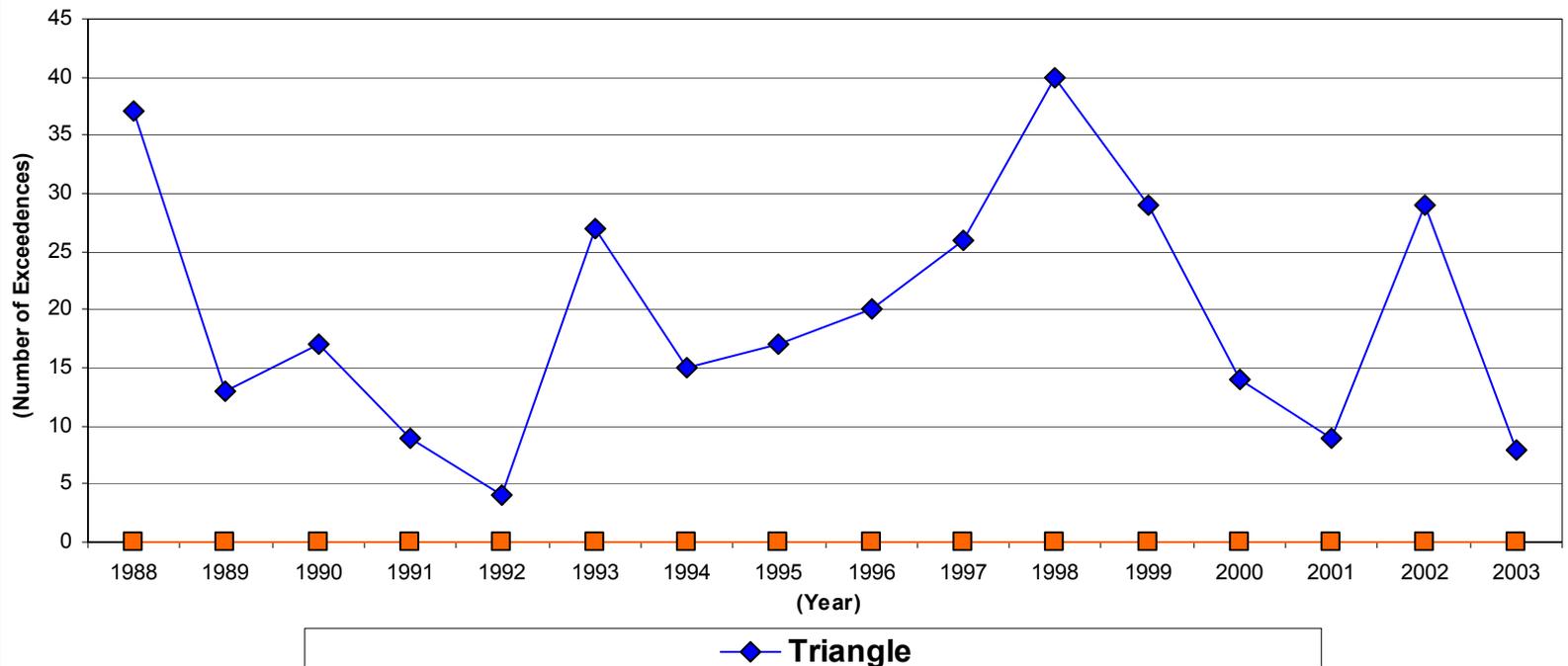


# Triangle Air Quality

- Triangle area is in non-attainment for Ozone  
**9 out of 10 monitors exceed 8-hour standard**
- Triangle area complies with current PM standards  
**But just barely!**

# Is Air Quality Getting Worse?

## Yearly 8 Hour Ozone Exceedences





# Wake County Air Quality Task Force Goals

- Comply with National Ambient Air Quality Standards by 2007.
- Eliminate ozone action days by 2010



Air Quality Task Force recommended 43 strategies under 13 categories that can be taken by: **Government, Businesses and Individuals**

1. Develop Regional Partnerships
2. Commuter Choice and e-business
3. Transportation Improvements
4. Cleaner Fuels and Alternative Fuel Vehicles
5. Reduce Emissions from Existing Vehicles.
6. Land Use

- 
7. Energy Conservation
  8. Reduce Emissions from Diesel Engines, on and off road
  9. Reduce Emissions from Non-Road Gasoline Engines
  10. Airport Clean Air Program
  11. Ozone Action Days Programs
  12. Outreach/Education
  13. Promote Efficient Freight/Delivery Transport



The Wake County Commissioners  
received the  
**Air Quality Task Force Report**  
September 15, 2003  
and asked staff to prepare an  
**Air Quality Implementation Plan**



# AQTF Recommended 43 Strategies

## **The Implementation Plan Reviewed:**

- Cost of implementation
- Ease of implementation
- Expected benefits
- Responsible parties
- Current status and time frame for action.



## Staff reviewed the 43 strategies recommended by Air Quality Task Force

- High-priority control measures - **already implemented** (2)
- High-priority control measures – **needs implementation** (4)
- Recommended control measures (11)
- Recommended control measures requiring collaboration (4)
- Recommended control measures with little control (14)
- Control measures which require further study (6)
- Control measures not recommended (2)



# High Priority Control Measures

- Participate in Air Awareness Program  
(already implemented)
- Participate in Triangle Clean Cities Coalition  
(already implemented)
- Continue Regional Collaboration
- Become a Best Workplace for Commuters
- Purchase hybrid and alternative fuel vehicles for Wake County fleet
- Reduce harmful emissions from Wake County Public School System buses.



Wake County Commissioners adopted the  
**Air Quality Implementation Plan**

February 2, 2004

Also approved by

**Human Services Board**

January 22, 2004

**Environmental Services Committee**

December 12, 2003