

Control of NO_x emissions from natural gas-fired industrial, commercial, institutional (ICI) boilers, steam generators, process heaters and water heaters

Simplified Photochemistry of O₃ Formation

Ozone formation

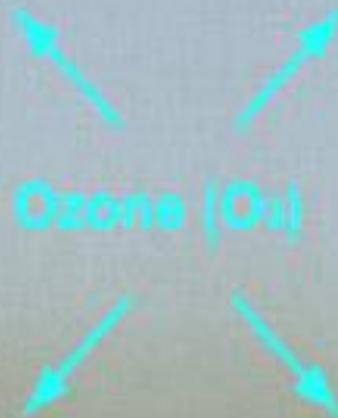
Sunlight



Oxygen (O₂) +
Volatile Organic Compounds (VOC) +
Nitrogen Oxides (NO_x)



Ozone (O₃)



Ozone NAAQS Attainment

National Ambient Air Quality Standard (NAAQS):

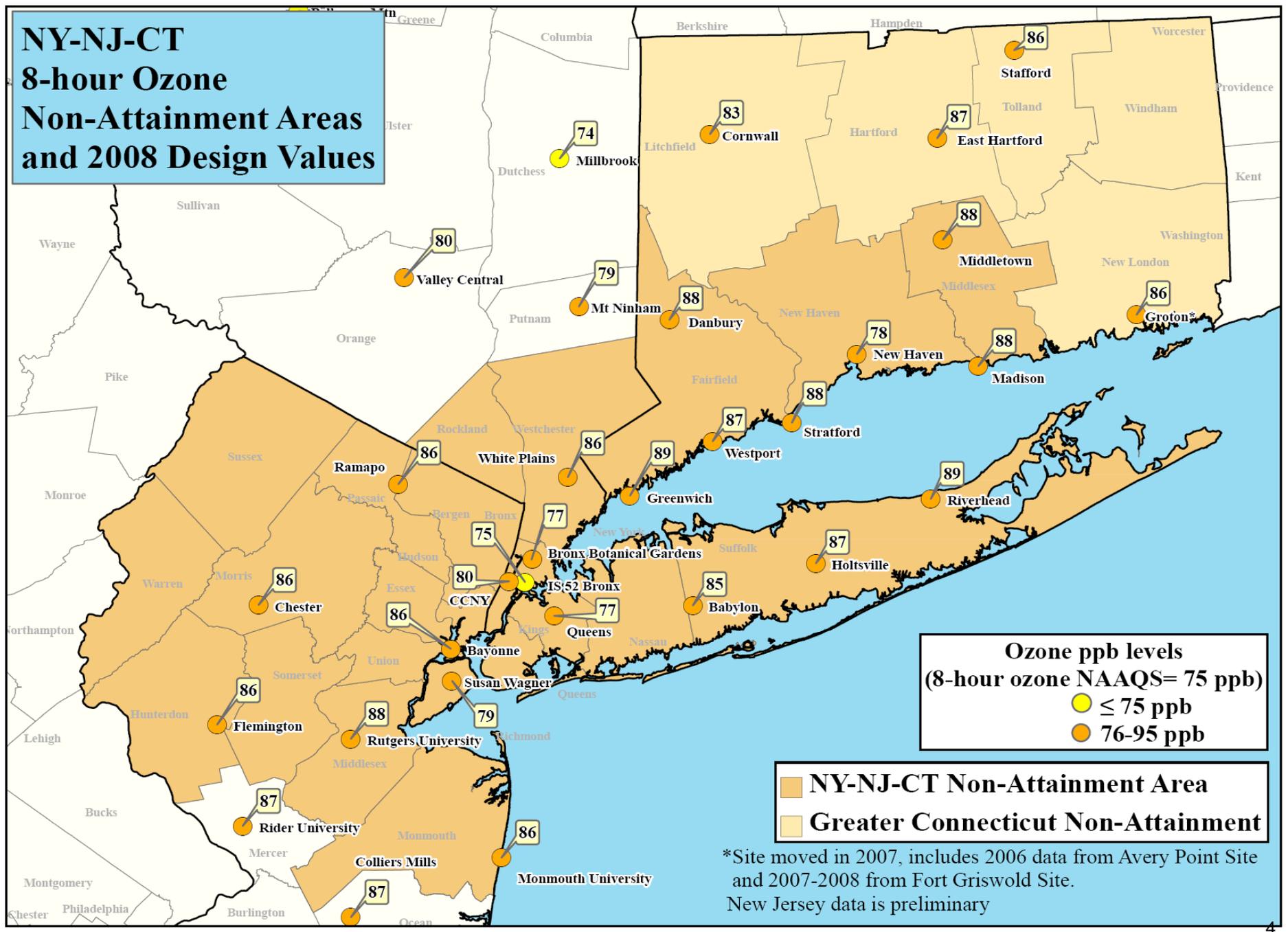
- 1997 8-hr O₃ = 0.085 ppm
- 2008 8-hr O₃ = 0.075 ppm
- EPA is reevaluating 2008 standard and may revise to between 0.06 – 0.07 ppm ([more info](#))

Nonattainment designation if ambient measurements >NAAQS

Health affects of ozone exposure:

- airway irritation; reduced lung capacity; asthma aggravation; permanent lung damage

NY-NJ-CT 8-hour Ozone Non-Attainment Areas and 2008 Design Values



The OTC Process

Member states pool expertise to collaboratively develop control measures and evaluate costs and benefits.

States evaluate each control measure based on their industrial base, current regulations and attainment needs.

If the evaluation shows that it is appropriate, states adopt a regulation based on model rule.

State-specific regulatory development procedures must be followed, including all public participation elements required under the Administrative Procedures Act.



Summary of measure

- ▶ **Based on San Joaquin Valley Air Pollution Control District Rule 4308 and Rule 4307, California Air Resources Board Regulations and Texas Air Control Board Regulations.**
- ▶ **Does not apply to, among other things, units located in residential dwellings designed for 4 or fewer families.**
- ▶ **Applies to units between 75 MBtu/hr–5 MMBtu/hr manufactured, supplied, sold, offered for sale, installed or solicited to be installed on or after January 1, 2013.**

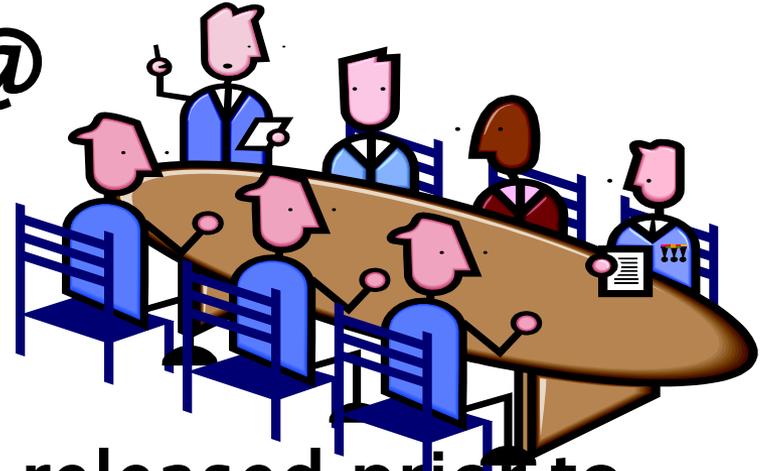
Proposed emission limits

Size	Emissions Rate (lb/MMBtu)
75–400 MBtu	0.093
400 MBtu – 2 MMBtu	0.036
2–5 MMBtu Atmospheric	0.014 or 12 ppmv
2–5 MMBtu Non-Atmospheric	0.011 or 9 ppmv

OTC Stakeholder meeting

March 16, 2010 @

DEP Headquarters
79 Elm Street
Hartford, CT



Control measures will be released prior to meeting

Stakeholder comments will be accepted

More information @ www.otcair.org

Moving forward in Connecticut

Estimate impact in Connecticut

- Review annual sales information
- Collect cost information and pollutant trade-off information

Assess relevance of proposed control strategy for Connecticut sources

Quantify emissions reductions

Revise state regulations, as appropriate

Meeting Agenda

I. Introductions

II. Topics for discussion

1) Overview of the Ozone Transport Commission and CT DEP process and control strategies

2) Estimation of CT annual sales in each size category

3) Impact on emissions:

a. Energy Star label

b. Boiler tune-ups (including frequency)

4) Current data:

a. Stack test

b. Price differential between boilers required to meet existing limits vs. new limits

c. Fuel benefit

d. Climate implications (pollutant trade-offs?)

e. Manufacturer certification

5) Other

III. Next Steps

IV. Adjournment