



# Connecticut Department of Energy and Environmental Protection



Connecticut Department of  
**ENERGY &  
ENVIRONMENTAL  
PROTECTION**

# Ozone Pollution - Public Health and Equity

Connecticut - non-attainment for both the 2008 and 2015 8-hr ozone national ambient air quality standards

**RESPIRATORY EFFECTS**

**Symptoms:**

- Cough
- Phlegm
- Chest tightness
- Shortness of breath

**Increased sickness and premature death from:**

- Asthma
- Bronchitis (acute or chronic)
- Emphysema
- Pneumonia

**Development of new disease:**

- Chronic bronchitis
- Premature aging of the lungs

**How Pollutants Cause Symptoms**

**Effects on Lung Function:**

- Narrowing of airways
- Inflammation
- Decreased air flow

**Airway Inflammation:**

- Swelling of airway blood cells
- Abnormal mucus production
- Fluid accumulation and swelling (edema)
- Death and disability of cells that line airways

**Increased Susceptibility to Respiratory Infection:**

**Normal** vs **Lung with respiratory infection**

**Cardiovascular Effects**

**Symptoms:**

- Chest tightness
- Chest pain (angina)
- Palpitations
- Shortness of breath
- Unusual fatigue

**Increased sickness and premature death from:**

- Coronary artery disease
- Abnormal heart rhythms
- Coronary artery disease
- Cognitive heart failure
- Stroke

**How Pollutants Cause Symptoms**

**Effects on Cardiovascular Function:**

- Less regeneration of red blood cells
- Abnormal heart rhythms
- Abbed autonomic nervous system control of the heart

**Vascular Inflammation:**

- Increased risk of blood clot formation
- Narrowing of vessels
- Increased risk of atherosclerosis, plaque buildup

**Normal** vs **Abnormal**

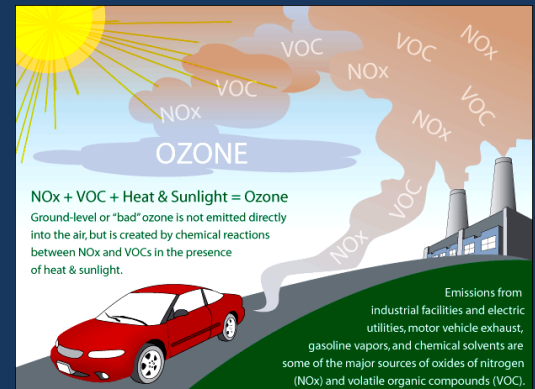
**Reduce your risk by using the Air Quality Index (AQI) to plan outdoor activities - [www.airnow.gov](http://www.airnow.gov)**

AQI Levels of Health Concern	AQI Values	What Action Should People Take?
Good	0-50	Enjoy Activities
Moderate	51-100	People unusually sensitive to air pollution: Plan to reduce outdoor activities when air quality is better
Unhealthy for Sensitive Groups	101-150	<b>Sensitive Groups:</b> Cut back or reschedule strenuous outside activities. <b>Other:</b> People with lung disease, asthma and older adults and people who are active members of sports teams, tend to be at high ozone levels. Sensitive groups: older adults and children. <b>Other:</b> People with heart disease, diabetes and other chronic conditions.

Ozone forms when NOx and VOC react during warm weather



Breathing ozone triggers health problems; can reduce lung function and harm lung tissue. Ozone worsens bronchitis, emphysema, and asthma, leading to increased medical care and costs.

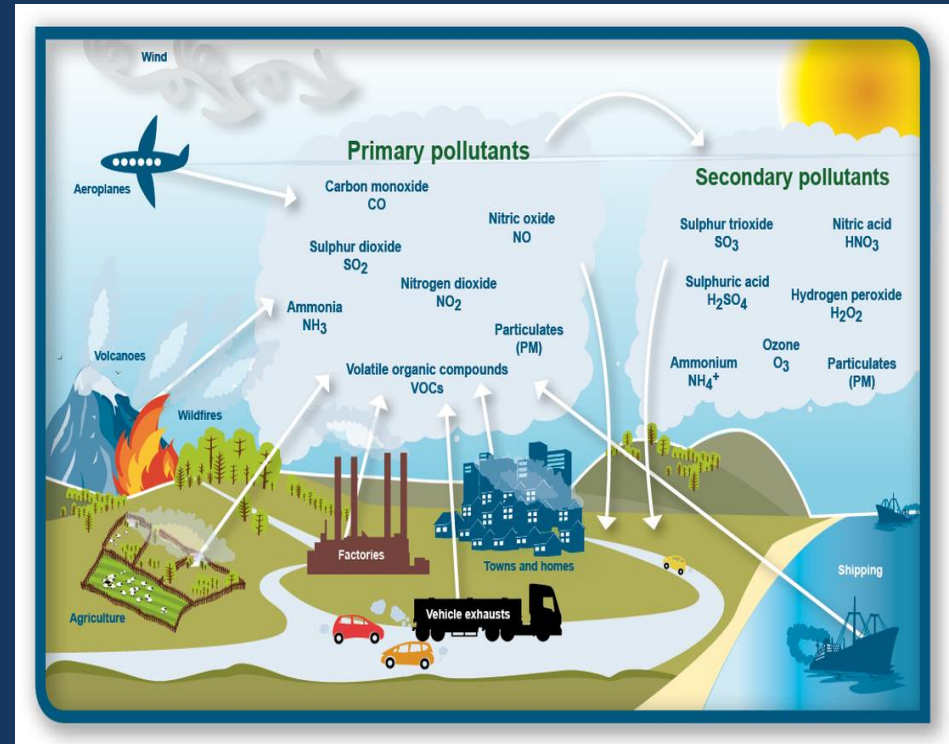


Particulate Matter (PM) also impacts public health



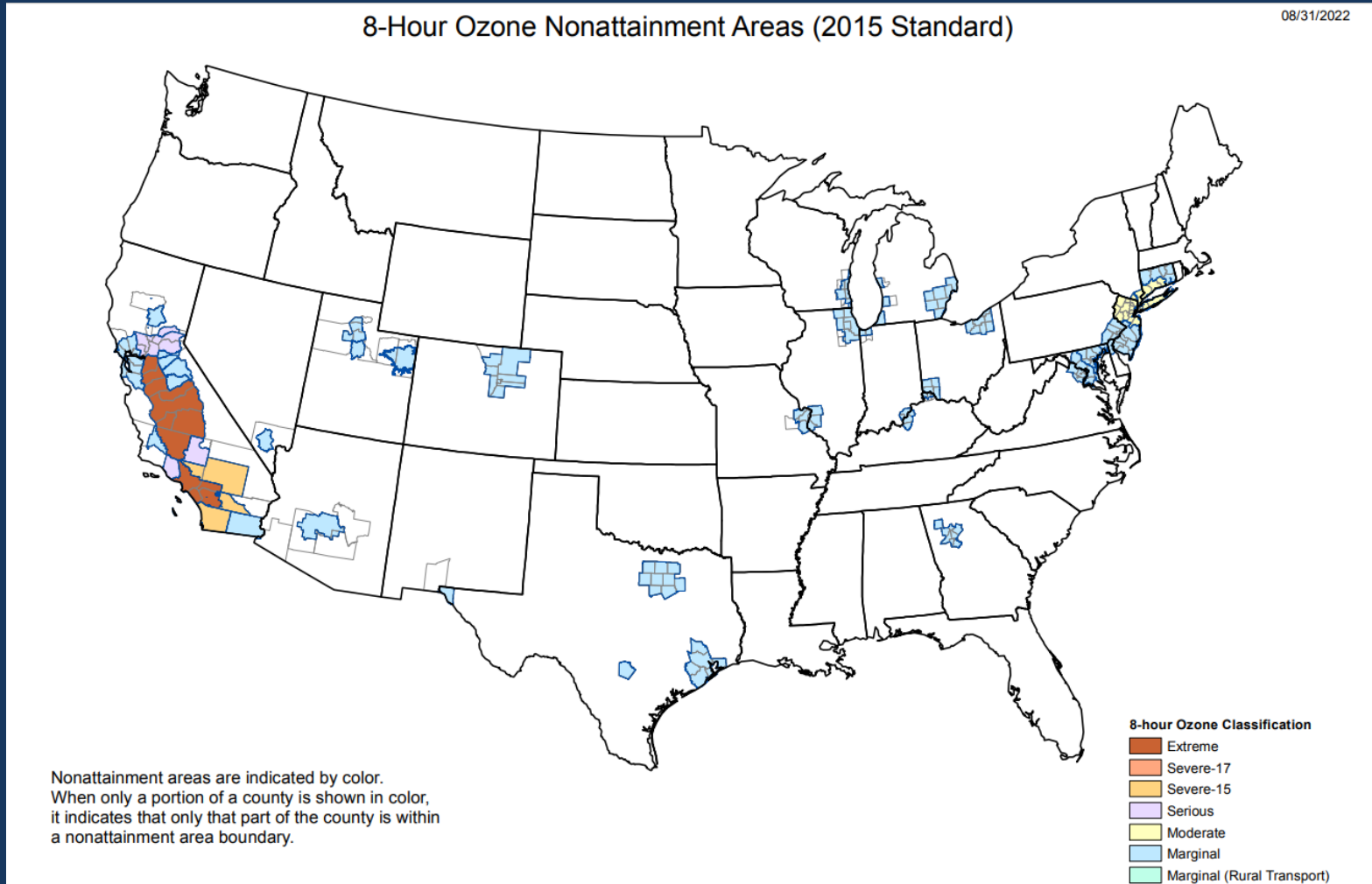
# Sources of Ground Level Ozone or Smog

- Ground level ozone has been difficult to rein in due to the numerous sources that contribute to its formation.
- Sources of VOCs:
  - Evaporation of gasoline, solvents used in paints, and solvents
  - Motor vehicle emissions
  - Emissions from off-road engines used in lawn mowers, motorboats, and construction equipment
- Sources of NOx:
  - Combustion of coal, oil, gas, and other fuels to produce electricity or to power large industrial boilers
  - Motor vehicles, particularly diesel fueled vehicles
  - Emissions from off-road engines used in lawn mowers, motorboats, and construction equipment



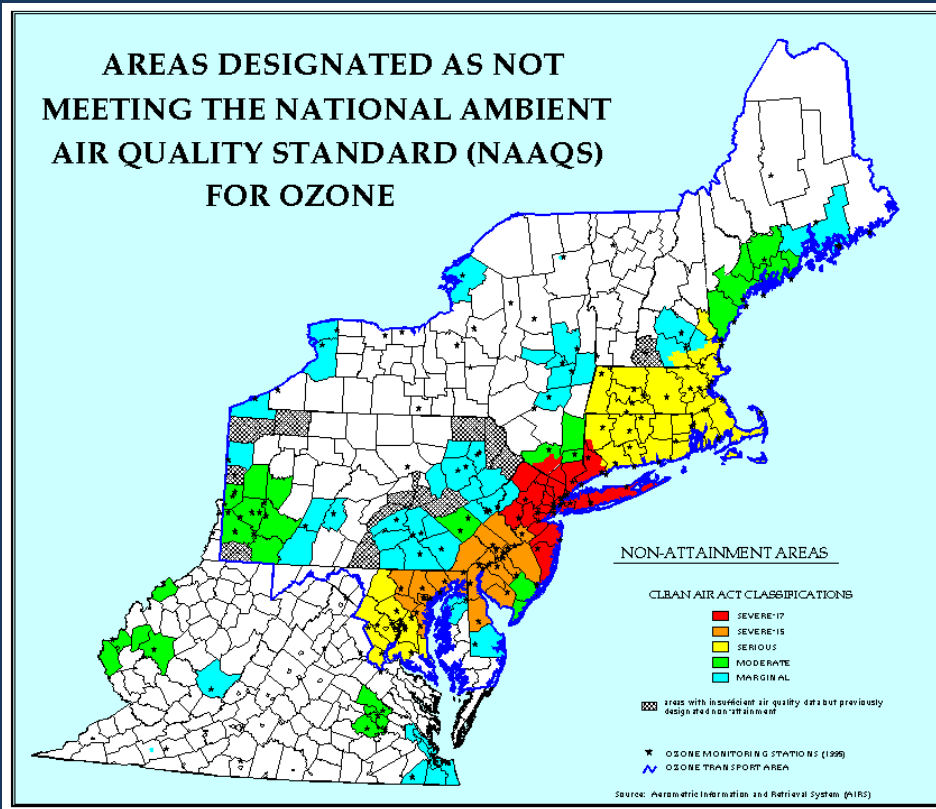
# Ozone Reclassification Areas Nationally

Many densely populated areas do not meet the 2015 ozone standard

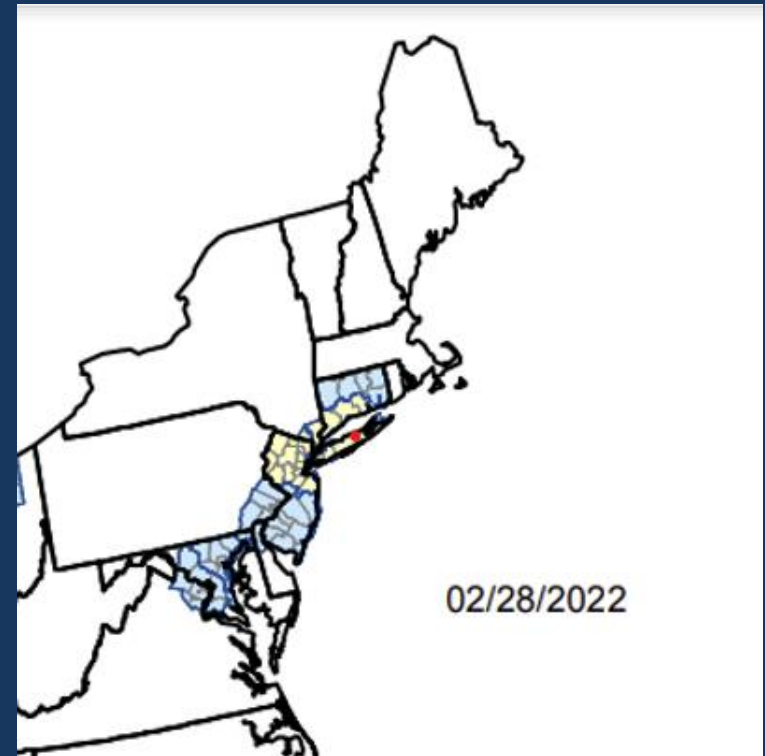


# Regional Ozone Levels: Comparison of 1999 and 2022

Ozone nonattainment 30 years ago



Ozone nonattainment today



The ozone standard 30 years ago was considerably less stringent than the current standard.



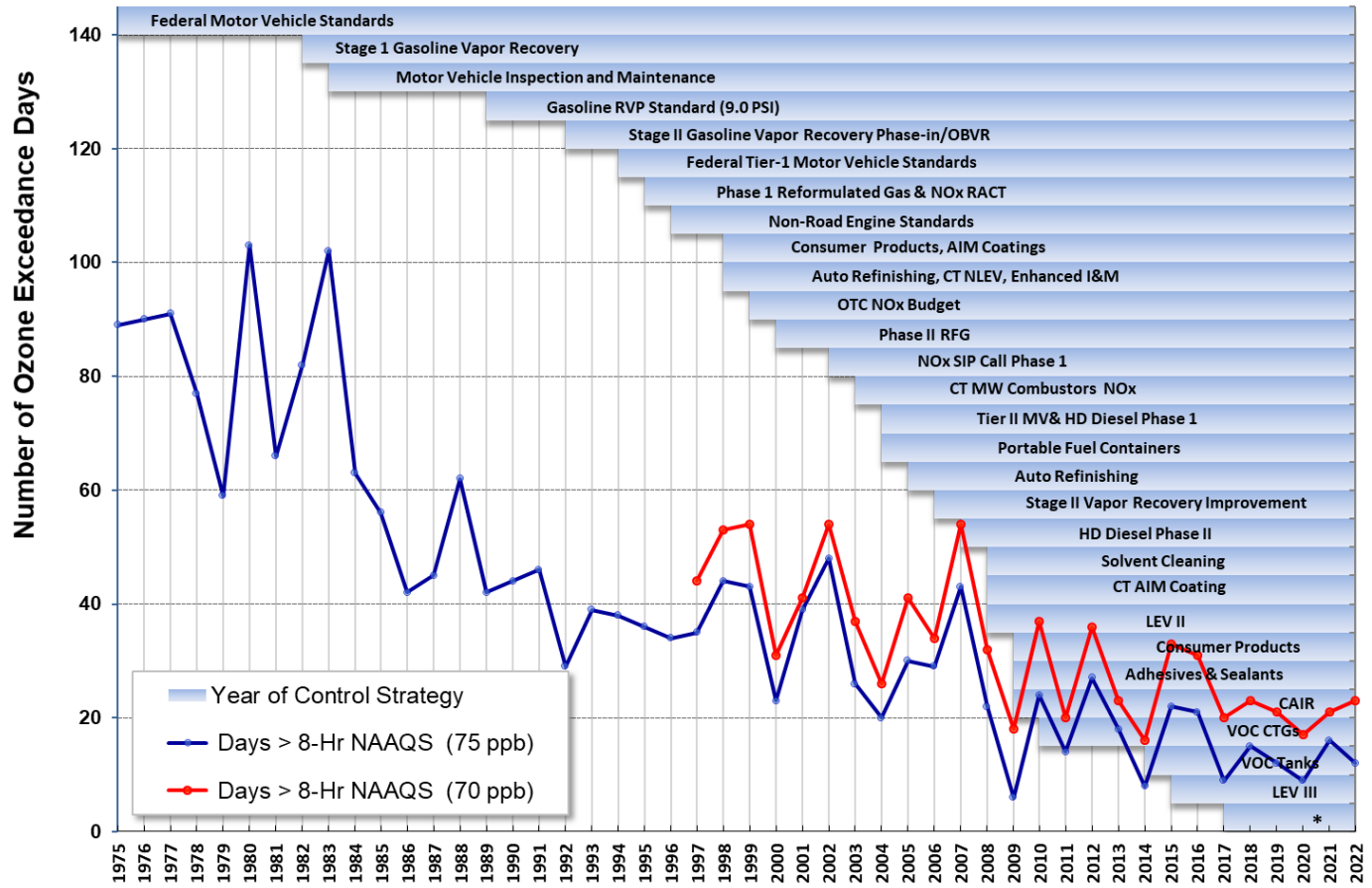
Connecticut Department of Energy and Environmental Protection

# CT's Progress In Meeting the Ozone NAAQS

If the 2008 ozone standard had been in place in the 1980s, CT would have exceeded it on over 100 days over the summer.

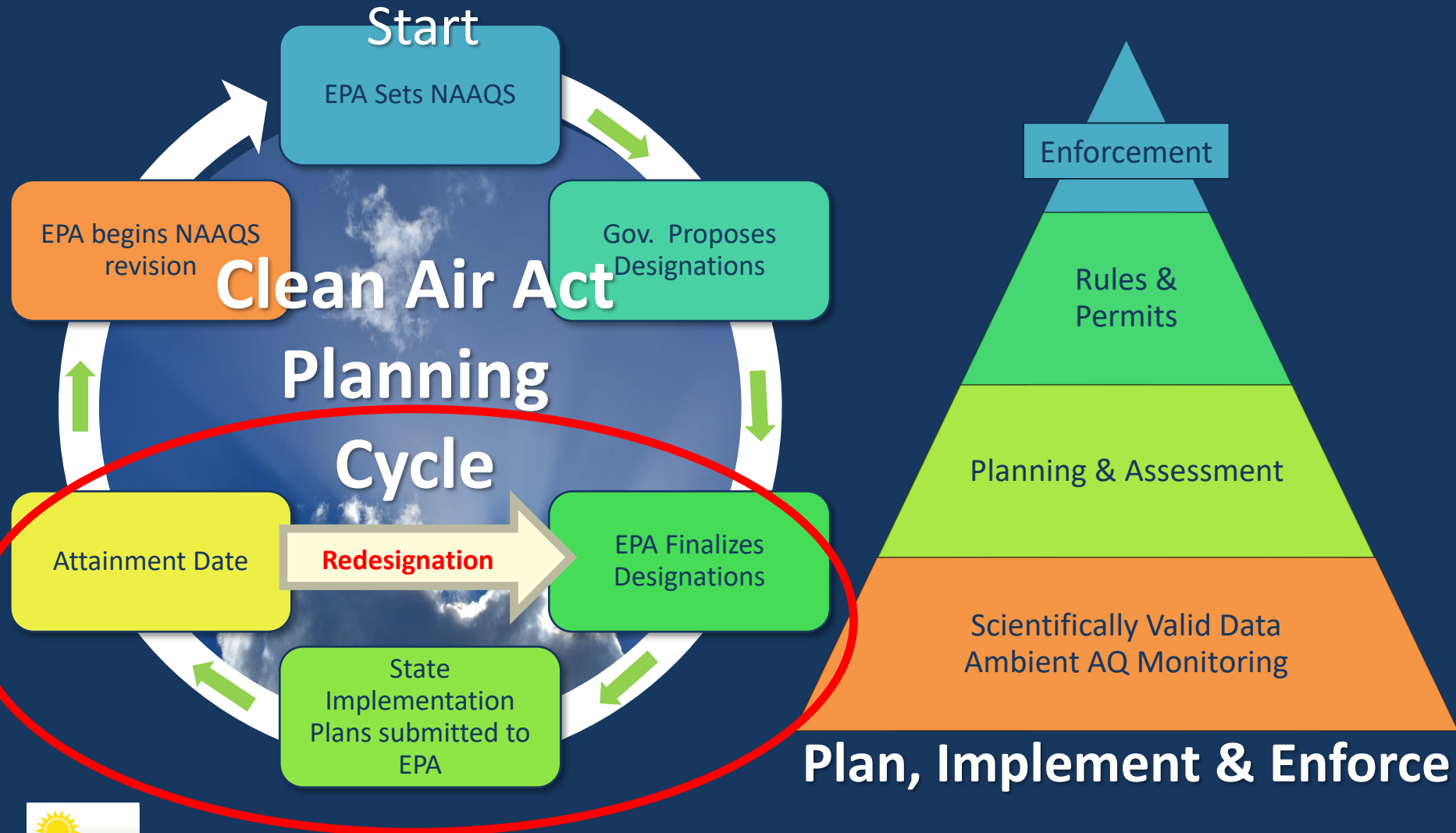
As shown by the chart, in recent years, CT has exceeded the 75 ppb 2008 standard much less frequently.

**Connecticut 8-Hour Ozone Exceedance Day Trends and Implemented Control Strategies**





# Air Quality Planning Cycle





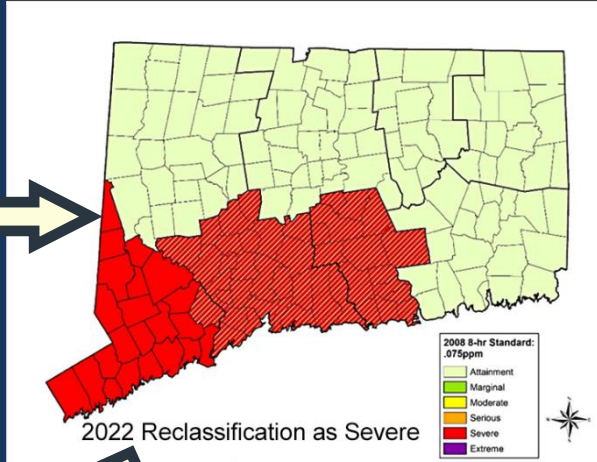
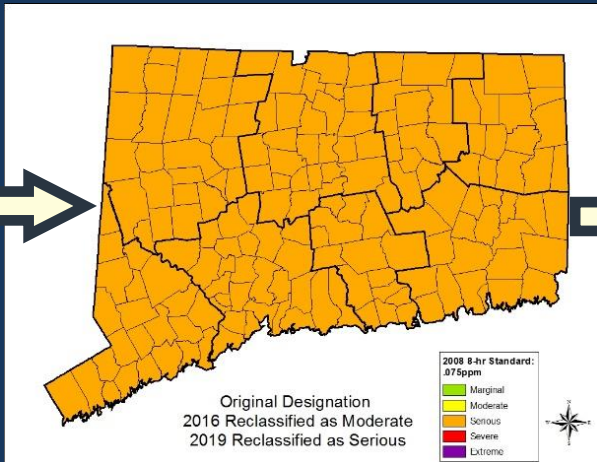
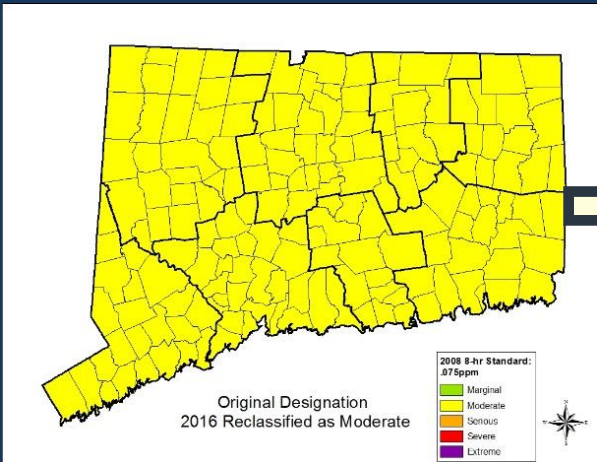
# 2008 Ozone NAAQS: History of Reclassification in CT



Marginal nonattainment

Moderate nonattainment

Serious nonattainment



Severe Non-Attainment  
Date July 20, 2027



# EPA Published a Final Reclassification Rule

## Impact on Connecticut

- For the **2008 ozone standard**, Fairfield, Middlesex, and New Haven counties will be reclassified from serious to severe and be given 6 additional years to meet the standard.
  - Severe nonattainment areas for the 2008 ozone standard will have until **2027** to attain the standard.
  - **EPA’s proposal finds that the rest of Connecticut has met the 2008 ozone standard.**
- For the **2015 ozone standard**, Hartford, Litchfield, New London, Tolland, and Windham counties will be reclassified from marginal to moderate.
  - The remaining portions of Connecticut were already classified as moderate and will retain that classification for the 2015 standard.
  - Connecticut’s moderate nonattainment areas for the 2015 ozone standard will have until **2024** to attain the standard.
- See 87 Fed Reg 60897 (October 7, 2022)

Federal Register / Vol. 87, No. 194 / Friday, October 7, 2022 / Rules and Regulations **60897**

(1) EPA APPROVED NORTH CAROLINA REGULATIONS—Continued

State citation	Title/subject	State effective date	EPA approval date	Explanation
Rule 2603	Testing Protocol	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2604	Number of Test Points	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2605	Velocity and Volume Flow Rate	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2606	Molecular Weight	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2607	Determination of Moisture Content	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2608	Number of Runs and Compliance Determination.	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2610	Opacity	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2612	Nitrogen Oxide Testing Methods	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2613	Volatile Organic Compound Testing Methods.	11/1/2019	10/7/2022, [Insert citation of publication].	
Rule 2614	Determination of VOC Emission Control System Efficiency.	11/1/2019	10/7/2022, [Insert citation of publication].	

22 Marginal areas or portions of areas failed to attain the standards by the applicable attainment date. The effect of failing to attain by the applicable attainment date is that these areas or portions of areas will be reclassified by operation of law to "Moderate" nonattainment for the 2015 ozone NAAQS on November 7, 2022, the effective date of this final rule. Accordingly, the responsible state air agencies must submit State Implementation Plan (SIP) revisions and implement controls to satisfy the statutory and regulatory requirements for Moderate areas for the 2015 ozone NAAQS according to the deadlines established in this final rule.

**DATES:** The effective date of this rule is November 7, 2022.

**ADDRESSES:** The EPA has established a public docket for these ozone designations at <https://www.regulations.gov> under Docket ID No. EPA-HQ-OAR-2021-0742. Although listed in the docket index, some information is not publicly available, e.g., Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form.

**FOR FURTHER INFORMATION CONTACT:** For general questions concerning this action, contact Emily Millar, U.S. EPA, Office of Air Quality Planning and Standards, Air Quality Policy Division, C539-01 Research Triangle Park, NC 27709; telephone number: 919-541-2619; email address: [emillar.emily@epa.gov](mailto:emillar.emily@epa.gov) or Robert Lingard, U.S. EPA, Office of Air Quality Planning and Standards, Air Quality Policy Division, C539-01 Research Triangle Park, NC 27709; by telephone number: 919-541-5272; email address: [lingard.robert@epa.gov](mailto:lingard.robert@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**Table of Contents**

The following is an outline of the Preamble.

I. Review of Proposed Actions

A. Proposed Determinations of Attainment by the Attainment Date, Determinations of Failure To Attain by the Attainment Date and Extensions of the Attainment Date

B. Proposed International Transport and Requirements for CAA Section 179B

C. Proposed Moderate Area SIP Submission and Controls Implementation Deadlines

II. Responses to Comments and Final Actions

A. Determinations of Attainment by the Attainment Date

B. Extension of Marginal Area Attainment Date

C. Determinations of Failure To Attain and Reclassification

D. International Transport and Requirements for CAA Section 179B

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 81  
[EPA-HQ-OAR-2021-0742; FRL-8425-02-OAR]

**Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Marginal for the 2015 Ozone National Ambient Air Quality Standards**

**AGENCY:** Environmental Protection Agency (EPA).

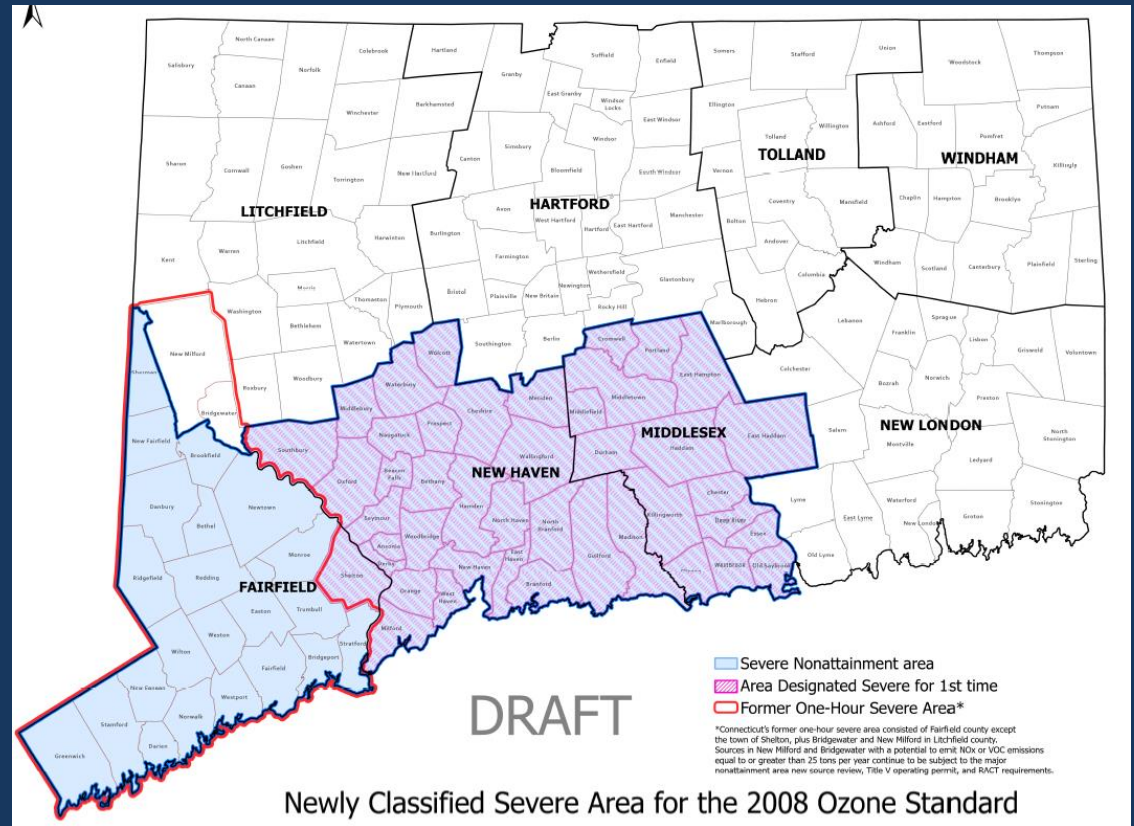
**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA or Agency) is finalizing three types of actions the Clean Air Act (CAA or Act) related to 25 areas classified as "Marginal" for the 2015 ozone National Ambient Air Quality Standards (NAAQS). First, the Agency is determining that five Marginal areas attained the standards by the August 3, 2021, applicable attainment date. Second, the Agency is granting a 1-year attainment date extension for the Uinta Basin, Utah (UT), nonattainment area. Third, the Agency is determining that



# Map of the New Severe Nonattainment Area -2008 standard

For the 2008 ozone standard, EPA's action will reclassify Fairfield, New Haven, and Middlesex counties from serious to severe.



# Air Planning Impacts

For the 2008 Severe Nonattainment Area:

- Attainment demonstration (including modeling, nonattainment new source review (NNSR), clean fuels program, enhanced motor vehicle enhanced inspection and maintenance (I/M), reasonable further progress (RFP), contingency measures (CMs), Emission inventory, Emission statement, and enhanced ozone monitoring plan) – **18 months after effective date (May 7, 2024)**
- Reasonably Available Control Technology (RACT) Demonstration (including revised major source threshold down to 25 tpy) – **18 months after effective date**
- Vehicle Miles Traveled (VMT) growth demonstration – **18 months after effective date**

For the 2015 Moderate Nonattainment Area:

- RACT (including major source, control technique guidelines (CTGs) and non-major source) – **January 1, 2023**
- Attainment demonstration (including modeling, enhanced ozone monitoring, emission statement and inventory, NNSR, CMs, RFP and basic I/M\*) – **January 1, 2023**
  - \*Basic I/M program has an implementation date no later than 4 years after the effective date of reclassification.



# Regulatory Changes

- Amend RCSA section 22a-174-1 so that the definition of “severe non-attainment area for ozone” matches the current area.

Current	Future
the towns of Bethel, Bridgeport, Bridgewater, Brookfield, Danbury, Darien, Easton, Fairfield, Greenwich, Monroe, New Canaan, New Fairfield, New Milford, Newtown, Norwalk, Redding, Ridgefield, Sherman, Stamford, Stratford, Trumbull, Weston, Westport and Wilton.	all towns in Fairfield, Middlesex and New Haven Counties plus the towns of Bridgewater and New Milford. For the purpose of this definition, a town includes each town, consolidated town and city, or consolidated town and borough.



# Potential Impacts to the Regulated Community

- New major sources could be created with no change in equipment or operations just based on the change in severe nonattainment area major source thresholds.
- New Title V sources may be created as well.
- Permit-by-rule approach may no longer be available to sources with multiple pieces of equipment.
- Permits and orders may no longer qualify for limitations under RACT.



# Working with the Regulated Community

- Planning and source identification now underway.
  - Sources with NSR Permits- no impact until the source changes equipment or operation.
    - Offset ratios will change
    - Sources covered under a permit-by-rule may require new compliance strategies
  - Sources in the Title V Program
    - New thresholds may trip Title V permitting and may require new limits or new permits
    - Section 33a/33b sources may require additional limits or an alternative means of compliance.



# Impacts of EPA's Action for the 2008 Ozone Standard

- The greatest impact will be a lowering of the threshold used to determine a “major source” from 50 tons/year to 25 tons/year, based on a source’s potential emissions of volatile organic compounds (VOCs) or nitrogen oxides (NO<sub>x</sub>).
  - VOCs and NO<sub>x</sub> react to form ground level ozone.
- Major sources of air pollution are subject to air pollution control requirements under the federal Clean Air Act, including but not limited to:
  - Nonattainment new source review (NNSR) for new major sources or modifications to existing major sources require state of the art pollution controls and emissions offsets.
  - Major source facilities must also have a permit issued in accordance with Title V of the CAA.
  - Reasonably available control technology (RACT) for VOC and NO<sub>x</sub> sources .





# Impacts on Permitting

- Nonattainment New Source Review
  - Effective November 7, 2022, nonattainment new source review (NNSR) permitting requirements for new and modified major stationary sources will apply across the newly reclassified severe ozone nonattainment area
    - For Middlesex and New Haven Counties, this means DEEP will:
      - Apply NNSR permitting requirements for lowest achievable emission rate to smaller sources (changing the major source threshold of potential to emit from 50 tpy to 25 tpy); and
      - Require the offsetting of new emissions with emissions reductions from existing sources (i.e., setting a new offset ratio of 1.3:1, rather than 1.2:1).
  - EPA guidance allows for states to implement portions of Appendix S of 40 CFR part 51, EPA's Emission Offset Interpretative Ruling, as a gap-filling program to implement any programmatic elements not reflected in a state's existing rules but is required by the reclassification.
  - Appendix S will govern applicability thresholds and offset ratios in the newly reclassified severe nonattainment area for nonattainment major NSR permitting of ozone precursors during the SIP development period.



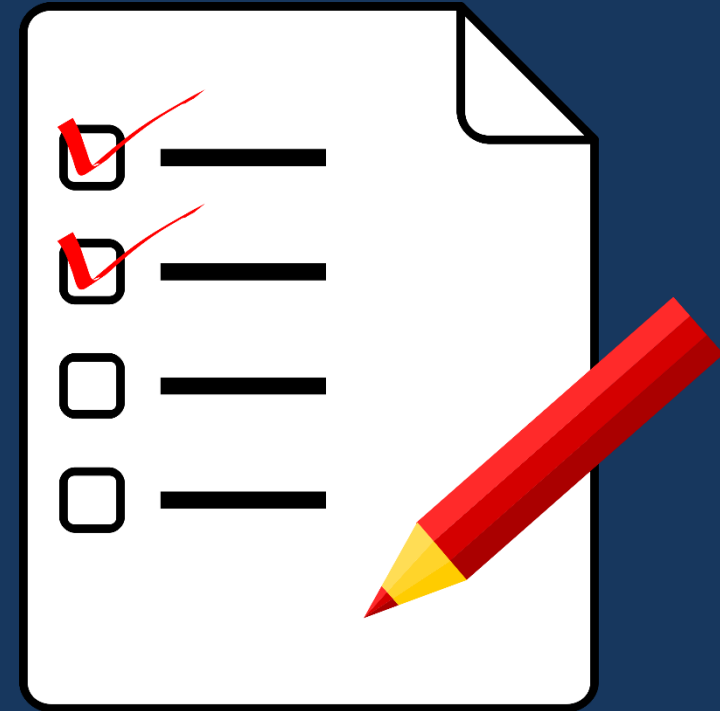
# Impacts on RACT

- Major sources of VOCs or NO<sub>x</sub> in Connecticut are already subject to RACT
- However, additional sources in some parts of the newly classified severe area will now be subject to RACT
  - The major source threshold in Middlesex and New Haven counties will be lowered to 25 tons per year based on potential to emit.
  - Portions of the newly classified severe area are already covered by the 25 ton/year potential to emit applicability threshold.
- CT-DEEP has already adopted RACT rules
  - Some sources may need single source RACT orders, for examples, major sources of VOCs not covered by one of EPA's Control Technique Guidelines (CTGs)
- **EPA published the final reclassification (bump-up) rule on October 7, 2022, it becomes effective 30 days later (e.g., November 7, 2022)**
  - **The proposal provides sources newly subject to RACT 3 years from the effective date of the final reclassification rule to come into compliance (e.g., November 2025).**

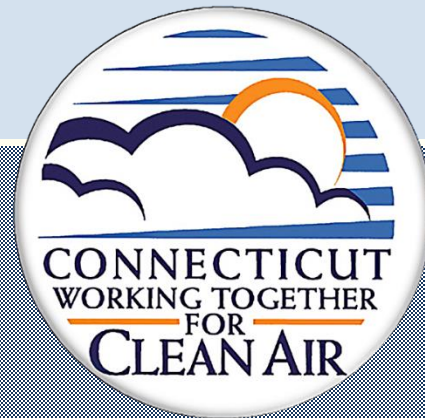


# Timing and Next Steps

- EPA published a final reclassification rule on October 7, 2022, effective on November 7<sup>th</sup>.
- DEEP will pursue regulatory changes to severe area definition with a goal to adopt in mid 2023.
- DEEP will be conducting additional outreach and stakeholder engagement and developing on-line tools, webinars etc.



# Questions and Resources



[Paul.Farrell@CT.gov](mailto:Paul.Farrell@CT.gov)

## EPA Resources:

- [2008 Ozone National Ambient Air Quality Standards \(NAAQS\) Nonattainment Actions | US EPA](#)
- [2015 Ozone National Ambient Air Quality Standards Nonattainment Actions | US EPA](#)
- [2022-20460.pdf \(govinfo.gov\)](#) EPA Final Rule

## DEEP Resources: (10 FAQs related to reclassification)

- [Air Permits- Frequently Asked Questions \(ct.gov\)](#)

