

Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Ozone National Ambient Air Quality Standard

Important Dates for EPA's Proposal

Signed by EPA Administrator on February 28th - published in the Federal Register on April 6, 2022

Public hearing April 21, 2022

Comments due June 6, 2022

What are the “Good Neighbor” Provisions under the CAA?

- The “Good Neighbor” provision requires EPA and states to address interstate transport of air pollution that affects downwind states' ability to attain and maintain the NAAQs.
- Section 110(a)(2)(D)(i)(I) of the CAA requires each state SIP to *prohibit emissions that will significantly contribute to nonattainment of a NAAQS, or interfere with maintenance of a NAAQS, in a downwind state.*
- The Act requires EPA to backstop state actions by promulgating Federal Implementation Plans (FIPs) in the event that a state fails to submit or EPA disapproves good neighbor SIPs.

Good Neighbor FIP for 2015 Ozone Standards

- ▶ Expands on “Revised CSAPR Update” EGU NO_x Trading Program for the 2008 Ozone Standards
- ▶ Adds 5 States (DE, MN, NV, UT, and WY) to the EGU Trading Program
- ▶ Requires further NO_x Reductions from EGUs
- ▶ Includes non-EGU Source Categories
- ▶ Additional Reduction of 94,000 tons of NO_x from Proposal
- ▶ Connecticut’s Benefit is ~0.5 ppb Ozone reduction by 2026

EPA Utilizes a 4-Step Process In Developing the FIP

The 4-Step Interstate Transport Framework EPA evaluates SIPs and/or prepares FIPs using the 4-step interstate transport framework to quantify necessary emissions reductions to address interstate ozone pollution (defined as “significant contribution”).

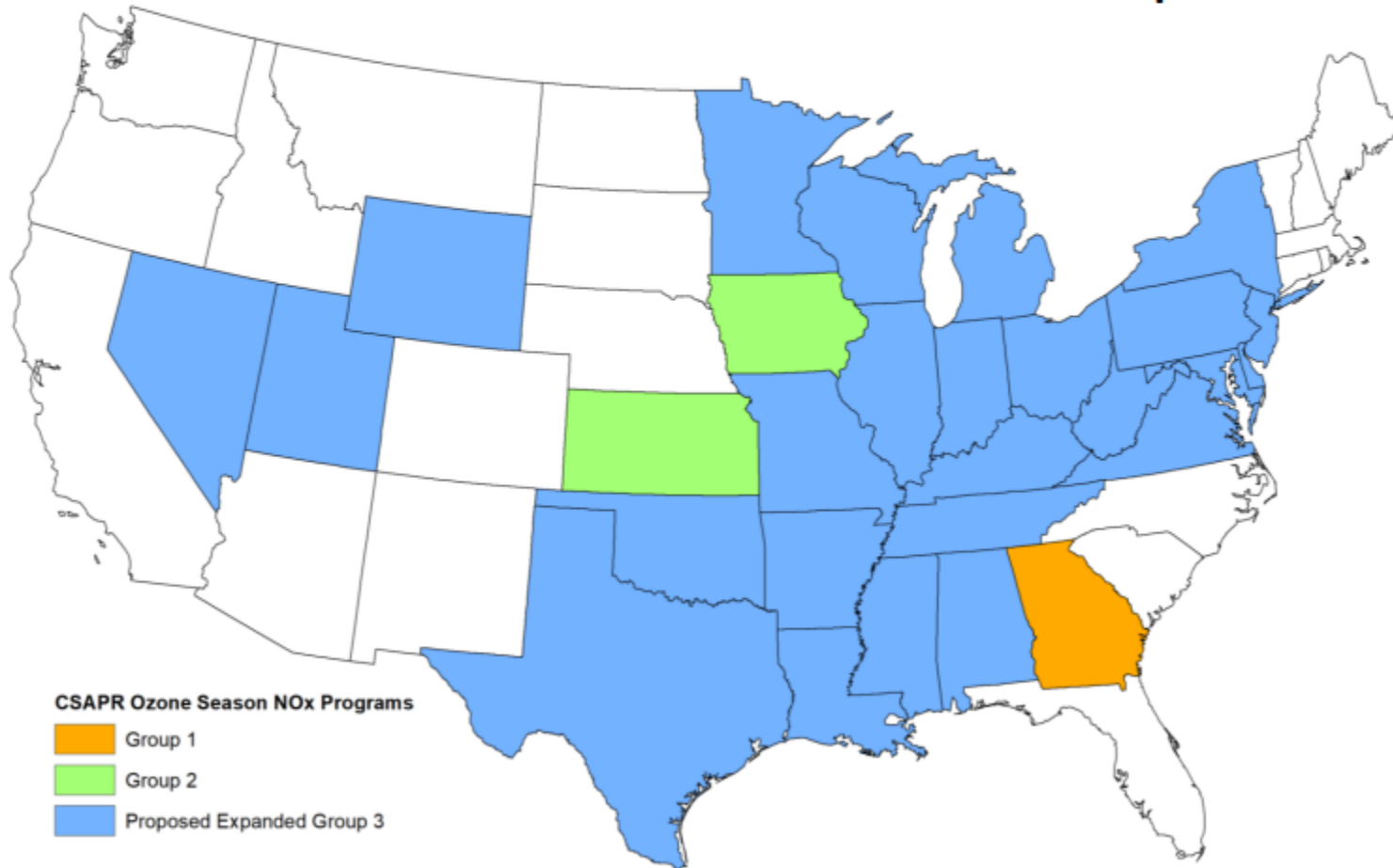
1. Identify downwind receptors expected to have problems attaining or maintaining the NAAQS.
2. Determine which upwind states are “linked” to these downwind air quality problems and thereby warrant further analysis of their emissions.
3. For states linked to downwind air quality problems, identify upwind emissions on a statewide basis that **significantly contribute** to nonattainment or interfere with maintenance of a standard in any area, using a multifactor analysis.
4. For upwind states that are found to have emissions that **significantly contribute** to nonattainment or interfere with maintenance of the NAAQS downwind, implement the necessary emissions reductions within the state.

Issues:

- Definition of significant contribution creates a process “do-loop”
- Inconsistent guidance on “linked” threshold
- Applies a national framework for the FIP but it does not consider state-specific or regional application for reducing emissions from EGU and Non-EGU sources.
- Process does not result in attainment

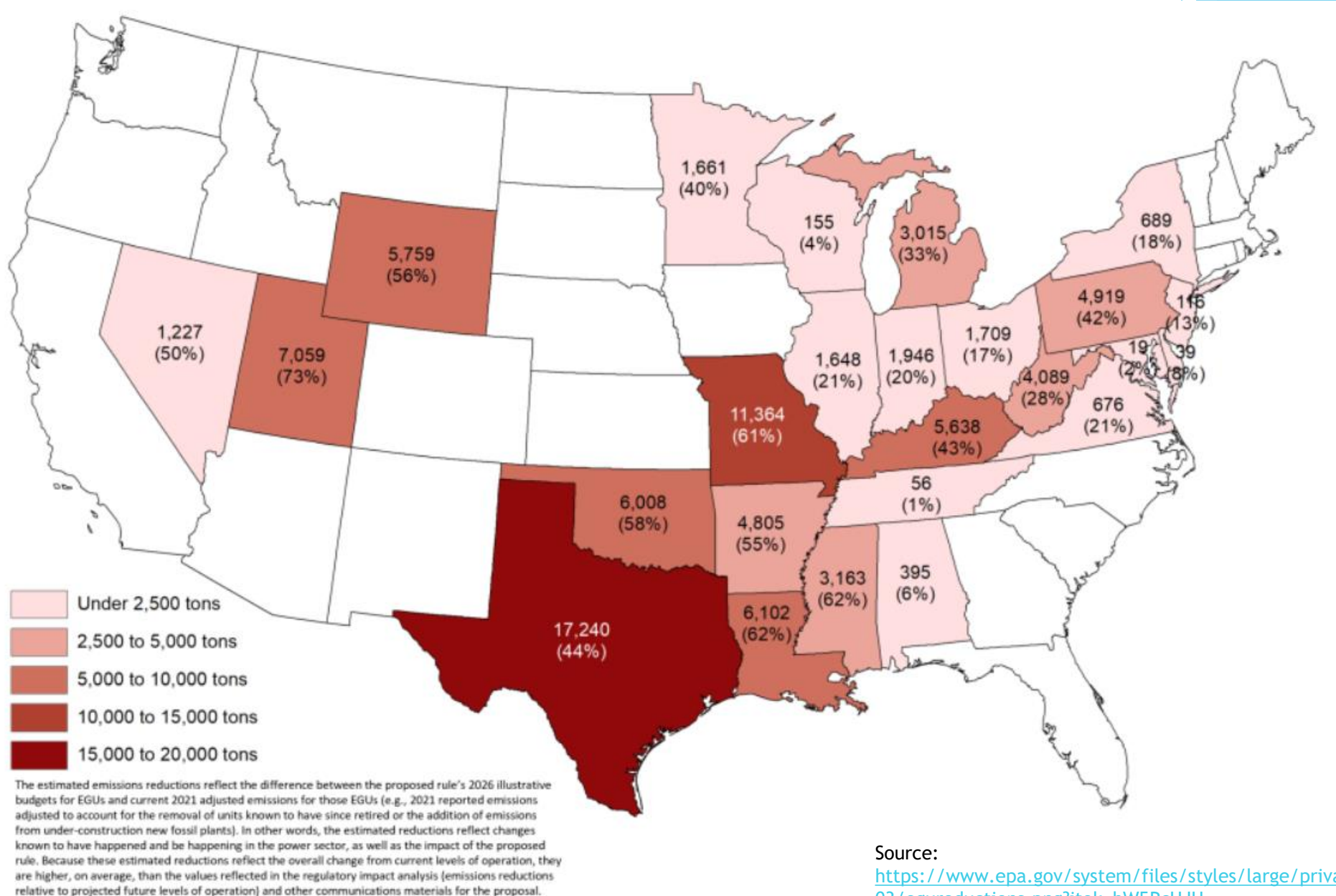
Coverage of CSAPR Ozone Season Trading Programs

Proposed expanded Group 3 CSAPR trading program includes 25 States with EGU NO_x emissions reduction requirements



- 12 states currently in Group 3 from previous CSAPR rulemakings
 - IL, IN, KY, LA, MD, MI, NJ, NY, OH, PA, VA, WV
- 8 states moving from Group 2 to Group 3
 - AL, AR, MO, MS, OK, TN, TX, WI
- 5 states not previously covered
 - DE, MN, NV, UT, WY

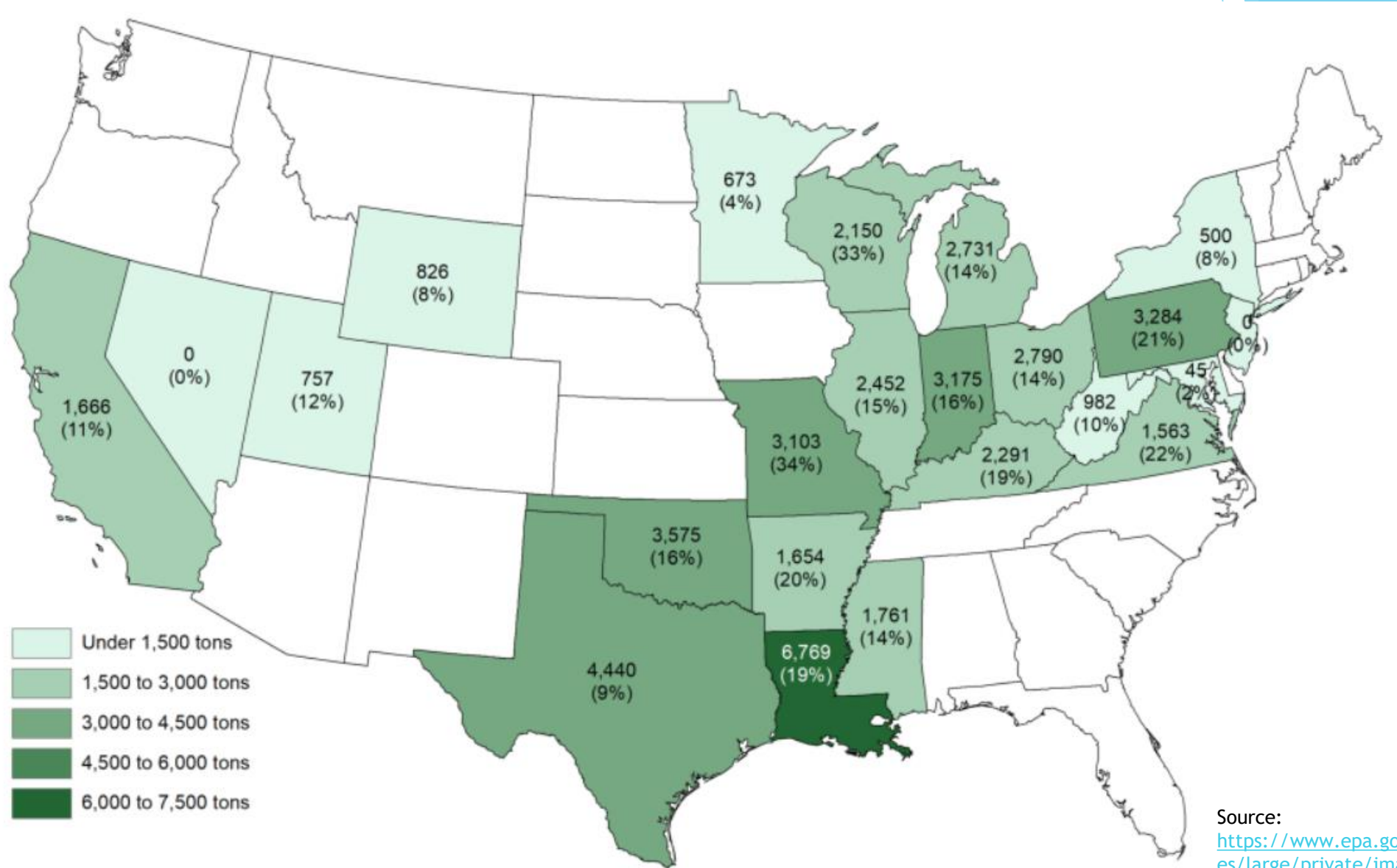
Proposed EGU Reductions in 2026 relative to 2021



Source:

<https://www.epa.gov/system/files/styles/large/private/images/2022-03/egureductions.png?itok=hW5PcH.IJ>

Proposed non-EGU Reductions 2026 relative to 2021



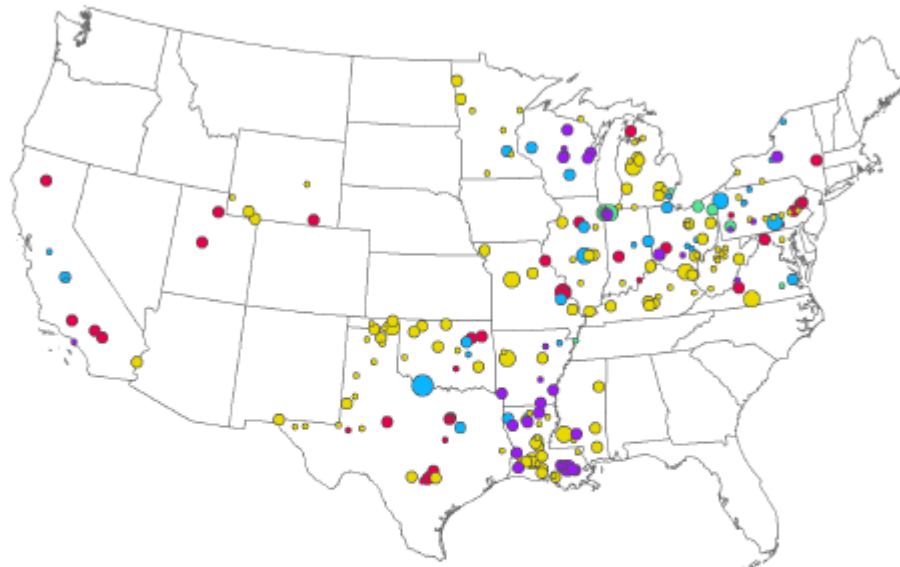
Source:
https://www.epa.gov/system/files/styles/large/private/images/2022-03/nonegureductions.png?itok=jjTUS_-c

New in this Proposal: Non-EGU Source Categories

- Reciprocating internal combustion engines in *Pipeline Transportation of Natural Gas*
- Kilns in *Cement and Concrete Product Manufacturing*
- Boilers and furnaces in *Iron and Steel Mills and Ferroalloy Manufacturing*
- Furnaces in *Flat Glass and Glass Products Manufacturing* (includes flat glass, glass container, pressed and blown glass and glassware manufacturing)
- Boilers in *Basic Chemical Manufacturing*
- Boilers in *Petroleum and Coal Products Manufacturing*
- Boilers in *Pulp, Paper, and Paperboard Mills*

EPA Figure: Geographical Distribution of Ozone Season NOx Reductions and Summary of Reductions by Industry and State

Non-EGU Ozone Season NOx Reductions



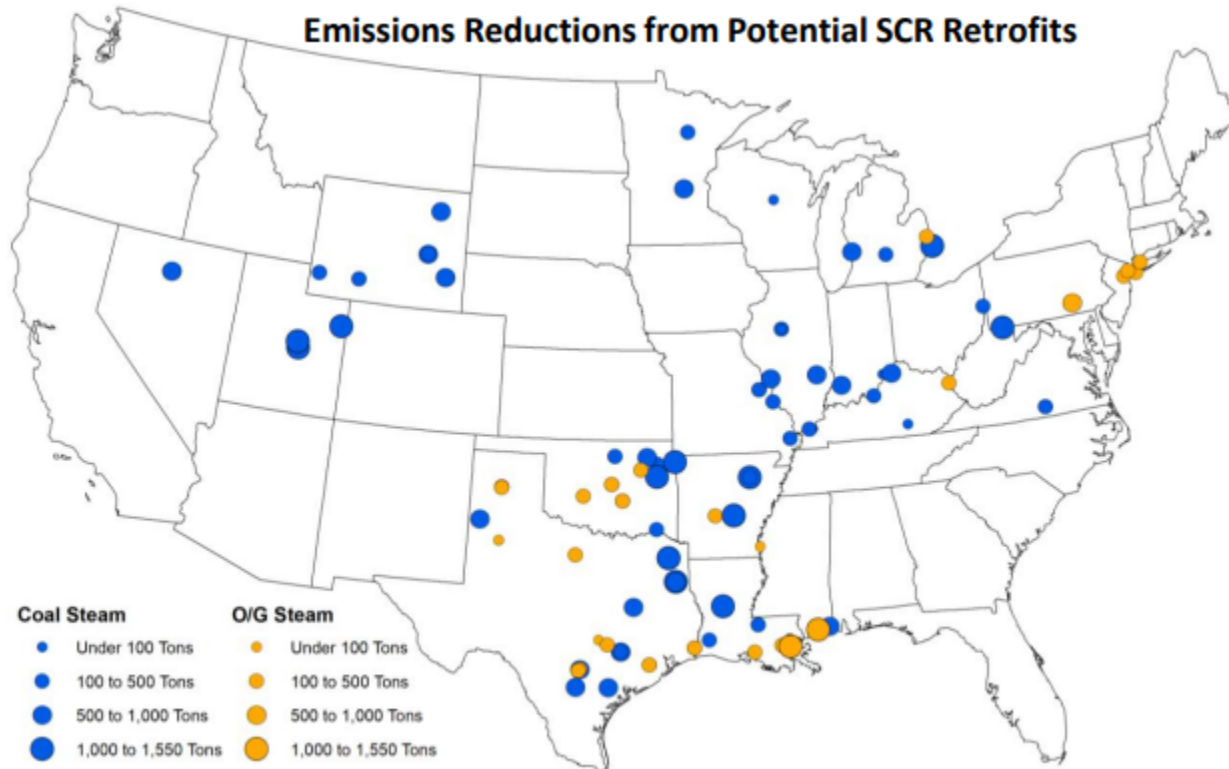
- Cement and Concrete Product Manufacturing
- Glass and Glass Product Manufacturing
- Iron and Steel Mills and Ferroalloy Manufacturing
- Pipeline Transportation of Natural Gas
- High Emitting Equipment from Tier 2 industries
- >1000 tons
- 500-1000 tons
- 100-500 tons
- Under 100 tons

State	Cement and Concrete Product Manufacturing	Glass and Glass Product Manufacturing	Iron and Steel Mills and Ferroalloy Manufacturing	Pipeline Transportation of Natural Gas	High Emitting Equipment from Tier 2 industries	Total
LA	0	206	0	3,915	2,649	6,769
TX	1,234	1,470	0	1,736	0	4,440
OK	586	190	0	2,799	0	3,575
PA	888	1,379	438	427	152	3,284
IN	468	338	1,829	152	388	3,175
MO	1,296	227	0	1,581	0	3,103
OH	116	451	847	1,198	179	2,790
MI	371	50	38	2,272	0	2,731
IL	234	901	0	1,316	0	2,452
KY	0	0	0	2,291	0	2,291
WI	0	677	0	0	1,472	2,150
MS	0	0	0	1,577	184	1,761
CA	1,162	299	0	137	68	1,666
AR	0	47	6	868	732	1,654
VA	398	174	92	801	98	1,583
WV	230	0	0	751	0	982
WY	446	0	0	380	0	826
UT	520	0	0	237	0	757
MN	0	115	0	558	0	673
NY	142	141	0	106	111	500
MD	0	0	0	45	0	45

Source: EPA Technical Memorandum, February 28, 2021, *Subject: Screening Assessment of Potential Emissions Reductions, Air Quality Impacts, and Costs from Non-EGU Emissions Units for 2026.*
<https://www.epa.gov/system/files/documents/2021/02/2021-npb-impacts-2015-o3-transport-fip-final-memo.pdf>

EGU NOx Emissions Reduction Potential

- Proposing NOx emissions reductions commensurate with new SCR (or SNCRs for certain types) on all coal-fired EGUs, as well as on larger oil/gas steam EGUs that operate relatively frequently
 - Also requiring emission reductions from optimizing existing pollution controls and upgrading combustion controls
- Relative to current emission levels, SCR retrofits can deliver 64,000 tons of NOx emissions reductions (~70% of rule's EGU potential) in 2026
 - For Coal (~42 GW):** Between \$6,500/ton and \$20,900/ton, with an average of \$11,000/ton
 - For Oil/Gas Steam (~19 GW):** Between \$4,500/ton and \$15,300/ton, with an average of \$7,700/ton



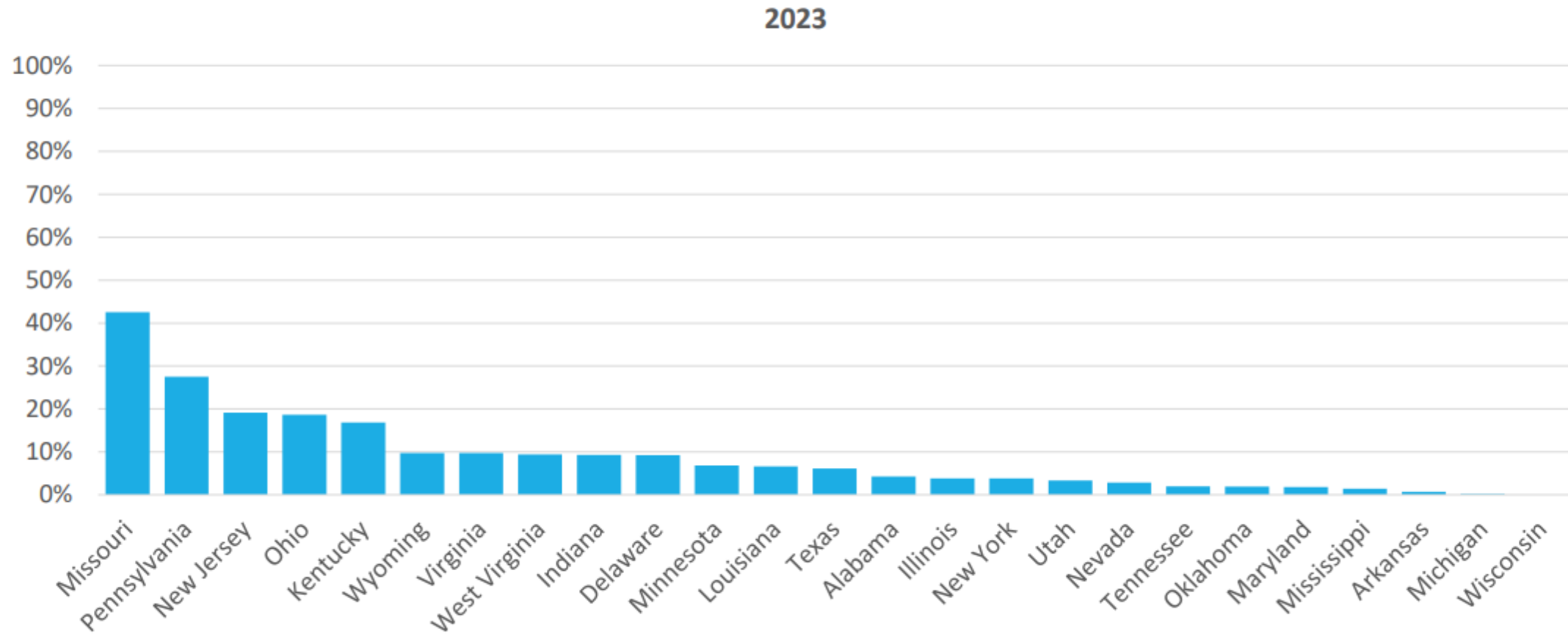
Preliminary numbers subject to change

Emissions (tons) that could be reduced with SCR retrofit in 2026			
State	Coal Steam	O/G Steam	All Steam
Texas	11,671	3,172	14,843
Utah	7,068	0	7,068
Louisiana	2,078	3,134	5,212
Wyoming	4,921	0	4,921
Arkansas	4,669	198	4,867
Oklahoma	3,091	1,746	4,837
Missouri	4,271	0	4,271
Michigan	3,235	184	3,419
Kentucky	2,944	188	3,132
Other	8,670	3,233	11,903
Total	52,618	11,856	64,473

"Other" states include Illinois, Indiana, Minnesota, Mississippi, Nevada, New York, Ohio, Pennsylvania, Virginia, West Virginia, and Wisconsin

Relative NOx Emissions Reductions: 2023

Near-term emissions reductions are small and largely based on operating existing controls

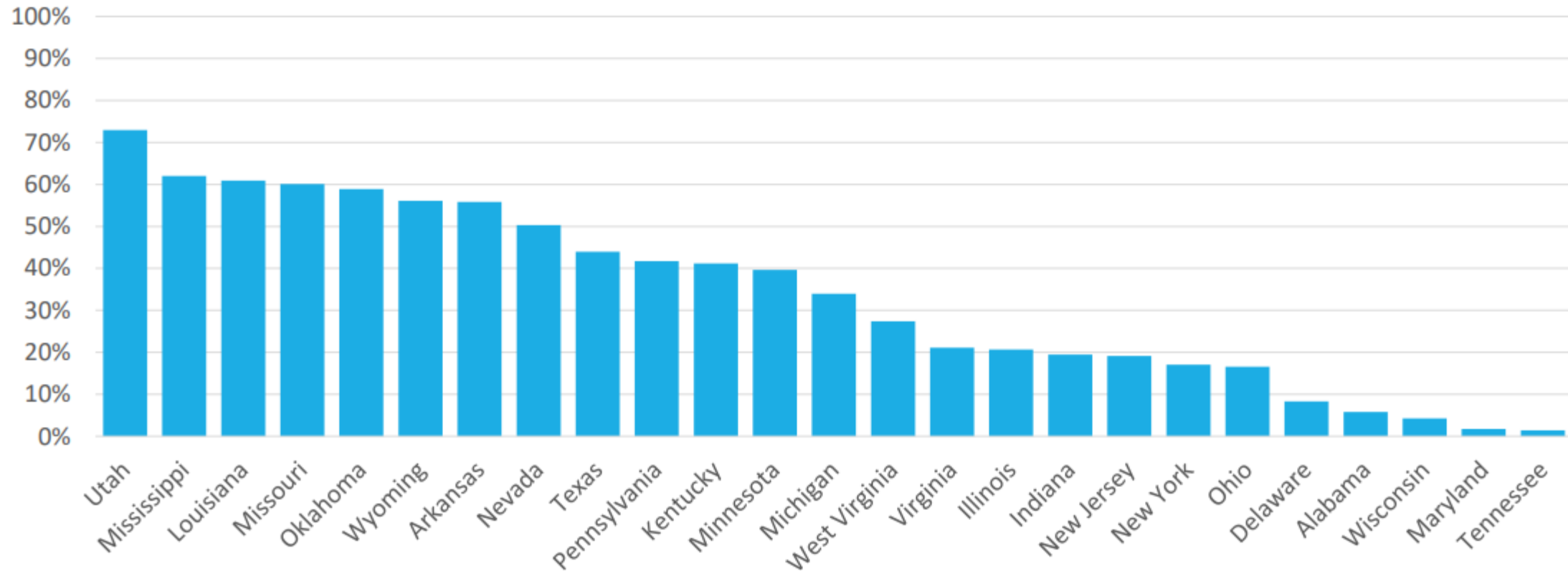


-These emissions reductions reflect values from current levels and announced changes. Actual incremental reductions in 2023 will likely be smaller as some coal would be projected to retire in the baseline

Relative NOx Emissions Reductions: 2026

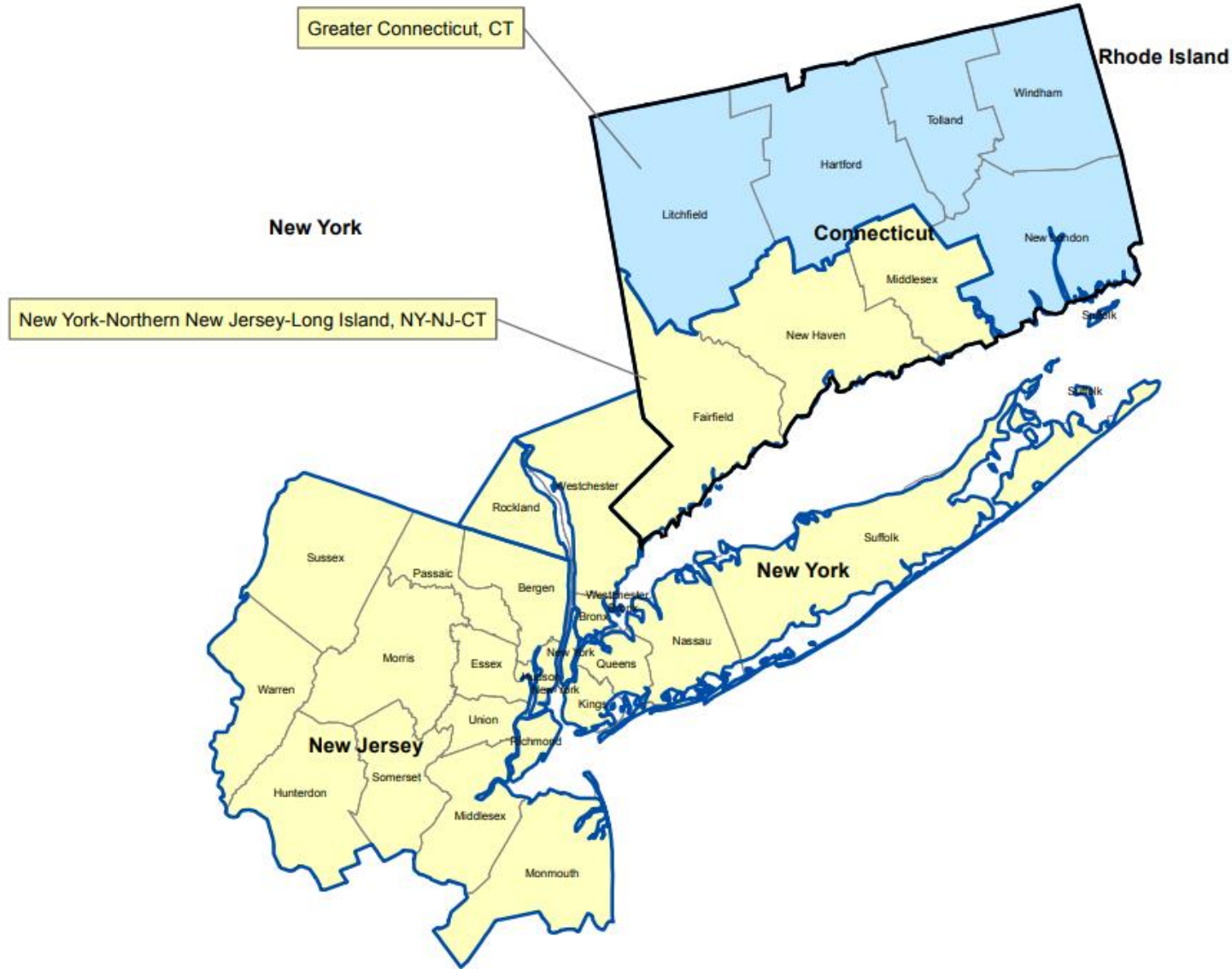
Longer-term emissions reductions reflect reduction potential from SCR retrofit

2026 (based on illustrative budgets)

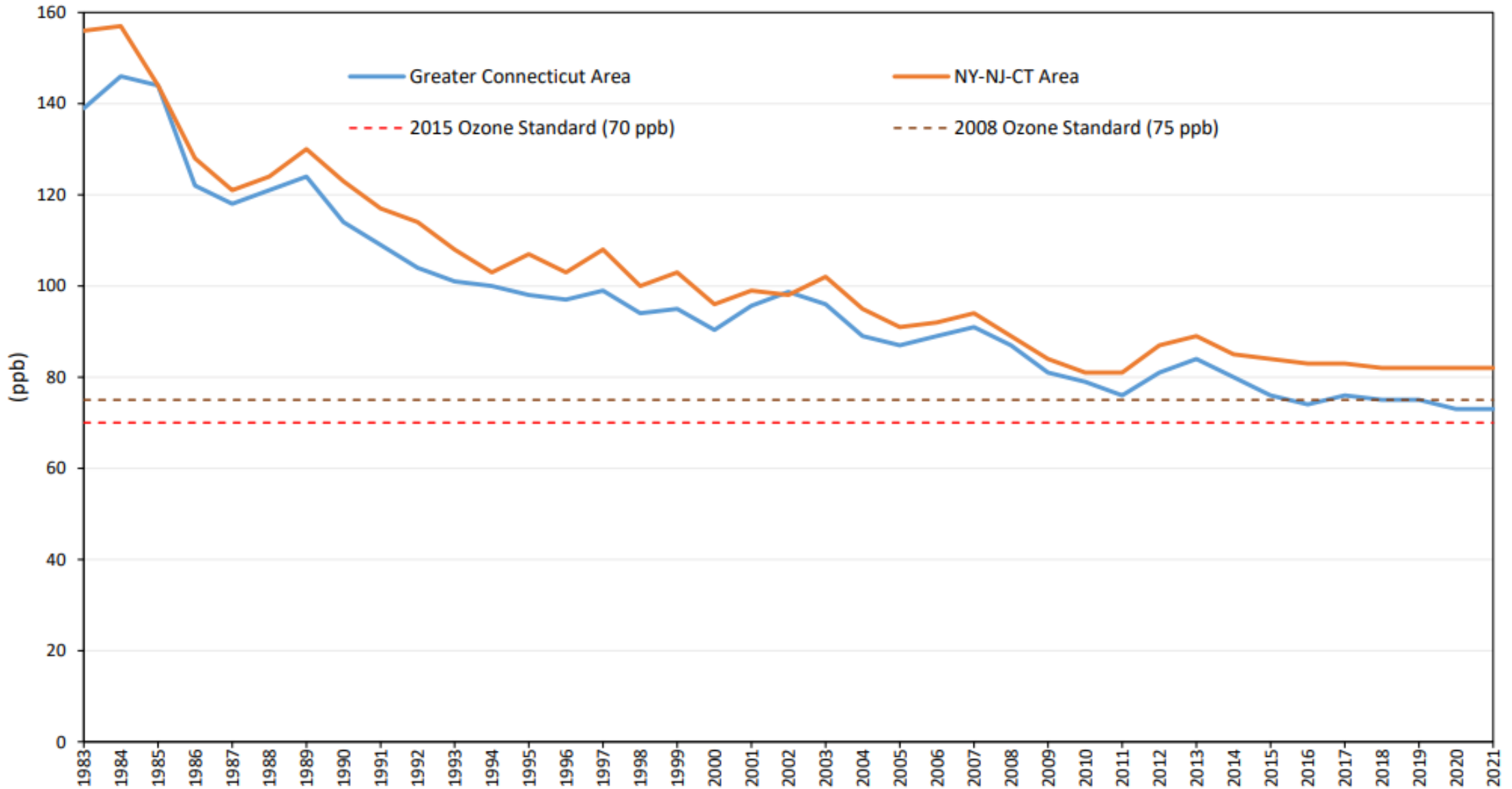


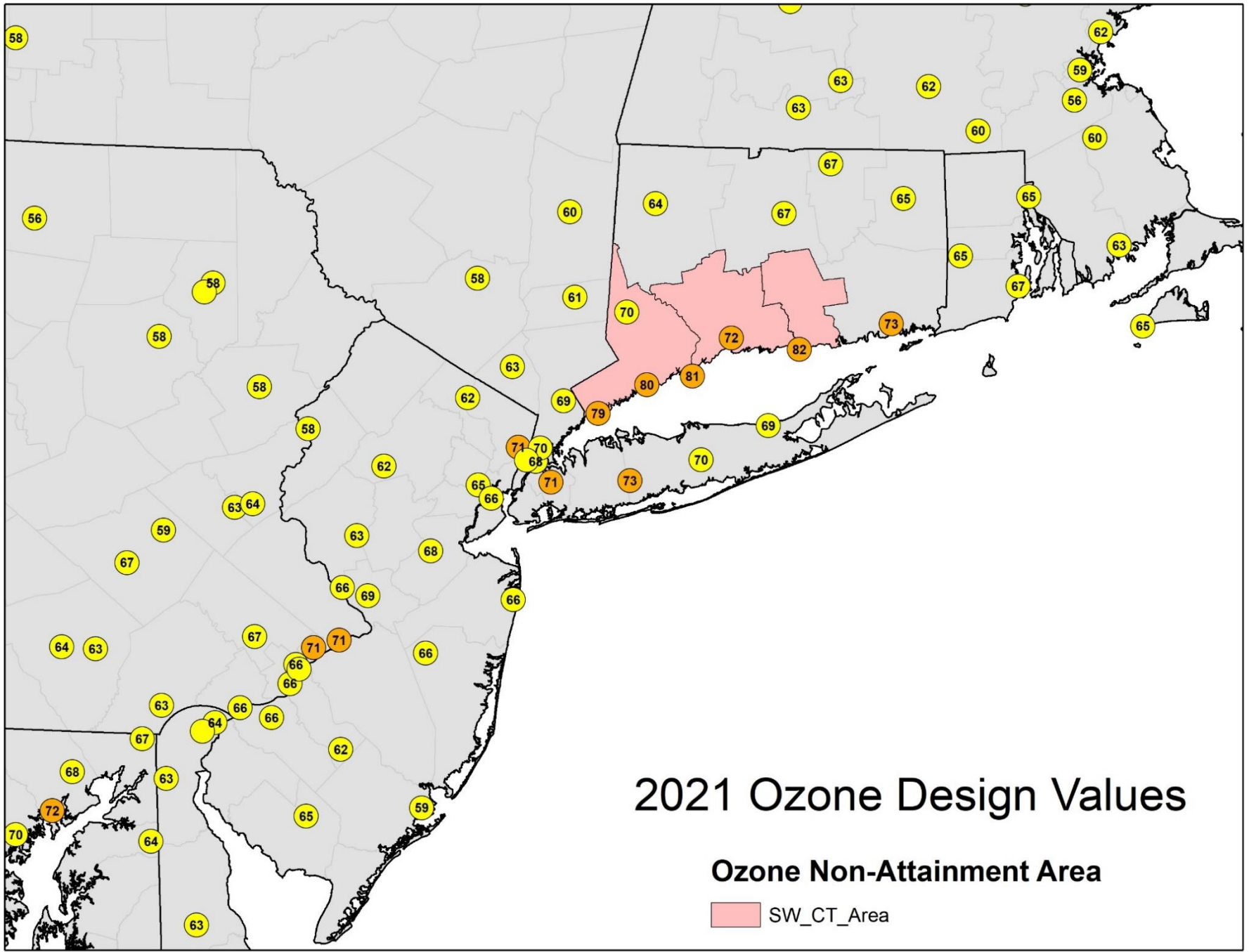
-These emissions reductions reflect values from current levels and announced changes. Actual incremental reductions in 2026 will likely be smaller as some coal would be projected to retire in the baseline

Connecticut 8-hour Ozone Nonattainment Areas (2015 Standard)



Ozone Design Values (ppb) Connecticut's Two Nonattainment Areas





2021 Ozone Design Values

Ozone Non-Attainment Area

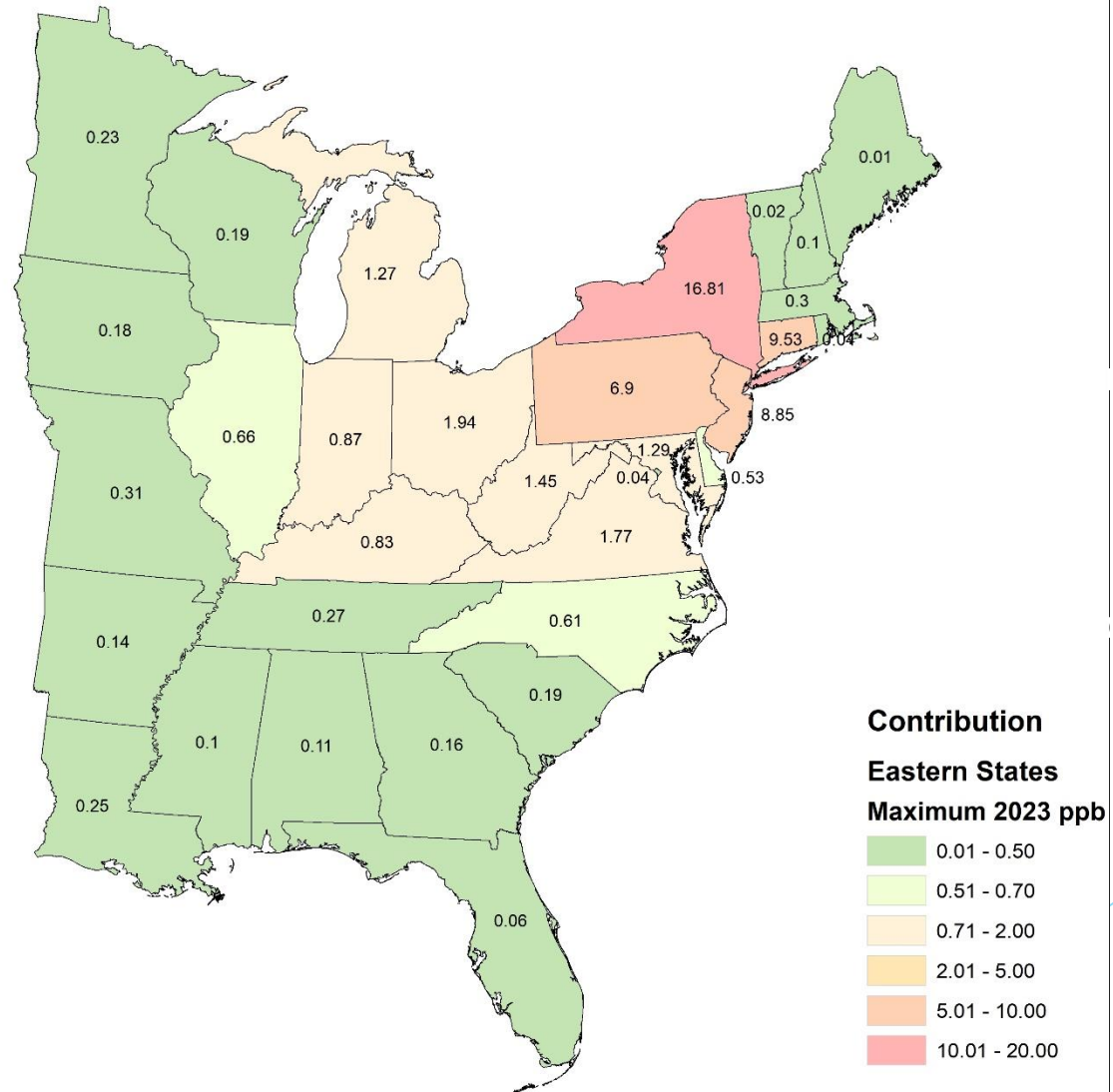
SW_CT_Area

Good Neighbor FIP Modeling Results
Projected 2023 Contributions (Pre-Rule)

	Southwest CT Monitors (ppb)						
Contributors	Greenwich	Danbury	Stratford	Westport	Middletown	Madison	New Haven
NY	16.81	13.92	13.56	14.36	10.40	11.54	12.25
NJ	6.90	8.82	7.43	8.85	5.24	5.67	6.33
PA	5.44	5.67	6.37	6.90	5.40	4.74	5.73
CT	9.53	2.88	4.33	2.95	5.53	4.05	4.44
OH	1.18	1.07	1.87	1.90	2.23	1.94	1.69
MI	1.07	0.44	0.94	0.92	0.84	1.27	0.76
IN	0.69	0.41	0.75	0.76	0.77	0.87	0.68
WV	0.66	0.79	1.30	1.34	1.60	1.45	1.18
MD	0.63	1.22	1.10	1.13	1.12	1.29	0.95
VA	0.50	1.06	1.19	1.19	1.41	1.77	1.16
KY	0.54	0.44	0.77	0.82	0.92	0.83	0.70
IL	0.46	0.30	0.53	0.53	0.51	0.66	0.48
<0.71 ppb	2.30	4.00	4.64	4.72	5.20	4.55	4.28
Other	26.03	27.33	29.15	29.47	28.37	30.90	27.09
Modeled Concentration	72.74	68.35	73.93	75.84	69.54	71.53	67.72

2023 Maximum Ozone Contribution to CT

2023 Modeled Ozone Contributions to Maximum CT Monitor

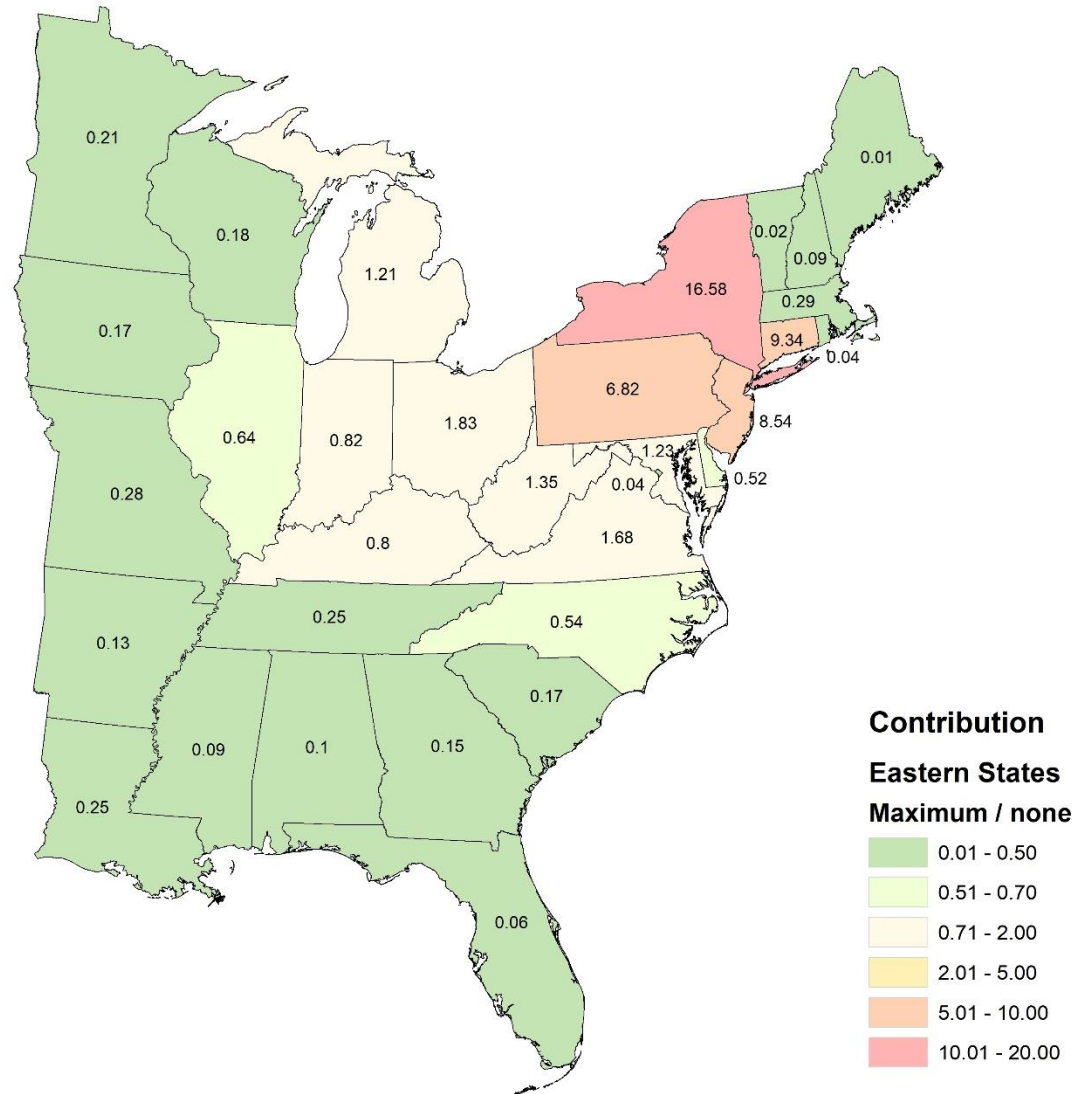


**Good Neighbor FIP Modeling Results
Projected 2026 Contributions (Pre-Rule)**

Contributors	Southwest CT Monitors (ppb)						
	Greenwich	Danbury	Stratford	Westport	Middletown	Madison	New Haven
NY	16.58	13.62	13.28	14.18	10.20	11.29	12.00
NJ	6.60	8.49	7.24	8.54	5.06	5.47	6.09
PA	5.32	5.63	6.36	6.82	5.37	4.74	5.69
CT	9.34	2.66	4.11	2.86	5.29	3.88	4.28
OH	1.10	1.00	1.76	1.78	2.08	1.83	1.59
MI	1.02	0.43	0.89	0.88	0.80	1.21	0.73
IN	0.64	0.38	0.71	0.71	0.72	0.82	0.64
WV	0.61	0.73	1.19	1.23	1.45	1.35	1.08
MD	0.60	1.18	1.11	1.08	1.08	1.23	0.91
VA	0.48	1.01	1.14	1.13	1.33	1.68	1.10
KY	0.51	0.42	0.75	0.80	0.89	0.80	0.68
IL	0.44	0.28	0.52	0.51	0.49	0.64	0.47
<0.71 ppb	2.09	3.70	4.31	4.37	4.79	4.25	4.00
Other	25.87	27.3	29.15	29.42	28.41	30.95	27.09
Modeled Concentration	71.20	66.83	72.52	74.31	67.96	70.14	66.35

2026 Maximum Ozone Contribution to CT

2026 Modeled Ozone Contributions to Maximum CT Monitor



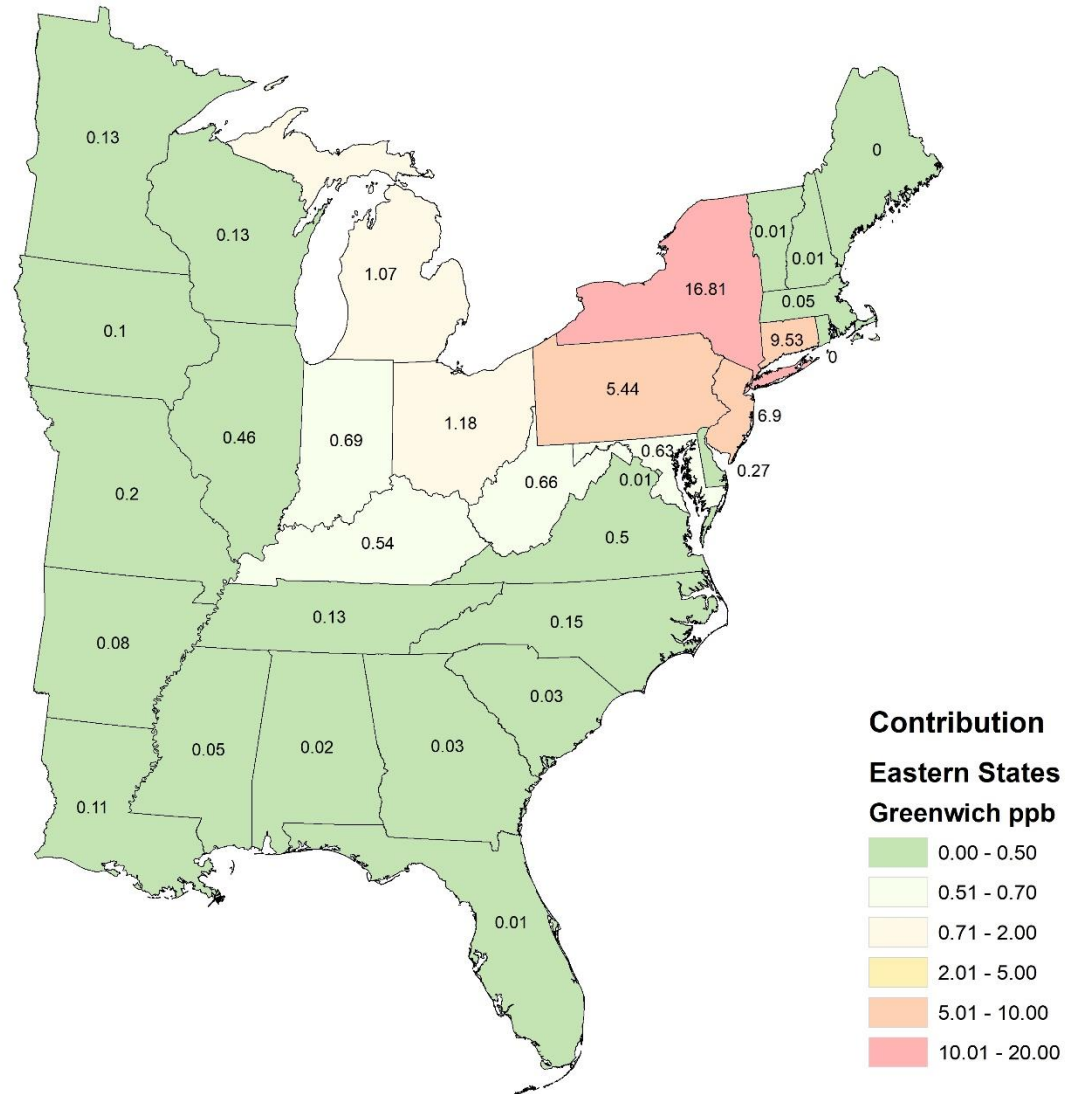
Next Steps

- Identify areas for CT comments:
 - Need for achieving a full remedy consistent with Wisconsin v. EPA
 - EPA should include other non-EGU categories such as municipal waste combustors.
 - Staff to identify other source categories for consideration.
 - Further evaluate mobile source/transportation strategies for inclusion.
- Consider developing testimony for a public hearing date 30 days after publication.
- Prepare comments to submit 60 days after publication.

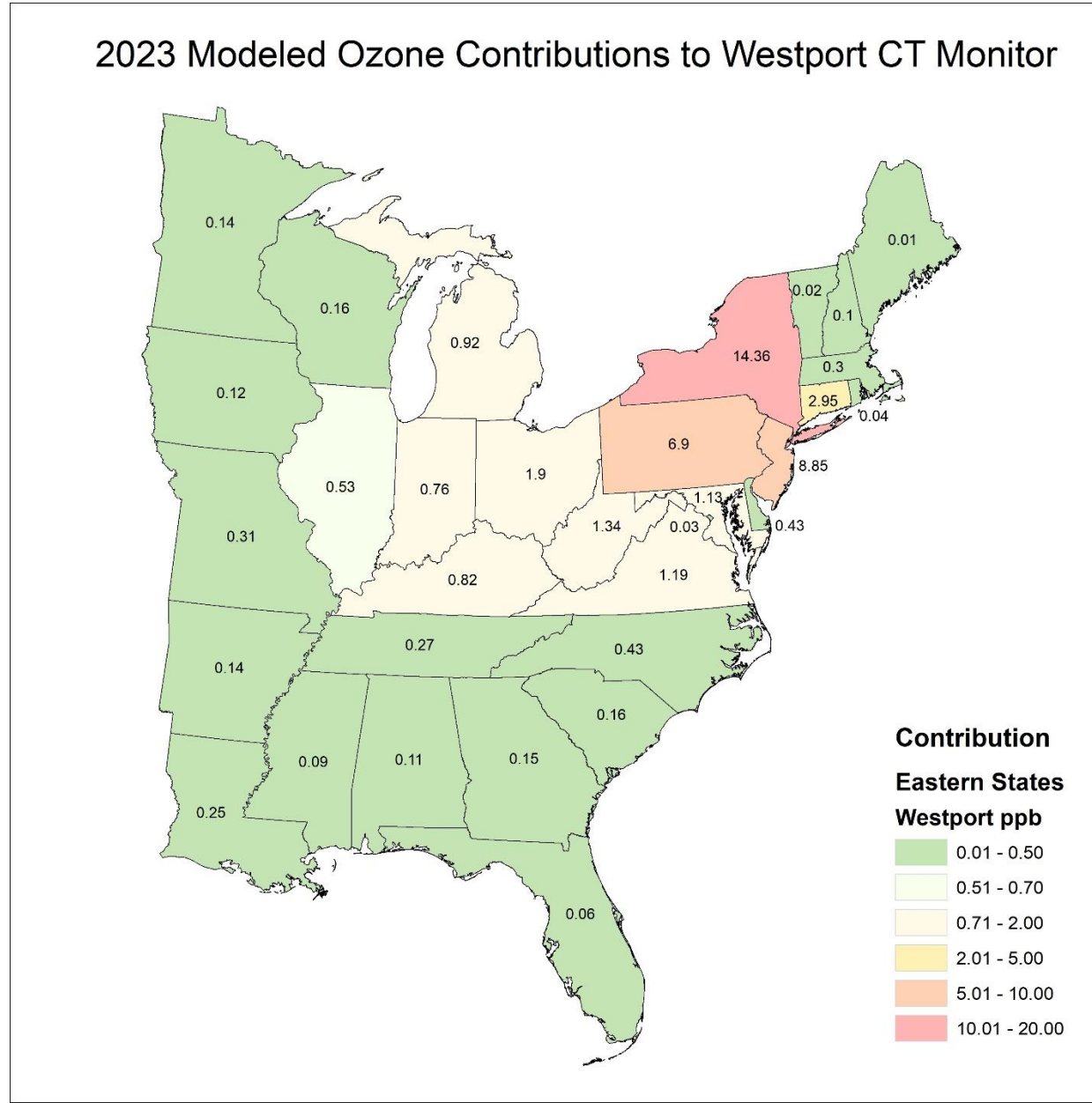
Extra Slides

2023 Ozone Contribution to Greenwich, CT

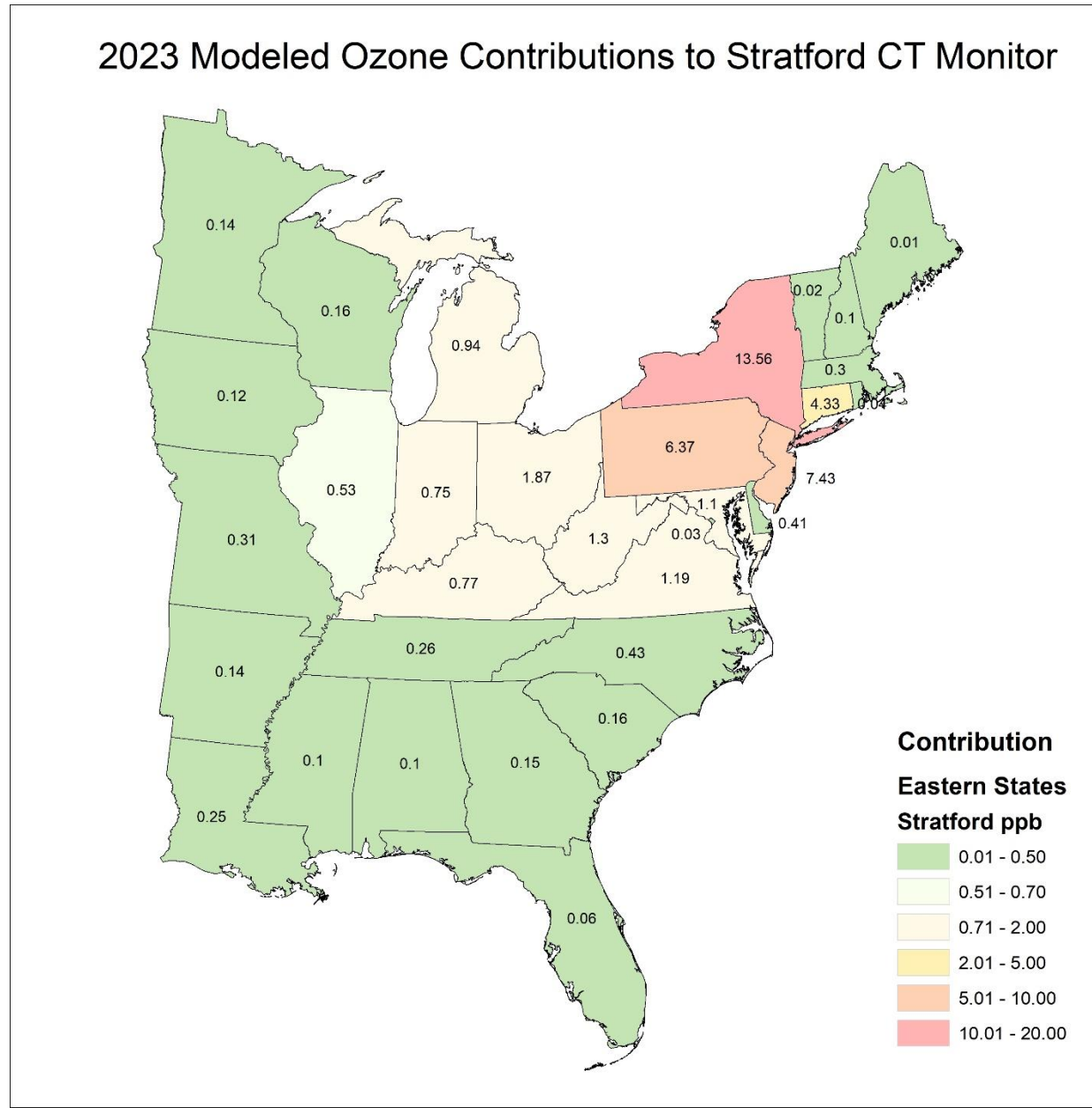
2023 Modeled Ozone Contributions to Greenwich CT Monitor



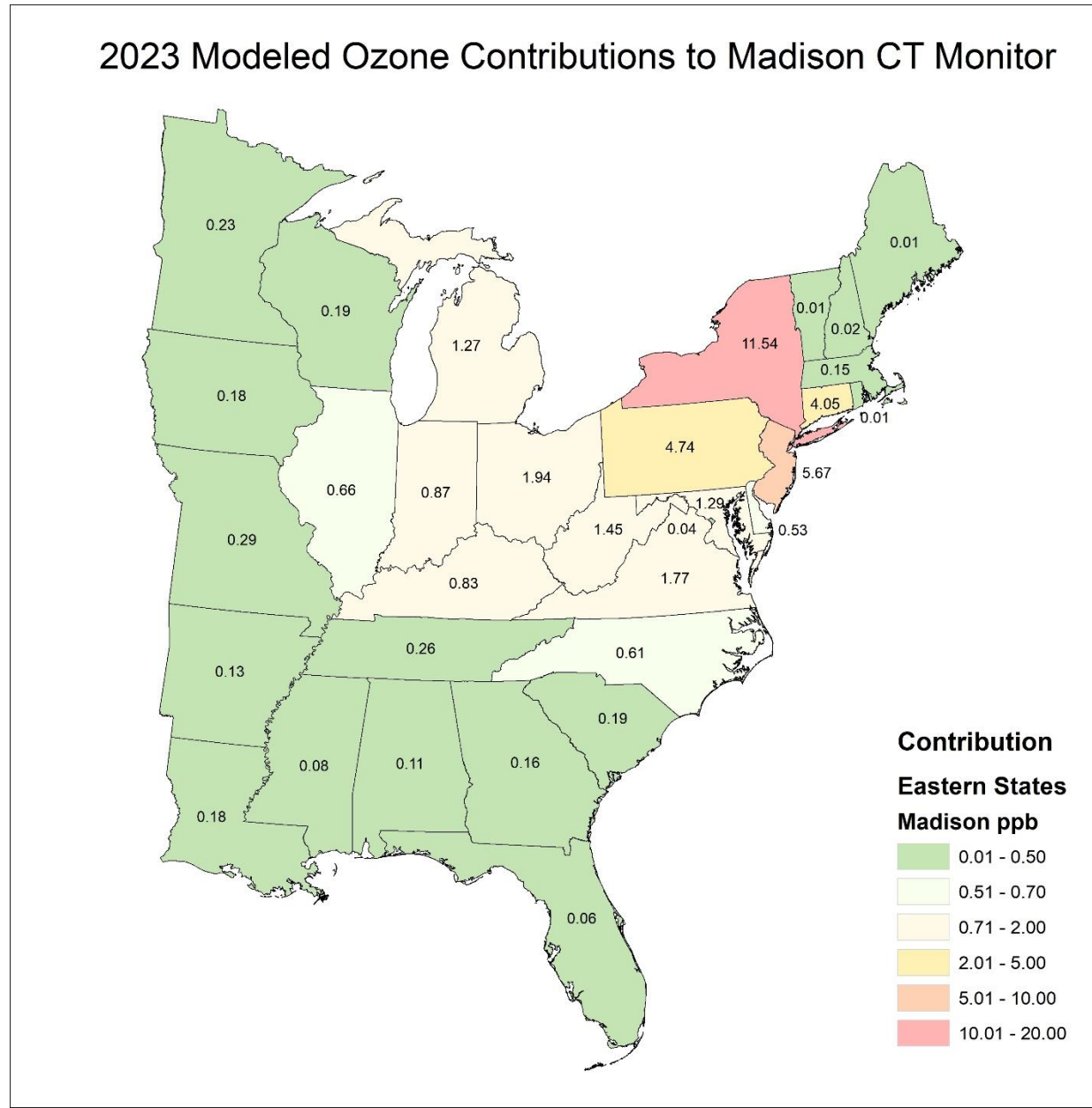
2023 Ozone Contribution to Westport, CT



2023 Ozone Contribution to Stratford, CT

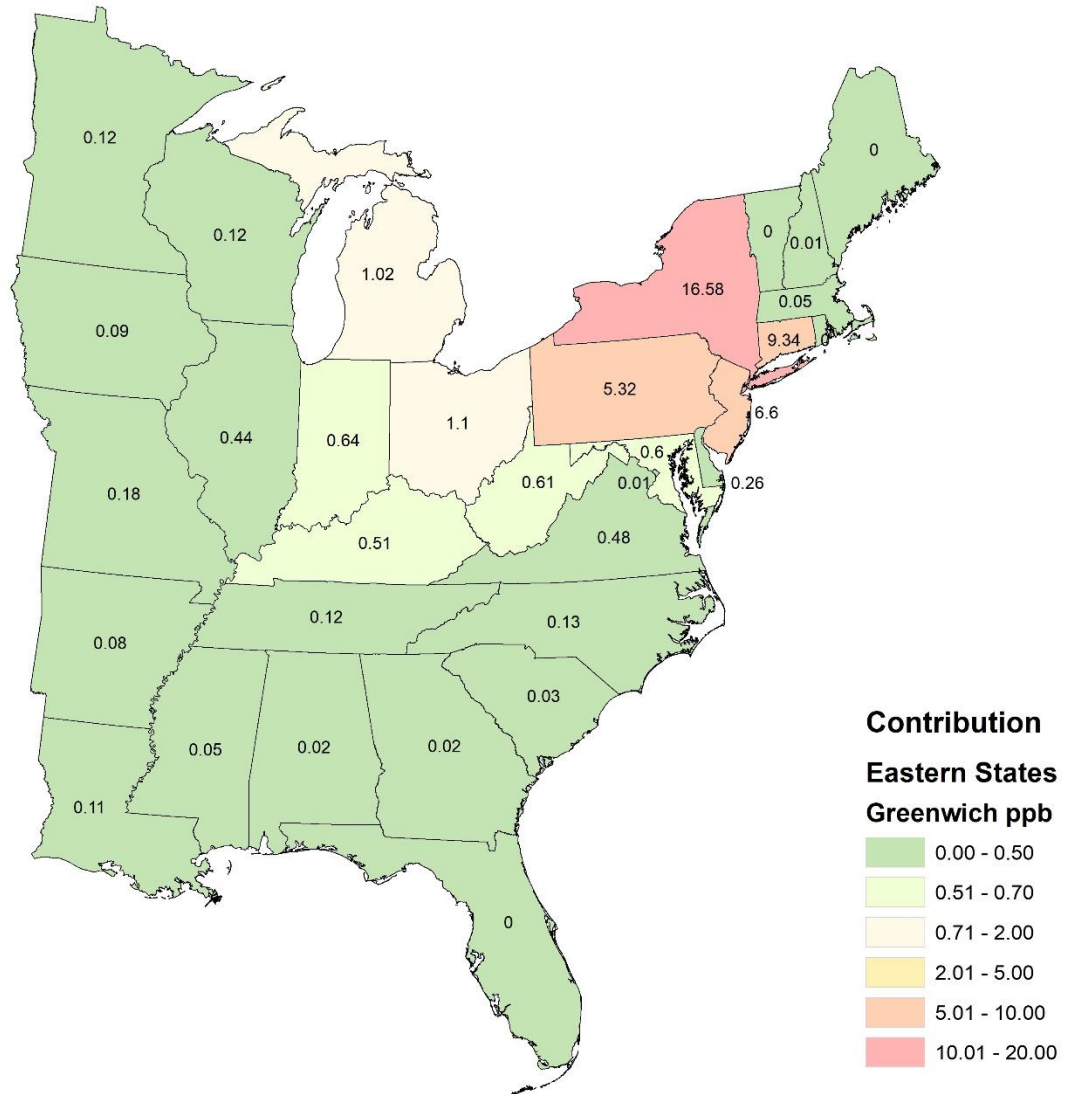


2023 Ozone Contribution to Madison, CT

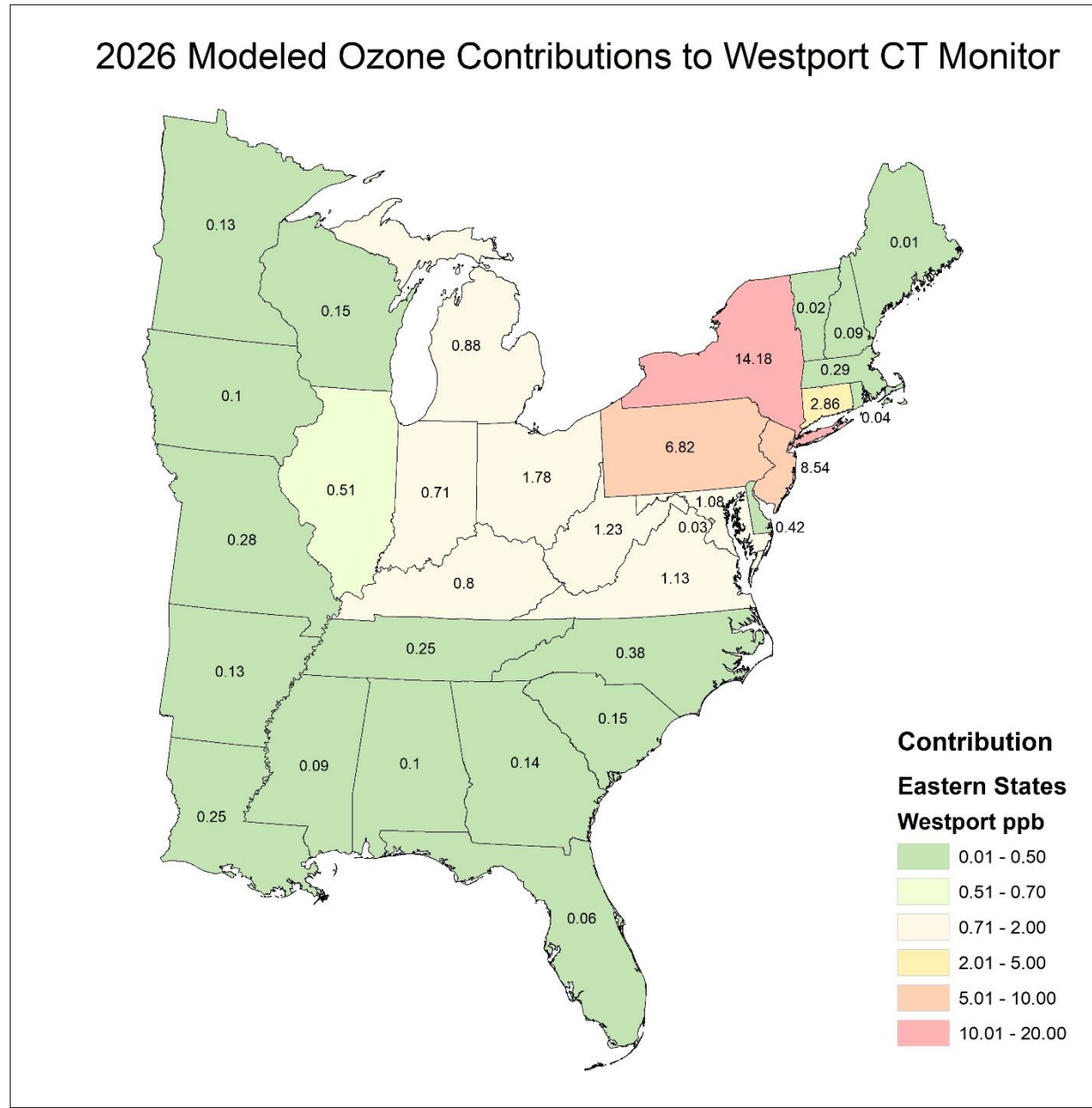


2026 Ozone Contribution to Greenwich, CT

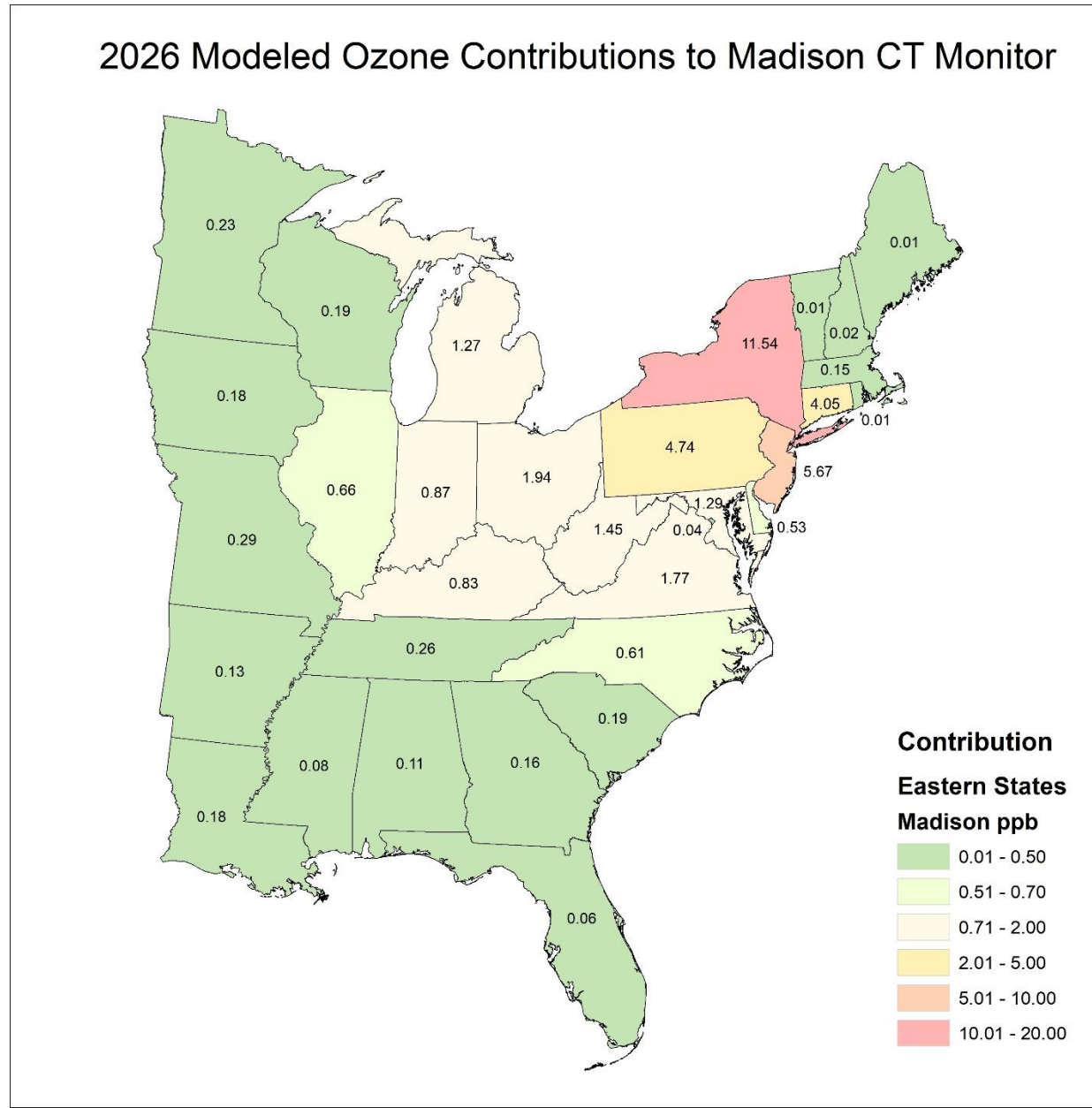
2026 Modeled Ozone Contributions to Greenwich CT Monitor



2026 Ozone Contribution to Westport, CT



2026 Ozone Contribution to Madison, CT





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Affirmative Action/Equal Opportunity Employer

CTDEEP re: Revised CSAPR Update Proposal
December 14, 2020
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December 14, 2020

Mr. Andrew Wheeler, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Via Electronic Submission
To the Federal eRulemaking Portal
www.regulations.gov

Attention: Docket ID No. EPA-HQ-OAR-2020-0272

RE: Proposed Rule- Revised Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS

Dear Administrator Wheeler:

The Connecticut Department of Energy and Environmental Protection (DEEP) welcomes the opportunity to submit these written comments on the United States Environmental Protection Agency's (EPA's) proposed rule, "Revised Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS" [85 FR 68964, October 30, 2020]. These comments supplement DEEP's oral comments made at the hearing held by EPA on this proposal on November 12, 2020.

Section 110(a)(2)(D) of the Clean Air Act (CAA) requires every state to adopt in its state implementation plan (SIP) adequate provisions to prohibit sources within the state from emitting at levels which will contribute significantly to nonattainment in, or interfere with maintenance by, any other state. For the 2008 ozone national ambient air quality standards (NAAQS), the CAA required states submit these "Good Neighbor" SIPs by March 2011 to address the interstate transport of air pollution. States' failure to satisfy Good Neighbor obligations led EPA to promulgate a federal implementation plan in 2016, the Cross-State Air Pollution Rule (CSAPR) Update, as a partial remedy. By 2018, EPA promulgated the CSAPR Close-out Rule, reneging on its legal obligation to provide a full remedy to address ozone transport.

In 2020, nearly ten years after Good Neighbor SIPs were due, EPA is now proposing the Revised CSAPR Update in an incomplete remedy to address ozone transport. As demonstrated in our August 2017 attainment demonstration for the southwest Connecticut nonattainment area, and recognized in *Wisconsin vs EPA*, transport from upwind states accounts for Connecticut's ongoing failure to attain. Interstate ozone transport has prevented Connecticut from attaining the 2008 standard in 2015, 2018, and with near certainty, will again in 2021. Each failure to attain these health-based standards results in the continued physical harm to people who must breathe

unhealthy air, the further degradation of our environment, the reclassification to a more burdensome regulatory regime and the ensuing economic hardships associated with each aspect of these failures.

This is not the first time EPA has proposed an inadequate regional interstate transport rule at odds with the statutory language of the CAA. DEEP urges EPA to incorporate a meaningful framework for corrective action should EPA's projected outcomes fail to actually materialize. DEEP encourages EPA to make the recommended and appropriate corrections in this proposal as a more systematic way to address interstate transport.

Provided EPA commits to a corrective action process that assesses actual progress in attaining the ozone standard, Connecticut agrees that EPA must move forward with the Revised Cross-State Air Pollution Rule Update as quickly as possible to gain the beneficial but insufficient reductions it provides. Before finalizing this rule, EPA should make adjustments to the trading program to align reductions on a daily basis consistent with the short-term ozone standard. The trading program as designed will not address the environmental and health-related impacts associated with peak energy demand and the high ozone days associated therewith.

While DEEP recognizes that EPA's proposal is not a full remedy and does not address states' Good Neighbor SIP obligations, DEEP offers the attached comments for EPA's consideration in an effort to identify effective mechanisms to fully and finally address interstate transport of air pollution which continues to impact the citizens of Connecticut.

Sincerely,

Katherine S. Dykes
Commissioner