Would You Be My Good Neighbor?

A Brief Overview of Good Neighbor SIPs

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MARAMA SIP Workshop

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DEPARTMENT OF ENERGY & ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Agenda

- Introduction
- Clean Air Act Text
- Transport Remedy: 4 Prongs
  - Photochemical Modeling (1 & 2)
  - Measures (3 & 4)

Introduction

- Use EPA's Good Neighbor Federal Implementation Plans (FIPs) and related to documents to glean what an acceptable transport SIP is
- Approach the District took towards 2015 Transport SIP
- This is not:
  - The only approach to the problem
  - Been tried and tested for states with obligations

Clean Air Act

- Transport SIPs (aka Good Neighbor SIPs) are part of the Infrastructure SIP or I-SIP
- Often dealt with separately, given their complexity and legal repercussions

CLEAN AIR ACT § 110(a)(1)

"Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revision thereof)…"

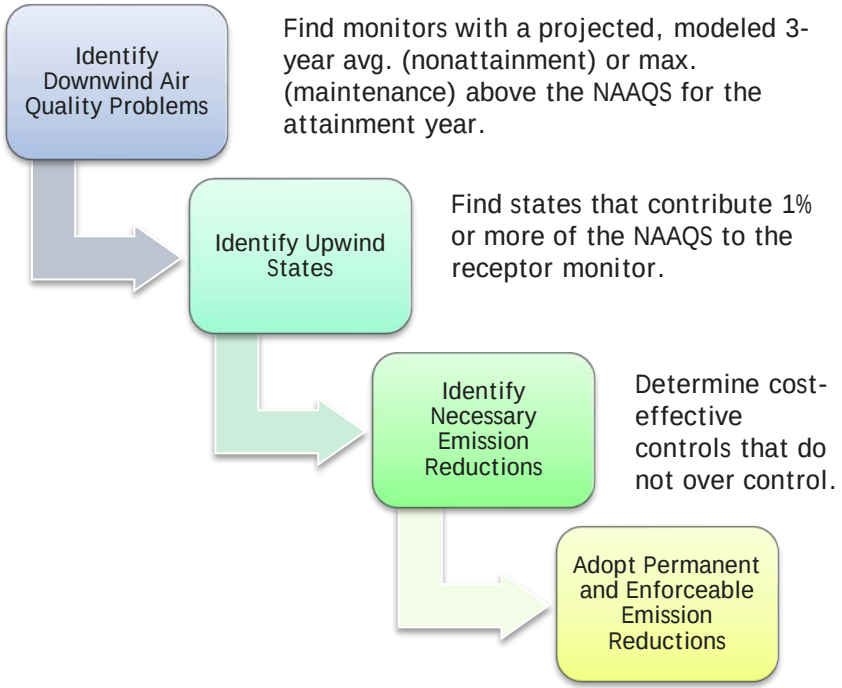
CLEAN AIR ACT § 110(a)(2)(D)(i)(I)

"Each such plan shall […] contain adequate provisions

(i) Prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the state from emitting any air pollutant in amounts which will:

(I) Contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or

Transport Remedy: 4 Prongs



- This process has:
  - Been used by EPA in numerous transport FIPs
  - Experienced much scrutiny from the courts
- No specific guidance from EPA on entire process, but following the approach in FIPs appears reasonable

For further reading: https://www.epa.gov/interstate-air-pollution-transport/interstate-air-pollution-transport

Modeling: Prongs 1 & 2

- Photochemical modeling is necessary for the first prongs and Source Apportionment (SA) modeling is necessary for the second
- Likely will analyze these two steps together
- Need to determine:
  - Which monitors that will not be attaining or have problems maintaining the NAAQS in their attainment year
  - If your state contributes to 1% or more of the problem
- Tools:

CAMx
https://www.camx.com/
Propriety, what EPA uses

CMAQ
https://www.cmascenter.org/cmaq/
Open community, SA less accepted

Modeling Data Source 1: EPA TSDs

- EPA's Transport Air Quality Modeling TSDs
- In 2018, Tsirigotis Memo found that previously issued EPA transport modeling could be used for demonstrating Prongs 1 and 2
- Could be an issue in the future if EPA does not provide relevant modeling prior to SIP submittals

Design Values and Contributions for Monitoring plus Modeled Receptors in 2023 – Part 1

					Contributions																										
Site ID	ST	County	2023 Avg	2023 Max	AL	AZ	AR	CA	CO	CT	DE	DC	FL	GA	ID	IL	IN	IA	KS	KY	LA	ME	MD	MA	MI	MN	MS	MO	MT	NE	NV	NH	NJ
40278011	AZ	Yuma	70.4	72.1	0.00	**2.97**	0.00	**6.31**	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00
60650016	CA	Riverside	72.2	73.1	0.00	0.13	0.00	**27.46**	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00
60651016	CA	Riverside	91.0	92.2	0.00	0.40	0.00	**35.27**	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00
80350004	CO	Douglas	71.3	71.9	0.00	0.48	0.00	**1.60**	**15.68**	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.16	0.45	0.00	0.00
80590006	CO	Jefferson	72.8	73.5	0.00	0.54	0.00	**1.44**	**16.82**	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.45	0.00	0.00
80590011	CO	Jefferson	73.5	74.1	0.00	0.49	0.00	**1.31**	**17.54**	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.47	0.00	0.00
80690011	CO	Larimer	70.9	72.1	0.00	**0.86**	0.00	**0.90**	**13.99**	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.10	0.31	0.00	0.00
90010017	CT	Fairfield	71.6	72.2	0.02	0.01	0.10	0.02	0.04	**4.59**	0.35	0.01	0.01	0.03	0.02	0.51	**0.89**	0.13	0.06	0.60	0.12	0.00	**0.78**	0.06	**1.25**	0.15	0.05	0.23	0.05	0.06	0.01	0.01	**8.17**
90013007	CT	Fairfield	72.9	73.8	0.09	0.01	0.16	0.03	0.05	**3.94**	0.41	0.02	0.05	0.15	0.03	**0.72**	**1.18**	0.16	0.10	**0.80**	0.24	0.02	**0.96**	0.33	**1.38**	0.18	0.09	0.34	0.08	0.07	0.01	0.10	**7.22**
90019003	CT	Fairfield	73.3	73.6	0.09	0.01	0.15	0.03	0.05	**2.52**	0.44	0.03	0.05	0.15	0.02	0.67	**1.16**	0.15	0.10	**0.84**	0.24	0.00	**1.13**	0.06	**1.44**	0.17	0.09	0.32	0.07	0.07	0.01	0.01	**8.38**
90099002	CT	New Haven	70.5	72.6	0.09	0.01	0.14	0.02	0.04	**3.85**	0.56	0.04	0.05	0.17	0.03	**0.71**	**1.05**	0.21	0.09	**0.79**	0.17	0.01	**1.28**	0.15	**1.31**	0.23	0.08	0.32	0.08	0.09	0.01	0.02	**5.79**
170310001	IL	Cook	68.2	71.9	0.00	0.01	0.03	0.02	0.04	0.00	0.00	0.00	0.04	0.00	0.02	**18.80**	**7.11**	**0.90**	0.48	0.04	0.05	0.00	0.00	0.00	**1.16**	**0.85**	0.00	0.37	0.08	0.29	0.01	0.00	0.00
170314201	IL	Cook	68.0	71.5	0.00	0.01	0.06	0.05	0.05	0.00	0.00	0.00	0.01	0.00	0.03	**23.46**	**5.42**	0.42	0.18	0.06	0.02	0.00	0.00	0.00	**1.56**	0.50	0.00	0.54	0.07	0.10	0.01	0.00	0.00
170317002	IL	Cook	68.5	71.3	0.01	0.04	0.19	0.07	0.09	0.00	0.00	0.00	0.04	0.05	0.04	**20.58**	**6.55**	0.69	0.52	0.18	0.10	0.00	0.00	0.01	**1.00**	0.38	0.00	**1.39**	0.07	0.19	0.02	0.00	0.00
350130021	NM	Dona Ana	70.8	72.1	0.01	**1.04**	0.00	0.31	0.15	0.00	0.00	0.00	0.05	0.01	0.02	0.00	0.00	0.00	0.06	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.05	0.00	0.00
350130022	NM	Dona Ana	69.7	72.4	0.00	**1.06**	0.00	0.31	0.18	0.00	0.00	0.00	0.04	0.01	0.02	0.00	0.00	0.00	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.05	0.00	0.00
350151005	NM	Eddy	69.7	74.1	0.00	**1.34**	0.02	0.63	0.18	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.10	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.08	0.08	0.00	0.00
350250008	NM	Lea	69.8	72.2	0.00	**1.66**	0.00	**0.71**	0.08	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.10	0.00	0.00
480391004	TX	Brazoria	70.4	72.5	0.27	0.01	**1.21**	0.01	0.05	0.00	0.00	0.00	0.10	0.10	0.01	0.07	0.07	0.25	0.37	0.09	**5.21**	0.00	0.00	0.00	0.00	0.14	0.53	0.64	0.05	0.21	0.00	0.00	0.00
481210034	TX	Denton	69.8	71.6	0.45	0.06	**0.92**	0.06	0.17	0.00	0.00	0.00	0.03	0.05	0.04	0.26	0.31	0.20	0.46	0.41	**2.87**	0.00	0.00	0.00	0.01	0.10	**0.91**	0.56	0.10	0.36	0.02	0.00	0.00

https://www.epa.gov/sites/default/files/2018-03/documents/transport_memo_03_27_18_1.pdf

Modeling Data Source 2: OTC TSDs

- Ozone Transport Commission/Mid-Atlantic Northeastern Visibility Union 2016 Based Modeling Platform Support Document
- Has the benefit of more direct control by states as to what goes into this modeling and the timeline for the modeling
- Unclear what EPA would do if this modeling contradicted theirs

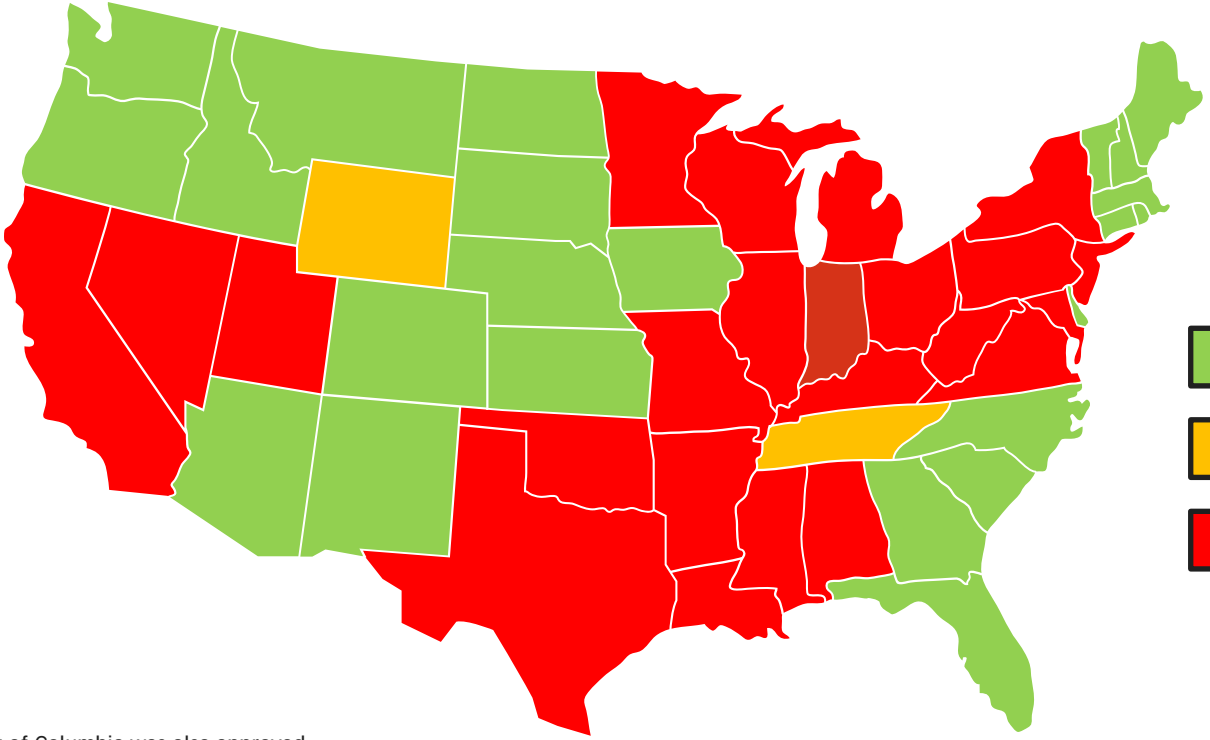
Table 10-8 (A and B). *1% State Linkages for Monitors Projected to not Attain and Maintain the 2015 NAAQS*

(A) Monitor Name	Monitor ID	CMAQ	CMAQ less Water	CAMx	CAMx less Water
Babylon	361030002	Maintenance	Attainment	Attainment	Attainment
Bristol	420170012	Nonattainment	Nonattainment	Attainment	Attainment
Fort Griswold Park	090110124	Attainment	Attainment	Attainment	Nonattainment
Greenwich Point Park	090010017	Nonattainment	Nonattainment	Nonattainment	Nonattainment
Hammonasset S.P.	090099002	Nonattainment	Nonattainment	Nonattainment	Maintenance
Sherwood Island	090019003	Nonattainment	Nonattainment	Nonattainment	Nonattainment
Stratford	090013007	Nonattainment	Nonattainment	Nonattainment	Nonattainment
Susan Wagner H.S.	360850067	Nonattainment	Attainment	Nonattainment	Attainment
White Plains	361192004	Maintenance	Attainment	Attainment	Attainment

(B) Monitor Name	Monitor ID	Linkages Using All High Ozone Days	Linkages Using Top 4 High Average
Babylon	361030002	IN,MD,MI,NJ,NY,OH,PA,VA,WV (9 states)	IN,KY,MD,MI,NJ,NY,OH,PA,VA,WV (10 states)
Bristol	420170012	DE,IN,KY,MD,MI,NJ,NY,OH,PA,VA,WV (11 states)	DE,IN,KY,MD,NJ,NY,OH,PA,VA,WV (10 states)
Fort Griswold Park	090110124	CT,MD,MI,NJ,NY,OH,PA,VA,WV (9 states)	CT,MI,NJ,NY,OH,PA,VA,WV (8 states)
Greenwich Point Park	090010017	CT,MD,MI,NJ,NY,OH,PA,VA,WV (9 states)	CT,IN,MD,MI,NJ,NY,OH,PA,VA,WV (9 states)
Hammonasset S.P.	090099002	CT,IL,IN,KY,MD,MI,NJ,NY,OH,PA,VA,WV (12 states)	CT,IL,IN,KY,MD,MI,NJ,NY,OH,PA,VA,WV (12 states)
Sherwood Island	090019003	CT,IN,MD,MI,NJ,NY,OH,PA,VA,WV	CT,IL,IN,KY,MD,NJ,NY,OH,PA,VA,WV

https://otcair.org/upload/Documents/Reports/2016TSD_January2023_withAppendices.pdf

Current SIP Status



Approved SIP

No Approved SIP, But No Linkages

Good Neighbor FIP

*District of Columbia was also approved

https://www.federalregister.gov/documents/2023/02/13/2023-02407/air-plan-disapprovals-interstate-transport-of-air-pollution-for-the-2015-8-hour-ozone-national

Regulations: Prongs 3 & 4

Prong 3

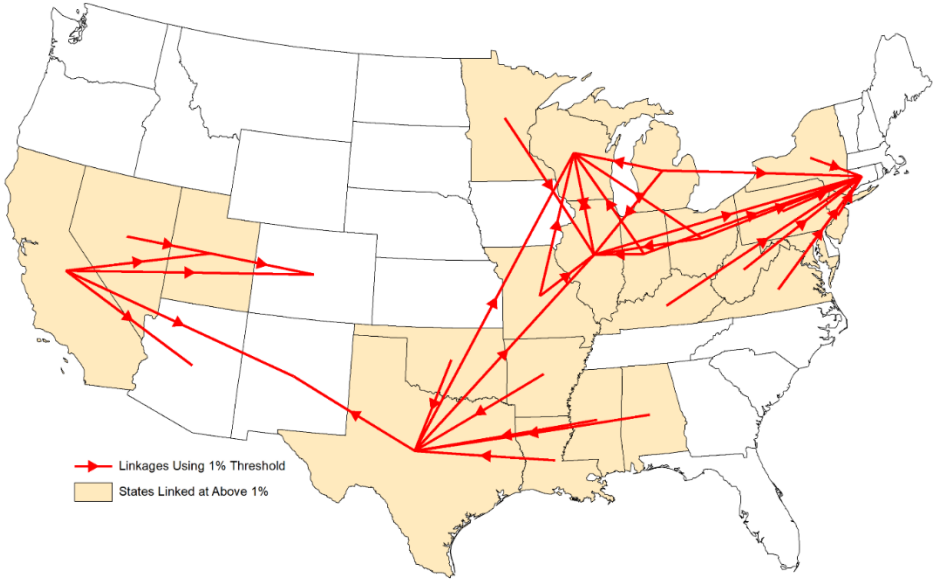
- EPA has noted that “no state submission that is the subject of this disapproval action offered any additional emissions control measures”*
- The expectation is that a state would need to show that emission reductions reduce contribution to receptors below 1%
- To meet Prong 3, the courts have told EPA in FIPs that they cannot “overcontrol.”
- To do that, determine:
  - What emissions reductions are needed to reduce your contribution below 1%
  - Which measures are most cost-effective to achieve those reductions
- It is unclear if overcontrol would be an issue if a state included it in their SIP as opposed to an EPA-issued FIP

Prong 4

- Regulations must meet the typical requirements for a rule to be included in a SIP
  - Permanent
  - Enforceable
  - Quantifiable
  - Surplus

*https://www.federalregister.gov/documents/2023/02/13/2023-02407/air-plan-disapprovals-interstate-transport-of-air-pollution-for-the-2015-8-hour-ozone-national

Questions?



The map shows "linkages" between pollution from upwind states and receptors in downwind states that had problems meeting the 2015 ozone NAAQS from EPA.