

MIDWEST OZONE GROUP PREVIEW OF 2015 OZONE NAAQS GOOD NEIGHBOR SIPs

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May 31, 2018

A PDF version of this document can be located at:

http://www.midwestozonegroup.com/files/MOG_Preview_of_GNS_Development_final.pdf

Support for States

- Using information available from EPA and MOG, how can States develop a technical support document (TSD) for Good Neighbor SIP revisions?
- MOG is making available to the states a TSD with data supporting approvable Good Neighbor SIPs to address EPA-identified nonattainment / maintenance monitors in the eastern US

Outcome

- Approval of Good Neighbor SIP for 2008 and 2015 ozone NAAQS would obviate new transport rules, 126 petitions and the 176A petition
- Good Neighbor SIPs can be approvable with existing OTB/OTW controls for all states in the East with recognition of the following:
 - Use of the accepted modeling platforms that are appropriate to assess transport, including 12km and 4 km
 - International emissions
 - Proration of upwind state responsibility based upon ppb contribution to any remaining downwind monitor
 - Significant contribution to be based on 1 ppb (not 1 %)
 - Maintenance monitors to be addressed through a no emission increase demonstration

Ozone Modeling TSD Development

- Address the four step process for each monitor group based on issues related to each
 - Step 1 – Identify problem monitors
 - Step 2 – Determine state linkages
 - Step 3 – Determine required response
 - Step 4 – Establish enforceable measures
- Use directly or as weight of evidence to support SIP revisions
- Examples provided for four (4) sets of monitors
 - Connecticut/New York, Maryland, Wisconsin/Michigan, Texas

New York/Connecticut

Step 1 – Identify Problem Monitors

SIP approvable modeling shows all monitors are in attainment with 2015 ozone NAAQS on the basis of 3 year average DV. Five monitors would be maintenance only.

				DVf (2023) Average (ppb) - Nonattainment		
Monitor	State	County	DVb (2011)	Original 12km Modeling	Updated 12km Modeling	4km Modeling
361030002	New York	Suffolk	83.3	72.5	74.0	70.7
90019003	Connecticut	Fairfield	83.7	72.7	73.0	69.9
90013007	Connecticut	Fairfield	84.3	71.2	71.0	69.7
360810124	New York	Queens	78.0	70.1	70.2	68.0
90099002	Connecticut	New Haven	85.7	71.2	69.9	70.3
90010017	Connecticut	Fairfield	80.3	69.8	68.9	69.2

				DVf (2023) Maximum (ppb) - Maintenance		
Monitor	State	County	DVb (2011)	Original 12km Modeling	Updated 12km Modeling	4km Modeling
361030002	New York	Suffolk	83.3	74.0	75.5	72.1
90019003	Connecticut	Fairfield	83.7	75.6	75.9	72.7
90013007	Connecticut	Fairfield	84.3	75.2	75.0	73.6
360810124	New York	Queens	78.0	71.9	72.0	69.8
90099002	Connecticut	New Haven	85.7	73.9	72.6	73.0
90010017	Connecticut	Fairfield	80.3	72.1	71.2	71.5

Step 2: Linkage assessment (1%)

- Using the linkage calculations from the 12km simulation, Alpine selected the states with linkage to problem receptors (based on the 1% of 70 pbb NAAQS) to define source regions in 4km OSAT simulation

Monitor	Name	PA	VA/DC	IL	IN	OH	MD	NJ	NY	WV	KY	MI	CT	DE	TX
90019003	Fairfield, CT	x	x	x	x	x	x	x	x						
361030002	Suffolk, NY	x	x	x	x	x	x	x			x	x	x		x
360850067	Richmond, NY	x	x	x	x	x	x	x		x	x	x		x	x
90013007	Fairfield, CT	x	x	x	x	x	x	x	x						
90099002	New Haven, CT	x	x	x	x	x	x	x	x						

Step 2: Linkage assessment (>1 ppb)

- Using the linkage calculations from the 12km simulation, Alpine also identified states with linkage to problem receptors > 1 ppb – 5 fewer than with 1%

Monitor	Name	PA	VA/DC	IL	IN	OH	MD	NJ	NY	DE
90019003	Fairfield, CT	x	x			x	x	x	x	
361030002	Suffolk, NY	x	x	x	x	x	x	x		
360850067	Richmond, NY	x	x	x	x	x	x	x		x
90013007	Fairfield, CT	x	x			x	x	x	x	
90099002	New Haven, CT	x	x	x		x	x	x	x	

Step 3 – Determine Required Response

- No nonattainment receptors: no response needed
- Only problem monitors: maintenance
- Alternative maintenance approaches
 - Demonstrate cost effective controls in place; or
 - 10 year projection with no emission increase

Step 3: Maintenance Alternative: 10 Year Reduction Demonstration

Annual Anthropogenic NOx Emissions

State	2011 (Tons)	2023 (Tons)	Change (Tons)	Change (%)
Connecticut	72,906	37,758	-35,148	-48%
Delaware	29,513	14,511	-15,002	-51%
District of Columbia	9,404	4,569	-4,834	-51%
Illinois	506,607	293,450	-213,156	-42%
Indiana	444,421	243,954	-200,467	-45%
Kentucky	327,403	171,194	-156,209	-48%
Maryland	165,550	88,383	-77,167	-47%
Michigan	443,936	228,242	-215,694	-49%
New Jersey	191,035	101,659	-89,376	-47%
New York	388,350	230,001	-158,349	-41%
Ohio	546,547	252,828	-293,719	-54%
Pennsylvania	562,366	293,048	-269,318	-48%
Texas	1,277,432	869,949	-407,482	-32%
Virginia	313,848	161,677	-152,171	-48%
West Virginia	174,219	136,333	-37,886	-22%

As reported by EPA, final CSAPR update summaries

Maryland

Step 1: Identify Problem Monitors

SIP approvable modeling shows that even without any international transport credit all monitors are attainment except Harford

				DVf (2023) Average (ppb) - Nonattainment		
Monitor	State	County	DVb (2011)	Original 12km Modeling	Updated 12km Modeling	4km Modeling
240251001	Maryland	Harford	90.0	71.4	70.9	71.1

				DVf (2023) Maximum (ppb) - Maintenance		
Monitor	State	County	DVb (2011)	Original 12km Modeling	Updated 12km Modeling	4km Modeling
240251001	Maryland	Harford	90.0	73.8	73.3	73.5

Step 1 : International Contribution

Harford: (only nonattainment monitor at 4km) – 71.1 ppb

– Reduction needed to achieve attainment: 0.2 ppb

– International contribution

- Canada/Mexico: 0.43 ppb (assumed to be 100% international)

- Boundary Conditions: no credit for any portion of the 11.34 ppb BC needed to bring monitor into attainment

 - 89% of global NO_x emissions are generated outside U.S.

– Weight of Evidence: Harford is likely to be in attainment of the 2015 ozone NAAQS “but for” international emissions

Step 1: International Emissions

- NOx Emissions influencing boundary condition are overwhelmingly (89%) from international sources:
 - China 21%
 - Int. Shipping 13%
 - USA 11%
 - India 7%
 - Russian Fed. 3%
 - Brazil 3%
 - Iran 2%
 - Indonesia 2%
 - Japan 2%
 - Mexico 2%
 - Int. Aviation 2%
 - Canada 1%
 - Saudi Arabia 1%
- Source: “European Commission, Joint Research Centre (JRC)/PBL Netherlands Environmental Assessment Agency. Emission Database for Global Atmospheric Research (EDGAR)”

Step 2: Linkage assessment (1%)

- Using the linkage calculations from the 12km simulation, Alpine selected the states with linkage to problem receptors (based on the 1% of 70 pbb NAAQS) to define source regions in 4km OSAT simulation

Monitor	Name	PA	VA/DC	IL	IN	OH	WV	KY	MI	TX
240251001	Harford, MD	x	x	x	x	x	x	x	x	x

Step 2: Linkage assessment (> 1 ppb)

- Using the linkage calculations from the 12km simulation, Alpine also identified states with linkage to problem receptors > 1 ppb – 2 fewer than with 1%

Monitor	Name	PA	VA/DC	IL	IN	OH	WV	KY
240251001	Harford, MD	x	x	x	x	x	x	x

Step 3 – Determine Required Response for Maintenance

- No nonattainment receptors (if emissions from Canada/Mexico are recognized)
- If only maintenance, allow the following alternatives
 - Show cost effective controls in place, or
 - 10 year projection with no emission increase

Step 3: Maintenance Alternative: 10 Year Reduction Demonstration

Annual Anthropogenic NOx Emissions

State	2011 (Tons)	2023 (Tons)	Change (Tons)	Change (%)
District of Columbia	9,404	4,569	-4,834	-51%
Illinois	506,607	293,450	-213,156	-42%
Indiana	444,421	243,954	-200,467	-45%
Kentucky	327,403	171,194	-156,209	-48%
Michigan	443,936	228,242	-215,694	-49%
Ohio	546,547	252,828	-293,719	-54%
Pennsylvania	562,366	293,048	-269,318	-48%
Texas	1,277,432	869,949	-407,482	-32%
Virginia	313,848	161,677	-152,171	-48%
West Virginia	174,219	136,333	-37,886	-22%

As reported by EPA, final CSAPR update summaries

Step 3 – Determine Required Response to Nonattainment

- If Harford is not given credit for at least 0.2 ppb from international transport and is treated as nonattainment, allow the following alternatives
 - Show cost effective controls in place, or
 - Proportional contribution (a.k.a., ‘red lines’ approach)

Step 3: “Red Lines” Allocation Alternative

- Upwind states are obligated to reduce emissions but no more than necessary to achieve attainment or eliminate linkage
- CAA does not specify how to allocate among upwind states
- EPA’s CSAPR cost based allocation method was upheld by the Supreme Court in part because of the complexity of other approaches
- This situation is much simpler

Step 3: Red Lines Alternative Harford, MD

Anthropogenic Contribution (ppb) from 2023 Base Case – 4km OSAT Modeling

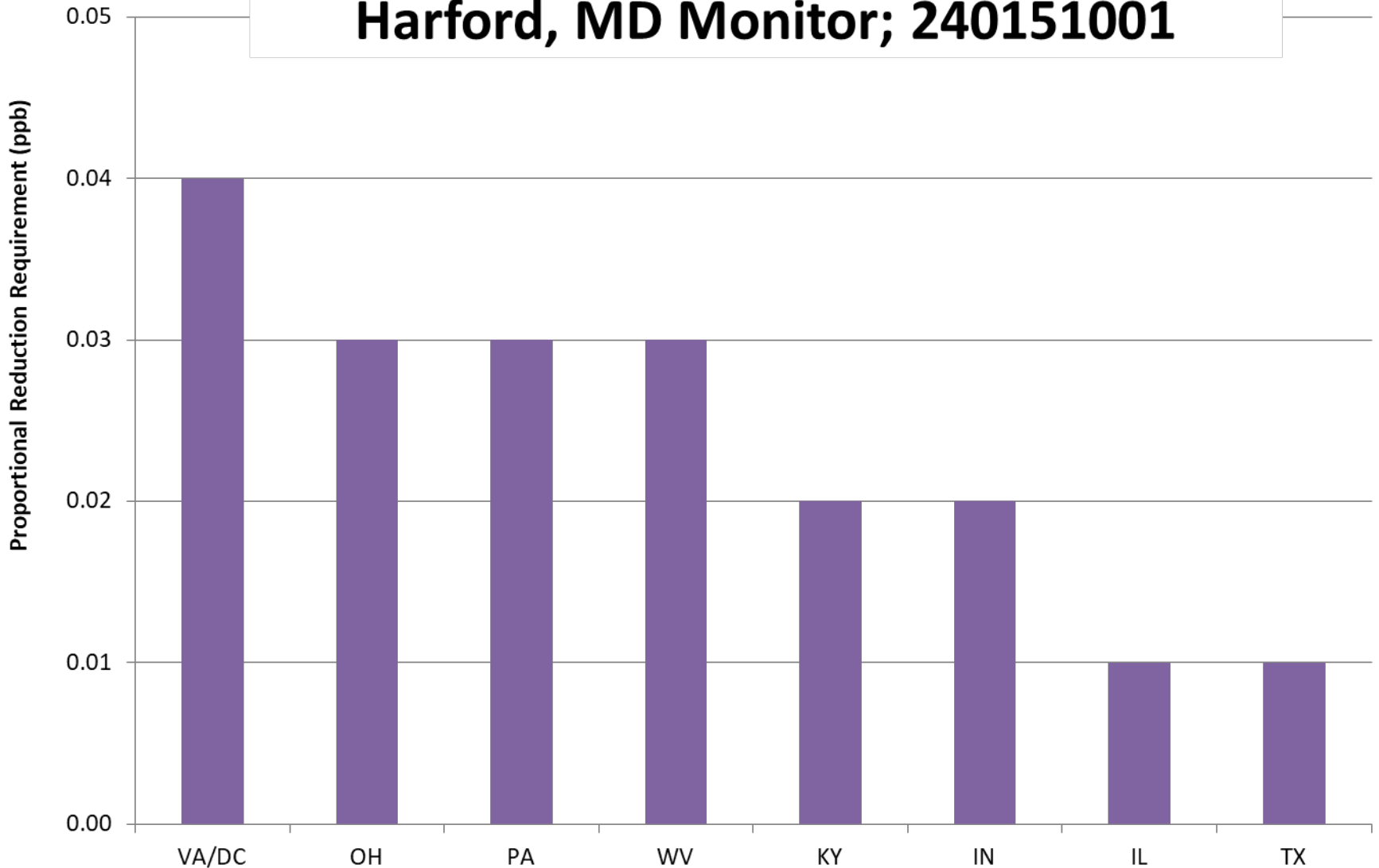
Redlines Reduction Contribution Calculation – Harford, MD

Upwind State must achieve less than 0.70 ppb significant contribution or monitor must achieve attainment

Reduction Necessary for Attainment = 0.2 ppb from 71.1 ppb

	Relative Contribution of Significant Upwind States (ppb and %)		Proportional Reduction Requirement (ppb)
VA/DC	3.92	22%	0.04
OH	3.02	17%	0.03
PA	2.70	15%	0.03
WV	2.52	14%	0.03
KY	2.07	12%	0.02
IN	1.81	10%	0.02
IL	1.05	6%	0.01
TX	0.90	5%	0.01
Total	17.99	100%	0.20

Proportional Reduction Requirements for Harford, MD Monitor; 240151001



Wisconsin/Michigan

Step 1: Identify Problem Monitors

SIP approvable modeling shows all monitors in attainment even without credit for international transport except for Sheboygan

Monitor	State	County	DVb (2011)	Original 12km Modeling		Updated 12km Modeling		4km Modeling	
				DVf (2023) Ave	DVf (2023) Max	DVf (2023) Ave	DVf (2023) Max	DVf (2023) Ave	DVf (2023) Max
260050003	Michigan	Allegan	82.7	69.0	71.8	69.0	71.7	70.3	73.1
550790085	Wisconsin	Milwaukee	80.0	65.4	67.0	71.2	73.0	67.4	70.5
551170006	Wisconsin	Sheboygan	84.3	70.8	73.1	72.8	75.1	71.7	74.0

Step 1 (cont.): International Contribution

Sheboygan: (only nonattainment monitor at 4km) – 71.7 ppb

- Reduction needed to achieve attainment: 0.8 ppb
- International contribution (from 12km modeling)
 - Canada/Mexico: 0.69 ppb (assumed to be 100% international)
 - Boundary Conditions: 17.53 ppb (only need credit for 0.11 ppb – less than 1%- of BC (in addition to Can/Mex) to bring monitor into attainment
 - 89% of global NOx emissions are generated outside U.S.
- Weight of Evidence: Sheboygan is likely to be in attainment of the 2015 ozone NAAQS “but for” international emissions

Step 1: International Emissions

- NOx Emissions influencing boundary condition are overwhelmingly (89%) from international sources:
 - China 21%
 - Int. Shipping 13%
 - USA 11%
 - India 7%
 - Russian Fed. 3%
 - Brazil 3%
 - Iran 2%
 - Indonesia 2%
 - Japan 2%
 - Mexico 2%
 - Int. Aviation 2%
 - Canada 1%
 - Saudi Arabia 1%
- Source: “European Commission, Joint Research Centre (JRC)/PBL Netherlands Environmental Assessment Agency. Emission Database for Global Atmospheric Research (EDGAR)”

Step 1 (cont.): Problem Monitors

- Sheboygan, Wisconsin: Maintenance only (assuming international emissions are recognized)
- Allegan, Michigan: Maintenance

Step 2: Linkage assessment (1%)

Site ID	State	County	2023 Avg DV	2023 Max DV	AR	IL	IN	IA	KS	KY
551170006	Wisconsin	Sheboygan	72.8	75.1	0.51	15.73	7.11	0.45	0.46	0.81
260050003	Michigan	Allegan	69.0	71.7	1.64	19.62	7.11	0.77	0.77	0.58

Site ID	State	County	LA	MI	MO	OH	OK	TX	WI
551170006	Wisconsin	Sheboygan	0.84	2.06	1.37	1.10	0.95	1.65	9.09
260050003	Michigan	Allegan	0.70	3.32	2.61	0.19	1.31	2.39	1.95

Site ID	State	County	Can + Mex	Offshore	Fire	Initial & Boundary	Biogenic
551170006	Wisconsin	Sheboygan	0.69	0.55	0.64	17.53	7.51
260050003	Michigan	Allegan	0.54	0.36	0.93	11.85	8.91

Step 2: Linkage assessment (> 1 ppb)

Use of >1 ppb results in 4 fewer linkages than with 1 %

Site ID	State	County	2023 Avg DV	2023 Max DV	AR	IL	IN	MI
551170006	Wisconsin	Sheboygan	72.8	75.1	0.51	15.73	7.11	2.06
260050003	Michigan	Allegan	69.0	71.7	1.64	19.62	7.11	3.32

Site ID	State	County	MO	OH	OK	TX	WI
551170006	Wisconsin	Sheboygan	1.37	1.10	0.95	1.65	9.09
260050003	Michigan	Allegan	2.61	0.19	1.31	2.39	1.95

Site ID	State	County	Can + Mex	Offshore	Fire	Initial & Boundary	Biogenic
551170006	Wisconsin	Sheboygan	0.69	0.55	0.64	17.53	7.51
260050003	Michigan	Allegan	0.54	0.36	0.93	11.85	8.91

Step 3 – Determine Required Response

- No nonattainment receptors (if international emissions are recognized)
- Only problem monitors: maintenance
- Alternative maintenance approaches
 - Show cost effective controls in place;or
 - 10 year projection with no emission increase

Step 3: Maintenance Alternative: 10 Year Reduction Demonstration

Annual Anthropogenic NOx Emissions

State	2011 (Tons)	2023 (Tons)	Change (Tons)	Change (%)
Illinois	506,607	293,450	-213,156	-42%
Indiana	444,421	243,954	-200,467	-45%
Kentucky	327,403	171,194	-156,209	-48%
Louisiana	535,339	373,849	-161,490	-30%
Michigan	443,936	228,242	-215,694	-49%
Missouri	376,256	192,990	-183,266	-49%
Ohio	546,547	252,828	-293,719	-54%
Oklahoma	427,278	255,341	-171,937	-40%
Texas	1,277,432	869,949	-407,482	-32%

As reported by EPA, final CSAPR update summaries

Step 3 – Determine Required Response to Nonattainment

- If Sheboygan is not given credit for at least 0.8 ppb from international transport and is treated as nonattainment, allow the following alternatives
 - Show cost effective controls in place, or
 - Proportional contribution (a.k.a., ‘red lines’ approach)

Step 3: “Red Lines” Allocation Alternative

- Upwind states are obligated to reduce emissions but no more than necessary to achieve attainment or eliminate linkage
- CAA does not specify how to allocate among upwind states
- EPA’s CSAPR cost based allocation method was upheld by the Supreme Court in part because of the complexity of other approaches
- This situation is much simpler

Step 3: Red Lines Alternative

Redlines Reduction Contribution Calculation - Sheboygan, WI

Upwind State must achieve less than 0.70 ppb significant contribution or monitor must achieve attainment
 Reduction Necessary for Attainment = 1.90 ppb from 72.8 ppb

	Relative Contribution of Significant Upwind States (ppb and %)		Proportional Reduction Requirement (ppb)
IL	15.73	50%	0.95
IN	7.11	22%	0.43
MI	2.06	7%	0.12
TX	1.65	5%	0.10
MO	1.37	4%	0.08
OH	1.10	3%	0.07
OK	0.95	3%	0.06
LA	0.84	3%	0.05
KY	0.81	3%	0.05
Total	31.62	100%	1.90

EPA final CSAPR update 12km APCA contributions

Texas

Step 1: Identify Problem Monitors

EPA modeling* show all monitors in attainment even without credit for international transport except for 3

Site ID	State	County	2009-13 Avg DV	2009-13 Max DV	2023 Avg DV	2023 Max DV
480391004	Texas	Brazoria	88.0	89	74.0	74.9
484392003	Texas	Tarrant	87.3	90	72.5	74.8
482011039	Texas	Harris	82.0	84	71.8	73.5
482010024	Texas	Harris	80.3	83	70.4	72.8
481210034	Texas	Denton	84.3	87	69.7	72.0
482011034	Texas	Harris	81.0	82	70.8	71.6

*EPA 12km design values as published in March 27, 2018 EPA memo

Step 1 (cont.): International Contribution

Tarrant (484392003) – 72.5 ppb (12km modeling)

- Reduction needed to achieve attainment: 1.6 ppb
- International contribution
 - Canada/Mexico: 1.24 ppb (assumed to be 100% international)
 - Boundary Conditions: 24.38 ppb (only need credit for 0.36 ppb – 1.5 % of BC -in addition to Can/Mex - to bring monitor into attainment)
 - 89% of global NOx emissions are generated outside U.S.
- Weight of Evidence: This monitor is likely to be in attainment of the 2015 ozone NAAQS “but for” international emissions

Step 1 (cont.): International Contribution

Harris (482011039) – 71.8 ppb (12km modeling)

- Reduction needed to achieve attainment: 0.9 ppb
- International contribution
 - Canada/Mexico: 0.47 ppb (assumed to be 100% international)
 - Boundary Conditions: 24.67 ppb (only need credit for 0.43 ppb – 1.7 % of BC - in addition to Can/Mex - to bring monitor into attainment)
 - 89% of global NO_x emissions are generated outside U.S.
- Weight of Evidence: This monitor is likely to be in attainment of the 2015 ozone NAAQS “but for” international emissions

Step 1 (cont.): International Contribution

Brazoria (480391004) – 74.0 ppb (12km modeling)

- Reduction needed to achieve attainment: 3.1 ppb
- International contribution
 - Canada/Mexico: 0.44 ppb (assumed to be 100% international)
 - Boundary Conditions: 24.02 ppb (only need credit for 2.66 ppb – 11.07% of BC - in addition to Can/Mex - to bring monitor into attainment)
 - 89% of global NOx emissions are generated outside U.S.
- Weight of Evidence: This monitor is likely to be in attainment of the 2015 ozone NAAQS “but for” international emissions

Step 1: International Emissions

- NOx Emissions influencing boundary condition are overwhelmingly (89%) from international sources:
 - China 21%
 - Int. Shipping 13%
 - USA 11%
 - India 7%
 - Russian Fed. 3%
 - Brazil 3%
 - Iran 2%
 - Indonesia 2%
 - Japan 2%
 - Mexico 2%
 - Int. Aviation 2%
 - Canada 1%
 - Saudi Arabia 1%
- Source: “European Commission, Joint Research Centre (JRC)/PBL Netherlands Environmental Assessment Agency. Emission Database for Global Atmospheric Research (EDGAR)”

Step 2: Linkage assessment (1%)

Site ID	State	County	2023 Avg DV	2023 Max DV	AR	IL	LA	MS	MO	OK
480391004	Texas	Brazoria	74.0	74.9	0.90	1.00	3.80	0.63	0.88	0.90
484392003	Texas	Tarrant	72.5	74.8	0.78	0.29	1.71	0.27	0.38	1.71
482011039	Texas	Harris	71.8	73.5	0.99	0.88	4.72	0.79	0.88	0.58
482010024	Texas	Harris	70.4	72.8	0.29	0.34	3.06	0.50	0.38	0.20
481210034	Texas	Denton	69.7	72.0	0.58	0.23	1.92	0.33	0.24	1.23
482011034	Texas	Harris	70.8	71.6	0.54	0.51	3.38	0.39	0.63	0.68

Site ID	State	County	TX	Can + Mex	Offshore	Fire	Initial & Boundary	Biogenic
480391004	Texas	Brazoria	26.00	0.44	2.31	2.05	24.02	5.60
484392003	Texas	Tarrant	27.64	1.24	1.18	1.34	24.38	6.44
482011039	Texas	Harris	22.82	0.47	4.04	2.09	24.67	4.50
482010024	Texas	Harris	25.62	0.28	4.83	0.77	27.83	2.66
481210034	Texas	Denton	26.69	0.92	1.23	0.87	24.69	6.42
482011034	Texas	Harris	25.66	0.24	3.91	1.75	25.71	3.44

Step 2: Linkage assessment (> 1 ppb)

Use of >1 ppb results in 4 fewer linkages than with 1 %

Site ID	State	County	2023 Avg DV	2023 Max DV	LA	OK	TX
480391004	Texas	Brazoria	74.0	74.9	3.80	0.90	26.00
484392003	Texas	Tarrant	72.5	74.8	1.71	1.71	27.64
482011039	Texas	Harris	71.8	73.5	4.72	0.58	22.82
482010024	Texas	Harris	70.4	72.8	3.06	0.20	25.62
481210034	Texas	Denton	69.7	72.0	1.92	1.23	26.69
482011034	Texas	Harris	70.8	71.6	3.38	0.68	25.66

Site ID	State	County	Can + Mex	Offshore	Fire	Initial & Boundary	Biogenic
480391004	Texas	Brazoria	0.44	2.31	2.05	24.02	5.60
484392003	Texas	Tarrant	1.24	1.18	1.34	24.38	6.44
482011039	Texas	Harris	0.47	4.04	2.09	24.67	4.50
482010024	Texas	Harris	0.28	4.83	0.77	27.83	2.66
481210034	Texas	Denton	0.92	1.23	0.87	24.69	6.42
482011034	Texas	Harris	0.24	3.91	1.75	25.71	3.44

Step 3 – Determine Required Response

- No nonattainment receptors (if international emissions are recognized)
- Only problem monitors: maintenance
- Alternative maintenance approaches
 - Show cost effective controls in place; or
 - 10 year projection with no emission increase

Step 3: Maintenance Alternative: 10 Year Reduction Demonstration

Annual Anthropogenic NOx Emissions				
State	2011 (Tons)	2023 (Tons)	Change (Tons)	Change (%)
Arkansas	232,185	132,148	-100,037	-43%
Illinois	506,607	293,450	-213,156	-42%
Louisiana	535,339	373,849	-161,490	-30%
Mississippi	205,800	105,941	-99,859	-49%
Missouri	376,256	192,990	-183,266	-49%
Oklahoma	427,278	255,341	-171,937	-40%

As reported by EPA, final CSAPR update summaries

Step 3 – Determine Required Response to Nonattainment

If Tarrant, Harris and/or Brazoria are not given enough international transport credit to be treated as attainment, allow the following alternatives

- Show cost effective controls in place, or
- Proportional contribution (a.k.a., ‘red lines’ approach)

Conclusion

- Approval of Good Neighbor SIP for 2008 and 2015 ozone NAAQS would obviate new transport rules and 126 petitions and the 176A petition
- Good Neighbor SIPs can be approved without new controls for all states in the East with recognition of the following:
- Step 1:
 - Alternative modeling platforms
 - Recognition of the several modeling platforms that are known to be appropriate to assess transport, including 12km and 4 km
 - MOG 4km modeling improves results in NY/CT; MD; MI/WI

Conclusion (cont.)

Step 1 (cont.):

– Recognition of international emissions

- No credit needed for NY/CT to achieve attainment
- Allowing credit for only Can/Mex resolves MD
- Allowing additional credit for 1% of BC resolves all monitors in East other than TX
- Allowing additional credit for 2% of BC resolves all monitors in East other than 1 monitor in TX
- Allowing additional credit for 12% of BC resolves all of East, including TX

Conclusion (cont.)

- Step 2:
 - Allow linkage to be based on impacts greater than 1 ppb (not 1 %) eliminates linkages with TX for the states of AR, MS, MO, OK, IL)
- Step 3:
 - For monitors not given enough credit for international transport to be treated as attainment, allow states to allocate responsibility for new control. This works particularly well in MD and WI which have only 1 potential nonattainment monitor (if international is not considered). Once ppb contribution to nonattainment is determined, states can calculate the extent to which emissions would need to be reduced or cost-justified
 - Allow “maintenance” to be addressed through a no emission increase demonstration helps all upwind states

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