



Department of
**Environment &
Conservation**

Ozone on a Hot Sunny Day

AAPCA 2022 Fall Business Meeting

September, 2022

Purpose of this Effort & Presentation

- Initiate communication between state & local agencies
- Initiate communication with EPA Headquarters & Regional Offices
- TDEC's role:
 - serve as a resource for Shelby County
 - coordinate activities involving multiple agencies(TDEC does not operate an ozone monitor in Memphis area)

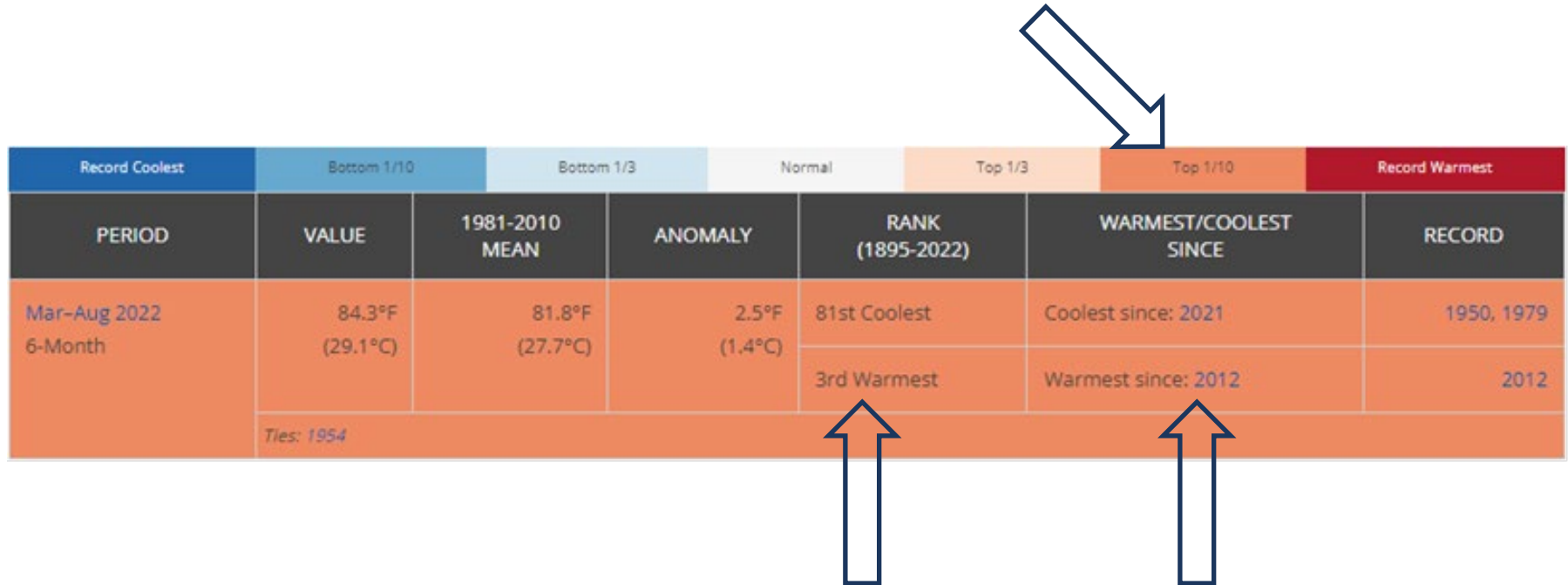
What Happens if a Tri-State Attainment Area Exceeds the Ozone NAAQS?

Memphis Area Ozone Monitors



Summer of 2022 has Lots of Hot, Sunny Days

Official Climate Ranking from National Centers for Environmental Information (NCEI)



Record Coolest		Bottom 1/10		Bottom 1/3		Normal	Top 1/3		Top 1/10	Record Warmest	
PERIOD	VALUE	1981-2010 MEAN	ANOMALY	RANK (1895-2022)		WARMEST/COOLEST SINCE		RECORD			
Mar-Aug 2022 6-Month	84.3°F (29.1°C)	81.8°F (27.7°C)	2.5°F (1.4°C)	81st Coolest		Coolest since: 2021		1950, 1979			
				3rd Warmest		Warmest since: 2012		2012			
				Ties: 1954							

Bad Weeks for Ozone in 2021 and 2022

2021 Preliminary 8-hr Max Ozone

	Memphis					Clks.		Nashville					Tri-Cities		Great Smoky Mtn				Knoxville					Chatt.		EPA Castnet		
	Orgill	Frayser	Hernando	Marion	Shelby Farms	Cadiz (EPA)	Hopkinsville	Fairview	Cedars Of Lebanon	Percy Priest Dam	East Health Center	Hendersonville	Blountville	Kingsport	Clingmans Dome - Gsmnp	Cove Mountain	Look Rock	Purchase	Springhill	Jefferson/ New Market	Eastknox	LoudonMS	Freels/Oak Ridge	Cades Cove - GSMNP	Soddy Daisy	Eastside	Edgar Evins	Speedwell
6/11/2021	31	23	30	32	36	47	41	31	33	37	30	33	30	27	40	36	35	39	29	34	26	30	27	32	31	35	32	
6/12/2021	40	43	43	46	58	57	54	49	49	52	50	55	35	36	44	41	47	38	42	40	41	45	45	41	47	46	48	
6/13/2021	63	61	59	53	67	56	57	48	48	57	52	57	43	38	44	49	51	50	42	43	39	46	39	36	41	44	48	
6/14/2021	66	67	81	73	73	61	57	56	60	58	57	58	52	51	54	57	58	60	53		52	51	51	33	52	50	54	
6/15/2021	59	60	65	66	65	48	46	44	43	40	41	42	52	52	52	57	54	61	51		50	49		51	50	49	45	
6/16/2021	62	67	65	77	70	62	55	56	52	51	51	53	45	44	47	49	52	50	48	47	47	48	45	46	50	48	49	
6/17/2021	71	69	66	70	77	62	66	53	60	68	69	80	57	55	50	64	62	59	52	59	53	66	51	52	53	52	56	49
6/18/2021	63	61	52	60	64	57	57	54	56	57	57	63	65	61	55	60	60	62	66	70	64	67	61	53	71	65	56	59
6/19/2021	26	30	23	37	29	40	32	23	23	32	26	30	50	47	48	59	58	60	37	42	37	30	32	27	28	26	33	34

2022 Preliminary 8-hr Max Ozone

	Memphis					Clks.		Nashville					Tri-Cities		Great Smoky Mtn				Knoxville					Chatt.		EPA Castnet		
	Orgill	Frayser	Hernando	Marion	Shelby Farms	Cadiz (EPA)	Hopkinsville	Fairview	Cedars Of Lebanon	Percy Priest Dam	East Health Center	Hendersonville	Blountville	Kingsport	Clingmans Dome - Gsmnp	Cove Mountain	Look Rock	Purchase	Springhill	Jefferson/ New Market	Eastknox	LoudonMS	Freels/Oak Ridge	Cades Cove - GSMNP	Soddy Daisy	Eastside	Edgar Evins	Speedwell
6/20/2021	57	71	50	73	62		54	54	41	65	69	62	50	44	57	56	62	56	62	52	52	54	58	43	69	72	44	38
6/21/2021	64	61	47	57	66		52	55	77	72	57	57	64	61	51	65	75	53	58	53	50	63	58	45	53	55	46	47
6/22/2021	56		61	57	68		54	57	64	59	53	54	66	60	59	63	63	62	58	58	55	56	58	63	61	66	59	56
6/23/2021	66	65	73	69	70		64	67	68	68	67	69	62	60	63	60	68	64	58	58	60	59	59	66	61	59	62	59
6/24/2021	66	67	78	71	71		60	70	58	67	68	63	64	62	48	54	50	55	58	60	58	54	64	51	64	61	51	53
6/25/2021	71	77	79	88	79		64	63	45	59	63	64	53	51	41	49	44	42	44	52	46	40	48	42	51	51	42	50
6/26/2021	41		40	42	43		47	47	41	49	47	49	37	32	45	46	39	41	36	37	32	35	44	33	51	44	39	42
6/27/2021	54		56	57	57		55	55	53	57	56	57	46	45	46	45	52	47	43	43	44	42	46	44	50	47	47	42
6/28/2021	64		67	68	70		54	67	55	59	59	57	61	54	40	50	52	48	49	54	53	53	52	40	54	52	49	49
6/29/2021	69		68	68	74		56	77	55	64	66	59	63	58		48	53	46	59	54	56	52	53	42	50	49	51	47

2022 Ozone Design Values (through 9/25/22, not certified)

	Memphis					Clks.		Nashville					Tri-Cities		Great Smoky Mtn				Knoxville					Chatt.		EPA Castnet		
	Orgill	Frayser	Hernando	Marion	Shelby Farms	Cadiz (EPA)	Hopkinsville	Fairview	Cedars Of Lebanon	Percy Priest Dam	East Health Center	Hendersonville	Blountville	Kingsport	Clingmans Dome - Gsmnp	Cove Mountain	Look Rock	Purchase	Springhill	Jefferson/ New Market	Eastknox	LoudonMS	Freels/Oak Ridge	Cades Cove - GSMNP	Soddy Daisy	Eastside	Edgar Evins	Speedwell
4th Max '20	62	60	62	69	62	60	59	57	55	61	60	63	54	56	61	58	58	59	52	57	53	59	56	54	55	56	54	54
4th Max '21	63	67	65	72	71	60	59	59	60	63	65	66	64	62	59	63	64	67	61	66	61	65	60	57	61	62	58	59
4th Max '22	69	69	75	71	74	59	61	67	64	67	67	63	63	60	63	64	68	64	58	61	60	59	59	63	66	69	59	57
2022 DV	64	65	67	70	69	59	59	61	59	63	64	64	60	59	61	61	63	63	57	61	58	61	58	58	60	62	57	56



Very Close

2023 Critical Values

preliminary

- Shelby County (TN) Shelby Farms – 68 ppb
- Marion County (AR) – 70 ppb
- Desoto County (MS) – 73 ppb



Was It Hot Enough For You In June 2012?

101° F and I'm wearing a tuxedo with a vest for an outdoor wedding!

The phenomenal ozone concentrations during that period are shown on the next slide.

	Memphis MSA						Clarksv	Nashville MSA						Chattanooga MSA			Knoxville MSA						Great Smoky Mtn				Tri-Cities		
DATE	Edmund Orgill	Frayser	Hernando, MS	Crittenden Marion, AR	Shelby Farms	Hep. KY	Fairview	Eagleville	Cedars of Lebanon	Cottontown	Percy Priest	East Nashville	Hendersonville	Sequoyah	Meigs	Ammon, Plant	Spring Hill	Jefferson/ New Market	East Knox	Loudon	Oak Ridge	Cades Cove	Clingmans Dome	Cove Mountain	Look Rock	Purchase Knob, NC	Blountville	Kingsport	
5/16/12									77																				
5/17/12			76																										
5/18/12	87	84		76	81							76	81																
5/24/12		84		79									76																
5/25/12																											76		
5/26/12													76																
5/30/12													77																
6/13/12			80			76																							
6/14/12	79	78		87									76																
6/15/12	78																												
6/19/12																	78												
6/25/12	85	83	86	86	81				76	78			81																
6/26/12																							77						
6/27/12	80	124		88	98						81	78	80										76		76				
6/28/12	84	82		77	91	77	81		94	85	85		83	82	79	84	85	96	87		79		87	77	77	78	83	80	
6/29/12	80	78							100	76	93	89	97	85		90	121	111	119	96	90		76	81	78	78	100	97	
6/30/12									77				81	82	82	86	93	91	96	90	84						85	85	
7/1/12														76		77													
7/2/12																	77	82											
7/5/12												76																	
7/6/12					89						76		79							79									
7/7/12	87	77								79		82	84	77			76												
7/9/12													76																
7/20/12					83																								
7/30/12	80																												
8/1/12									80																				
8/2/12										81			86				78	78											
8/8/12	84	80			86						91		83																
8/15/12		82																											
8/22/12													80																
8/23/12					81					78			79																
8/24/12													79																
8/27/12													79																
9/5/12	79																												
9/6/12				76																									

Year	11	10	3	7	8	2	1	0	6	6	5	4	20	5	2	4	7	5	3	3	3	0	4	2	3	2	4	3
------	----	----	---	---	---	---	---	---	---	---	---	---	----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Preliminary 2014 Ozone Exceedance Data (8Hr (0.76)\1 Hr Counts) as of November 1, 2014

[illegible][illegible]

Preliminary Tennessee Ozone Data for 2012 - 2014

County	Site Name	MONITOR ID	2012 4th Max.	2013 4th Max.	Preliminary 2014 4th Max.	Preliminary 2012 2014 DV> 0.075 PPM	2014 4th Max Needed for 8 Hr DV Violation (>0.075 PPM)
Anderson Co	Freels Bend_Study Area Melton Lake	470010101 - 1	0.073	0.06	0.06	0.064	0.095
Blount Co	Great Smoky Mountains Np Look Rock	470090101 - 1	0.075	0.064	0.064	0.067	0.089
Blount Co	Great Smoky Mountains Np - Cades Cove	470090102 - 1	0.064	0.059	0.058	0.06	0.105
Davidson Co	1015 Trinity Lane	470370011 - 1	0.076	0.057	0.065	0.066	0.095
Davidson Co	Percy Priest	470370026 - 1	0.081	0.06	0.071	0.07	0.087
Hamilton Co	Volunteer Army Ammunition Plant	470654003 - 1	0.077	0.064	0.067	0.069	0.087
Hamilton Co	Ridgetrail Rd.	470651011 - 1	0.077	0.061	0.064	0.067	0.09
Jefferson Co	1188 Lost Creek Rd	470890002 - 1	0.082	0.065	0.067	0.071	0.081
Knox Co	9315 Rutledge Pike Mascot Tn 37806	470930021 - 1	0.073	0.057	0.06	0.063	0.098
Knox Co	4625 Mildred Drive	470931020 - 1	0.078	0.061	0.063	0.067	0.089
Loudon Co	1703 Roberts Rd	471050109 - 1	0.075	0.061	0.067	0.067	0.092
Meigs Co	8401 Highway 60	471210104 - 1	0.075	0.059		0.067	0.094
Sevier Co	Great Smoky Mountain Np Cove Mountain	471550101 - 1	0.072	0.066	0.068	0.068	0.09
Sevier Co	Clingsmans Dome, Great Smoky Mtns. Np	471550102 - 1	0.071	0.064	0.066	0.067	0.093
Shelby Co	1330 Frayser Blvd	471570021 - 1	0.083	0.069	0.067	0.073	0.076
Shelby Co	6855 Mudville Rd. Edmond Orgill Park	471571004 - 1	0.084	0.063	0.065	0.07	0.081
Shelby Co	Shelby Farms	471572005 - 1	0.086	0.069	0.066	0.073	0.073
Sullivan Co	Hill Road	471632002 - 1	0.076	0.063	0.065	0.068	0.089
Sullivan Co	Ketron Middle School On Bloomingdale Rd.	471632003 - 1	0.075	0.063	0.061	0.066	0.09
Sumner Co	Rockland Recreation Area-Old Hickory Dam	471650007 - 1	0.083	0.068	0.066	0.072	0.077
Williamson Co	Fairview Middle School Crow Cut Road	471870106 - 1	0.074	0.062	0.063	0.066	0.092
Wilson Co	Cedars Of Lebanon State Park	471890103 - 1	0.077	0.062	0.064	0.067	0.089

Claiborne	SPD 718 Russell Hill Rd, Speedwell, TN 37870	470259991-1	0.065	0.061	0.065	0.063	0.102
DeKalb	ESP Edgar Evans State Park, Smithville, TN 37166	470419991-1	0.077	0.062	0.062	0.067	0.089

Christian	Hopkinsville	210470006 - 1	0.075	0.062	0.065	0.067	0.091
DeSoto	5 East South	280330002 - 1	0.075	0.065	0.067	0.069	0.088
Crittenden	Marion	050350005 - 1	0.079	0.067	0.067	0.071	0.082

Data updated through: 3/10/2015

CASTNET Data updated: 3/10/2015

*Truncation to the 3rd digit applied 0.0756 = 0.075 ppm.

0.055	0.069	Less than .070
0.07	0.075	Between .070 and .075
0.075	0.077	Greater than .075

EPA Options for “Focus” Area:

From Lynorae Benjamin and Jane Spann, EPA Region 4:

- Focus Area – Initially designated attainment which later exceeds NAAQS*
 - No boundaries exist. EPA would reach out to state/local agency with exceeding monitor
 - Memphis area is NOT a Focus Area (yet)
- Generally, EPA has 3 options.
 - 1) work with the State on a voluntary basis to bring the area back to attainment as soon as possible;
 - 2) issue a SIP call to require controls to bring the area back into attainment as soon as possible (this does not change the areas attainment designations);
 - 3) redesignate the area to nonattainment.
- We typically follow 1, 2, and 3 in that order.

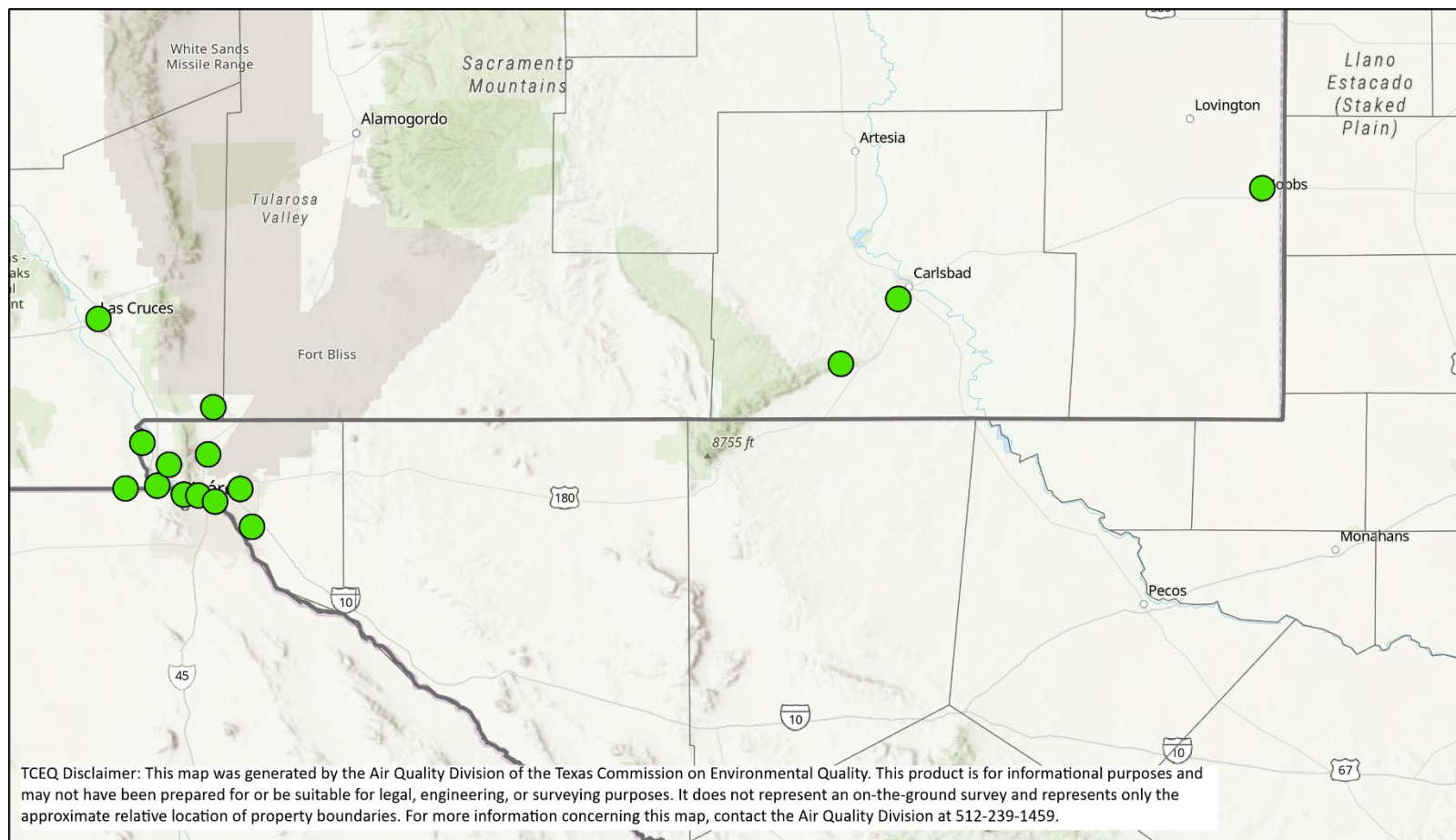
* For areas that were initially designated nonattainment for a NAAQS and are subsequently redesignated to attainment are maintenance areas - If such area later exceeds that NAAQS, it must comply with contingency measures included in maintenance plan.

Redesignations of Attainment Areas

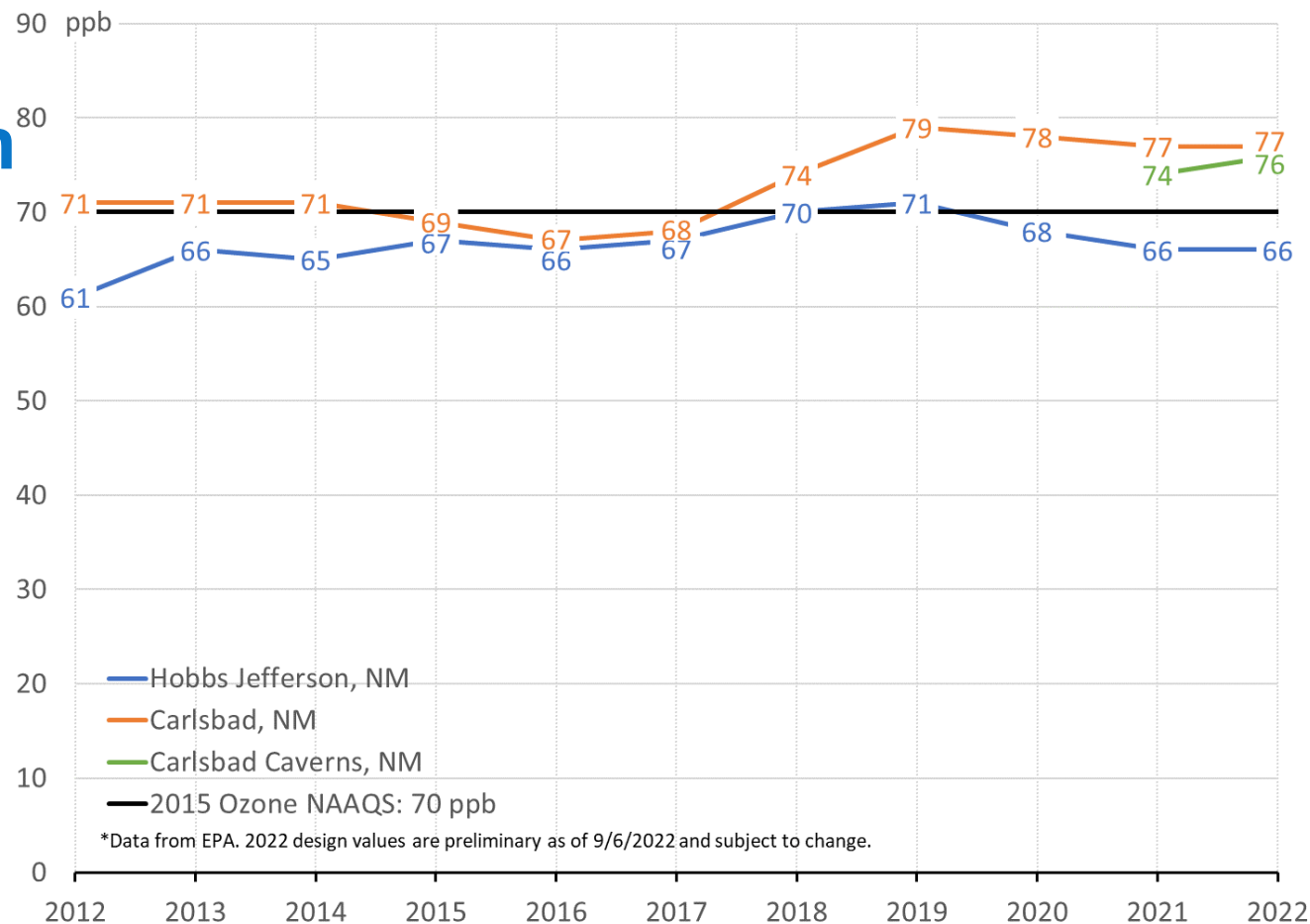
- Denver-Boulder-Greeley-Ft. Collins-Loveland, CO 1997 ozone area designated nonattainment in 2007; initial designations in 2004.
- Hayden, AZ 2008 lead area designated nonattainment in 2014; initial designations were done in 2 rounds in 2010 and 2011.
- San Francisco Bay Area, designated nonattainment for the 1-hr ozone NAAQS in 1998; initial designations were done in 1992.
- Shoreline Sheboygan County, WI (partial) 2008 ozone area designated nonattainment in 2019; initial designations in 2012.
- West Central Pinal, AZ (partial) 2006 PM_{2.5} area designated nonattainment in 2011; initial designations in 2009.

From Lynorae Benjamin, EPA Region 4

Texas-New Mexico Border Area Ozone Monitor Locations



Eight-Hour Ozone Design Values in Carlsbad and Hobbs, NM



What's next for the Permian Basin?

- On June 27, 2022, Governor Abbott sent a letter to President Biden stating that the EPA's discretionary action would jeopardize oil production in Texas.
- On July 27, 2022, EPA Administrator Michael Regan sent a response letter stating that the EPA is still considering nonattainment redesignations for the Permian Basin, which could include portions of New Mexico and Texas.
- On August 23, 2022, Governor Abbott sent a follow-up letter to President Biden stating that a nonattainment designation would be arbitrary and capricious by ignoring the lack of supporting modeling and Texas monitoring data.

Preliminary Questions for EPA

- Does EPA intend to continue to follow 3 Option Approach?
 - Does Permian Basin Actions Change this?
- Does Reconsideration of 2015 Ozone NAAQS affect EPA's approach to Focus Areas
 - If NAAQS is lowered, will EPA concentrate efforts on new standard?
- For multi-state/local agency areas, does it matter which one initiates early action?
- IF EPA were to designate an area to nonattainment for ozone, what would the classification be?
 - Marginal areas are not required to have attainment plans
- Would EPA review and act on exceptional event submissions if there are no pending designation decisions?

Next Steps

- Quarterly Calls with:
 - Shelby County Health Department
 - Memphis MPO
 - West Memphis MPO
 - Arkansas Dept. of Environmental Quality
 - Mississippi Dept. of Environmental Quality
 - Tennessee Dept. of Environment & Conservation
 - EPA Region 4
 - EPA Region 6

Thanks to

- TDEC – Kyle Spangle, Paul LaRock, Marc Corrigan
- Shelby County Health Department – Karen Cook-Pryor, Mike Goldstein, Chris Boyd, Larry Smith, Wasim Khokhar
- Memphis MPO – Pragati Srevastava, Nick Warren, Kate Horton
- West Memphis MPO - Amanda Hicks
- Arkansas DEQ – Tricia Treece, David Clark, David Witherow, Erika Droke
- Mississippi Department of Environmental Quality – Melissa Fortenberry, Keith Head, Rodney Cuevas
- Texas Commission on Environmental Quality – Donna Huff, Walker Williamson
- Region 4 – Lynorae Benjamin, Jane Spann
- Region 6 – Michael Feldman