Texas: Zeroing in on Healthy Air
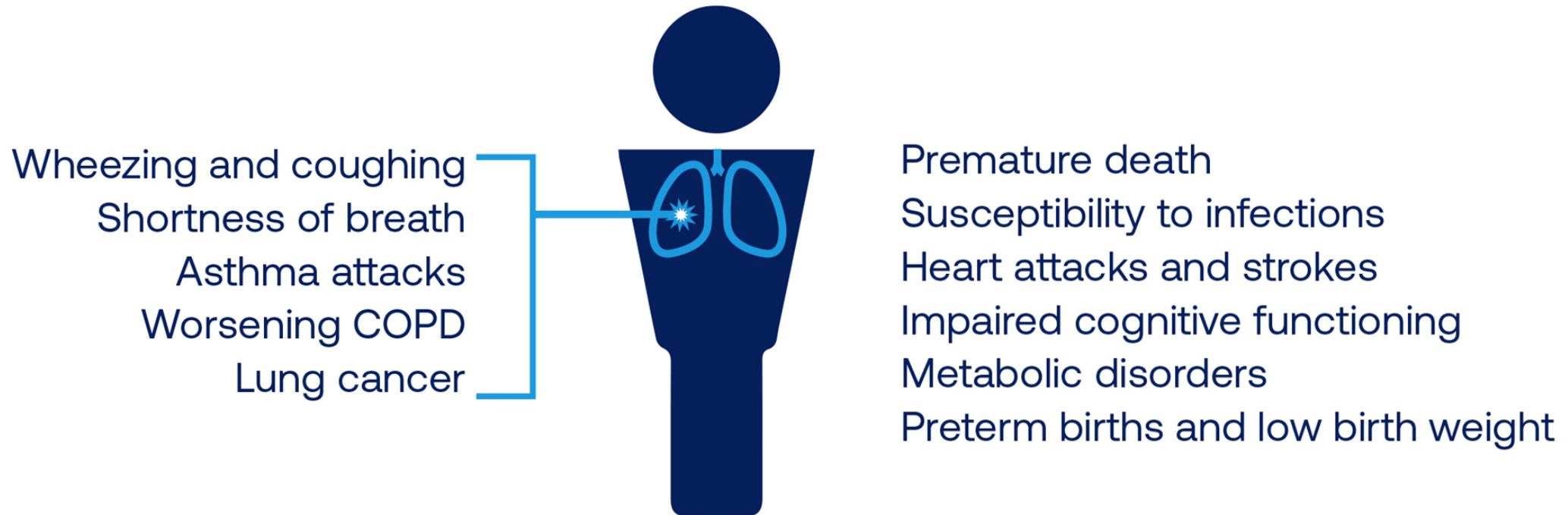
May 26, 2022

Charlie Gagen
Director, Advocacy – TX, OK
Charlie.Gagen@Lung.org

Improving quality of life for those with lung disease

Air pollution can harm children and adults in many ways.

Wheezing and coughing
Shortness of breath
Asthma attacks
Worsening COPD
Lung cancer

Premature death
Susceptibility to infections
Heart attacks and strokes
Impaired cognitive functioning
Metabolic disorders
Preterm births and low birth weight

American Lung Association.

Who is most at risk from air pollution in Texas?

Children Under 18	**7,399,810**
Adults 65+	**3,734,229**
Pediatric Asthma	**504,454**
Adult Asthma	**1,534,955**
COPD	**1,114,201**
Lung Cancer	**14,029**
Heart Disease	**1,780,223**
Poverty Estimate	**3,870,946**
People of Color	**17,045,107**
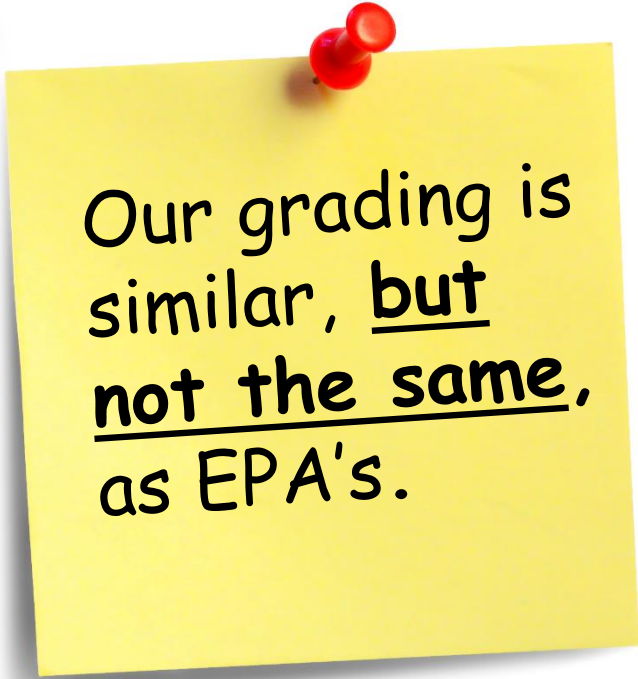
Everyone knows someone at risk from pollution.

American Lung Association.

State of the Air Report

✓Puts air pollution into everyday language

✓Gives public local information

✓Focuses attention on **ozone and particle pollution**

✗*Does not* grade local leadership or agency clean air efforts

✗*Does not* exclude high pollution events

American Lung Association.

What We Grade

Our grading is similar, but <u>not the same</u>, as EPA's.

- **Ozone (smog)**
  - Number of days with high 8-hour averages
- **Particle pollution (soot, PM$_{2.5}$)**
  - Short-term (24-hour) measures –number of days with high 24-hr averages, AKA "spikes"
  - Year-round (annual average) measures "day-in and day-out"
- Only counties with monitors get grades
- Grade only air quality—not "effort to clean up"

American Lung Association.

Reports on the two most widespread pollutants

Ozone and particle pollution can shorten life.

Health risks from
OZONE POLLUTION
PARTICLE POLLUTION

PREMATURE DEATH · May cause developmental harm · May casue reproductive harm · Asthma attack · Lung cancer · Wheezing and coughing · Shortness of breath · Cardiovascular harm · Susceptibility to infections · Lung tissue redness, swelling

American Lung Association.
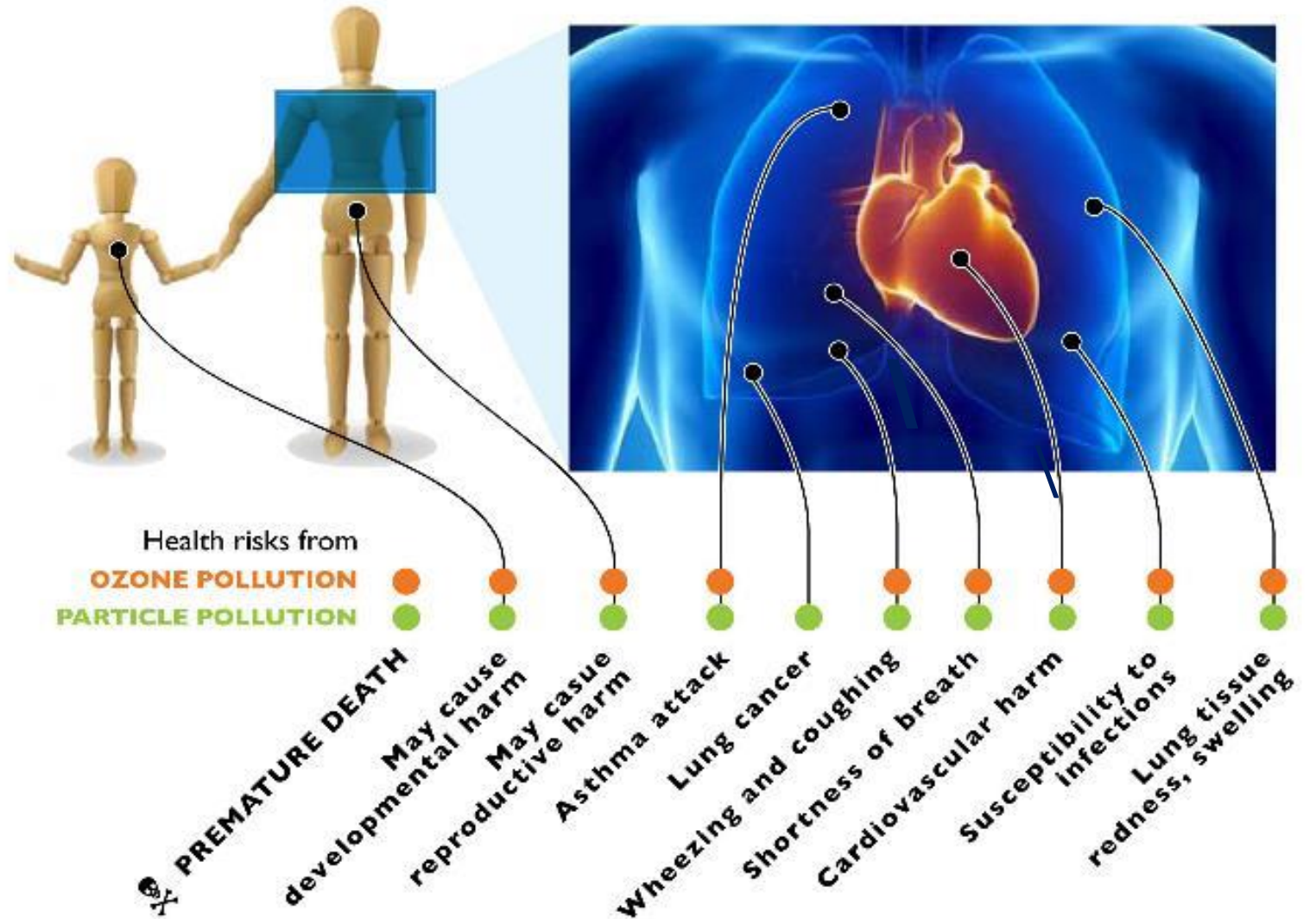
Where we got the data for 2022 report

States & Tribes Collect Air Pollution Data in
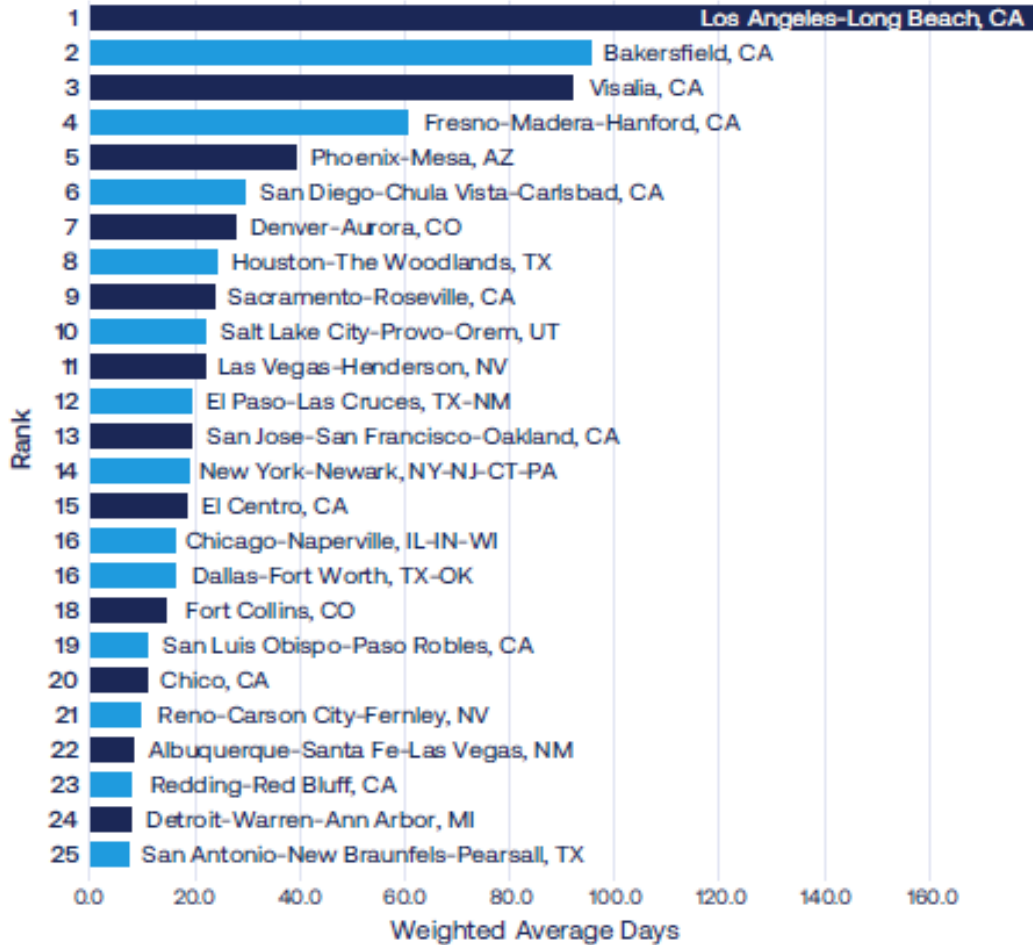2018, 2019 & 2020

EPA Reviews & Posts Data Online

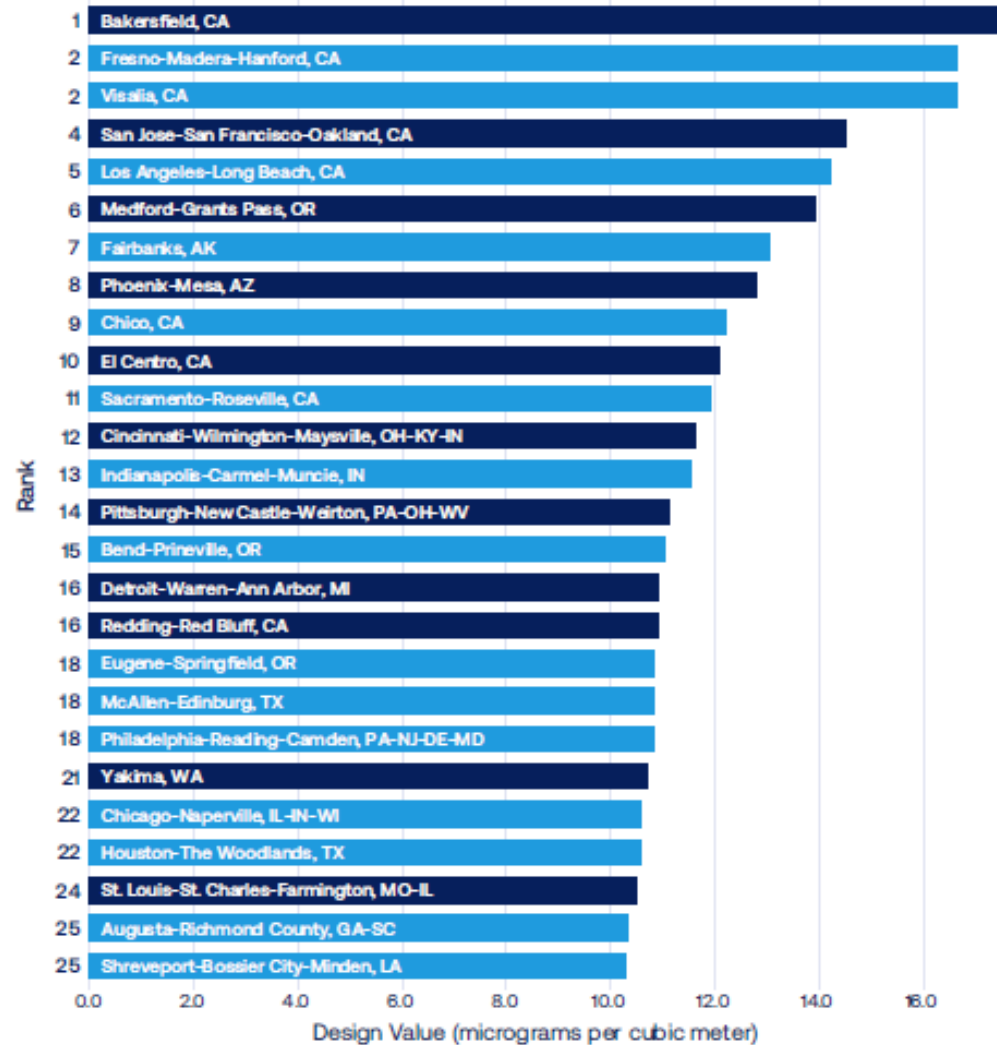We Use Data to Calculate Grades & Rankings

We Share with State/Local Air Agencies for Their Review

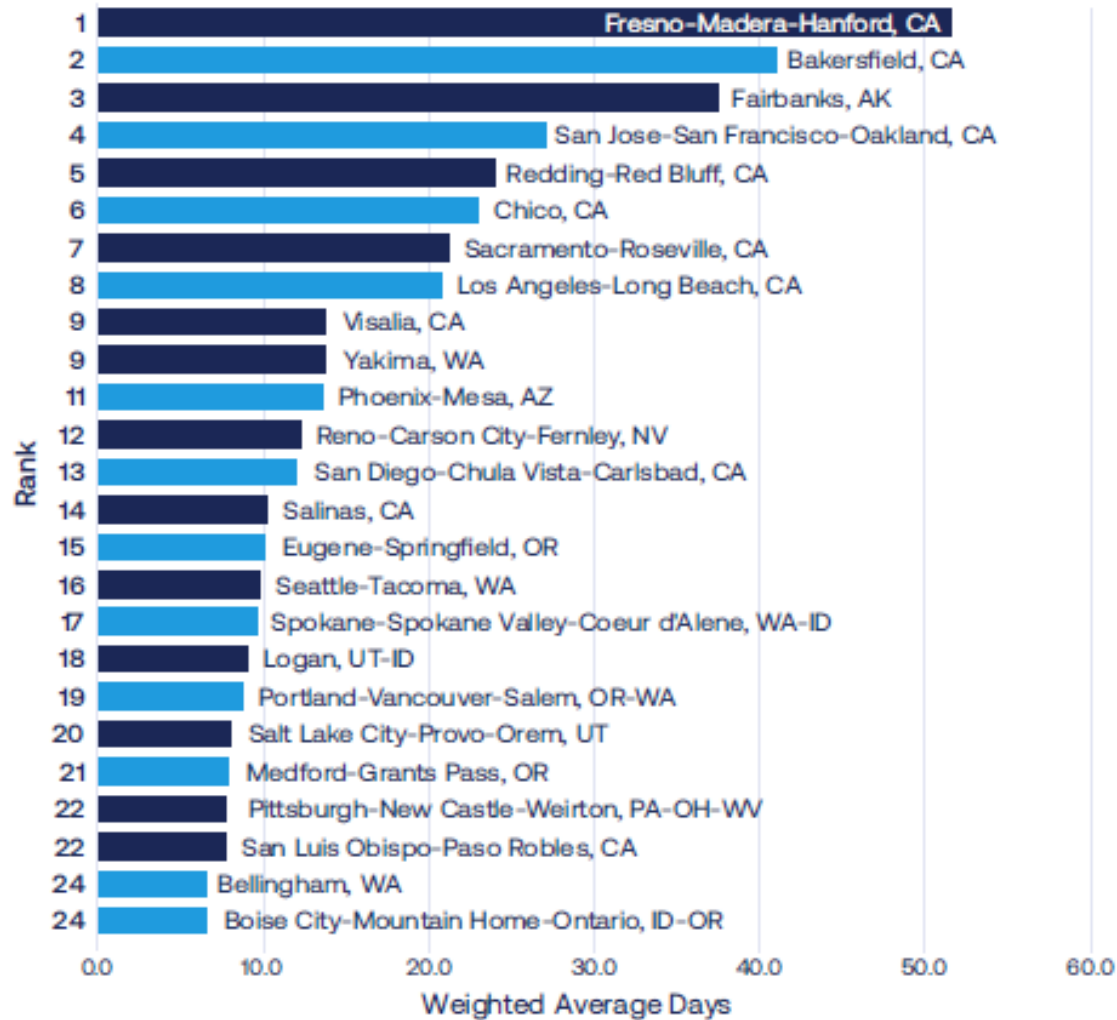# Most Polluted Cities

25 Cities Most Polluted by Ozone

Rank	City
1	Los Angeles-Long Beach, CA
2	Bakersfield, CA
3	Visalia, CA
4	Fresno-Madera-Hanford, CA
5	Phoenix-Mesa, AZ
6	San Diego-Chula Vista-Carlsbad, CA
7	Denver-Aurora, CO
8	Houston-The Woodlands, TX
9	Sacramento-Roseville, CA
10	Salt Lake City-Provo-Orem, UT
11	Las Vegas-Henderson, NV
12	El Paso-Las Cruces, TX-NM
13	San Jose-San Francisco-Oakland, CA
14	New York-Newark, NY-NJ-CT-PA
15	El Centro, CA
16	Chicago-Naperville, IL-IN-WI
16	Dallas-Fort Worth, TX-OK
18	Fort Collins, CO
19	San Luis Obispo-Paso Robles, CA
20	Chico, CA
21	Reno-Carson City-Fernley, NV
22	Albuquerque-Santa Fe-Las Vegas, NM
23	Redding-Red Bluff, CA
24	Detroit-Warren-Ann Arbor, MI
25	San Antonio-New Braunfels-Pearsall, TX

Weighted Average Days

25 Cities Most Polluted by Annual PM

Rank	City
1	Bakersfield, CA
2	Fresno-Madera-Hanford, CA
2	Visalia, CA
4	San Jose-San Francisco-Oakland, CA
5	Los Angeles-Long Beach, CA
6	Medford-Grants Pass, OR
7	Fairbanks, AK
8	Phoenix-Mesa, AZ
9	Chico, CA
10	El Centro, CA
11	Sacramento-Roseville, CA
12	Cincinnati-Wilmington-Maysville, OH-KY-IN
13	Indianapolis-Carmel-Muncie, IN
14	Pittsburgh-New Castle-Weirton, PA-OH-WV
15	Bend-Prineville, OR
16	Detroit-Warren-Ann Arbor, MI
16	Redding-Red Bluff, CA
18	Eugene-Springfield, OR
18	McAllen-Edinburg, TX
18	Philadelphia-Reading-Camden, PA-NJ-DE-MD
21	Yakima, WA
22	Chicago-Naperville, IL-IN-WI
22	Houston-The Woodlands, TX
24	St. Louis-St. Charles-Farmington, MO-IL
25	Augusta-Richmond County, GA-SC
25	Shreveport-Bossier City-Minden, LA

Design Value (micrograms per cubic meter)

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Most Polluted Cities

25 Cities Most Polluted by Daily PM

Cleanest Cities

Cleanest U.S. Cities – Ten cities ranked on all three cleanest city lists (listed in alphabetical order)

- Bangor, ME
- Burlington-South Burlington-Barre, VT
- Charlottesville, VA
- Elmira-Coming, NY
- Harrisonburg-Staunton, VA
- Lincoln-Beatrice, NE
- Roanoke, VA
- Urban Honolulu, HI
- Virginia Beach-Norfolk, VA-NC
- Wilmington, NC

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Texas Counties

County	High Ozone Days 2018-2020					High Particle Pollution Days 2018-2020							
						24 Hour						Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Orange	Red	Purple	Maroon	Wgt. Avg	Grade	Design Value	Pass / Fail
Atascosa	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Bell	7	0	0	2.3	D	INC	INC	INC	INC	INC	INC	INC	INC
Bexar	22	0	0	7.3	F	1	1	0	0	0.8	B	8.4	Pass
Bowie	DNC	DNC	DNC	DNC	DNC	3	0	0	0	1.0	C	9.4	Pass
Brazoria	12	3	0	5.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brazos	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Brewster	0	0	0	0.0	A	0	0	0	0	0.0	A	5.7	Pass
Cameron	0	0	0	0.0	A	6	3	0	0	3.5	F	10.1	Pass
Collin	25	2	0	9.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Culberson	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	CDNC	DNC	DNC	DNC
Dallas	24	1	0	8.5	F	4	2	0	0	2.3	D	9.1	Pass
Denton	32	1	0	11.2	F	INC	INC	INC	INC	INC	INC	INC	INC
Ector	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	INC	INC
Ellis	5	0	0	1.7	C	1	0	0	0	0.3	B	INC	INC
El Paso	36	3	0	13.5	F	0	0	0	0	0.0	A	8.8	Pass

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Texas Counties

County	High Ozone Days 2018-2020					High Particle Pollution Days 2018-2020							
						24 Hour						Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Orange	Red	Purple	Maroon	Wgt. Avg	Grade	Design Value	Pass / Fail
Galveston	17	0	1	6.3	F	2	0	0	0	0.7	B	7.7	Pass
Gregg	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Harris	52	11	2	24.2	F	4	2	0	0	2.3	D	10.6	Pass
Harrison	0	0	0	0.0	A	1	0	0	0	0.3	B	8.4	Pass
Hidalgo	0	0	0	0.0	A	9	2	0	0	4.0	F	10.8	Pass
Hood	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hunt	3	1	0	1.5	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	13	1	0	4.8	F	2	0	0	0	0.7	B	9.1	Pass
Johnson	16	1	0	5.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kaufman	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kleberg	DNC	DNC	DNC	DNC	DNC	7	3	0	0	3.8	F	INC	INC
Lubbock	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	INC	INC
McLennan	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Maverick	DNC	DNC	DNC	DNC	DNC	0	1	0	0	0.5	B	INC	INC
Montgomery	21	1	0	7.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Navarro	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association

Texas Counties

| County | High Ozone Days 2018-2020 | | | | | High Particle Pollution Days 2018-2020 | | | | | | | |
| | | | | | | 24 Hour | | | | | | Annual | |
	Orange	Red	Purple	Wgt. Avg	Grade	Orange	Red	Purple	Maroon	Wgt. Avg	Grade	Design Value	Pass / Fail
Nueces	0	0	0	0.0	A	1	2	0	0	1.3	C	8.8	Pass
Orange	7	0	0	2.3	D	1	0	0	0	0.3	B	9.1	Pass
Parker	6	1	0	2.5	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Polk	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Potter	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	INC	INC
Randall	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockwall	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Smith	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tarrant	39	6	0	16.0	F	2	0	0	0	0.7	B	9.0	Pass
Travis	7	0	0	2.3	D	4	1	0	0	1.8	C	9.6	Pass
Victoria	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Webb	0	0	0	0.0	A	5	1	0	0	2.2	D	INC	INC

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Harris County - Ozone

American Lung Association
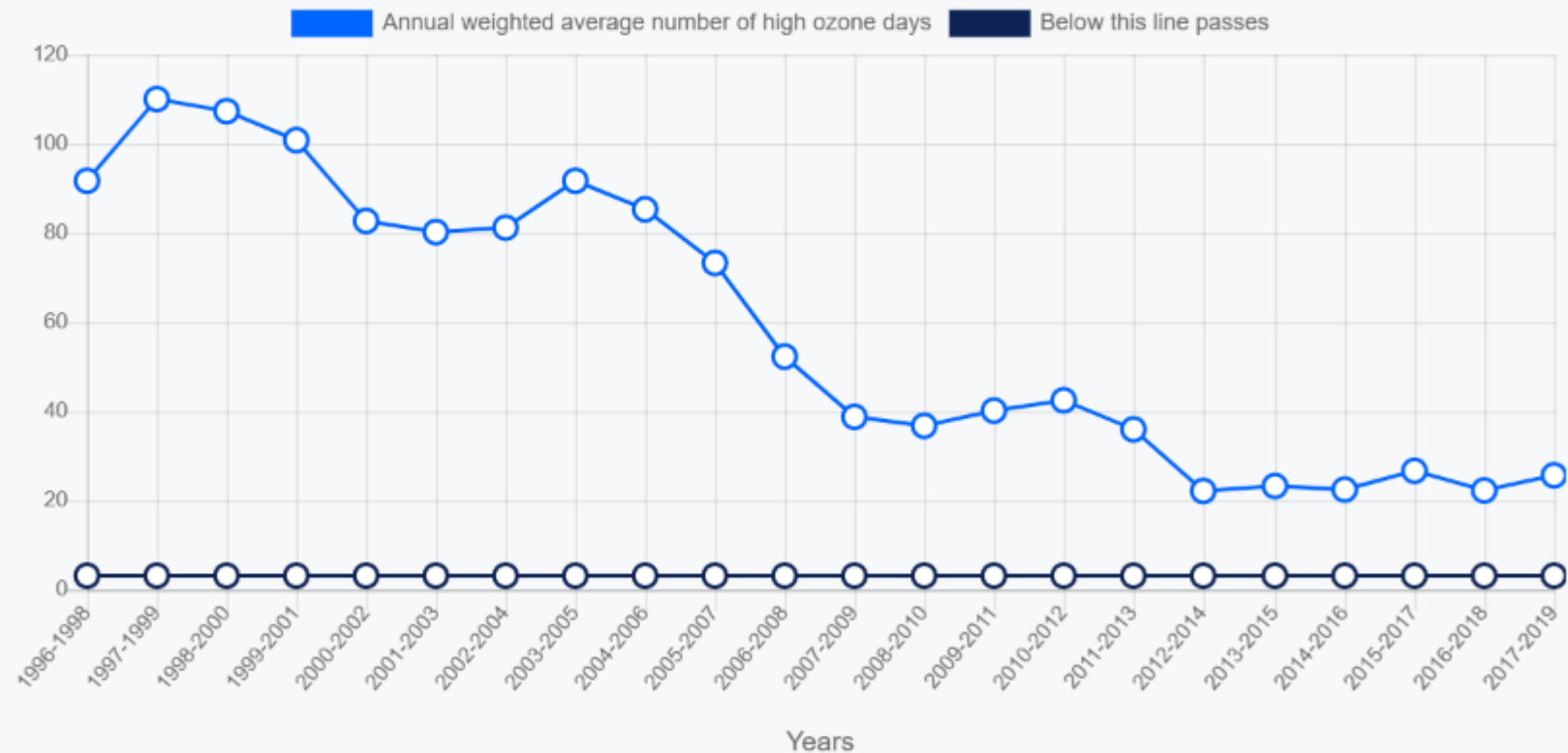
Harris County – short term particle pollution
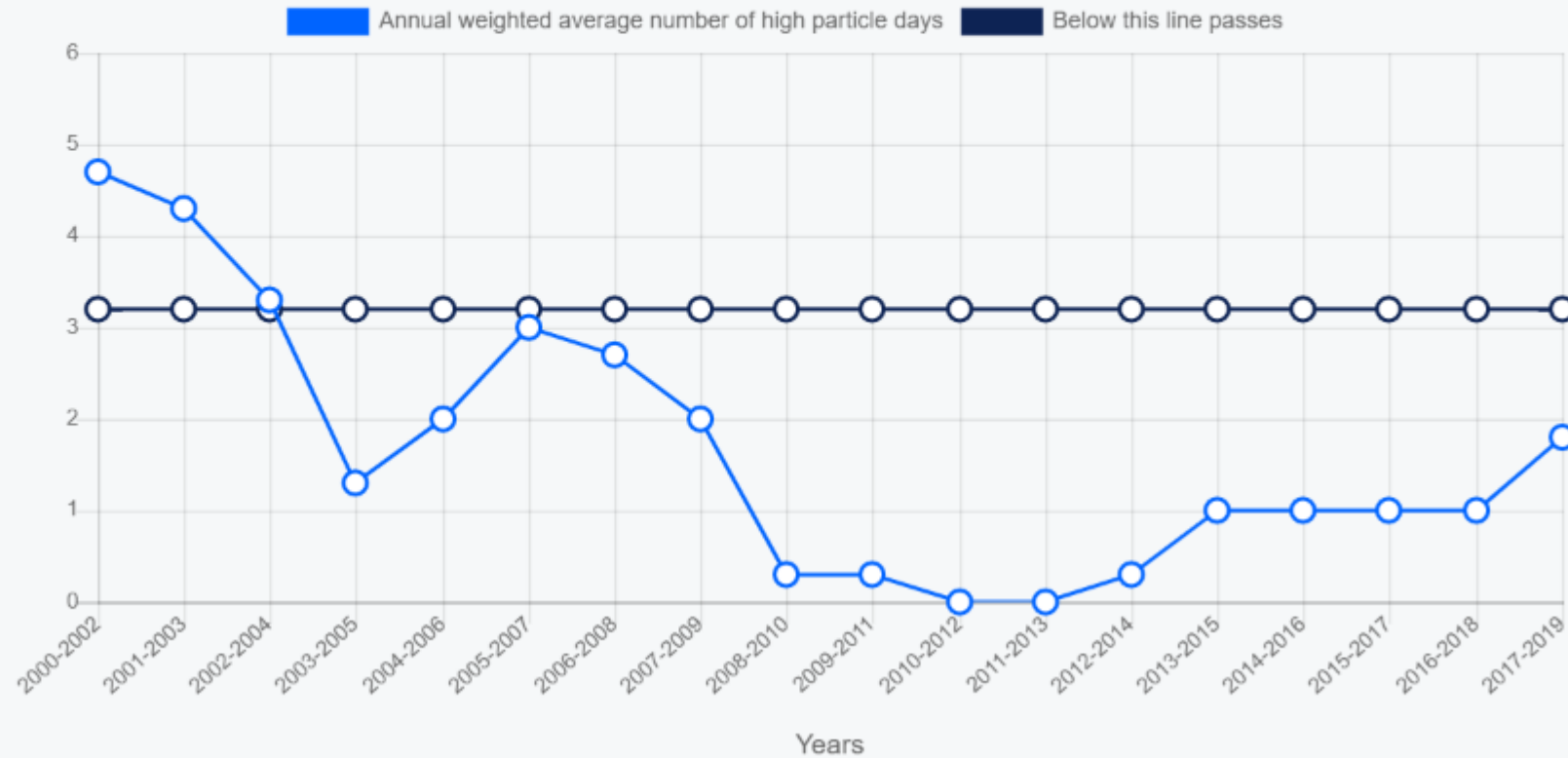
Harris County – annual particle pollution
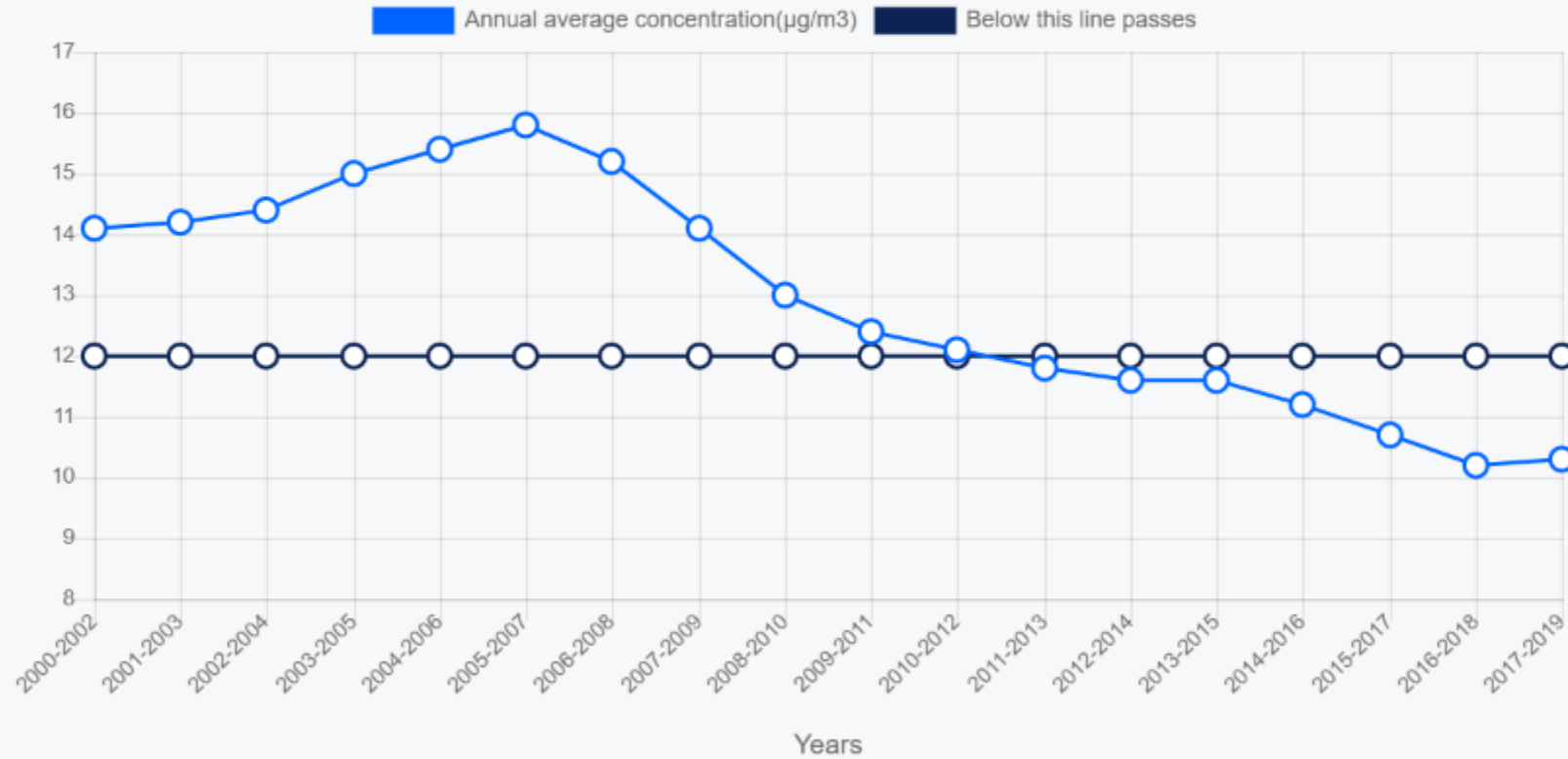
State of the Air

www.lung.org/sota

- Report Cards
- Compare your air tool
- Methodology
- Recommendations

Key Assumptions
Transition to Zero-Emission Vehicles & Electricity Generation

- **Full Zero-Emission Vehicle Sales in the United States**
  - 2035, 100% Passenger Vehicle Sales
  - 2040, 100% Medium- and Heavy-Duty Vehicle Sales

- **National Power Grid**
  - 2035, 100% Non-Combustion Electricity Generation

American Lung Association.

Pollutant impact
Relative emission reduction benefits

Pollutant	Light Duty: On-Road Emission Reductions (Tons per Year, Percent Reduction)			Heavy Duty: On-Road Emission Reductions (Tons per Year, Percent Reduction)		
	2030	2040	2050	2030	2040	2050
Nitrogen Oxides	-23,124 -8%	-80,975 -61%	-111,168 -92%	-51,274 -6%	-478,879 -55%	-887,640 -92%
Volatile Organic Compounds	-49,080 -9%	-195,520 -41%	-347,094 -76%	-4,316 -5%	-41,379 -51%	-80,375 -87%
Fine Particles	-2,903 -10%	-11,369 -42%	-16,170 -58%	-644 -4%	-5,737 -43%	-9,682 -68%
Greenhouse Gases (CO2e, Short Tons)	-198 M -18%	-733 M -70%	-1.0 B -94%	-37 M -7%	-322 M -58%	-572 M -92%

American Lung Association.

$1.2+ Trillion

Public Health Benefits

- Cumulative Public Health Benefits
- 2020-2050 Timescale
- National-scale Benefits

- **110,000** Premature Deaths Avoided
- **2.7 Million** Asthma Attacks Avoided
- **13.4 Million** Lost Work Days Avoided

American Lung Association®

Zeroing in on Healthy Air in Texas

"Zeroing in on Healthy Air" highlights the potential for major public health and climate change benefits major transition to zero-emission transportation and electricity.

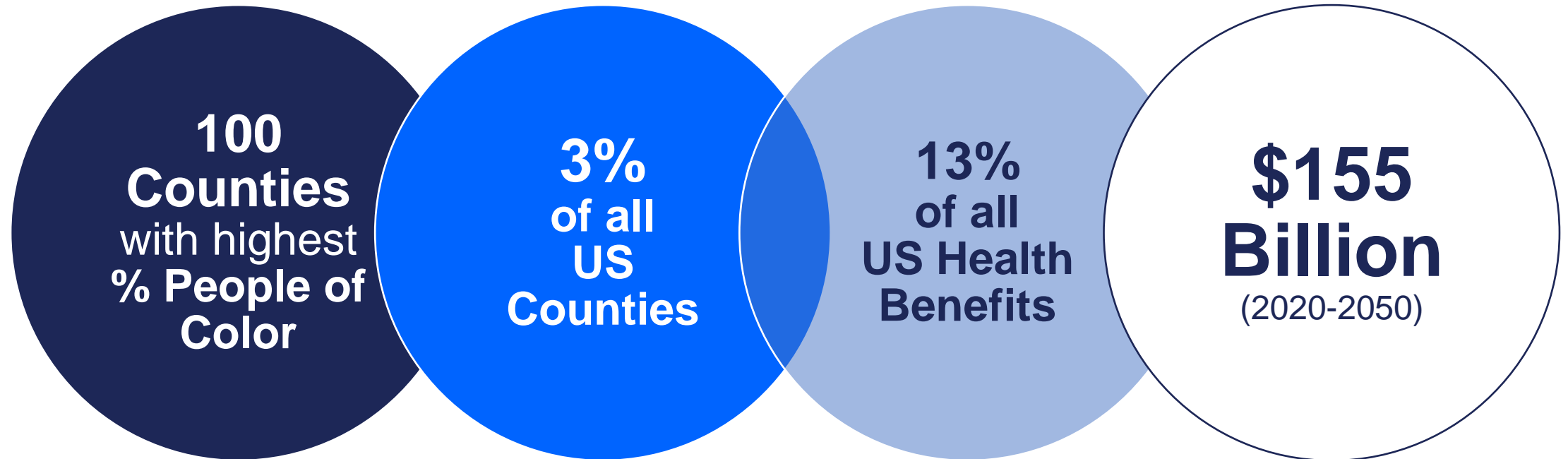| For Texas this transition could mean significant public health benefits, including:	
$104.0 Billion in public health benefits	9,320 avoided deaths
346,000 avoided asthma attacks	1,520,000 avoided lost work days

American Lung Association.

Metro Area Benefits
Top 10 Cities by Monetized Health Benefits

Top 10 Metro Areas Public Health Benefits	Cumulative Public Health Benefits 2020-2050			
	Health Benefits ($2017, Billions)	Premature Deaths Avoided	Asthma Attacks Avoided	Lost Work Days Avoided
1. Los Angeles-Long Beach, CA	$95.5	8,680	241,000	1,210,000
2. New York-Newark, NY-NJ-CT-PA	$84.2	7,660	206,000	1,070,000
3. Chicago-Naperville, IL-IN-WI	$46.5	4,230	113,000	552,000
4. San Jose-San Francisco-Oakland, CA	$42.5	3,850	113,000	561,000
5. Philadelphia-Reading-Camden, PA-NJ-DE-MD	$41.1	3,760	86,600	424,000
6. Washington-Baltimore-Arlington, DC-MD-VA-WV-PA	$38.9	3,540	104,000	516,000
7. Miami-Port St. Lucie-Fort Lauderdale, FL	$36.5	3,320	62,300	342,000
8. Houston-The Woodlands, TX	$33.4	3,000	130,000	568,000
9. Detroit-Warren-Ann Arbor, MI	$29.2	2,690	55,100	268,000
10. Dallas-Fort Worth, TX-OK	$28.0	2,530	88,300	405,000

Equity Matters
Distribution of Benefits

100 Counties with highest % People of Color

3% of all US Counties

13% of all US Health Benefits

$155 Billion (2020-2050)

American Lung Association

Zeroing In on Healthy Air

A National Assessment of Health and Climate Benefits of Zero-Emission Transportation and Power

Resources

- Zeroing in on Healthy Air report
- State-by-State Fact Sheets
- Petition to President Biden
- Technical Documentation

Lung.org/ev

Our Vision
A World Free of Lung Disease