The Ohio Manufacturers' Association

2019-20

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FACTS ABOUT THE ECONOMIC IMPACT OF OHIO MANUFACTURING

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FACTS ABOUT THE ECONOMIC IMPACT OF OHIO MANUFACTURING

Ohio is powered by manufacturing. Ohio manufacturing is responsible for almost **17%** of Ohio's Gross Domestic Product and contributes to the quality of life in Ohio by providing:

- About **700,000 jobs** for Ohio workers
- An annual payroll of **$40 billion,** the highest total annual wages of any Ohio industry sector
- More than **$54 billion** in exported products to 210 countries and territories
- A **safer environment** through decreased emissions and increased recycling

Manufacturing is the **largest of the 20 sectors** of Ohio's economy, including government, with **16.63% of total output** in 2018, of which 9.16% were durable goods and 7.47% were non-durable goods.

Ohio's manufacturing sector GDP was **$107.9 billion** in 2017, ranking it **third** in the nation after California and Texas.

The average annual earnings of Ohio workers on manufacturing payrolls in 2017 were **$60,002**.

The Ohio Manufacturers' Association has prepared these data to provide Ohioans with an understanding of the importance of manufacturing to the economic future of the state. The data in this publication were the most current available as of June 2019.

For printed copies of this information, contact the OMA at **(800) 662-4463** or **oma@ohiomfg.com.**

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Site Selection 2014-2018 Top Ten states (ranked by number of qualifying projects)

FACT:
Ohio ranked second nationally in the number of new site selections in the past 7 years, bested only by Texas each year.

To be listed, projects must meet one of three criteria:
1. Investment minimum of $1,000,000, or
2. Square footage of 20,000 or more, or
3. Job creation of 20 or more

Projects are generally credited to the year first announced.

2018		2017		2016		2015		2014	
State	# Sites	State	# Sites	State	# Sites	State	# Sites	State	# Sites
TX	608	TX	594	TX	642	TX	702	TX	689
OH	454	OH	467	OH	515	OH	517	OH	582
IL	444	IL	419	IL	434	IL	413	IL	394
GA	300	GA	281	NC	289	NC	300	NC	313
KY	228	NC	274	GA	271	KY	285	GA	311
NC	217	CA	262	CA	250	MI	217	KY	258
VA	197	KY	248	KY	231	GA	211	MI	230
CA	190	PA	185	VA	222	PA	202	PA	227
MI	171	VA	164	PA	219	VA	167	LA	200
FL	151	IN	162	MI	184	IN	166	TN	195

Source: Site Selection Magazine, March 2019, http://siteselection.com/

Manufacturing projects as a percent of all new qualifying Ohio projects

FACT:
Typically about one-half of Ohio's new site selection projects are manufacturing projects.

Year	# Manufacturing Projects	# Total Ohio Qualifying Projects	% Manufacturing Projects
2018	238	434	55%
2017	206	392	53%
2016	240	498	48%
2015	232	469	49%
2014	257	490	52%

Source: Ohio Development Services Agency, Research Office, Ohio Private Investment Survey 2016, 2017, 2018, March 2019

Manufacturing sector investment projects 2014 – 2018

Sector	2018	2017	2016	2015	2014
Rubber & Plastics	40	30	30	29	20
Transportation Equipment	39	35	45	40	44
Fabricated Metals	33	27	31	34	37
Machinery	23	19	19	34	37
Food & Beverage	20	21	33	20	36
Electronics & Appliances	18	15	16	11	10
Chemicals	17	23	19	29	21
Stone, Clay, Glass	14	9	10	10	8
Miscellaneous	9	7	11	12	5
Primary Metals	8	12	6	7	12
Printing	8	1	3	5	6
Furniture	7	4	4	4	5
Paper Products	6	8	12	10	10
Textiles/ Apparel	5	3	2	3	2
Lumber and Wood	4	2	8	3	3
Petroleum	1	1	7	2	5

Source: Ohio Development Services Agency, Research Office, Ohio Private Investment Survey, 2016, 2017, 2018, March 2019

FACT:

Rubber & Plastics and Transportation Equipment projects perennially lead Ohio new manufacturing investment projects.

Ohio's Economy

Manufacturing GDP ranking by state (2015 – 2017 and pre-Great Recession benchmark year, 2008)

Rank	2017			2016		
	State	Mfg. GDP (billions)	% of U.S.	State	Mfg. GDP (billions)	% of U.S.
1	CA	$300.3	13.38%	CA	$289.0	13.28%
2	TX	$226.2	10.08%	TX	$225.8	10.38%
3	OH	$107.9	4.81%	OH	$106.0	4.87%
4	IL	$103.7	4.62%	IL	$100.4	4.62%
5	IN	$102.6	4.57%	NC	$99.8	4.59%
6	NC	$102.5	4.57%	IN	$98.4	4.52%
7	MI	$99.2	4.29%	MI	$93.5	4.30%
8	PA	$87.6	3.91%	PA	$85.0	3.91%
9	NY	$72.9	3.25%	NY	$71.3	3.28%
10	GA	$61.1	2.72%	WA	$58.4	2.69%

Rank	2015			2008		
	State	Mfg. GDP (billions)	% of U.S.	State	Mfg. GDP (billions)	% of U.S.
1	CA	$278.6	12.85%	CA	$181.1	11.06%
2	TX	$227.5	10.49%	TX	$158.8	9.70%
3	OH	$108.1	4.99%	OH	$84.1	5.13%
4	IL	$103.8	4.79%	IL	$78.8	4.81%
5	NC	$100.1	4.62%	NC	$78.0	4.76%
6	IN	$100.0	4.61%	PA	$75.5	4.61%
7	MI	$92.5	4.27%	NY	$69.1	4.22%
8	PA	$85.1	3.93%	IN	$63.8	3.89%
9	NY	$74.6	3.44%	MI	$61.8	3.77%
10	WA	$58.2	2.69%	WI	$48.9	2.98%

Total 2017 U.S. Manufacturing GDP: $2,244.3 (billion)

Source: Ohio Development Services Agency, Research Office, a State Affiliate of the U.S. Census Bureau, Gross Domestic Product from Ohio, September 2018

FACT:

In 2015, Ohio regained its pre-Great Recession position as the third most productive manufacturing state in the nation, from fourth—or even fifth—in the years 2009 – 2014. Ohio has retained its third place since then.

Manufacturing leads Ohio industries in contribution to Gross Domestic Product (initial figures for 2017)

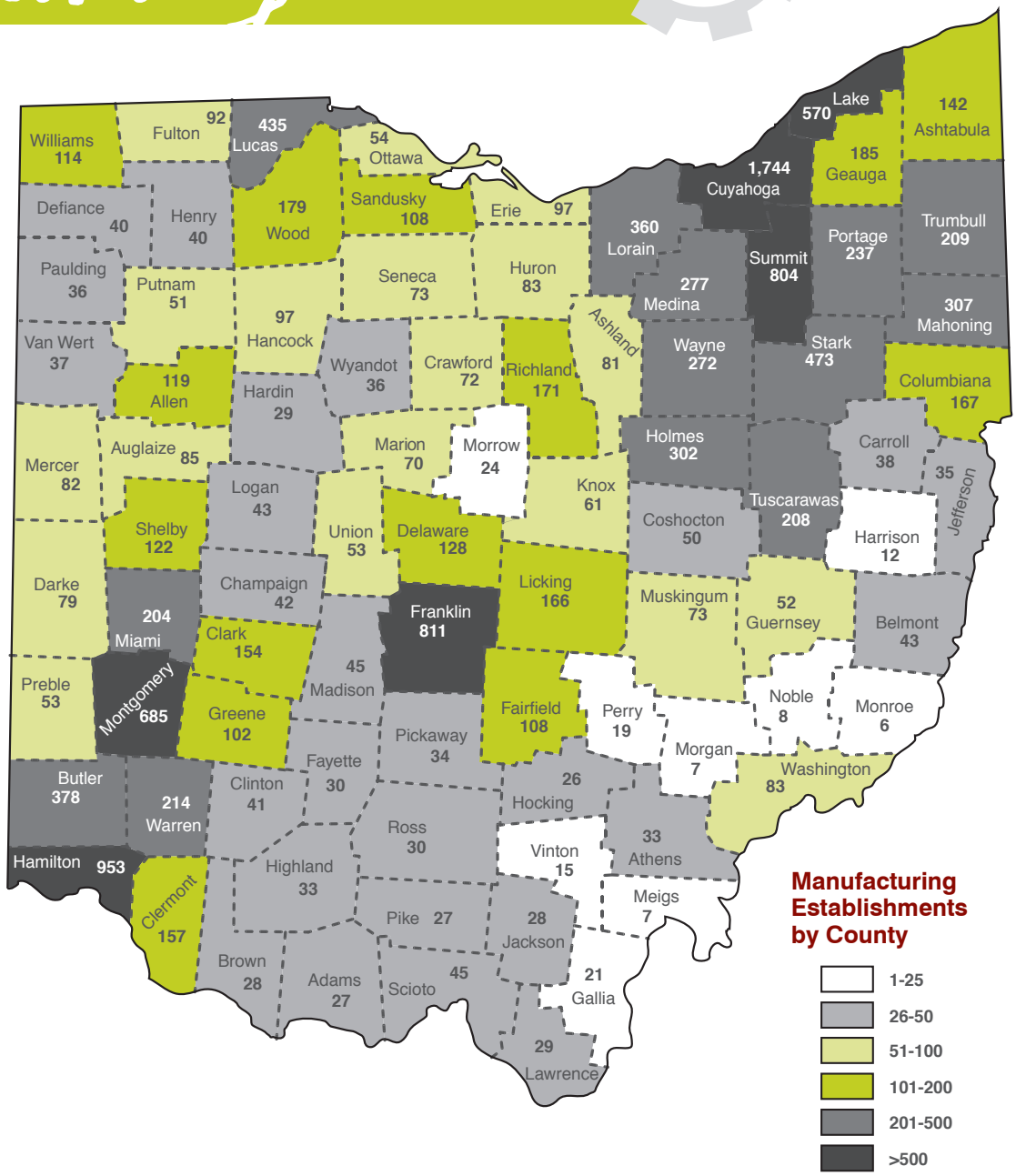
FACT:

At almost 17%, manufacturing's contribution to Ohio's GDP is greater than that of any other industry sector. In 2017, as in 2015, Real estate, Rental and Leasing bypassed Government as the second largest industry sector after Manufacturing.

Industry Sector	$ Contributed to Ohio GDP (in billions)			% of Ohio GDP		
	2017	2016	2015	2017	2016	2015
Manufacturing	$107.95	$106.00	$108.09	16.63%	16.94%	17.77%
Real estate, rental and leasing	$71.66	$68.62	$68.21	11.04%	10.97%	11.22%
Government	$71.46	$69.19	$67.75	11.01%	11.06%	11.14%
Finance and insurance	$60.82	$54.47	$51.00	9.37%	8.71%	8.39%
Health care and social assistance	$54.34	$53.36	$51.36	8.37%	8.53%	8.45%
Wholesale trade	$39.53	$37.87	$37.16	6.09%	6.05%	6.11%
Retail trade	$39.16	$38.13	$36.73	6.03%	6.09%	6.04%
Professional and technical services	$31.65	$32.25	$30.71	4.88%	5.15%	5.05%
Construction	$25.65	$23.26	$21.67	3.95%	3.72%	3.56%
Management	$21.07	$20.99	$20.87	3.25%	3.35%	3.43%
Administrative support & waste management	$20.49	$20.69	$20.25	3.16%	3.31%	3.33%
Transportation and warehousing	$20.40	$18.91	$17.31	3.14%	3.02%	2.85%
Information	$16.58	$17.06	$15.74	2.55%	2.73%	2.59%
Accommodation and food services	$15.82	$15.28	$14.53	2.44%	2.44%	2.39%
Other	$14.04	$13.61	NA	2.16%	2.17%	NA
Mining	$12.74	$9.78	NA	1.96%	1.56%	NA
Utilities	$11.51	$11.34	$13.30	1.77%	1.81%	2.19%
Arts, entertainment & recreation	$6.00	$6.44	NA	0.92%	1.03%	NA
Education	$5.25	$5.17	NA	0.81%	0.83%	NA
Agriculture, forestry, fishing & hunting	$3.02	$3.30	$3.95	0.46%	0.53%	0.73%

Source: Ohio Development Services Agency, Research Office, a State Affiliate of the U.S. Census Bureau, Gross Domestic Product from Ohio, September 2018

Manufacturing density in Ohio (2016)



Source: 2016 County Business Patterns

FACT:

Of Ohio's 14,000 manufacturing establishments in 2016, 40% were in just six counties: Cuyahoga, Hamilton, Summit, Franklin, Montgomery, and Lake. Cuyahoga County had the most manufacturing establishments at 1,744.

Ohio manufacturing: A leader in U.S. manufacturing jobs (2018)

FACT:

In 2018, Ohio again ranked third in manufacturing employment nationally, and had 5.5% of all U.S. manufacturing jobs. According to this source, Ohio had 6,800 more manufacturing employees in 2018 than in 2017. And, the U.S. total of employees in manufacturing increased by 303,000 over the same period.

Rank	2018			2017		
	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs
1	CA	1,322,200	10.3%	CA	1,302,300	10.4%
2	TX	896,000	7.0%	TX	878,200	7.0%
3	OH	705,700	5.5%	OH	698,900	5.6%
4	MI	625,300	4.9%	MI	607,100	4.8%
5	IL	591,000	4.6%	IL	577,600	4.6%
6	PA	566,200	4.4%	PA	553,000	4.4%
7	IN	535,800	4.2%	IN	534,500	4.3%
8	WI	490,000	3.8%	WI	479,900	3.8%
9	NC	475,000	3.7%	NC	467,500	3.7%
10	NY	445,000	3.5%	NY	435,300	3.5%

Rank	2016			2015		
	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs
1	CA	1,282,800	10.5%	CA	1,269,200	10.3%
2	TX	844,000	6.9%	TX	849,300	6.9%
3	OH	689,700	5.6%	OH	691,700	5.6%
4	MI	596,100	4.9%	MI	603,500	4.9%
5	PA	567,100	4.6%	PA	567,200	4.6%
6	IL	565,400	4.6%	IL	567,000	4.6%
7	IN	519,000	4.2%	IN	519,700	4.2%
8	WI	474,000	3.9%	WI	473,500	3.8%
9	NC	463,000	3.8%	NC	459,900	3.7%
10	NY	443,300	3.6%	NY	448,500	3.6%

Total U.S. Manufacturing Jobs 2018: 12,842,000

Total U.S. Manufacturing Jobs 2017: 12,539,000

Total U.S. Manufacturing Jobs 2016: 12,275,000

Total U.S. Manufacturing Jobs 2015: 12,331,000

Source: State Rankings 2019, A Statistical View of America, Editors Kathleen O'Leary Morgan and Scott Morgan

Manufacturing near top of Ohio private sector employment (2018)

Rank	Industry Sector	Employment	% of total Ohio jobs
	Total (covered) Ohio employment	**5,559,900**	**100%**
1	**Health care and social assistance**	814,900	14.7%
2	**Government**	779,200	14.0%
3	**Manufacturing**	698,900	12.6%
4	**Retail trade**	563,200	10.1%
5	**Accommodation and food services**	485,000	8.7%
6	**Administrative, support and waste services**	327,400	5.9%
7	**Professional and technical services**	262,900	4.7%
8	**Finance and insurance**	244,000	4.4%
9	**Wholesale trade**	235,000	4.2%
10	**Construction**	219,300	3.9%
11	**Other services**	213,700	3.8%
12	**Transportation and warehousing**	206,900	3.7%
13	**Management**	140,900	2.5%
14	**Education services**	121,200	2.2%
15	**Arts, entertainment and recreation**	81,300	1.5%
16	**Information**	70,800	1.3%
17	**Real estate, rental and leasing**	63,900	1.1%
18	**Utilities**	19,100	0.3%
19	**Mining and logging**	12,200	0.2%

Source: Ohio Department of Job and Family Services, Office of Workforce Development, Ohio Labor Market Information, http://ohiolmi.com/ces/lmr.htm

FACT:

12.6% of all (unemployment-insurance covered) Ohio workers were employed in manufacturing in 2018, up from 12.4% in 2017. Only the Health Care & Social Assistance and Government sectors had greater employment.

Ohio's leading manufacturing employers

FACT:

Large, global industrial enterprises employ large numbers of Ohioans; many have Ohio headquarters.

Rank	Company	Ohio Employment Estimate: Headcount	Headquarters	Product
1	**Honda Motor Co., Ltd.**	15,000	Tokyo, Japan	Motor vehicles
2	**General Electric Company**	12,000	Boston, MA	Aerospace and electrical equipment
3	**Berkshire Hathaway, Inc.**	11,800	Omaha, NE	Machinery and fiberglass products
4	**Procter & Gamble Company**	**11,000**	**Cincinnati, OH**	**Soaps and consumer goods**
5	**Whirlpool Corporation**	9,350	Benton Harbor, MI	Consumer products
6	**Marathon Petroleum Corporation**	**9,300**	**Findlay, OH**	**Petroleum**
7	**Fiat Chrysler Automobiles N.V.**	6,530	Onbekend, The Netherlands	Motor vehicles
8	**Ford Motor Company**	6,150	Dearborn, MI	Motor vehicles
9	**Sherwin-Williams Company**	**6,100**	**Cleveland, OH**	**Paints**
10	**Crown Equipment Corporation**	**4,800**	**New Bremen, OH**	**Lift trucks**
11	**Swagelok Company**	**4,700**	**Solon, OH**	**Fluid systems**
12	**General Motors Corporation**	4,600	Detroit, MI	Motor vehicles
13	**Nestlé S.A.**	3,600	Vevey, Switzerland	Frozen foods
14	**Worthington Industries, Inc.**	**3,570**	**Worthington, OH**	**Metal products**
15	**AK Steel Holding Corporation**	**3,500**	**West Chester, OH**	**Steel**
16	**Goodyear Tire & Rubber Company**	**3,300**	**Akron, OH**	**Rubber products**
17	**ArcelorMittal SA**	3,100	Luxembourg, Luxembourg	Steel
17	**Emerson Electric Co.**	3,100	St. Louis, MO	Electrical products
19	**Honeywell International Inc.**	3,000	Morris Plains, NJ	Aerospace and electrical equipment
20	**Parker Hannifin Corporation**	**2,900**	**Cleveland, OH**	**Industrial equipment**
21	**Lincoln Electric Holdings, Inc.**	**2,825**	**Cleveland, OH**	**Arc welding equipment**
22	**Owens Corning**	**2,775**	**Toledo, OH**	**Home products**
22	**TimkenSteel Corporation**	**2,775**	**Canton, OH**	**Steel**
24	**Bridgestone Corporation**	2,650	Tokyo, Japan	Rubber products
25	**Eaton Corporation plc**	2,385	Dublin, Ireland	Motor vehicle parts

Source: Ohio Development Services Agency, Research Office, Ohio Major Employers – Section 1, May 2019

The Ohio Manufacturers' ASSOCIATION

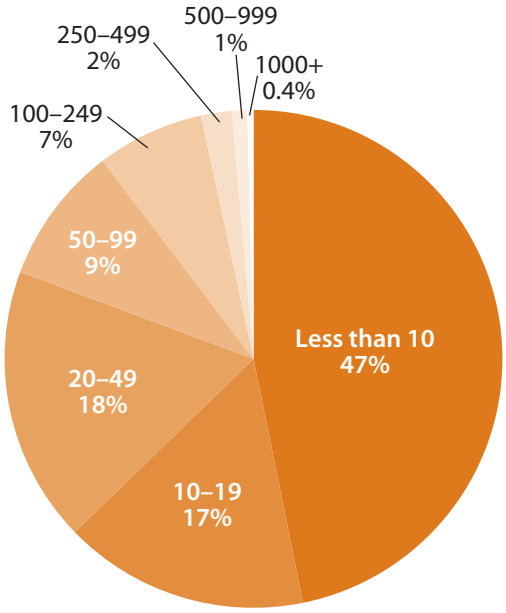
Manufacturing means large and small businesses in Ohio

Number of Ohio manufacturing firms by number of employees

Number of Employees	Number of Firms (2016)	Number of Firms (2015)	Number of Firms (2014)	Number of Firms (2013)
Fewer than 10	6,510	6,612	6,743	6,811
10–19	2,320	2,314	2,281	2,285
20–49	2,462	2,484	2,495	2,454
50–99	1,246	1,240	1,233	1,254
100–249	957	994	982	958
250–499	331	322	311	322
500–999	122	121	112	105
1000+	52	52	51	48
Total	**14,000**	**14,139**	**14,208**	**14,237**

Source: 2016 County Business Patterns

Distribution of Ohio manufacturing firms by number of employees (2016)



FACT:

Almost 50% of Ohio manufacturing firms employ fewer than 10 people, while 0.4% of firms employ more than 1,000.

Traditional industries continue to be Ohio's manufacturing job producers

FACT:

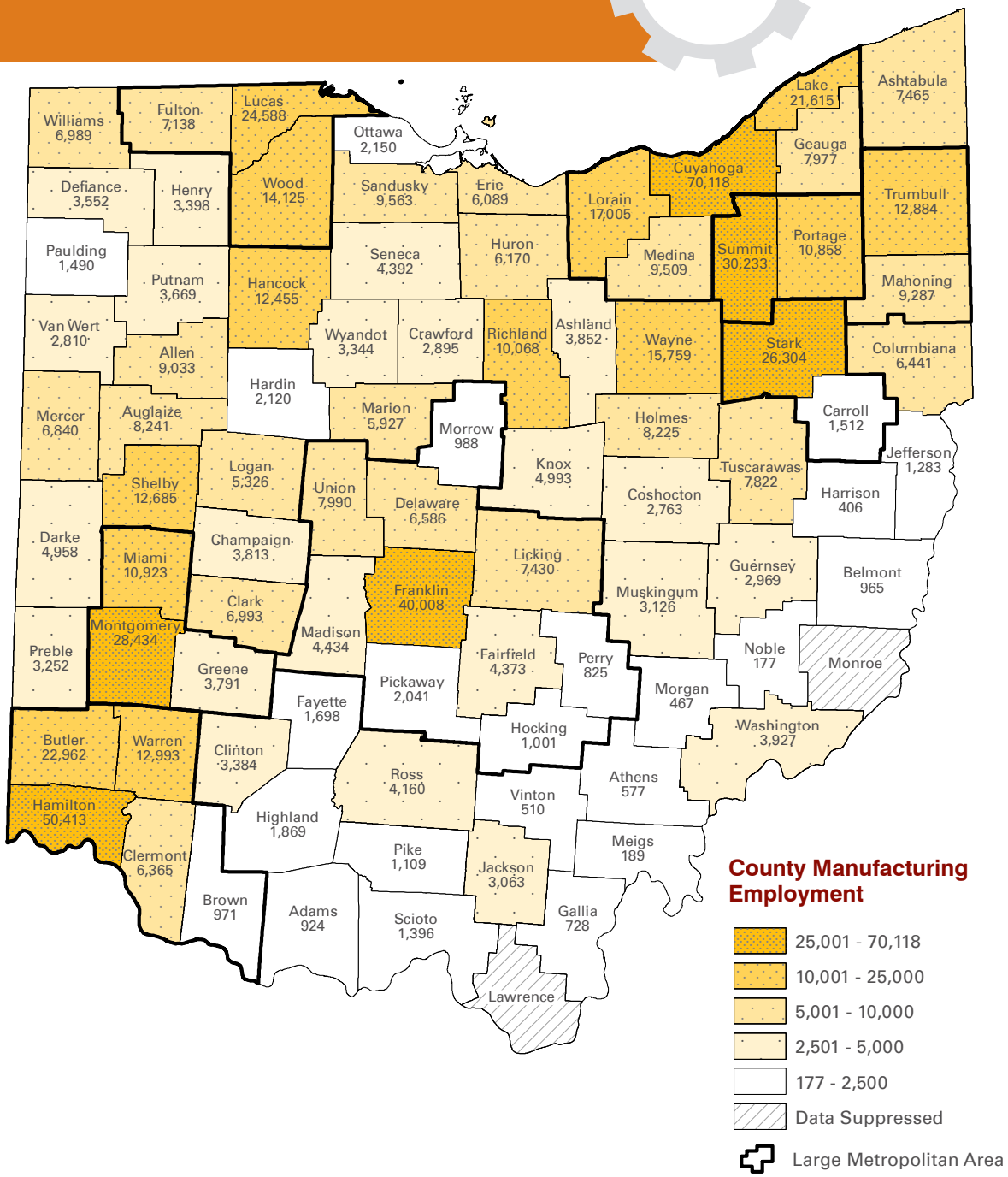
Traditional industries are foundational to the state's economy. According to this source, the greatest year-over-year growth from 2017 to 2018 occurred in Machinery manufacturing jobs, up 3%. The biggest job contraction was in Printing and Related Support Activities, by just under 1%.

Manufacturing industry	Number of jobs (2018)	Number of jobs (2017)	Number of jobs (2016)
Durable Goods			
Transportation equipment	127,900	124,500	125,300
Fabricated metal products	101,800	99,000	98,100
Machinery	80,100	77,800	76,900
Primary metals	35,700	35,900	36,800
Nonmetallic mineral products	27,300	27,200	27,100
Electrical equipment & appliances	26,700	26,800	27,400
Computer and Electronic Products	20,800	20,300	20,500
Furniture and related products	16,100	16,100	15,500
Nondurable Goods			
Food manufacturing	61,400	60,700	60,000
Plastics & rubber products	57,900	57,400	56,700
Chemical manufacturing	45,600	44,500	44,300
Printing and Related Support Activities	21,400	21,600	21,600

Source: Ohio Department of Job & Family Services, Office of Workforce Development, Ohio Labor Market Information, http://ohiolmi.com/ces/lmr.htm

OHIO MANUFACTURING AND *Jobs*

Manufacturing employment is 714,829 (2016)



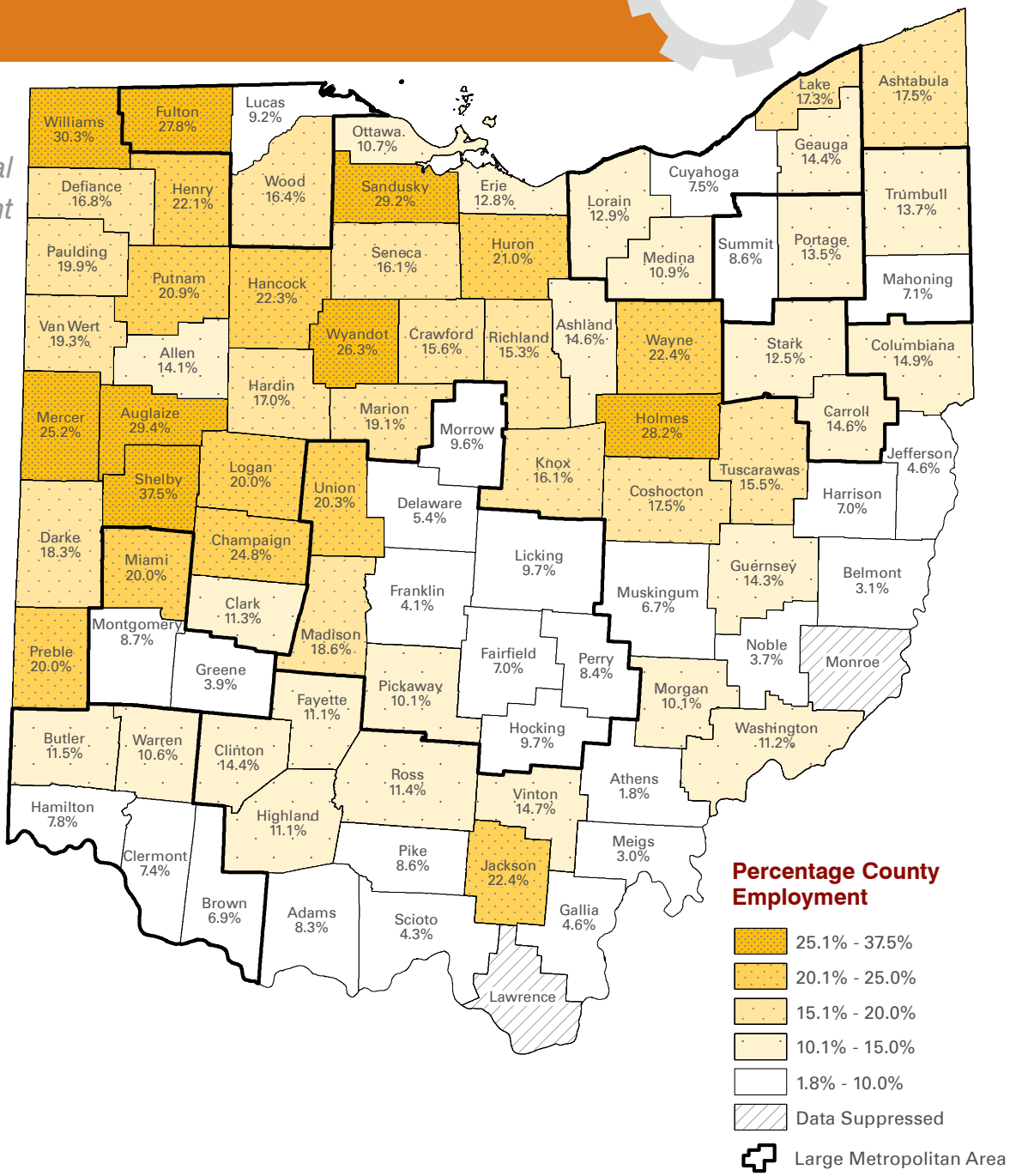
Source: Ohio Development Services Agency, Research Office, Ohio County Indicators, June 2018 (U.S. Bureau of Economic Analysis)

FACT:

According to this source, the state's manufacturing employment in 2016 was just under 715,000 and comparable to 2015 (715,200). Cuyahoga County had the greatest manufacturing employment at 70,118.

Note: Employment estimates are made for full-time and part-time jobs where the jobs are located, not where the job-holders reside. People holding more than one job are counted in each job.

Manufacturing employment of total county employment is 10.3% (2016)



Source: Ohio Development Services Agency, Research Office, Ohio County Indicators, June 2018 (U.S. Bureau of Economic Analysis)

FACT:

More than one out of every ten of Ohio's workers was employed in manufacturing in 2016. Manufacturing employment as a percentage of total Ohio employment was 10.3%, down slightly from 10.4% in 2015. Shelby County had the greatest manufacturing employment density at 37.5%.

Note: Employment estimates are made for full-time and part-time jobs where the jobs are located, not where the job-holders reside. People holding more than one job are counted in each job.

Earnings and Wages

Ohio annual wages by industry sector (in thousands) (2017)

Industry sector	Total all wages (in thousands)	Average annual wage
Manufacturing	$41,158,070	$60,002
Health care and social assistance	$37,224,591	$46,445
Professional and technical services	$18,996,605	$73,542
Finance and insurance	$17,193,341	$76,502
Wholesale trade	$16,304,332	$69,080
Retail trade	$16,052,174	$27,848
Management of companies and enterprises	$15,152,740	$106,749
Construction	$13,201,791	$60,831
Administrative and waste services	$11,107,307	$34,230
Transportation and warehousing	$9,127,785	$48,915
Accommodation and food services	$7,855,502	$16,337
Other services, except public administration	$5,129,523	$33,039
Information	$4,859,885	$67,912
Educational services	$3,433,186	$35,849
Real estate and rental and leasing	$3,000,198	$46,972
Arts, entertainment and recreation	$2,708,463	$34,106
Utilities	$1,852,380	$96,907
Mining, quarrying, and oil & gas extraction	$795,504	$71,324
Agriculture, forestry, fishing and hunting	$548,031	$33,518

Source: Ohio Department of Job and Family Services, Ohio Labor Market Information, Employment and Wages by Industry, http://ohiolmi.com/

FACT:

Year after year, Ohio manufacturing continues to lead all industry sectors in total wages.

Average annual earnings within selected manufacturing subsectors (2017)

Rank	Industrial sector	Average annual wage
1	**Chemical manufacturing**	$84,957
2	**Primary metal**	$67,772
3	**Computer & electronic products**	$67,488
4	**Transportation equipment**	$67,201
5	**Machinery**	$63,067
6	**Electrical equipment & appliances**	$60,238
7	**Paper manufacturing**	$60,078
8	**Nonmetallic, mineral products**	$58,558
9	**Fabricated metal products**	$55,280
10	**Food manufacturing**	$51,210
11	**Plastics & rubber products**	$49,901
12	**Miscellaneous manufacturing**	$48,879
13	**Printing and related support activities**	$45,251
14	**Furniture and related product manufacturing**	$44,844

Source: Ohio Department of Job and Family Services, Ohio Labor Market Information, Employment and Wages by Industry, http://ohiolmi.com/

FACT:

Chemical manufacturing supports the highest average annual manufacturing wages in the state.

Global Economy

Ohio exports to the world (2018)

FACT:

In 2018, Ohio was again the ninth largest exporting state, down from eighth in 2016.

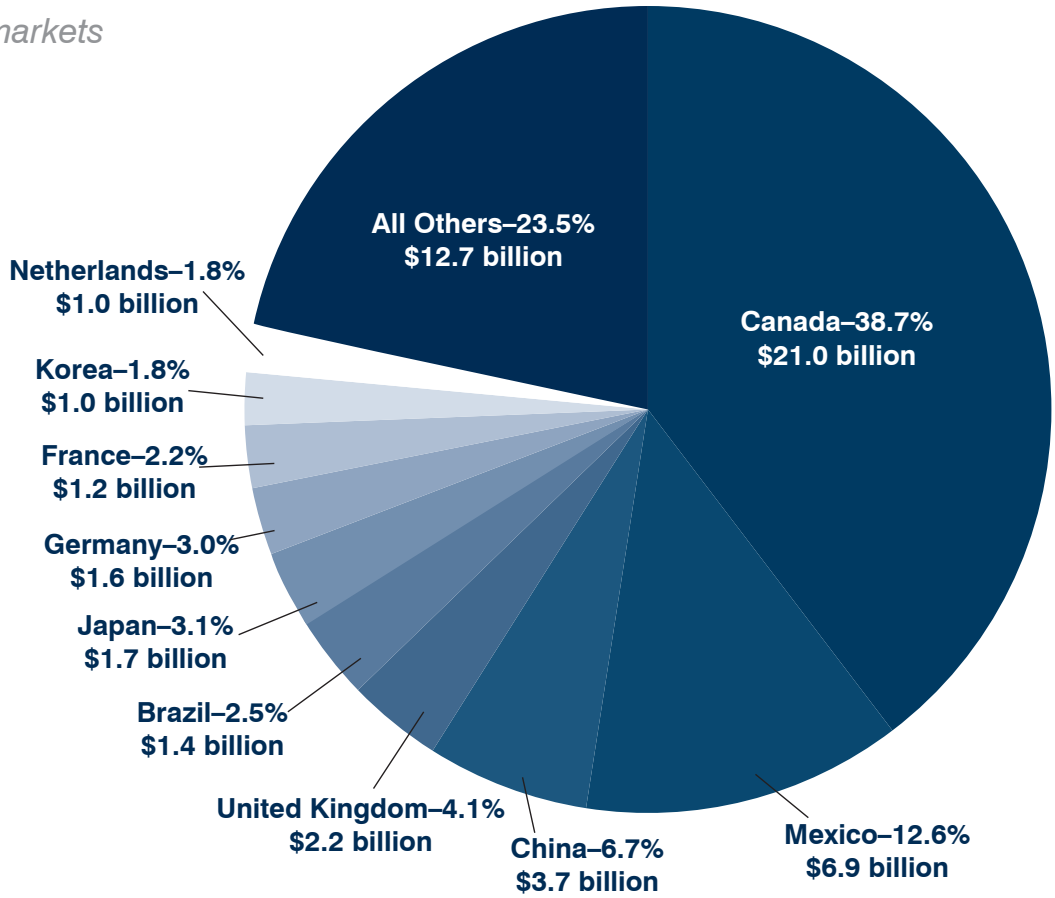
Rank	2018		
	State	Exports ($ in billions)	Top Export
1	TX	$315	Mineral fuel, oil, etc.
2	CA	$178	Electric machinery
3	NY	$81	Prec. stones; jewelry
4	WA	$78	Aircraft and parts
5	LA	$66	Mineral fuel, oil, etc.
6	IL	$65	Industrial machinery
7	MI	$58	Vehicles and parts
8	FL	$57	Electric machinery
9	OH	$54	Industrial machinery
10	PA	$41	Industrial machinery

Rank	2017		
	State	Exports ($ in billions)	Top Export
1	TX	$265	Mineral fuel, oil, etc.
2	CA	$172	Electric machinery
3	NY	$78	Prec. stones; jewelry
4	WA	$76	Aircraft and parts
5	IL	$65	Industrial machinery
6	MI	$60	Vehicles and parts
7	LA	$57	Mineral fuel, oil, etc.
8	FL	$55	Electric machinery
9	OH	$50	Industrial machinery
10	PA	$39	Industrial machinery

Rank	2016	
	State	Exports ($ in billions)
1	TX	$233
2	CA	$164
3	WA	$80
4	NY	$74
5	IL	$60
6	MI	$54
7	FL	$52
8	OH	$49
9	LA	$49
10	PA	$37

Source: Ohio Development Services Agency, Research Office, Ohio Exports Report 2018, March 2019

Ohio's Top 10 export markets (2018)



Source: Ohio Development Services Agency, Research Office, Ohio Exports Report 2018, March 2019

FACT:

In 2018, Ohio exported $54.3B in goods to 210 countries and territories. This is an increase of 8.4% over 2017. More than 50% of Ohio's exports go to Canada and Mexico.

Top export commodities (2018)

FACT:
Ohio supplies the world with both durable and non-durable goods. These leading exported commodities accounted for 73% – or $39.7B – of the state's total exports of $54.3B in 2018.

FACT:
Machinery continued to be Ohio's leading export in 2018 ($9.9 billion). Ohio was fourth among the 50 states in this category with 5% of the U.S. total.

Industries	Exported goods ($ in billions) 2018	% of Ohio exports 2018	Ohio's State Ranking 2018	Exported goods ($ in billions) 2017	% of Ohio exports 2017	Exported goods ($ in billions) 2016	% of Ohio exports 2016
Machinery (including computers)	$9.9	18.2%	4	$9.0	18.0%	$9.1	18.4%
Vehicles & parts	$9.1	16.8%	6	$7.6	15.2%	$7.5	15.2%
Aircraft, spacecraft & parts	$5.2	9.6%	9	$4.8	9.6%	$4.7	9.6%
Electrical machinery	$3.5	6.5%	11	$3.4	6.7%	$3.2	6.5%
Plastics & articles thereof	$3.1	5.7%	3	$3.0	6.1%	$2.9	5.8%
Optic, photo; medical instruments	$1.9	3.4%	15	$1.7	3.3%	$1.7	3.5%
Iron & steel products	$1.4	2.6%	4	$1.4	2.7%	$1.3	2.7%
Perfumery, cosmetic, etc.	$1.3	2.4%	4	$1.1	2.3%	$1.0	2.1%
Rubber & articles thereof	$1.1	2.0%	3	$1.1	2.3%	$1.2	2.4%
Iron & steel	$1.1	2.0%	5	$1.2	2.3%	$1.1	2.2%
Misc. chemical products	$1.1	2.0%	8	$1.0	NA	$0.8	NA
Soap, waxes, etc.; dental preparations	$1.0	1.8%	2	$0.9	NA	$0.9	NA

Source: Ohio Development Services Agency, Research Office, Ohio Exports Report 2018, March 2019

Industry leads statewide reduction/recycling of Ohio-generated waste

	Tons Reduced/Recycled			Percentage of Total Reduced/Recycled		
Year	Residential/ Commercial	Industrial	Total	Residential/ Commercial	Industrial	Total
1990	2,260,000	2,186,000	4,446,000	19.4	38.2	25.6
1995	1,942,000	6,523,000	8,465,000	17.0	42.8	31.7
2000	2,712,535	12,199,869	14,912,404	20.0	65.6	46.3
2005	3,745,758	9,474,260	13,220,018	25.7	56.9	42.3
2010	3,500,240	8,985,171	12,485,411	27.4	51.4	41.3
2015	3,728,582	8,546,359	12,274,941	27.3	53.5	41.4
2017	4,098,867	8,893,655	12,992,522	29	55	43

Source: Ohio Environmental Protection Agency

Note: Ohio EPA attributes some of the year-to-year variations in the industrial recycling rate to changes in economic activity/output. However, year-to-year changes are also due to how many, and which, companies respond to annual surveys.

FACT:

Industry leads the way in solid waste reduction and recycling. Reduction and recycling include source reduction activities, reuse, recycling, composting and incineration. Industry is an enormous consumer of recycled materials, such as metals, glass, paper and plastics; thus, manufacturers are strong advocates for improving recycling systems in Ohio and the U.S.

Each year, Ohio's 52 local solid waste management districts survey businesses in their districts about the amounts and types of materials being recycled. This provides a statewide picture of recycling activities, trends and opportunities. While reporting is voluntary, measuring and reporting recycling efforts is valuable for all of Ohio's audiences.

Ohio EPA offers grants, technical assistance and recognition to businesses who want to increase recycling or develop markets for recycled products.

Ohio EPA has an online platform whereby Ohio businesses can advertise and acquire scrap and by-product materials that might otherwise be destined for disposal in landfills. The **Ohio Materials Marketplace** is a free online platform allowing organizations to connect and find solutions to material reuse and recycling needs, thereby, facilitating the shift towards a circular, closed-loop economy.

Emissions data

[1]The 2010 and more recent summarized point source emissions are calculated from information provided to Ohio EPA from Title V and Synthetic Minor permitted facilities. Those two files are posted on the Ohio EPA Emission Inventory System (EIS) website: http://www.epa.state.oh.us/dapc/aqmp/eiu/eis.aspx.

The 1980 emissions data are derived from a 1995 Ohio EPA publication, "Emission Trends Report for Stationary Air Contaminant Sources within the State of Ohio 1980-1990."

*Percent reductions are calculated based on the formula:((Old value – new value)/Old value)*100*

It is difficult to compare the historical figures to the current figures due to changes in how the emissions data are reported.

PM emissions in 1980 accounted for filterable particulate matter only. PM emissions in 2010 and after accounted for filterable and condensable particulate matter. The PM reduction from the 1980 emissions would have been significantly larger if the condensable fraction was inventoried.

Only Volatile Hydrocarbon Compounds (VOCs) were included in the 1980 inventory. Both VOCs and Organic Compounds (OC) were inventoried in 2010 and after. VOCs are a fraction of OCs. For illustration purposes, the 1980 report assumed VOC=OC emissions. The OC reduction from the 1980 emissions would have been significantly larger if the OC emissions were inventoried besides the VOC emissions.

The number of facilities included in EIS varies from 1980 to 2010 and beyond. In 1980, only large emission units were inventoried. In 2010 and after, emission units with greater than one ton for any of the criteria pollutants were inventoried.

Overall, it is quite evident that the 1980 emissions are reduced by at least 80 percent for those four pollutants.

	1980 (tons)	2010 (tons)	% reduction 1980:2010	2017 (tons)	% reduction 2010:2017
SO_2	2,659,612	619,267	77%	104,594	83%
NO_X	690,195	150,891	78%	94,033	38%
Particulate Matter	174,250	66,303	62%	26,761	60%
Organic Compounds	169,515	36,284	79%	35,748	1%
Carbon Monoxide	329,700	243,864	26%	152,254	38%

	1982 (PPB)	2012 (PPB)	% reduction 1982:2012	2018 (PPB)	% reduction 2012:2018
Highest average eight-hour ozone concentration in Ohio	115	89	22.6%	88	1.1%
	1983 (PPB)	**2012 (PPB)**	**% reduction 1983:2012**	**2018 (BBP)**	**% reduction 2012:2018**
Highest annual average Sulphur dioxide (SO_2) concentration in Ohio	24.07	5.25	78.2%	1.43	72.8%
	2000 μ/m^3	**2012 μ/m^3**	**% reduction 2000: 2012**	**2018 μ/m^3**	**% reduction 2012:2018**
Highest annual average Particulate Matter (2.5 μ or smaller) concentration in Ohio	19.7	12.31	37.5%	11.08	10.0%

Source: Ohio Environmental Protection Agency

FACT:

Manufacturers have invested billions of dollars in environmental control technologies and more efficient processes, which has significantly reduced emissions.[1]

Toxic releases to the environment (millions of pounds per year): multi-year trend for core chemicals at base years 1988 and 2001, all industries

Year	Total air emissions	Surface water discharges	Total underground injection	Total on-site releases to land	Total on- and off-site disposal or other releases
1988 core chemicals					
1988	104,527,630	1,047,455	11,538,544	29,291,941	189,716,989
1999	37,664,651	458,895	12,077,836	19,036,238	113,749,510
2013	15,482,908	340,435	5,364,564	12,091,641	54,648,321
2014	14,914,256	180,686	5,321,927	9,562,936	51,599,527
2015	13,588,808	227,786	5,248,999	9,176,050	49,554,584
2016	15,427,726	141,097	5,404,594	7,412,245	47,915,855
2017	13,941,383	169,848	6,159,408	18,091,894	58,292,726
% change 1988-2017	-86.66	-83.78	-46.62	-38.24	-69.27
% change 1999-2017	-62.99	-62.99	-49.00	-4.96	-48.75
2001 core chemicals					
2001	119,894,999	10,006,806	31,985,954	66,020,183	282,121,623
2013	47,401,249	6,616,444	17,093,435	25,535,646	121,909,364
2014	46,362,469	6,898,981	16,188,049	21,665,375	114,847,455
2015	37,277,407	7,444,780	18,539,317	20,997,223	106,264,956
2016	32,618,308	6,983,870	17,598,832	18,280,008	96,439,507
2017	35,769,344	6,887,300	15,908,324	30,407,168	111,350,737
% change 2001-2017	-70.17	-31.17	-50.26	-53.94	-60.53

Source: Ohio Environmental Protection Agency

Note: U.S. EPA requires an annual Toxic Release Inventory from facilities. Chemicals in the annual inventory are added or delisted in any year. Thus, base year core chemical amounts vary.

FACT:

Ohio manufacturers have made significant progress in reducing toxic releases to the environment.

The mission of The Ohio Manufacturers' Association is to protect and grow Ohio manufacturing

For more information about the services and activities of the OMA, contact us at **(800) 662-4463** or **oma@ohiomfg.com** or visit **ohiomfg.com.**

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