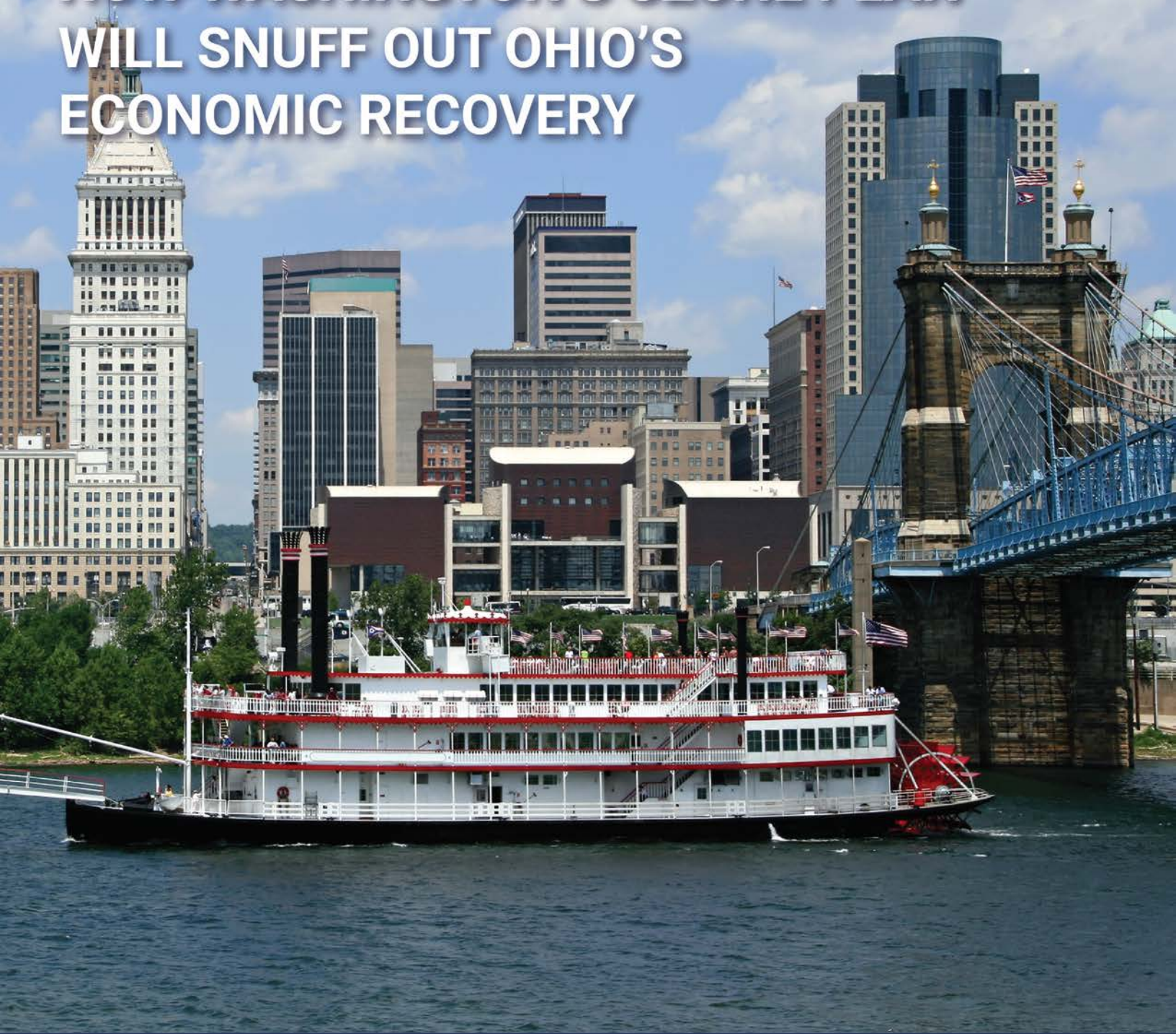


POWERING DOWN: HOW WASHINGTON'S OZONE PLAN WILL SNUFF OUT OHIO'S ECONOMIC RECOVERY



The Center For
Regulatory Solutions

www.centerforregulatorysolutions.org



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About Us

The Center for Regulatory Solutions is a project of the Small Business and Entrepreneurship Council, a 501c(4) advocacy, research, education and networking organization dedicated to protecting small business and promoting entrepreneurship. The SBE Council works to educate elected officials, policymakers, business leaders and the public about key policies that enable business start-up and growth.

1.0 KEY FINDINGS

- The Obama Administration and the U.S. Environmental Protection Agency (EPA) are currently considering a plan to dramatically tighten federal ozone limits to an unprecedented 65 to 70 ppb. If implemented, this plan would cause significant damage to Ohio's economy.
- The very industries that buoyed Ohio's economy through the economic downturn, manufacturing, energy, and construction, will be targeted by this regulation.
- Today, most of Ohio is meeting the 2008 standard, with the counties surrounding Cincinnati, Columbus, and Cleveland classified as being in "marginal nonattainment." Under this classification, the EPA will not impose penalties or new planning requirements.
- By lowering the National Ambient Air Quality Standard from 75 parts per billion (ppb) into the 65 to 70 ppb range, the EPA would cause at least 34 counties in Ohio to be in violation of federal law. These are some of Ohio's most populated counties, concentrated around the Cleveland and Cincinnati metropolitan areas, but a number of Ohio's rural counties may be dragged into nonattainment as well.
- The vast majority of Ohio's economy, population, and workforce could be caught in the net of ozone nonattainment under the EPA's proposed range. The 34 impacted counties represent 84 percent of the state's GDP, 80 percent of the state's workforce, and 77 percent of the state's population.
- Ohio's manufacturers will be especially hard hit by the new ozone regulation. The manufacturing sector employs 16 percent of Ohio's workforce, making it the largest sector by employment in the entire state.
- Ohio's construction industry would be another casualty of this regulation, because counties designated as being in "nonattainment" may be forced to institute construction bans.
- The new proposed ground-level ozone rules being considered in Washington have provoked a bipartisan backlash in Ohio.
- In interviews with the Center for Regulatory Solutions (CRS), in letters to the Obama Administration, and in other public comments, a broad cross-section of elected officials, business owners, and regulatory experts expressed their frustration that the EPA is ignoring the substantial progress Ohio has already made to clean its air.

- In order to combat ground-level ozone, in the 1990s Ohio created the E-Check program to monitor vehicle emissions in the counties around Cleveland and order those vehicles in violation to be repaired. It is estimated that in its first 10 years the program reduced 18.8 tons of vehicle emissions per day.
- Ohio's substantial efforts to improve its air quality are perhaps best summarized by Lt. Governor Mary Taylor, who said "Ohio is in the process of implementing dozens of massive new regulations put in place by [EPA] over the past several years ... Taken together, these regulations impose billions of dollars in new costs. They will also drive major reductions in the emissions that cause ozone, making a new NAAQS even less necessary."
- The state's power plants will face the dual challenge of more expensive inputs (as this rule will confer costs on energy production) and expenses associated with its own compliance (ie. the purchase of selective catalytic reduction to control NOx) – the end result of this "tax" on industry – is higher residential and industrial energy costs.

Cleveland Impacts

- Under the proposed range for the EPA's new ozone National Ambient Air Quality Standards (NAAQS), an eight county region stretching from Ashtabula County to Lorain County would be classified in nonattainment.
- The eight counties that surround Cleveland account for 30 percent (\$177.2 billion) of state GDP and nearly 30 percent of the state's workforce (1.7 million individuals).
- The economic burdens from this regulation will hit the hardest in Ashtabula and Lorain Counties where the manufacturing sector represents the largest sector of their economies (15 and 14 percent, respectively).
- Five of the eight Cleveland-area counties already suffer from high levels of poverty, ranging from 14.6 to 19.2 percent.
- All of the relatively non-invasive measures (like the E-Check program) have already been undertaken in Cleveland, and in pursuit of attainment, Ohio will have to apply methods that will curtail its economic growth.

Cincinnati Impacts

- In the Cincinnati metro area the entirety of Butler, Claremont, Hamilton, and Warren counties would be thrust into nonattainment. This region generates \$92.8 billion or 16 percent of Ohio's GDP and employs almost 15 percent of its workforce.
- The new ozone standard would be punishing counties that, like Hamilton County, have substantially decreased their ozone levels, and would continue to see improvements as the 2008 standard is enforced.

Survey

- A recent survey commissioned by the National Association of Manufacturers (NAM) finds that voters in Ohio overwhelmingly have a high opinion of the quality and cleanliness of their local air. According to the survey, nearly two-thirds (65 percent) of Ohio voters rate their local air quality as "Excellent" or "Good."
- Most Ohio voters (55 percent) oppose any additional environmental regulations on businesses, believing these would have negative impacts on the economy through higher taxes (78 percent), higher prices (80 percent), and making it harder to start or grow businesses (69 percent).
- By a wide margin, Ohioans think the bigger problem for their local area is "less economic growth and job opportunities caused by regulations" (73 percent) rather than "lower air quality caused by pollution" (16 percent).
- Fewer than two-in-five Ohioans (35 percent) think that the federal government should implement stricter environmental regulations on businesses operating in their local area.

2.0 EXECUTIVE SUMMARY

The Obama Administration and the U.S. Environmental Protection Agency (EPA) are currently considering a plan to dramatically tighten federal ozone limits to an unprecedented 65 to 70 ppb. If implemented, this plan would cause significant damage to Ohio's economy, just as the state is putting the Great Recession in its rear-view mirror. The very industries that buoyed Ohio's economy through the economic downturn, manufacturing, energy, and construction, will be targeted by this regulation-causing job loss, slowed economic growth, less tax revenue for the state, and an incentive for manufacturers to move elsewhere.

The proposed regulations would also limit the state's access to federal highway funding, which means Ohioans may face more frequent traffic jams – especially in the Cleveland and Cincinnati metro areas. Furthermore, public opinion research shows a strong majority of Ohioans believe their air quality is already well above average, and significant majorities across the state oppose any plan that would cost the state thousands of jobs and billions in lost economic activity for no, or very little, environmental benefit in return.

For these reasons, Ohio businesses, labor unions, local officials, and state officials have come together to speak out against Washington's ozone agenda.

"After the great strides we have made in the region on improving air quality, the proposed new EPA standards will serve as an antidevelopment punishment...By moving the goalposts on ozone, we are afraid that the EPA's plan will chase away [manufacturing] jobs, stifle future development and push the region back to low income status."

Tracy Drake

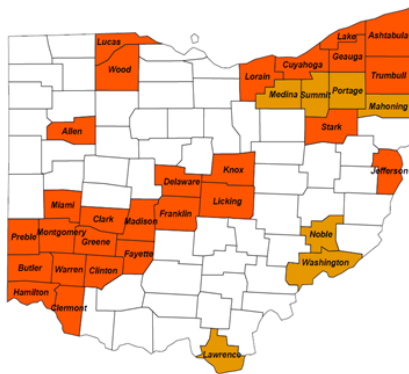
President, Eastern Ohio Development Alliance,
August 2015 interview with CRS

Washington's Ozone Agenda Hits Ohio Especially Hard

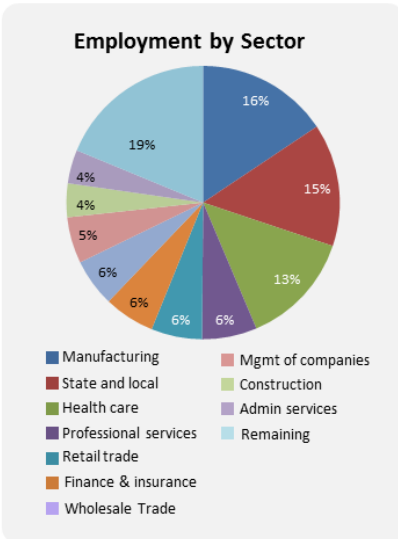
By lowering the National Ambient Air Quality Standard from 75 parts per billion (ppb) into the 65 to 70 ppb range, the EPA would cause, with a single action, at least 34 counties in Ohio to be in violation of federal law. These are some of Ohio's most populated counties, concentrated around the Cleveland and Cincinnati metropolitan areas, but a number of Ohio's rural counties may be dragged into nonattainment as well. Together, these 34 counties are home to 77 percent of the state's population, 84 percent of Ohio's GDP, and 80 percent of state employment.

Violation of the proposed ground-level ozone standards will trigger a process that effectively hands over to the EPA significant control over permitting and planning programs that currently reside within the purview of state and local authorities in these counties. Opening new manufacturing facilities, expanding existing businesses, and upgrading the state’s road network – among many other high-priority public and private investments in the Ohio state economy – are threatened by the EPA’s ultra-low cap on ozone-forming emissions. Even worse, the EPA’s role in micromanaging Ohio’s economy could be permanent if Ohio can’t reach attainment. Some scientists and planners believe the new standards being contemplated by Washington are so low, they may actually be technologically unfeasible.

THIRTY-FOUR COUNTIES IN OHIO WOULD BE IN NON-ATTAINMENT IF EPA LOWERS OZONE NAAQS TO 65 PPB; TOGETHER THEY ACCOUNT FOR 84% OF OHIO’S GDP.



■ Counties that violate 65 ppb
■ Counties that violate 70 ppb
 Counties that do not violate proposed range



The 34 counties represent the following:

- \$493.9 billion or 84% of the state’s GDP
- 5.3 million or 80% of the state’s employment
- \$268.5 billion or 84% of total employment compensation in the state
- Approximately 77% of the state’s population

Non-Attainment Counties	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Allen	6.2	64,385
Ashtabula	6.1	45,492
Butler	21.7	188,335
Clark	6.6	64,164
Clermont	11.7	86,507
Clinton	1.6	21,006
Cuyahoga	77.9	903,449
Delaware	11.4	128,152
Fayette	1.0	16,765
Franklin	74.3	882,855
Geauga	5.8	51,887
Greene	8.0	99,123
Hamilton	46.7	608,746
Jefferson	2.1	27,517
Knox	2.1	29,875
Lake	14.2	119,412
Lawrence	2.4	18,405
Licking	10.2	72,580
Lorain	18.8	127,309
Lucas	23.2	258,612
Madison	2.6	20,645
Mahoning	8.2	131,266
Medina	10.9	84,463
Miami	5.0	52,686
Montgomery	25.9	304,599
Noble	0.4	5,272
Portage	10.0	76,326
Preble	0.9	14,957
Stark	15.2	209,281
Summit	33.5	331,215
Trumbull	7.2	91,714
Warren	12.8	109,266
Washington	2.4	32,443
Wood	6.9	77,814
Total	493.9	5,356,523
Ohio	584.7	6,663,005

Democrats, Republicans, and Businesses Speak Out

The new proposed ground-level ozone rules being considered in Washington have provoked a bipartisan backlash in Ohio. In interviews with the Center for Regulatory Solutions (CRS), in letters to the Obama Administration, and in other public comments, a broad cross-section of elected officials, business owners and regulatory experts expressed their frustration that the EPA is ignoring the substantial progress Ohio has already made to clean its air.

“Ohio has made tremendous strides in clean air technology,” wrote State Representative Jack Cera (D) in a **letter** to the EPA. “The state’s manufacturers are strong believers in sustainable practices,” he continued, adding, “I strongly believe environmental policies must be flexible” to account for regional variances. “We do not believe that environmental protection and economic development are mutually exclusive,” Lt. Governor Mary Taylor wrote in a **letter** calling upon the EPA to re-examine the science underlying their new proposed standard. “The current standard is helping improve the quality of our air, and any further reduction is unjustified.”

In an interview with CRS, the Tri-State Building Trades Unions warned that the new rule would “result in lower economic growth, more job losses and an even lower standard of living” in Ohio and other Appalachian states. In a separate interview, a Zanesville, Ohio professional said that the new regulation would cause unemployment to “sky rocket” and implored the EPA to “leave the regulations alone.” Meanwhile, the Cincinnati USA Regional Chamber, which represents more than 4,000 businesses, urged the EPA to allow the 2008 ozone standards to be fully implemented before lowering the standard that they said may never be necessary. In **comments** to the EPA they wrote: “The manufacturing sector is a critical component to the Cincinnati region’s economy and would be directly impacted by this change,” adding that the regulations would be “detrimental to the Cincinnati economy” and would kill jobs.

“The overall impact of these far reaching regulations will result in lower economic growth, more job losses and an even lower standard of living to the Appalachian communities of the three state region that we represent.”

Mark Johnson

Business Manager,
Tri-State Building Trades Unions
August 2015 interview with CRS

Rural Ohio is also worried. The lower range of the standard is “so stringent that all 34 monitors in the state, including those used for background data in rural Ohio would violate the standard,” Governor John Kasich wrote in a letter to the EPA in 2011, when the EPA first proposed lower standards. Ohio’s ozone levels are inflated by background ozone blown in from **Canada**, which deals many Ohio communities a bad hand in terms of how much economic activity they could support under stricter regulations. The levels the EPA is contemplating are so low that many **national parks**, like the iconic Yosemite National Park and the Grand Canyon, would be in nonattainment.

Construction Bans, Delayed Road Projects

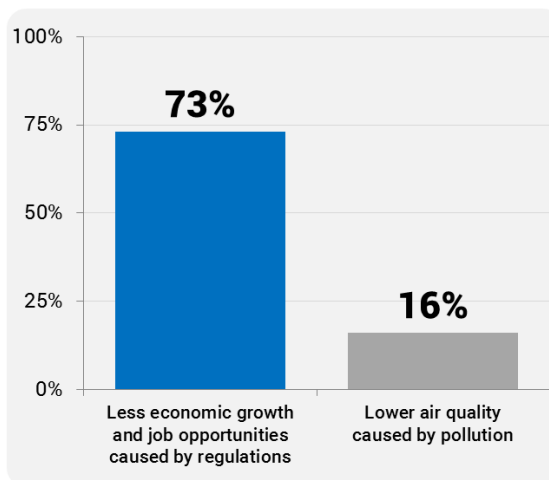
Local and national groups representing **cities, counties, transportation departments, agricultural agencies, state-level environmental regulators, labor unions, construction companies, energy producers, manufacturers**, and many other stakeholders have all sounded the alarm over Washington’s ozone plans. In their view, the EPA is ignoring that very few cost-effective strategies are available to reduce remaining ozone-forming emissions, following four decades of huge private and public investments across all levels of government to solve the problem. In fact, the EPA has acknowledged that, in order to comply with a 65 parts per billion standard, 40 percent of reductions must come from “**unknown controls**” that don’t currently exist. Therefore, in comments to the Obama Administration, these stakeholders have warned that states may be forced to adopt much harsher measures, including:

- Construction bans
- Limits or bans on business expansions
- Delays in highway and road projects
- Denials of highway and road projects
- Measures to discourage driving, including the adoption of “no drive” days
- New restrictions on energy production

If a location is out of attainment under the proposed regulation, a provision called “transportation conformity” could withhold federal highway dollars from Ohio. While the EPA argues they wouldn’t impose these funding restrictions, they have – in **Atlanta, Georgia** – at the behest of environmental groups. Ohioans are worried that the same fate could befall their transportation improvement projects. In an interview with CRS, the Affiliated Construction Trades Ohio Foundation (ACT Ohio) warned that the EPA could “halt federal funding for Ohio’s highway, transit or infrastructure development initiatives.” In the

OHIO OPINION POLL

What do you see as the bigger problem for your local area?



Source: NAM Ohio opinion poll, August 2015

Cincinnati area specifically, the EPA could halt the Brent Spence Bridge/I-75 Corridor project, the Western Hills Viaduct, and the interchange at Interstate 71 and Martin Luther King Drive, **according** to the Cincinnati USA Regional Chamber.

Experience shows cars and trucks that spend more time on the road stuck in traffic jams will **produce more emissions** – including those that contribute to ozone – than vehicles traveling to their destinations at or near the speed limit. Therefore, by making traffic worse in Ohio, the EPA’s ozone proposal is not just economically destructive – it is self-defeating.

Voters Wary of Federal Overreach

Recent public opinion research suggests strong opposition to the EPA’s plans in Ohio. A statewide public opinion poll, commissioned by the National Association of Manufacturers, found nearly two-thirds (65 percent) of Ohio voters rate their local air quality as “Excellent” or “Good.” By a wide margin, Ohioans think that a bigger problem for their local area is “less economic growth and job opportunities caused by regulations” (73 percent) rather than “lower air quality caused by pollution” (16 percent). Only a third (34 percent) of Ohio voters think that new environmental regulations on local businesses would actually make the local air quality better.

Conclusion

The results of this report show that Washington’s plan to dramatically tighten the federal ozone standard – a plan which could be finalized by Oct. 1 or sooner – poses an urgent threat to Ohio’s economy, Ohio’s employers, and Ohio’s workers. It also serves as a call to action for citizens, public officials, business owners, and industry groups to demand the federal ozone standard remains at the current 75 ppb level – a standard that itself was only imposed in 2008, and which the EPA only began implementing this year.

3.0 OZONE BASICS

Ground-level ozone is formed by a complex chemical reaction involving nitrogen oxides (NO_x), volatile organic compounds (VOCs), sunlight, and other weather conditions. Industrial facilities and tailpipe emissions from cars and trucks are major sources of NO_x and VOCs, which are together known as ozone precursors. Ground-level ozone is the primary component of smog and is chemically identical to the thin layer of ozone that exists in the stratosphere and protects us from harmful ultra-violet radiation.

Across the United States there are also significant levels of background ozone attributed to natural sources, such as stratospheric intrusions or wildfires, and air pollution that drifts into the country from other nations. A new [study](#) from NASA's Jet Propulsion Laboratory has shown that air pollution from China drifts across the Pacific Ocean and increases the ozone levels in large swaths of the country. Parts of Ohio are routinely affected by ozone drift from [Canada](#). Although some ozone is produced all year, the highest concentrations of ozone are typically seen in the summer, due to a combination of intense sunlight and stagnant air that provides conditions for ozone precursors to react and form ozone.

In the 1970s, concerns over air pollution and health prompted the EPA to set National Ambient Air Quality Standards (NAAQS) for six "criteria pollutants," including ozone. In 1979, the ozone NAAQS was 120 parts per billion (ppb), averaged over the course of one hour. In 1997, it was lowered to 80 ppb, with the averaging time changed from one hour to eight hours. Then, in 2008, the ozone NAAQS was lowered again to 75 ppb.

The Obama Administration's push to dramatically tighten the ozone NAAQS began in 2010 – just two years after the current standard was set at 75 ppb. After a major outcry over the costs of this proposal, the EPA [withdrew](#) their plan in 2011. In November 2014, the EPA decided to [try again](#). It released a proposal to lower the ozone NAAQS from 75 ppb into the range of 65-70 ppb, taking comment on proposals as low as 60 ppb.

The EPA claims a dramatically tighter standard is justified by health concerns. In particular, the agency has repeatedly [cited asthma prevention](#) as one of the benefits of the proposal. However, many academics and state regulators have questioned these purported health benefits. Ozone-forming emissions have [dropped](#) by over 50 percent since 1980 and are expected to [continue](#) to fall. However, there seems to be little data to link ozone to asthma rates. According to the National Center for Health Statistics, asthma prevalence in the United States [increased](#) from 7.3 percent to 8.4 percent in the last decade, even though ozone levels have significantly decreased. [According to](#)

Dr. Michael Honeycutt, the top toxicologist at the Texas Commission on Environmental Quality, “if asthma were actually tied to ozone, you would expect to see the instances of asthma decreasing, not increasing. In fact, data from Texas hospitals show that asthma admissions are actually highest in the winter, when ozone levels are the lowest.” Separately, a TCEQ report on the EPA’s sources, methods, and assumptions found them to be “inconsistent,” “misleading,” “unrealistic,” “critically flawed,” and “implausible.”

In Ohio, air quality regulators have directly challenged the EPA’s scientific justification for the rule. **State regulators** in Ohio say the EPA’s planned new ozone NAAQS is harder to take because the “scientific evidence demonstrated in this proposal ... does not justify the proposed range.” According to Ohio’s **Attorney General**, “even were the supporting documentation cited by U.S. EPA to be accepted wholly at face value, it would not support the proposed restrictive levels.” Ohio Lt. Governor Mary Taylor agreed in a letter to the EPA, **writing** “According to the Ohio EPA, your agency is relying on the same basic research that was used years ago, and upon which the EPA made the determination in 2010 to not tighten the standard. We do not believe there is anything in the toxicological or epidemiological analysis that justifies a standard below 75 ppb.”

“Even were the supporting documentation cited by U.S. EPA to be accepted wholly at face value, it would not support the proposed levels.”

Mike DeWine

Ohio Attorney General, March 2015
Letter to the EPA Administrator

As the Texas Commission on Environmental Quality explained in a recent **report**, “respiratory effects can occur at the high ozone concentrations that were measured in the 1980s and 1990s.” But with today’s much cleaner air, the EPA “has not demonstrated that public health will measurably improve by decreasing the level of the ozone standard.”

While the scientific basis for the EPA’s proposal is shaky, the economic impacts are far more certain. Analysis performed by the **EPA** and National Economic Research

Associates (**NERA**) tells us the lower standard will increase costs for businesses and families. Where they disagree is over how great the burden will be, with the EPA estimating \$15 billion in annual costs and NERA putting the cost at \$140 billion each year.

Under the Clean Air Act, cities and counties that do not meet the NAAQS for ozone are placed into “nonattainment,” or violation of federal environmental standards. Once designated in nonattainment, local and state officials must answer to the federal

government for permitting and planning decisions that could impact ozone levels. State officials are required to develop an “implementation plan” that imposes new restrictions across the economy, especially the transportation, construction, and energy industries. The EPA has veto power over these implementation plans. States that refuse to comply, or have their implementation plans rejected, face regulatory and financial sanctions from the federal government.

“EPA data indicates that the air is cleaner today than it has been in thirty years, progress due in large part to control measures associated with past NAAQS standards. This success shows that ozone NAAQS when given an opportunity to be fully implemented produce significant reductions...Moreover, EPA acknowledges that there are alternative views on health effects evidence and risk information. Due to all these uncertainties, allowing the current standard to take full effect would alleviate any perceived concerns with measured scientific data and allow EPA time to further consider those uncertainties while still protecting air quality.”

U.S. Representative Robert Latta (R-OH)

July 2015 [letter](#) to the EPA administrator

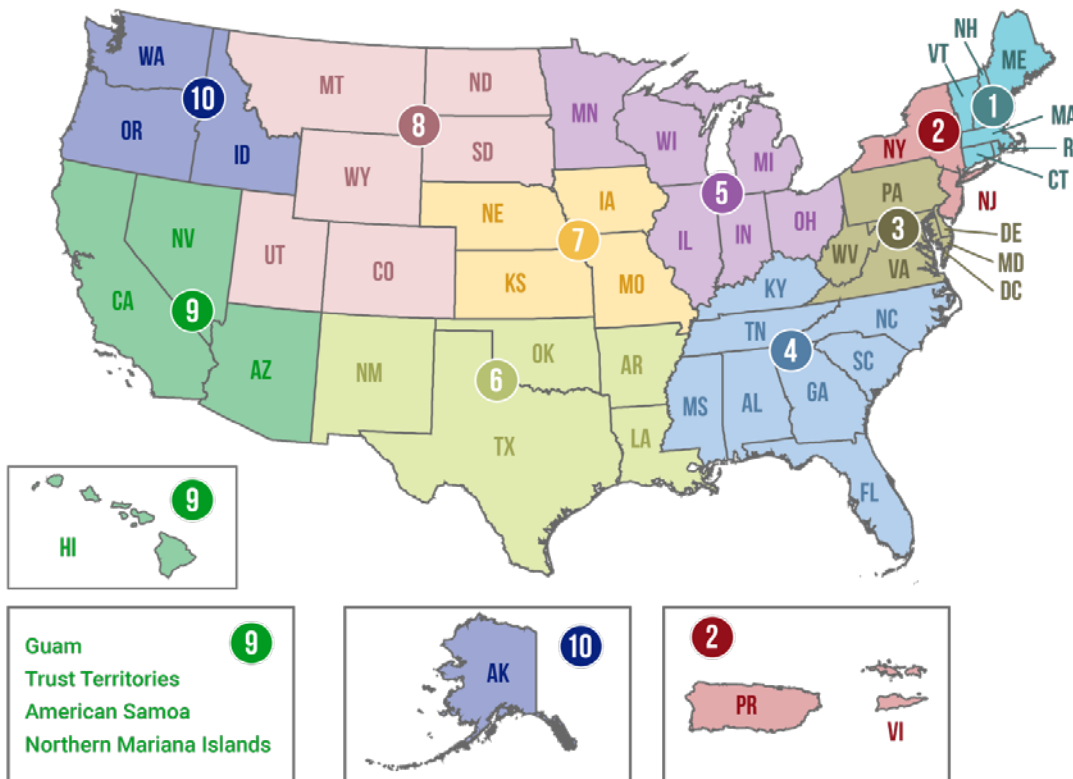
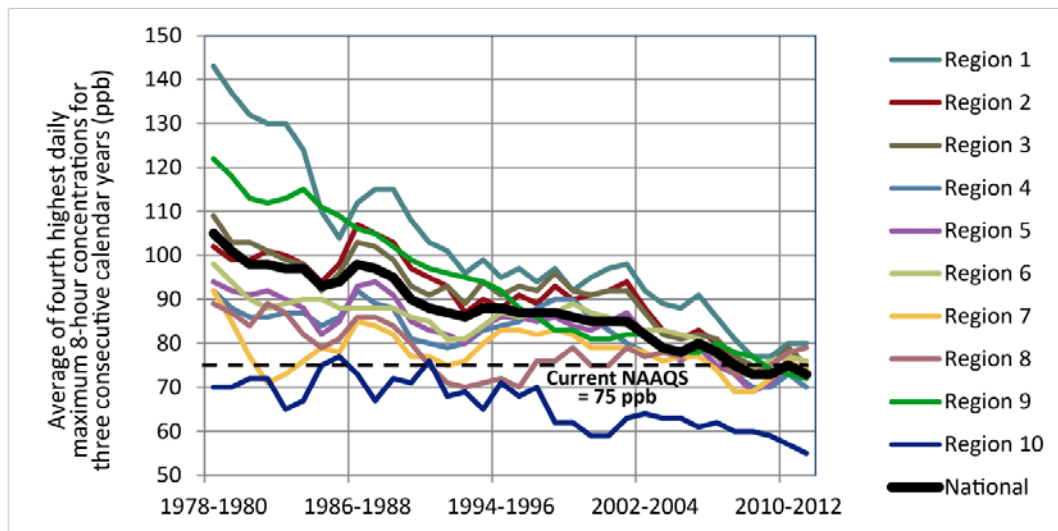
Under the current ozone NAAQS of 75 ppb, which was set in 2008, **231 counties** are in nonattainment, or close to nonattainment. Under the new range of 65-70 ppb proposed by the EPA, **558 counties** face the threat of nonattainment. The dramatic expansion of the EPA’s reach comes despite continued progress at the state level in improving air quality. The EPA’s proposal, therefore, is simply a decision by the agency to move the goalposts and redefine the legal definition of nonattainment. To complicate matters further, state and local officials are still struggling to implement the 2008 standard, because the EPA just this year finalized the rules for compliance after a **seven-year** delay. If the EPA pushes

ahead, ignoring the legitimate concerns of state and local interests, it will mark a radical departure from the way federal ozone standards have been enforced before.

Congress is worried that the new standards are coming too quickly and the EPA is not giving counties enough time to comply with the 2008 standards. In July of 2015 Congressman Bob Latta (R-OH) authored a **bipartisan letter** to the EPA that was signed by 136 Members of Congress, including Congressman Tim Ryan (D-OH), asking the EPA to allow the 2008 standards to be fully implemented before it investigates

whether lowering the standards further is necessary. Similar letters have been sent by the Chairman of the **Senate Environment and Public Works Committee**, the Chairman of the **House Energy and Commerce Committee**, the Chairman of the **House Committee on Science, Space, and Technology**, the Chairman of the **Senate Small Business Committee**, a **coalition** of medical professionals in Congress, and by the **Colorado** and **Utah** delegations.

OZONE LEVELS IN STEADY DECLINE SINCE 1978



Source: EPA

4.0 HISTORY OF OZONE IN OHIO

Ohio has a long history of fighting air pollution, often acting in advance of the nation to improve its air quality. As far back as the 1880's, when Cincinnati was a bustling manufacturing and transportation hub, local residents complained of **coal smoke**, trapped by the surrounding hills, blanketing their city for days on end. This prompted Cincinnati to pass one of the first smoke ordinances in the nation in 1881. Despite this and other early initiatives, smoke and smog remained a serious problem in Cincinnati through the mid-twentieth century, prompting the city to adopt ambient air standards two years before the NAAQS were adopted.

"At 65 [ppb], the proposed new standard would be impossible for Washington County to meet, as Washington County currently has an ozone level of 69 [ppb] one of the lowest in the state ... Federal highway funds could cease and job creation and economic growth could grind to a halt and energy cost would skyrocket."

Ron Feathers

Washington County Commissioner
August 2015 interview with CRS

In 2008, the federal ozone NAAQS was lowered from 80 ppb to 75 ppb, presenting Ohio with a new air quality challenge. Today, most of the state is meeting the 2008 standard, with the **counties** surrounding Cincinnati, Columbus, and Cleveland classified as being in "marginal nonattainment." Under this classification, the EPA will not impose penalties or new planning requirements.

However, if the ozone NAAQS is lowered any further, those federal sanctions would almost certainly be triggered. The EPA has proposed lowering the standard to

between 65 and 70 ppb, and at 65 ppb, it is **projected** that the entire state of Ohio could be in nonattainment¹. It is estimated that the penalties imposed by the EPA would result in \$850 million in compliance **costs** and would eliminate 22,819 jobs or job equivalents per year while costing the state \$23 billion in lost gross state product between 2017 and 2040.

¹ As discussed in section 5.1 of this report, Ohio only has 34 air quality monitors throughout the state. While the American Petroleum Institute has interpolated the data from these monitors to estimate the degree of nonattainment across the entire state, the FTI Consulting analysis that is the basis of this report takes a more conservative approach and only examines impacts on monitored counties.

“I understand the health benefits associated with meeting the ambient air quality standards; however, the increased compliance costs will also have a direct negative impact on health if individuals lose their jobs and health care benefits. EPA’s own study shows that its proposed new national standard could impose \$90 billion annually in additional operating costs for manufacturers, farmers, and other service providers, potentially costing thousands of jobs. People are at risk of losing their health care and other employment benefits for their families which also has serious health consequences. Our communities are also at risk of losing local tax revenue to fund schools, police and fire departments, and other essential services if the expected job losses from this reconsideration are accurate.”

Ohio Governor John Kasich

July 2011 Letter to the EPA Administrator

Ohio Governor Kasich acknowledged this problem four years ago when the Obama administration first attempted to tighten ozone standards. In a letter to then-EPA Administrator Lisa Jackson he wrote:

“EPA’s own study shows that its proposed new national standard could impose \$90 billion annually in additional operating costs for manufacturers, farmers, and other service providers, potentially costing thousands of jobs. People are at risk of losing their health care and other employment benefits for their families which

“Ohio has made tremendous strides in clean air technology and I believe we need to see the progress of this technology in action...It is my sincere hope that the federal government will strike a sensible balance that gives current technologies and practices a chance before embarking on new endeavors.”

Jack Cera (D), Ohio State Representative

(Jefferson, Monroe, and Belmont Counties)

June 2015 [Letter](#) to the White House

also has serious health consequences. Our communities are also at risk of losing local tax revenue to fund schools, police and fire departments, and other essential services if the expected job losses from this reconsideration are accurate.”

A few months later, based on similar concerns pouring in from across the country, the White House convinced the EPA to **back down** and retain the 2008 standards. But today, President Obama’s EPA is pushing for a **second time** to dramatically tighten the ozone standard, despite the serious economic risks this entails for states like Ohio.

Most of Ohio’s emissions are the result of transportation and not from manufacturing or the energy sector. According to the 2011 National Emissions Inventory (NEI), the **vast majority** of volatile organic compound (VOC) and nitrogen oxide (NOx) ozone precursor emissions generated in Ohio are from vehicle emissions. For Columbus specifically, 87 percent of Franklin County’s NOx emissions come from the transportation sector. Indeed, State Representative Jack Cera (D) **urged** the White House to allow the current standards to take effect, saying, “Ohio has made tremendous strides in clean air technology and I believe we need to see the progress of this technology in action.”

“Ohio continues to improve air quality, and seeks to do so consistent with related quality of life considerations including necessary conditions for a strong and growing economy. The new proposal by the U.S. EPA, inconsistent with the intent of the Clean Air Act and without adequate scientific basis, threatens that course.”

Ohio Attorney General Mike DeWine

March 2015 [Comments](#) on the EPA proposal

In order to combat ground-level ozone, in the 1990s Ohio created the **E✓Check** program to monitor vehicle emissions in the counties around Cleveland and order those vehicles with offensive emissions to be repaired. It is estimated that in its first 10 years the program reduced **18.8 tons** of vehicle emissions per day. Ground-level ozone in Ohio was also reduced through overall improvements in vehicle emissions, with the **EPA** noting that cars, SUVs, and pickup trucks purchased today are “well over 90 percent cleaner than a new vehicle purchased in 1970.”

While Ohio is on track to lower its emissions due in part to these developments, the state **would not** be able to meet lower NAAQS standards by 2025 without imposing additional restrictions. In a **letter** to the White House, Mayor of Lima, Ohio, David Berger, wrote that it is difficult to achieve further ozone reductions

because the low-hanging fruit has already been picked and “there simply are no easy solutions at this point.”

Even without lower standards, Ohio’s air will continue to improve. In fact, the EPA just awarded Columbus official “attainment” status, a title the EPA is threatening to take away in October. The EPA’s air quality **data**, collected from 2011 through 2013, showed that Cincinnati’s incidence of “high ozone days” has fallen 64 percent since 1998, while Columbus’ has dropped roughly 75 percent from 1997. Cincinnati and Columbus are among the cleanest metropolitan areas in the country for 24-hour particle pollution. Meanwhile, Cleveland’s “high ozone days” have dropped 68 percent from 2002, while its 24-hour particle pollution has fallen over 90 percent. And Ohio’s air has continued to improve from 2013 levels; not a single smog warning was issued in central **Ohio** in 2014, the first time that has happened in 20 years.

Ohio’s substantial efforts to improve its air quality are perhaps best summarized by Lt. Governor Mary Taylor, who **said** “Ohio is in the process of implementing dozens of massive new regulations put in place by [EPA] over the past several years ... Taken together, these regulations impose billions of dollars in new costs. They will also drive major reductions in the emissions that cause ozone, making a new NAAQS even less necessary.”

“Ohio is in the process of implementing dozens of massive new regulations put in place by your agency over the past several years: regulations like the Mercury and Air Toxics Standards, the Boiler MACT, fuel economy standards for cars and trucks, regional haze rules, the Cross-State Air Pollution Rule, Tier 3 tailpipe emissions standards, and of course the Clean Power Plan. Taken together, these regulations impose billions of dollars in new costs. They will also drive major reductions in the emissions that cause ozone, making a new NAAQS even less necessary.”

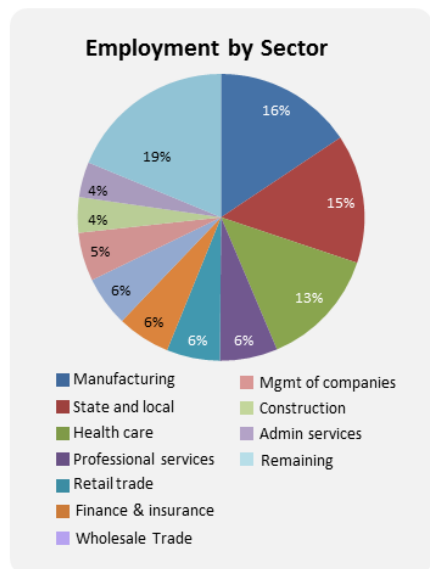
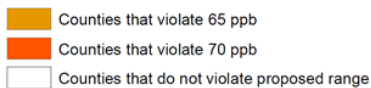
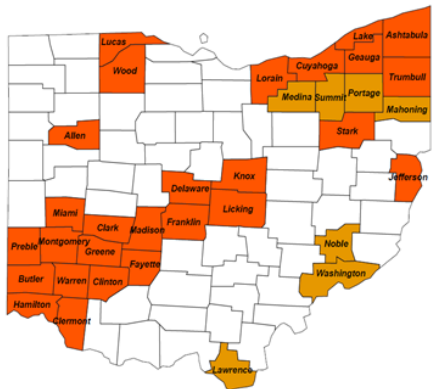
Ohio Lt. Governor Mary Taylor

March 2015 **Letter** to the EPA Administrator

5.0 OHIO IMPACTS

5.1 Overview

THIRTY-FOUR MONITORED COUNTIES IN OHIO WOULD BE IN NONATTAINMENT IF EPA LOWERS OZONE NAAQS TO 65 PPB; TOGETHER THESE COMMUNITIES ACCOUNT FOR 84% OF OHIO'S GDP.



The 34 counties represent the following:

- \$493.9 billion or 84% of the state's GDP
- 5.3 million or 80% of the state's employment
- \$268.5 billion or 84% of total employment compensation in the state
- Approximately 77% of the state's population

Non-Attainment Counties	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Allen	6.2	64,385
Ashtabula	6.1	45,492
Butler	21.7	188,335
Clark	6.6	64,164
Clermont	11.7	86,507
Clinton	1.6	21,006
Cuyahoga	77.9	903,449
Delaware	11.4	128,152
Fayette	1.0	16,765
Franklin	74.3	882,855
Geauga	5.8	51,887
Greene	8.0	99,123
Hamilton	46.7	608,746
Jefferson	2.1	27,517
Knox	2.1	29,875
Lake	14.2	119,412
Lawrence	2.4	18,405
Licking	10.2	72,580
Lorain	18.8	127,309
Lucas	23.2	258,612
Madison	2.6	20,645
Mahoning	8.2	131,266
Medina	10.9	84,463
Miami	5.0	52,686
Montgomery	25.9	304,599
Noble	0.4	5,272
Portage	10.0	76,326
Preble	0.9	14,957
Stark	15.2	209,281
Summit	33.5	331,215
Trumbull	7.2	91,714
Warren	12.8	109,266
Washington	2.4	32,443
Wood	6.9	77,814
Total	493.9	5,356,523
Ohio	584.7	6,663,005

The EPA's proposed range of 65-70 ppb for a new federal ozone NAAQS would have a profound impact on Ohio. Thirty-four counties, located throughout the state, may violate the dramatically tighter ozone standard and be thrown into nonattainment by the EPA. As noted in section 3.0, the stringency of the standard raises the specter of long-term or indefinite nonattainment status for these counties, which would impose serious restrictions on future economic growth.

An economic analysis conducted by CRS and completed by the economics division

of FTI Consulting, Inc. – a global research, technology and business advisory firm – finds the vast majority of Ohio's economy, population, and workforce could be caught in the net of ozone nonattainment under the EPA's proposed range. It is important to

note that FTI's analysis only considered the 34 Ohio counties that have air quality monitors in place. Therefore, FTI's analysis is more conservative than **others** that have interpolated this data to the state's non-monitored counties. The 34 impacted counties represent 84 percent of the state's GDP, 80 percent of the state's workforce, and 77 percent of the state's population. Of the 34 monitored counties listed, 11 would be newly in nonattainment and 19 would go from **"marginal nonattainment"** (not sanctioned by the EPA) to "nonattainment" and be far more likely face economic penalties.

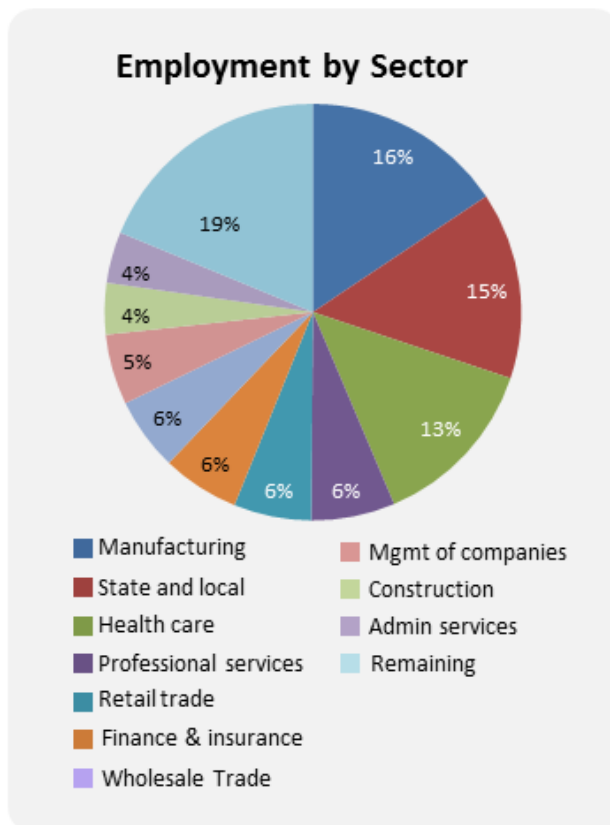
Taken together, the EPA's proposal threatens to limit the growth of some of Ohio's biggest and most promising economic sectors. The 34 impacted counties support jobs in healthcare, manufacturing, construction, professional services, energy, power generation, and transportation. All these sectors face direct regulatory impacts under ozone nonattainment, or the indirect effects of restricted economic growth and higher energy costs. For example, the state's power plants will face the dual challenge of more expensive inputs (as this rule will confer costs on energy production) and expenses associated with its own compliance (ie. the purchase of selective catalytic reduction to control NOx). The end result of this "tax" on industry is higher residential and industrial energy costs. By negatively impacting such a fundamental part of Ohio's economy, the EPA is ensuring that the damage to the state's economy will be as pervasive as it is severe. In fact, an **analysis** commissioned by NAM predicts Ohio may lose almost 23,000 jobs per year and \$23 billion in economic activity by 2040 – all because of this single mandate.

Ohio's manufacturers will be especially hard hit by the new ozone regulation. The manufacturing sector employs 16 percent of Ohio's workforce, making it the largest sector by employment in the entire state. As simply put by State Representative Jack Cera (D), **Ohio** is "a manufacturing powerhouse." However, manufacturing is only beginning to make its comeback following the recession. Limiting its growth now will damage Ohio's economy for years to come. The Mayor of Lima, Ohio expressed his concerns on this very topic, **writing** that increasing the ozone standards would "cause manufacturing

"Parts of our nation's Midwest have not yet recovered from the recession and our substantial losses of manufacturing jobs. Income stagnation prevails and Lima's median household income at roughly \$28,000 per annum remains substantially below the Ohio and national levels. We cannot afford to lose ground!"

David Berger, Mayor of Lima, Ohio

June 2015 **Letter** to the White House



job losses and the loss of city, state and federal revenues.”

Ohio’s construction industry would be another casualty of this regulation, because counties designated as being in “nonattainment” may be forced to institute construction bans. Similar to the proposed rule’s impact on manufacturing, this will result in job loss, decreased state GDP, delayed/stalled completion of critical infrastructure projects, and complications in the delivery of important public services.

The Parkersburg-Marietta Building and Construction Trades Council, which represents thousands of unionized construction professionals in Ohio, echoed the AGC’s concerns in a recent letter to the White House, stating that

“environmental benefits of setting this standard are negligible, but the economic damage to the construction industry would be extensive.”

The construction industry is also **vulnerable** to the threat this new standard poses to federal highway funding. This is because areas classified as being in nonattainment are subject to “**transportation conformity**,” which is a thorough analysis conducted by

“There are significant adverse consequences in a state that has areas designated as nonattainment. Businesses and industries would incur increased costs, permitting delays and restrictions on expansion, forcing them to either impose higher prices on their customers or relocate out of the nonattainment area, taking much-needed revenue from the state. In the case of construction, equipment owners may face restrictions on the use and/or operation of their off-road diesels.”

The Associated General Contractors of America (AGC)

March 2015 **Letter** to the EPA

“The environmental benefits of setting this standard are negligible, but the economic damage to the construction industry would be extensive ... I am concerned that the EPA is trying to find a solution to a problem that does not exist. The one-sized fits all regulation of ground-level ozone will put much of our members into nonattainment, which would cause our region great financial hardship.”

**Parkersburg-Marietta Building
and Construction Trades
Council, AFL-CIO**

June 2015 Letter to the White House

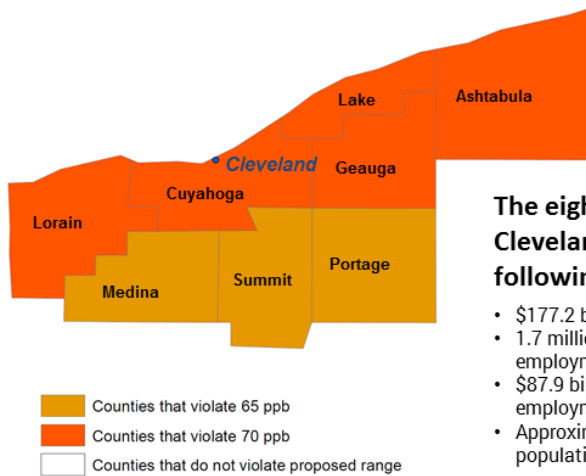
multiple agencies at the local, state, and federal level, to ensure transportation projects do not affect the area’s ability to regain or maintain attainment.

Furthermore, in nonattainment areas transportation projects can proceed only if it can be demonstrated that they will not result in increased emissions. An interruption in federal highway funding would not only impact the jobs in the construction sector, but also cause significant delays in critical infrastructure projects.

The economic threat posed by the EPA’s new ozone standard is not uniform across the state; it would be more significant in areas where there is more industry. This means that it would cause greater problems in the counties that account for a greater proportion of Ohio’s GDP, like the Cleveland and Cincinnati metro areas.

5.2 Cleveland Metro Area

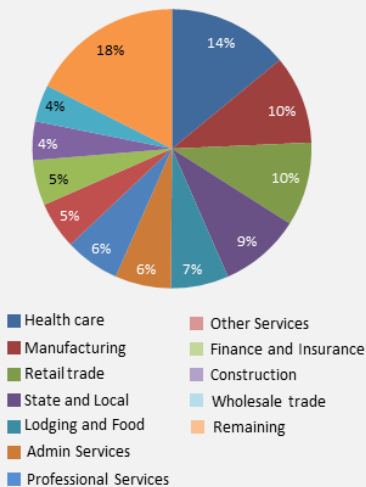
THE CLEVELAND METRO AREA ENCOMPASSES COUNTIES THAT ACCOUNT FOR 25 PERCENT OF THE STATE'S POPULATION. EIGHT OF THOSE COUNTIES WOULD BE IN NONATTAINMENT AT 65 PPB



The eight counties surrounding Cleveland represent the following:

- \$177.2 billion, or 30% of the state's GDP
- 1.7 million, or 26% of the state's employment
- \$87.9 billion, or 28% of total employment compensation in the state
- Approximately 25% of the state's population

Employment by Sector



Cleveland Metro Counties	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Ashtabula	6.1	45,492
Cuyahoga	77.9	903,449
Gauga	5.8	51,887
Lake	14.2	119,412
Lorain	18.8	127,309
Medina	10.9	84,463
Portage	10.0	76,326
Summit	33.5	331,215
Total	177.2	1,739,553
Ohio	584.7	6,663,005

Under the proposed range for the EPA's new ozone NAAQS, an eight county region stretching from Ashtabula County to Lorain County would be classified in nonattainment. This heavily populated corridor surrounding Cleveland is home to a diverse array of industries and businesses that would suffer direct and indirect impacts from ozone-related restrictions on economic growth. They include manufacturers, health care workers, state and local government employees, and a variety of service providers. The eight counties that surround Cleveland account for 30 percent (\$177.2 billion) of state GDP and nearly 30 percent of the state's workforce (1.7 million individuals). Putting such a critical region at risk is not only bad for the Cleveland metro area but for Ohio as a whole.

Many of the counties in the Cleveland area are still struggling with high unemployment. Ashtabula, Cuyahoga, and Lorain Counties all have unemployment rates that are at least a full percentage point higher than the federal unemployment rate (7.0, 6.4, and 6.6 percent respectively). The economic burdens from this regulation will hit the hardest in Ashtabula and Lorain Counties where the manufacturing sector represents the largest sector of their economies (15 and 14 percent, respectively). These regulations will ensure that those unemployed Ohioans will have a much harder time finding work, and they will be joined by those who are newly laid off from the manufacturing, construction, and energy sectors.

Even more alarming is that five of the eight Cleveland-area counties suffer from high levels of poverty, ranging from 14.6 to 19.2 percent. Not only will the people in these communities struggle to find work sufficient to pull themselves out of poverty, but as businesses and utilities face greater compliance costs, those costs will be transferred to consumers, hitting the impoverished the hardest. Those living in poverty spend the highest percentage of their income on **basic necessities**, like food, housing, transportation, and electricity, which makes it more difficult for them to absorb utility rate increases. These families may be forced to choose between putting food on the table and keeping the lights on.

U.S. Representative Jim Renacci (R-OH), who represents parts of Lorain, Medina, Cuyahoga, Summit, and Portage Counties, **predicts** that this regulation will lead to high utility costs, which will have the harshest impact on poorer Ohioans. "Significant portions of the country, including Ohio, are still struggling to meet the EPA's 2008 guidelines, so moving the goalposts now will only lead to more uncertainty and higher compliance costs, which will ultimately be passed onto the consumer," Renacci said recently.

"The numbers show that Ohio's economy is fragile. In so many sectors of the state's economy, there is a strong sense that the EPA's proposed ozone standards will reduce hiring, cause layoffs, raise prices, and bring growth to a halt."

Ohio State Representative Martin Sweeney (D-Cleveland)

June 2015 **Letter** to the White House

“Significant portions of the country, including Ohio, are still struggling to meet the EPA’s 2008 guidelines, so moving the goalposts now will only lead to more uncertainty and higher compliance costs, which will ultimately be passed onto the consumer.”

**U.S. Representative
Jim Renacci (R-OH)**

November 2014

This region has already improved its ozone levels by pursuing a variety of efforts. For example, the EPA already requires that seven of these eight counties participate in the E✓Check program, which requires vehicle owners to test their vehicles every two years for VOC levels. All of the relatively non-invasive measures (like the E✓Check program) have already been undertaken in Cleveland, and in pursuit of attainment, Ohio will have to apply methods that will curtail its economic growth.

5.3 Cincinnati Metro Area

FOUR COUNTIES IN THE CINCINNATI METRO AREA WOULD BE IN NONATTAINMENT AT 65 PPB

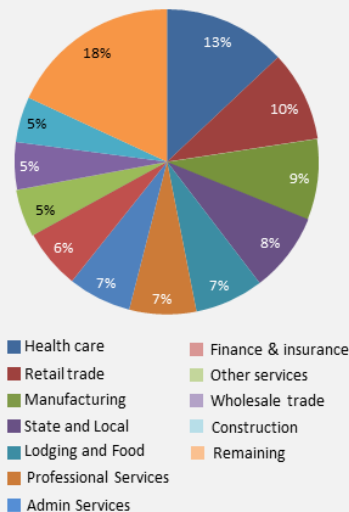


The four counties surrounding Cincinnati represent the following:

- \$92.8 billion, or 16% of the state's GDP
- 993,000 jobs, or almost 15% of the state's employment
- \$54.3 billion, or 17% of total employment compensation in the state
- Approximately 14% of the state's population

- Counties that violate 65 ppb
- Counties that violate 70 ppb
- Counties that do not violate proposed range

Employment by Sector



Cincinnati Collar Counties	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Butler	21.7	188,335
Clermont	11.7	86,507
Hamilton	46.7	608,746
Warren	12.8	109,226
Total	92.8	992,854
Ohio	584.7	6,663,005

In the Cincinnati metro area the entirety of Butler, Clermont, Hamilton, and Warren counties would be thrust into nonattainment. This region generates \$92.8 billion or 16 percent of Ohio's GDP and employs almost 15 percent of its workforce.

The new ozone standard would be punishing counties that, like Hamilton County, have substantially **decreased** their ozone levels, and would continue to see improvements as the 2008 standard is enforced.

The Cincinnati USA Regional Chamber addressed a **letter** to the EPA noting the

significant impact this ozone standard will have on the Cincinnati metro area, stating: "Lowering the ozone standard before completing implementation of the existing 2008 standard will result in most of the United States, including southwest Ohio and northern Kentucky, becoming nonattainment for the new 65-70 ppb standard. This will result in massive costs imposed on businesses in the Cincinnati area that have been working diligently to meet the 2008 ozone standard."

The letter went on to advise that the EPA, “not lower the 2008 ozone NAAQS standard. Instead, EPA should allow sufficient time (to at least 2020) for the current 2008 ozone guidance issued on February 13, 2015 to be implemented, and for the benefits of the final 2008 ozone standard to be realized before recommending a lowering of a standard that may never be necessary.” The Cincinnati USA Regional Chamber sent this letter in the interest of its nearly 4,000 local member businesses.

Because of impacts like these, Ohioans are highly skeptical about this unnecessary and costly intrusion by the EPA into state and local affairs. As the next section explores in detail, a statewide public opinion poll commissioned by NAM found that 65 percent of Ohio voters rate their local air quality as “Excellent” or “Good.” Ohioans believe the bigger problem for their local area is “less economic growth and job opportunities cause by regulations” (73 percent) rather than “lower air quality caused by pollution” (16 percent).

“[This regulation] will result in massive costs imposed on businesses in the Cincinnati area that have been working diligently to meet the 2008 ozone standard.”

**The Cincinnati USA
Regional Chamber**

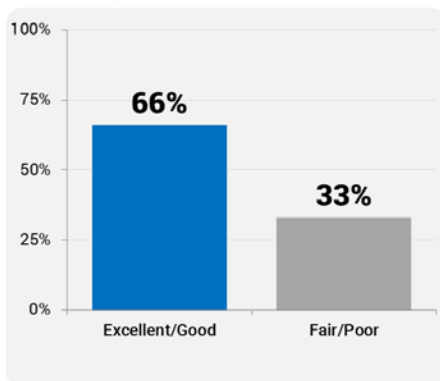
March 2015 **comments** on proposed standards

5.4 Ohioans Like Their Air Better Than They Like Their Economy – Fear Over-Regulation

A recent survey commissioned by NAM finds that voters in Ohio overwhelmingly have a high opinion of the quality and cleanliness of their local air. According to the survey, nearly two-thirds (65 percent) of Ohio voters rate their local air quality as “Excellent” or “Good.” Just over a quarter (28 percent) rate their local air quality as “Fair,” and only six percent say their local air quality is “poor.” Even a large majority (66 percent) of those living in counties deemed to be in nonattainment with the 2008 standard of 75 ppb gave positive ratings to their local air quality, with only five percent of voters in those counties considering their local air quality to be “Poor.”

OHIO OPINION POLL

How would you rate the air quality in your local area (among counties in non-attainment)?



Source: NAM Ohio opinion poll, August 2015

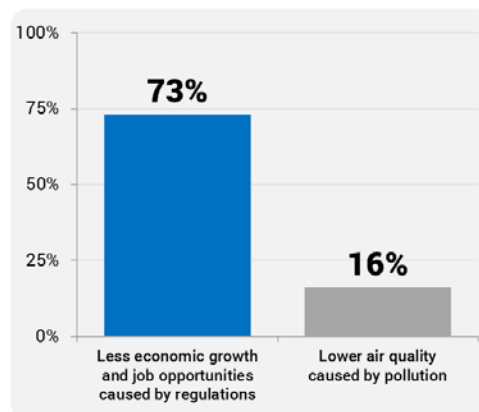
Majorities in every area of the state rate their local air quality positively, especially in the Northeast and Central regions (71 percent and 67 percent, respectively). This is particularly significant because, as discussed in section 5.2, eight counties in Northeastern Ohio would be plunged further into nonattainment under the EPA’s proposal – not because of any change in the underlying air quality conditions, but because Washington officials simply chose to move the goalposts.

By a wide margin, Ohioans think the bigger problem for their local area is “less economic growth and job opportunities caused by

Spelling trouble for the proposed rule, most Ohio voters (55 percent) oppose any additional environmental regulations on businesses, believing these would have negative impacts on the economy through higher taxes (78 percent), higher prices (80 percent), and making it harder to start or grow businesses (69 percent). Moreover, few (34 percent) believe that stricter regulations would have a meaningful impact on air quality. Additionally, Ohioans have very little tolerance for changes in lifestyle or the economic repercussions that could be imposed by stricter air quality regulations, like the EPA’s proposed ozone standard.

OHIO OPINION POLL

What do you see as the bigger problem for your local area?



Source: NAM Ohio opinion poll, August 2015

regulations” (73 percent) rather than “lower air quality caused by pollution” (16 percent). This survey also showed that Ohioans are anxious about their economic performance and have little confidence in the Obama administration’s economic policies (46 percent think these policies are having a negative effect). Less than half of Ohioans (42 percent) rate their local economy as “Excellent” or “Good,” with 41 percent rating it as “Fair,” and 17 percent rating it as poor. This rating is on par with a national poll commissioned by NAM in June 2015, which found that 45 percent of Americans rate their local economy as “Excellent” or “Good.”

“The new proposed ozone standard ... will cripple employment as a whole. Unemployment will sky rocket, which sky rockets criminal acts by those who need money to meet every day needs. Leave the regulations alone.”

Jackie Midelmus
HR Generalists, Zanesville, Ohio

August 2015 interview with CRS

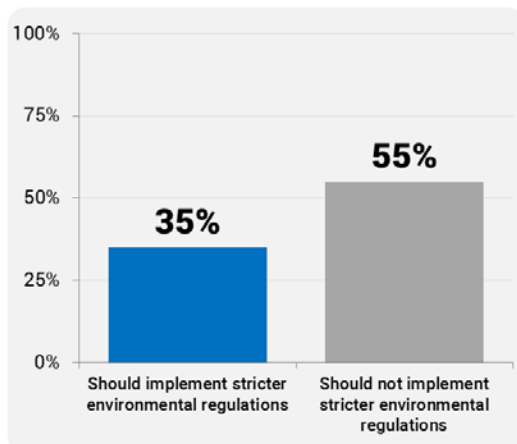
Ohioans are largely optimistic about the direction their state is headed with almost three-in-five (57 percent) saying Ohio is headed in the right direction, while 24 percent think it is going down the wrong track. Nationally the numbers are reversed: 28 percent think the country is headed in the right direction, 59 percent say the country is seriously on the wrong track, and 13 percent are unsure or say it is static.

This may change if the EPA moves forward with lower standards, as Ohioans oppose stricter environmental regulations on businesses in their area and they overwhelmingly believe that new air quality regulations would have adverse local economic effects with only modest improvements in air quality. Fewer than two-in-five (35 percent) think that the federal government should implement stricter environmental regulations on businesses operating in their local area.

For this reason, a strong majority of Ohioans are unwilling to see their quality of life suffer or the economy take a hit because of stricter federal air quality regulations. Just 25 percent said they would accept less economic growth and

OHIO OPINION POLL

Should the federal government implement stricter environmental regulations on businesses operating in your local area?



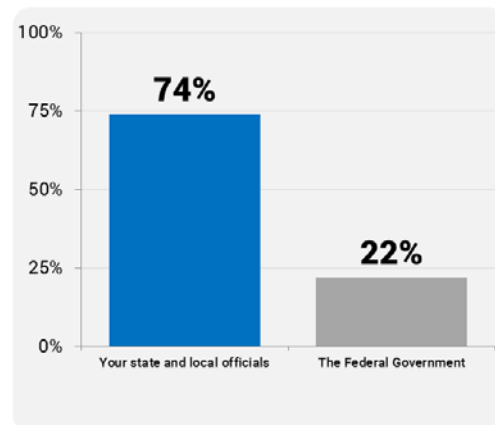
Source: NAM Ohio opinion poll, August 2015

job opportunities in their area in order to comply with stricter federal air quality regulations. After decades of road demands outpacing investments in road capacity, Ohioans still have patience for environmental reviews of transportation projects – but their patience is wearing thin. Only 33 percent said they would tolerate more traffic delays and longer commute times for the sake of stricter air quality regulations. That is especially true when it comes to regulations coming out of Washington, such as the EPA's proposed new ozone standard. Ohioans clearly favor state and local regulations over federal mandates. Slightly more than one-in-five Ohio voters (22 percent) think the federal government should have more of a say over air quality regulations in their local area. Most prefer that these decisions be handled by state and local officials (74 percent).

What is clear from this survey is that Ohioans like their air, but are not pleased with their local economy and fear that regulations from Washington will only make things worse. Given the origins of the EPA's ozone proposal in Washington, its economically destructive impacts, and the powerful control it will give the federal government over decisions usually left to state and local officials, these polling numbers should give pause to the agency and its supporters. At the same time, the results of this survey clearly show why public officials from both major political parties, impacted businesses, and others in Ohio are speaking out against the EPA's ozone agenda.

OHIO OPINION POLL

Who do you think should have more of a say when it comes to air quality regulations in your local area?



Source: NAM Ohio opinion poll, August 2015

6.0 OHIOANS ARE NOT ALONE – OPPOSITION TO THE EPA’S OZONE RULES COMES FROM ACROSS THE U.S.

Due to the impacts described in this report, a wide array of stakeholders have been outspoken in their opposition to the EPA’s proposed ozone standard. Prominent state and local officials, state regulators, organized labor groups, and business chambers have written to the EPA asking it to keep the 75 ppb standard. These letters express the same concerns: the proposed standard will hurt the economy, take away jobs, worsen traffic congestion, and will be implemented before the current standard has been given the proper amount of time to take effect.

State and Local Officials and Regulators

State and local officials do not want their communities to face the economic penalties associated with this regulation, nor do they want the industries that contribute significantly to state GDP to be uprooted. In 2011, Ohio’s own John Kasich articulated his resistance to the first iteration of this proposal. His concern centered around the high cost this regulation would have on Ohio’s businesses and transportation sector.

“EPA’s proposed new standard for ozone could triple the current number of counties facing ‘nonattainment’ status, resulting in higher operating costs for businesses, greater restrictions on investment in critical infrastructure, and lower funding levels for transportation initiatives. In fact, the lower range of the ozone standard that EPA has proposed is so stringent that all 34 monitors in the state, including those used for background data in rural Ohio would violate the standard.”

Ohio Governor John Kasich

July 2011 letter to the EPA

Governor Kasich went on to note that the new standards, far from improving public health, would actually have a “direct negative impact on health if individuals lose their jobs and healthcare benefits.”

In fact, the Ohio Environmental Protection Agency, an agency created with the specific mandate to protect the environment and public health through environmental stewardship, also came out **against** an ozone standard revision when it was reintroduced this year, noting the severe impact it would have on industry.

“Nonattainment designations have a crippling impact on industrial and manufacturing growth. Expansion plans are postponed and new businesses look elsewhere due to the extra hurdles and burdens required of companies in nonattainment areas.”

**Ohio Environmental
Protection Agency**

March 2015 **letter to the EPA**

The proposed regulation would not only cause significant harm in Ohio, but throughout the country. In a recent study, **NAM** estimated that the overall cost of the proposed new ozone NAAQS at \$140 billion a year, making it **“the most expensive regulation ever”** in U.S. history. The **Association of Air Pollution Control Agencies** conducted a survey which showed that most state-level air quality regulators are worried about the EPA moving the ozone NAAQS closer to background levels. This extensive report includes comments submitted to the EPA from the **Florida Department of Environmental Protection**, the **Louisiana Department of Environmental Quality**, the **Mississippi Department of Environmental Quality**, the **Nevada Division of Environmental Protection**, the **South Carolina Department of Health and Environmental Control**, the **Tennessee Department of Environment and Conservation**, the **West Virginia Department of Environmental Protection**, the **Georgia Environmental Protection**

Due to these concerns State Representative Sean O’Brien (D-Bazetta), a ranking member on the Energy & Natural Resources Committee, has joined other state leaders in asking the EPA to reconsider the lower standard. In an interview with CRS, he described his concerns as centering around an increase in energy costs for both Ohio residents and industry – a burden that will either be passed on to consumers or push businesses out of Ohio.

“Ohio businesses and consumers are struggling with high energy bills which would significantly increase if these changes were implemented. Moreover, recent extreme global weather patterns underscore the need in Ohio for abundant, reliable, and efficient sources of energy. The move toward renewable energy must be made, but the EPA’s new regulations are far too much too soon.”

**Ohio State Representative Sean
O’Brien (D-Bazetta),**

Ranking Member on the Energy & Natural Resources
Committee, August 2015 interview with CRS

Division, and many more, all voicing their concern over the proposed regulation. These state regulatory agencies are joined by the **United States Conference of Mayors**, the **National League of Cities**, the **National Association of Counties**, and the **National Association of Regional Councils**, which submitted a joint **letter** to the EPA rejecting the more stringent ozone measures due to the delayed implementation of the 2008 measures.

“Our organizations, which collectively represent the nation’s 19,000 cities and mayors, 3,069 counties, and more than 500 regional councils...urge the EPA to delay issuing a new NAAQS for ozone until the 2008 ozone standard is fully implemented.”

United States Conference of Mayors, the National League of Cities, the National Association of Counties, and the National Association of Regional Councils

Letter to EPA Administrator McCarthy,
March 2015

Likewise, the **National Association of State Departments of Agriculture** wrote to the EPA in March 2015, objecting to the energy-price consequences of the proposed rule. Among other effects, the rule would increase “input costs, such as for fuel or fertilizer...impacting the economic vitality of rural communities.” Furthermore, farmers could be hit with “costly upgrades on equipment such as engines for irrigation systems in order to comply with restrictions resulting from an increase in nonattainment areas.”

As noted above, this regulation portends problems for the transportation sector. **The American Association of State Highway and**

Transportation Officials and the **Association of Metropolitan Planning Organizations** fleshed out the severity of this impact in their March 2015 joint **letter** to the EPA. Their letter emphasized that although they “support the need to protect public health,” the “transportation conformity process will impose a difficult—if not impossible task in places where background levels are so high that there is little that can be done through transportation planning to reduce ambient ozone.” Put simply, the proposed standard is not only economically costly, it may also be impossible to attain.

Labor

Organized labor has also joined state and local officials in opposing this proposed regulation. Opposition comes from the **Unions for Jobs and Environmental Progress (UJEP)**, a coalition of labor organizations representing 3.2 million workers in electric power, rail transportation, coal mining, construction, and other industries. They agree

that the EPA's ozone plan would "threaten jobs across most energy-related sectors, including electric utility generation," particularly due to projected plant closures associated with the proposed standard.

"UJEP members estimate that some 51,000 direct jobs in mining, coal transportation, and electric generation are at risk due to this projected level of closures under the Clean Power Plan. A comparable number of direct jobs are at risk in this rulemaking."

Unions for Jobs and Environmental Progress (UJEP)

March 2015 **letter** to the EPA

The **International Brotherhood of Boilermakers**, a union representing workers in industrial construction, repair, and maintenance; manufacturing; shipbuilding and marine repair; railroads; mining and quarrying; cement kilns; and related industries, echoes this sentiment in its letter to the EPA, writing, "states and industry need a reasonable period of time to fully implement the existing standard before attempting to achieve an even more ambitious standard like the one the EPA proposes to adopt."

The Laborers' International Union of North America (LIUNA) **concurs** with this assessment, adding that the construction and related manufacturing businesses that will be most affected by the requirements "are also among the best providers of good-paying jobs for Americans. We cannot continue to layer environmental regulation upon environmental regulation without considering the impact it will have on our economy and our workers." The concern for the construction industry is voiced locally by the Executive Director of the Affiliated Construction Trades Ohio Foundation ("ACT Ohio"), who explained the union's position and frustration with the proposed standard in a conversation with the Center for Regulatory Solutions.

The United Association of Plumbers, Pipefitters and HVAC Technicians Local Union 396 of the Mahoning Valley and the Tri-State Building Trades Unions are two other Ohio groups that have also shared their concerns with CRS. Mr. Butch Taylor, a local business manager and member of the 396 union, detailed the continued effort to comply with the existing standards and how difficult it would be to comply with the 65-70 ppb range.

Mr. Mark Johnson, Business Manager at the Tri-State Building Trades Unions, echoes Taylor's concerns: "The overall impact of these far reaching regulations will result in lower economic growth, more job losses and an even lower standard of living to the Appalachian communities of the three state region that we represent," he said in an interview with CRS. Together these organizations represent millions of jobs in a variety of industries that could be impacted by this regulation directly or indirectly.

"In recent years, ozone emissions have dramatically decreased in Ohio, to the benefit of all our residents. However, ACT Ohio vehemently opposes any efforts to halt federal funding for Ohio's highway, transit or infrastructure development initiatives. On behalf of our 92,000 members, and their families, ACT Ohio urges regulators to balance compliance standard with economic development, job creation and retention."

**Affiliated Construction Trades (ACT)
Ohio**

August 2015 interview with CRS

"EPA's proposal for energy is important for future generations. However, these new regulations are moving too far, too fast, too soon. These regulations will prohibit our membership from making a living and our community will continue to experience heavy unemployment issues hindering economic growth."

Butch Taylor

Business Manager, Local Union 396,
Plumbers and Pipefitters, August 2015
interview with CRS

Business

The business community is also alarmed about the potential increase in the cost of doing business in the United States – a development that, as noted above, will force companies to cut domestic jobs.

The **U.S. Chamber of Commerce** and the **National Association of Manufacturers** are among those leading the charge against this damaging regulation. The Chamber has drawn particular attention to the impact of the proposed standard on **transportation systems** throughout the United States, with a special focus on the Nevada and D.C. area. In both locations the conclusion is the same: Conformity lapses (when transportation

projects are deemed to be inconsistent with the ozone standard) will become more frequent and “disruptive” under the stricter standard. The Chamber notes that these lapses, which effectively block permits and approvals for projects in the development stage, have occurred **70 times** already, including the extremely damaging case in Atlanta, Georgia where \$700 million in federal transportation funding was withheld over the course of two years.

“Now is not the time to hurt local economies with costly regulations when the United States is struggling to emerge from the recession and bring back the 2.1 million manufacturing jobs that were lost.”

Ohio Manufacturers’ Association
Letter to the White House.

The pressure this proposed rule would put on the transportation sector has generated serious concern from general contractors. **The Associated General Contractors of America**, which represents more than 26,000 firms in the construction industry, noted that construction will be effectively banned unless a proposed project “will not result in increased emissions.” These construction bans will “delay the renovation and

improvement of public infrastructure, including highway and transit construction projects, and bridge construction repairs.”

The National Association of Manufacturers commissioned a **study** conducted by National Economic Research Associates to assess exactly how damaging this regulation will be to the country. The study found that the regulation will cause the following economic harm:

- U.S. GDP will be reduced by \$140 billion per year and \$1.7 trillion from 2017-2040;
- There will be 1.4 million fewer job-equivalents per year on average through 2040; and
- The cost to the average U.S. household will be \$830 per year in the form of lost consumption.

Due to these startling findings, NAM warned that “the nation’s manufacturing comeback – driven largely by an advantage on energy – could be placed in jeopardy.” The Ohio Manufacturers’s Association joined 35 other manufacturers’ groups in a **letter** to the White House, adding, “Now is not the time to hurt local economies with

costly regulations when the United States is struggling to emerge from the recession and bring back the 2.1 million manufacturing jobs that were lost.”

In Ohio, the Ohio Chamber of Commerce, Eastern Ohio Development Alliance (EODA), and the Cincinnati USA Regional Chamber all oppose this regulation. Tracy Drake, President of EODA, a sixteen county non-profit organization, told the CRS that the new standards “will serve as an antidevelopment punishment” to Appalachia and would “push the region back into low income status.”

The Cincinnati USA Regional Chamber has been outspoken as well, **noting** that “the proposed standard would adversely affect virtually every sector of the economy. Moreover it would have a major adverse effect on the reliability of the energy sector, which has already been hit hard by costs to comply with numerous other regulations affecting coal-fired plants. The new ozone standard would hasten the retirement of many of those plants and further threaten energy reliability in our region.” Additionally, the Cincinnati region has several proposed critical infrastructure projects that would be challenged by this standard.

Such strong opposition from such a diverse group of stakeholders should signal to the EPA and the Obama Administration that this proposed rule would simply cause too much hardship for too many people. The wisdom of moving forward with this proposed standard needs to be considered critically, particularly in light of how potentially damaging it could be to the U.S. economy.

“Federally supported highway and transportation projects may be suspended at EPA’s discretion due to the inability of the area to meet the newly changed ozone standard. Thus, the new standard could threaten major transportation projects in the Cincinnati USA region such as the Brent Spence Bridge/ I-75 Corridor project, the Western Hills Viaduct and the interchange at Interstate 71 and Martin Luther King Drive.”

The Cincinnati USA Regional Chamber

March 2015 **letter** to the EPA .

7.0 CONCLUSION

Ohioans are clearly proud of their environment, their economy, and the overall direction of their state. The more they learn about Washington's ozone agenda and how it could impact their way of life, the more they oppose it. To date, the ozone issue has maintained a relatively low profile in Ohio, essentially hiding in plain sight behind the controversy generated by several other EPA regulatory proposals, including the Clean Power Plan.

Ohio has been, and always will be, a manufacturing powerhouse of the nation; a place where good people willing to work hard can find a job in a machinery plant or paving roads. And Ohio has come a long way towards improving its air quality by installing innovative technology in the energy and manufacturing sectors, supporting natural gas development, and reducing the emissions of the state's vehicles. Throughout this report we have highlighted the economic harm these proposed regulations could impose on Ohio, an area that has only recently regained its footing. This report also highlighted the concerns of over a hundred leaders, groups, and associations representing hundreds of thousands of people. They all agree that these regulations would impose severe economic penalties and result in little benefit to public health. Lt. Governor Mary Taylor summarizes it well, [writing](#):

"The State of Ohio has seen significant improvement in the quality of the air we breathe since enactment of the federal Clean Air Act. However, we believe and have instructed our agencies to adhere to the core principle that protection of the environment and economic progress are not mutually exclusive. When evaluating proposed regulations, we require our agencies to articulate the need for regulation, including any scientific analysis, as well as the economic impact in order to determine whether the purpose of the regulation justifies the impact. We believe that the current proposal to change the NAAQS would fail under this analysis due to both the economic impact and the lack of a scientific basis for reducing the standard below the current 75 ppb."

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APPENDIX A: OHIO-TESTIMONIALS

Butch Taylor, Business Manager, Local Union 396, Plumbers and Pipefitters: “EPA’s proposal for energy is important for future generations. However, these new regulations are moving too far, too fast, too soon. These regulations will prohibit our membership from making a living and our community will continue to experience heavy unemployment issues hindering economic growth.”

Christian R. Palich, President, Ohio Coal Association: “The Obama Administration continues to unleash an unprecedented assault on the middle class which will kill good Ohio jobs and destroy access to affordable energy. From the new carbon proposal to the proposed ozone regulations, the EPA refuses to concern itself with the fact that these rules will hurt consumers and provide no material environmental benefit. President Obama is willing to boost his radical environmental credentials on the backs of Ohio families and businesses who need affordable, reliable energy from coal to create jobs and keep the lights on.”

Cincinnati USA Regional Chamber: “[This regulation] will result in massive costs imposed on businesses in the Cincinnati area that have been working diligently to meet the 2008 ozone standard.”

Cory Noonan (R), Allen County Commissioner: “Manufacturing and agriculture production are the foundation of not only Allen County, but northwest Ohio. We are fortunate to have two major highways and a vibrant rail system running through Allen County, transporting millions of dollars of goods in and throughout the United States. As our economic development representatives meet with business leaders who call Allen County home, there is continued talk of growth and expansion. Increasingly stringent ozone standards proposed by the U.S. EPA could jeopardize our economic growth opportunities. As it is our goal to have clean air and clean water, I am encouraged that our own experts at the Ohio EPA have stated that, “Ohio EPA believes that a standard of .075 ppm (the current standard) is protective of human health and that sufficient evidence does not justify a lower standard.” The U.S. EPA must consider that arbitrarily adjusting the ozone standards below the scientifically supported .075 ppm will undoubtedly jeopardize business growth and job creation opportunities for Allen County and Ohio. “

David Berger, Mayor, City of Lima, OH: “Parts of our nation’s Midwest have not yet recovered from the recession and our substantial losses of manufacturing jobs. Income stagnation prevails and Lima’s median household income at roughly \$28,000 per annum remains substantially below the Ohio and national levels. We cannot afford to lose ground!”

Don Crane, President, Western Reserve Building Trades Council: “As president of the Western Reserve Building Trades Council, I represent nearly 6000 construction workers in Mahoning, Trumbull, and Columbiana counties. Highway construction makes up nearly 60% of the work these members perform. Under the Clean Air Act, EPA is authorized to withhold transportation funding for highway and transit projects in regions unable to demonstrate compliance with emissions rules. New restrictions that come from being out of compliance with federal ozone standards threaten the funding streams needed for new roads and projects to expand the capacity of existing corridors. Because Ohio and many other localities have already dramatically reduced ozone emissions, compliance with another new standard will be very difficult. In fact, EPA has acknowledged that, in order to comply with a 65 parts per billion standard, 40 percent of reductions must come from “unknown controls” that don’t currently exist. “

Jack Cera, State Representative (D-Belmont County): “Ohio has made tremendous strides in clean air technology and I believe we need to see the progress of this technology in action...It is my sincere hope that the federal government will strike a sensible balance that gives current technologies and practices a chance before embarking on new endeavors.”

Jackie Midelmus, HR Generalists, Zanesville, Ohio: “The new proposed ozone standard ... will cripple employment as a whole. Unemployment will sky rocket, which sky rockets criminal acts by those who need money to meet every day needs. **Leave the regulations alone.**”

Jeff Miller, Ken Miller Supply: “We care deeply about the environment in Ohio. Increasing Air Regulations will further slowdown Ohio Oil and Gas activity without providing air quality benefit. New regulations will diminish activity and investment and make it even more difficult to do business in Ohio.”

Jim Renacci, U.S. Representative (R-OH): “Significant portions of the country, including Ohio, are still struggling to meet the EPA’s 2008 guidelines, so moving the goalposts now will only lead to more uncertainty and higher compliance costs, which will ultimately be passed onto the consumer.”

John Kasich, Ohio Governor: “I understand the health benefits associated with meeting the ambient air quality standards; however, the increased compliance costs will also have a direct negative impact on health if individuals lose their jobs and health care benefits. EPA’s own study shows that its proposed new national standard could impose \$90 billion annually in additional operating costs for manufacturers, farmers, and other service providers, potentially costing thousands of jobs. People are at risk of losing their health care and other employment benefits for their families

which also has serious health consequences. Our communities are also at risk of losing local tax revenue to fund schools, police and fire departments, and other essential services if the expected job losses from this reconsideration are accurate.”

Mark Johnson, Business Manager, Tri-State Building Trades Unions: “The overall impact of these far reaching regulations will result in lower economic growth, more job losses and an even lower standard of living to the Appalachian communities of the three state region that we represent.”

Mark Shambaugh, Citizen, Cambridge, Ohio: “I am employed today because of the oil and gas development in SE Ohio. I was born and raised in SE Ohio and spent half of my life working here. I will probably die here if I can finish my working career here. This ozone regulation will strangle business that my employer serves and I will be out of work, out of a home, out of Ohio. The ozone plan is still a bad ideal. Bad for Ohio and bad for our country.”

Martin Sweeney, State Representative (D-Cleveland): “The numbers show that Ohio’s economy is fragile. In so many sectors of the state’s economy, there is a strong sense that the EPA’s proposed ozone standards will reduce hiring, cause layoffs, raise prices, and bring growth to a halt.”

Mary Taylor, Ohio Lt. Governor: “Ohio is in the process of implementing dozens of massive new regulations put in place by your agency over the past several years: regulations like the Mercury and Air Toxics Standards, the Boiler MACT, fuel economy standards for cars and trucks, regional haze rules, the Cross-State Air Pollution Rule, Tier 3 tailpipe emissions standards, and of course the Clean Power Plan. Taken together, these regulations impose billions of dollars in new costs. They will also drive major reductions in the emissions that cause ozone, making a new NAAQS even less necessary.”

Matthew A. Szollosi, Executive Director ACT Ohio: “The Affiliated Construction Trades Ohio Foundation (“ACT Ohio”) was created by the Ohio State Building & Construction Trades Council to facilitate industrial development and promote industry best practices for Ohio’s public works and private construction. In recent years, ozone emissions have dramatically decreased in Ohio, to the benefit of all our residents. However, ACT Ohio vehemently opposes any efforts to halt federal funding for Ohio’s highway, transit or infrastructure development initiatives. On behalf of our 92,000 members, and their families, ACT Ohio urges regulators to balance compliance standards with economic development, job creation and retention.”

Mike DeWine, Ohio Attorney General: “Even were the supporting documentation cited by U.S. EPA to be accepted wholly at face value, it would not support the proposed levels.”

Ohio Environmental Protection Agency: “Nonattainment designations have a crippling impact on industrial and manufacturing growth. Expansion plans are postponed and new businesses look elsewhere due to the extra hurdles and burdens required of companies in nonattainment areas.”

Parkersburg-Marietta Building and Construction Trades Council, AFL-CIO: “The environmental benefits of setting this standard are negligible, but the economic damage to the construction industry would be extensive ... I am concerned that the EPA is trying to find a solution to a problem that does not exist. The one-sized fits all regulations of ground-level ozone will put much of our members into nonattainment, which would cause our region great financial hardship.”

Rich Blankenship (R), Mayor, City of Ironton, Ohio “As Mayor of a small town in southern Ohio for the past seven years I have dealt with the impact of the EPA’s unfunded mandates which has only caused hardship on our citizens. It is difficult enough to attract new businesses in our area and with these new regulations it will only make it more difficult. I understand the reason for environmental protection but it appears that the EPA continues to develop new standards which further hinder our ability to move forward and create jobs.”

Robert Latta, U.S. Representative (R-OH): “EPA data indicates that the air is cleaner today than it has been in thirty years, progress due in large part to control measures associated with past NAAQS standards. This success shows that ozone NAAQS when given an opportunity to be fully implemented produce significant reductions...Moreover, EPA acknowledges that there are alternative views on health effects evidence and risk information. Due to all these uncertainties, allowing the current standard to take full effect would alleviate any perceived concerns with measured scientific data and allow EPA time to further consider those uncertainties while still protecting air quality.”

Ron Feathers – Washington County Commissioner: “The EPA is preparing to lower the permissible ozone standard in the air from the current 75 billion parts per billion (ppb) down to 65 ppb or less. At 65, the proposed new standard would be impossible for Washington County to meet, as Washington County currently has an ozone level of 69 ppm one of the lowest in the State. Noncompliance would mean Washington County manufacturers would not be able to expand without a reduction of emissions. Plans for new plants and expansion at existing plants will be stopped. Federal highway funds

could cease and job creation and economic growth could grind to a halt and energy cost would skyrocket.”

Sean O’Brien, State Representative (D-Bazetta) and Ranking Member on the Energy & Natural Resources Committee: “As a proponent of clean energy, I understand the EPA’s proposals for air quality standards control are important for future generations. However, now is not the time for such sweeping and stringent policy changes. Ohio businesses and consumers are struggling with high energy bills which would significantly increase if these changes are implemented. Moreover, recent extreme global weather patterns underscore the need in Ohio for abundant, reliable, and efficient sources of energy. The move toward renewable energy must be made, but the EPA’s new regulations are far too much too soon.”

The Affiliated Construction Trades Ohio Foundation (ACT Ohio) “In recent years, ozone emissions have dramatically decreased in Ohio, to the benefit of all our residents. However, ACT Ohio vehemently opposes any efforts to halt federal funding for Ohio’s highway, transit or infrastructure development initiatives. On behalf of our 92,000 members, and their families, ACT Ohio urges regulators to balance compliance standard with economic development, job creation and retention.”

Tracy V. Drake, President, Eastern Ohio Development Alliance: “The Eastern Ohio Development Alliance (“EODA”) is a sixteen county non-profit organization located in southeastern Ohio dedicated to promoting economic development in our region. Our constituent members are committed to environmental stewardship. After the great strides we have made in the region on improving air quality, the proposed new EPA standards will serve as an antidevelopment punishment. We have worked hard to bring manufacturing and energy industry jobs to Appalachia. By moving the goal posts on ozone, we are afraid that the EPA’s plan will chase away such jobs, stifle future development and push the region back to low income status. We support the Ohio EPA’s comments to the U.S. EPA and concur that the burden of non-attainment “has a crippling impact on industrial and manufacturing growth.”

APPENDIX B: OHIO NONATTAINMENT ECONOMIC IMPACT BY COUNTY

(See following page)

Executive Summary

Scope of Analysis: Evaluated the economies of 34 Ohio counties that would be considered in non-attainment if the EPA proposed standard of 65 ppb were in effect today.

Economic Findings:

- The 34 counties represent 84% of the state's GDP, 80% of its employment, and 77% of its population.
- The eight counties in the Cleveland metro area account for 30% of the state's GDP, 26% of its employment, and 28% of the state's population.
- Manufacturing is very important to these 34 counties, representing 476,000 jobs, or 9% of total employment.

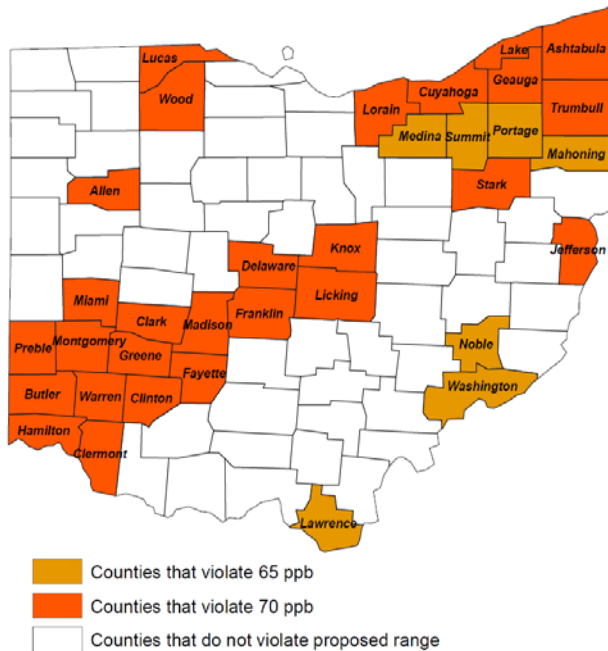
Ozone Findings:

- In several counties, the large majority of NOx emissions are caused by the transportation sector.
- Several coal-fired power plants across the state have recently shut down due to EPA regulations.
- The EPA already requires seven counties around Cleveland participate in the E-Check program. This program ensures that vehicle owners have their vehicles tested every two years to determine volatile organic compound (VOC) levels.

Options for Reducing Ozone:

- 11 of the 34 counties have fossil fuel power generators that would require expensive selective catalytic reduction to control NOx.
- 23 of the 34 counties account for 29% of the state's oil production and 17% of the state's gas production in 2014; significant emission controls would need to be installed to reduce ozone precursors.
- The state's four refinery complexes in three of the impacted counties (Allen, Lucas and Stark) would likely need additional emission controls beyond what might already exist.
- The transportation sector represents two-thirds of NOx emissions; EPA modeling does not show whether reductions in fossil fuel power generation, oil and gas operations, and refinery operations would be sufficient to reduce ozone levels.

Thirty-four counties in Ohio would be in non-attainment if EPA lowers Ozone NAAQS to 65ppb. Together these counties represent 84% of the state's GDP.



Non-Attainment Counties*	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Allen	6.2	64,385
Ashtabula	6.1	45,492
Butler	21.7	188,335
Clark	6.6	64,164
Clermont	11.7	86,507
Clinton	1.6	21,006
Cuyahoga	77.9	903,449
Delaware	11.4	128,152
Fayette	1.0	16,765
Franklin	74.3	882,855
Geauga	5.8	51,887
Greene	8.0	99,123
Hamilton	46.7	608,746
Jefferson	2.1	27,517
Knox	2.1	29,875
Lake	14.2	119,412
Lawrence	2.4	18,405
Licking	10.2	72,580

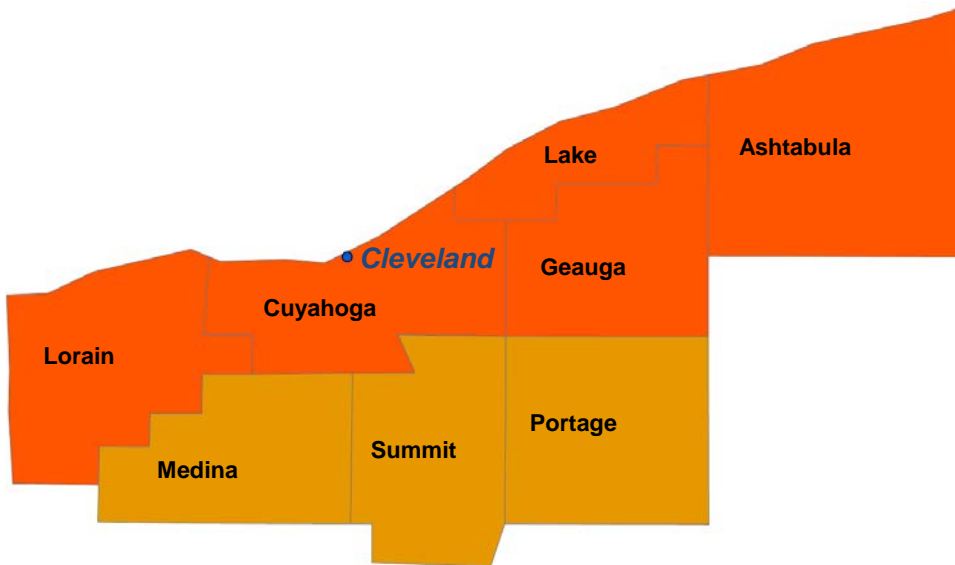
Non-Attainment Counties*	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Lorain	18.8	127,309
Lucas	23.2	258,612
Madison	2.6	20,645
Mahoning	8.2	131,266
Medina	10.9	84,463
Miami	5.0	52,686
Montgomery	25.9	304,599
Noble	0.4	5,272
Portage	10.0	76,326
Preble	0.9	14,957
Stark	15.2	209,281
Summit	33.5	331,215
Trumbull	7.2	91,714
Warren	12.8	109,266
Washington	2.4	32,443
Wood	6.9	77,814
Total	493.9	5,356,523
Ohio	584.7	6,663,005

The 34 counties represent the following:

- \$493.9 billion or 84% of the state's GDP
- 5.3 million or 80% of the state's employment
- \$268.5 billion or 84% of total employment compensation in the state
- Approximately 77% of the state's population

* Based on EPA analysis of 2011-2013 ozone data, accessed at <http://www.epa.gov/groundlevelozone/pdfs/20141126-20112013datatable.pdf>

The eight Cleveland metro area counties – Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit – would all be in non-attainment at 65 ppb; these counties represent 30% of the state’s GDP and 26% of the state’s jobs.

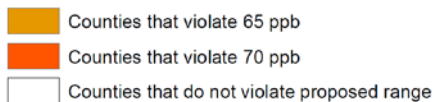


The eight counties surrounding Cleveland represent the following:

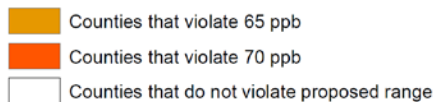
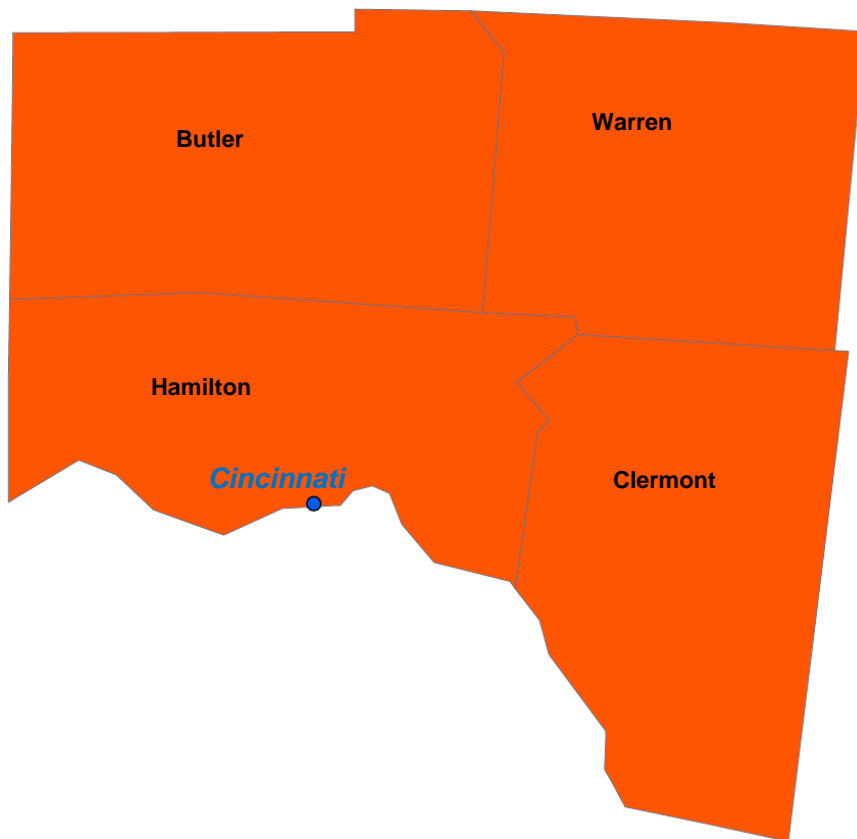
- \$177.2 billion, or 30% of the state’s GDP
- 1.7 million, or 26% of the state’s employment
- \$87.9 billion, or 28% of total employment compensation in the state
- Approximately 25% of the state’s population

Cleveland Metro Counties	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Ashtabula	6.1	45,492
Cuyahoga	77.9	903,449
Gauga	5.8	51,887
Lake	14.2	119,412
Lorain	18.8	127,309
Medina	10.9	84,463
Portage	10.0	76,326
Summit	33.5	331,215
Total	177.2	1,739,553
Ohio	584.7	6,663,005

The EPA requires seven of these counties (excluding Ashtabula) to participate in the E-Check program. This program ensures that vehicle owners have their vehicles tested every two years to determine volatile organic compound (VOC) levels.



The four Cincinnati metro counties – Butler, Clermont, Hamilton, and Warren – would be in non-attainment at 65 ppb. These counties represent 16% of the state’s GDP and 15% of jobs in Ohio.



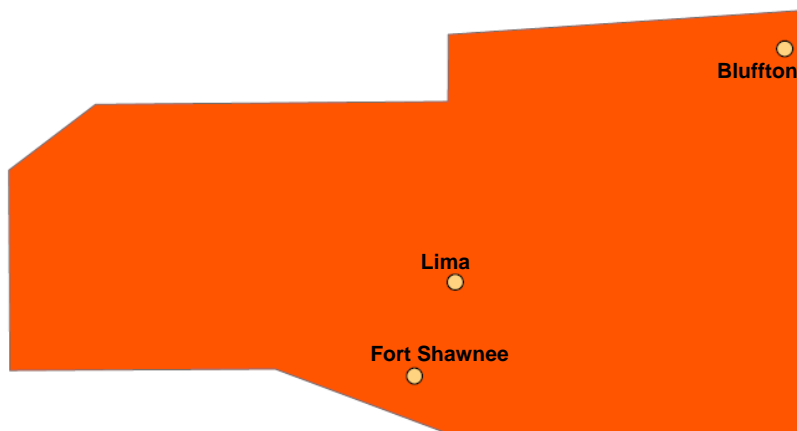
The four counties surrounding Cincinnati represent the following:

- \$92.8 billion, or 16% of the state’s GDP
- 993,000 jobs, or almost 15% of the state’s employment
- \$54.3 billion, or 17% of total employment compensation in the state
- Approximately 14% of the state’s population

Cincinnati Collar Counties	2014 GDP Estimate (Bn \$)	2013 Employment Estimate
Butler	21.7	188,335
Clermont	11.7	86,507
Hamilton	46.7	608,746
Warren	12.8	109,226
Total	92.8	992,854
Ohio	584.7	6,663,005

Allen County is a county in northwestern Ohio. Lima, the principal city, has a large oil refinery and several manufacturing plants.

County Map



Summary Statistics

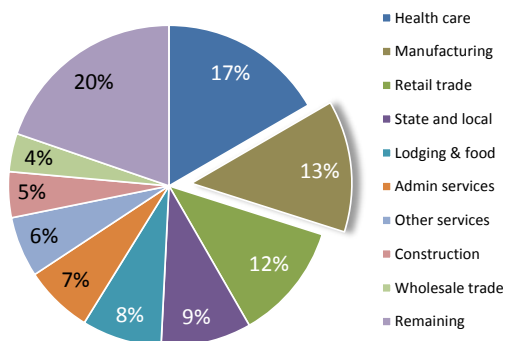
Population (2014) ¹	105,040
Households (2009-2013) ²	50,552
Total Employment (2013) ³	64,385
Manufacturing Employment (2013) ³	8,543
Unemployment Rate (2014) ⁴	5.7%
Employee Compensation (2014\$) ⁵	\$2.9 Bn
GDP estimate (2014\$) ⁶	\$6.2 Bn
Median Household Income (2014\$) ⁷	\$44,485
Poverty Rate ⁸	16.1%
2011-2013 Average Ozone ⁹	73

Employment Highlights

Top Employers

- St. Rita's Medical Center
- Lima Memorial Hospital
- DTR Industries
- Procter & Gamble Mfg.
- Ford Motor Company
- American Trim
- Joint Systems Mfg. Center
- Nash Finch
- Husky Energy Lima Refinery
- Nickles Bakery
- Lakeview Farms
- Metokote Corporation
- INEOS
- Rudolph Foods Company
- PCS Nitrogen, Div. of Potash Corp.

Employment by Sector

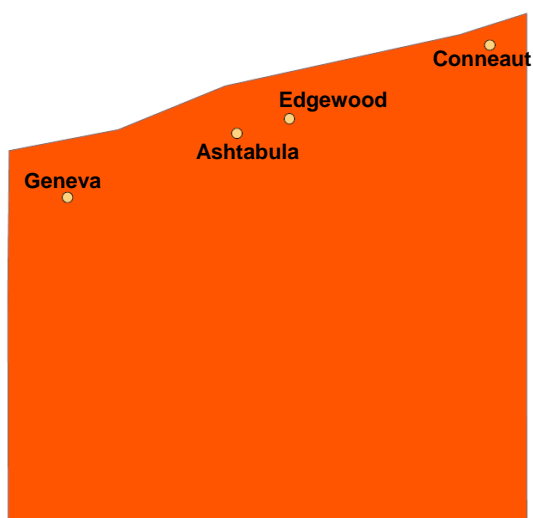


Ozone Challenges

- **Manufacturing:** Manufacturing composes 13% of employment in Allen County. This includes companies such as DTR, Procter & Gamble, Ford Motor Company, and Joint Systems.
- **Oil Refining:** Husky's Lima refinery produces approximately two billion gallons of refined petroleum products annually, including approximately 25% of all gasoline consumed in Ohio.

Ashtabula County, in the northeast corner of Ohio, relies heavily on manufacturing (15% of employment). The county's only coal-fired power plant closed in April 2015.

County Map



Summary Statistics

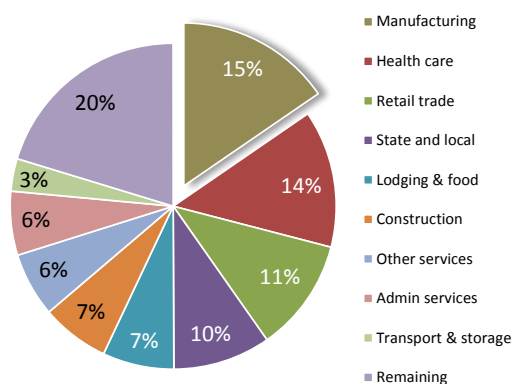
Population (2014) ¹	99,175
Households (2009-2013) ²	38,952
Total Employment (2013) ³	45,492
Manufacturing Employment (2013) ³	7,018
Unemployment Rate (2014) ⁴	7.0%
Employee Compensation (2014\$) ⁵	\$1.5 Bn
GDP estimate (2014\$) ⁶	\$6.1 Bn
Median Household Income (2014\$) ⁷	\$42,088
Poverty Rate ⁸	18.9%
2011-2013 Average Ozone ⁹	75

Employment Highlights

Top Employers

- Ashtabula Cty Medical Center
- Ashtabula County
- Cristal
- MFG - Molded Fiber Glass Co.
- Ashtabula Area City Schools
- Kennametal, Inc.
- General Aluminum Mfg. Co.
- Geneva Medical Center
- Citadel Plastics
- Lake Erie Correctional Inst.
- Geneva Area City Schools
- Continental Structural Plastics
- Conneaut Area City Schools
- HDT Global
- Conneaut Medical Center

Employment by Sector

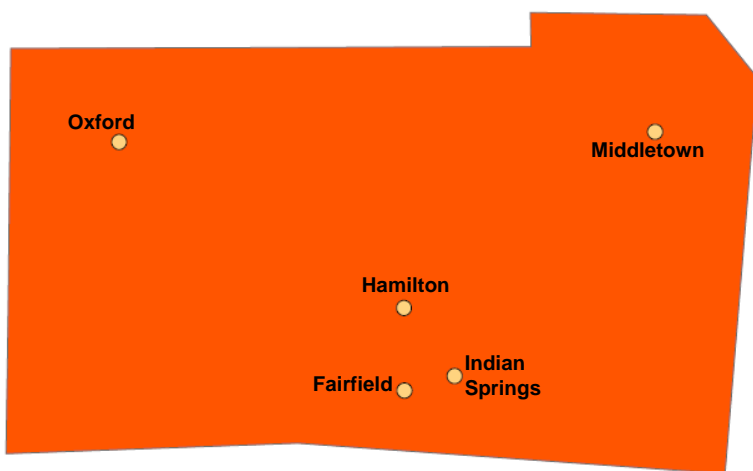


Ozone Challenges

- **Manufacturing:** Manufacturing composes 15% of employment in Ashtabula County. This includes such companies as Cristal, Molded Fiber Glass Co, General Aluminum, and Citadel Plastics. Cristal has a 23 MW gas-fired cogeneration plant.
- **Power Generation:** First Energy closed its Ashtabula plant (244 MW, coal) in April 2015.

Butler County, located north of Cincinnati in southwestern Ohio, is home to several fossil fuel fired power plants and a significant manufacturing base.

County Map



Summary Statistics

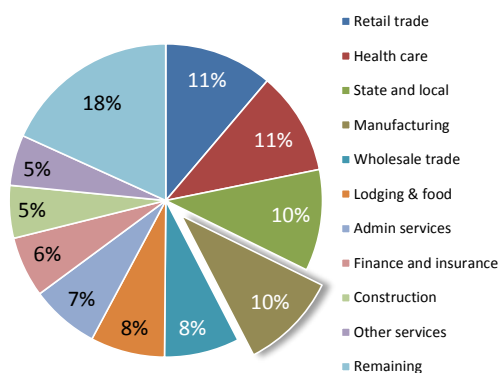
Population (2014) ¹	374,158
Households (2009-2013) ²	134,612
Total Employment (2013) ³	188,335
Manufacturing Employment (2013) ³	19,026
Unemployment Rate (2014) ⁴	5.4%
Employee Compensation (2014\$) ⁵	\$8.7 Bn
GDP estimate (2014\$) ⁶	\$21.7 Bn
Median Household Income (2014\$) ⁷	\$58,806
Poverty Rate ⁸	13.3%
2011-2013 Average Ozone ⁹	78

Employment Highlights

Top Employers

- Miami University
- Cincinnati Financial Corp
- AK Steel
- GE Aviation
- Lakota School District
- Butler County Government
- Mercy Regional Hospital
- Ohio Casualty Ins Group
- Hamilton City Schools
- Ft. Hamilton Hospital
- Fairfield City Schools
- Cornerstone Brands
- Advance Pierre Foods
- Baker Concrete
- Procter & Gamble

Employment by Sector

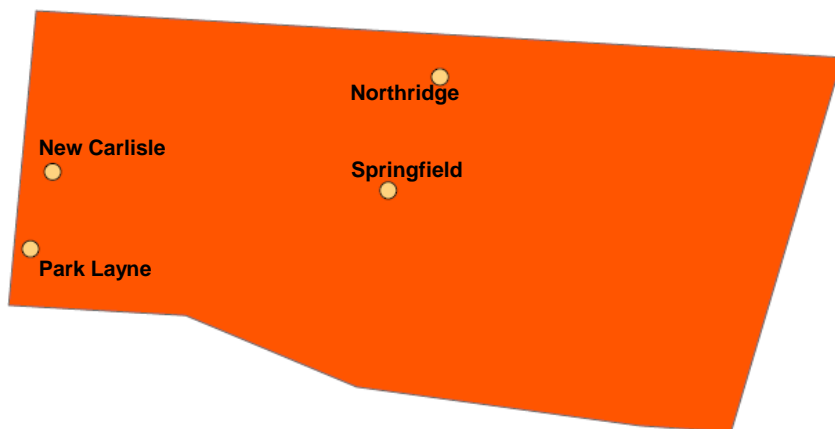


Ozone Challenges

- **Manufacturing:** Manufacturing composes 10% of employment in Butler County. This includes such companies as AK Steel, GE Aviation and Baker Concrete.
- **Manufacturing Co-Generation:** Industrial power generation totals 59 MW of capacity.
 - Middletown Coke Company (47 MW, Other Gas)
 - Miller Coors Trenton Brewery (11 MW, Coal)
 - Wausau Paper Middletown (1 MW, Coal)
- **Power Generation:** Butler County has 9 power generating plants, 8 of which are fossil fuel based, totaling 1,385 MW of generating capacity:
 - Dicks Creek (106 MW, Gas; 30 MW, Distillate)
 - Hamilton (75 MW, Coal; 47 MW Gas)
 - Hamilton Peaking (29 MW, Gas)
 - Madison (576 MW, Gas)
 - Woodsdale (462 MW, NG)

Clark County is located in central southwest Ohio; the manufacturing sector employs 11% of the workforce in the county.

County Map



Summary Statistics

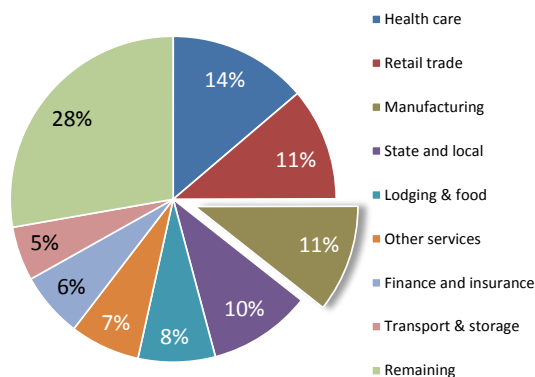
Population (2014) ¹	136,554
Households (2009-2013) ²	54,963
Total Employment (2013) ³	64,164
Manufacturing Employment (2013) ³	6,836
Unemployment Rate (2014) ⁴	5.6%
Employee Compensation (2014\$) ⁵	\$2.5 Bn
GDP estimate (2014\$) ⁶	\$6.6 Bn
Median Household Income (2014\$) ⁷	\$44,810
Poverty Rate ⁸	18.2%
2011-2013 Average Ozone ⁹	75

Employment Highlights

Top Employers

- Comm. Mercy Health Partners
- Assurant Specialty Property
- Clark County Government
- Springfield City Schools
- Clark County government
- Ohio Air National Guard Base/Springfield
- Wright-Patt Air Force Base
- Speedway SuperAmerica LLC
- Navistar International
- City of Springfield Gov't
- Dole Fresh Vegetables
- Honda of America
- Int'l Truck and Engine Corp
- Kroger Stores
- TAC Industries

Employment by Sector

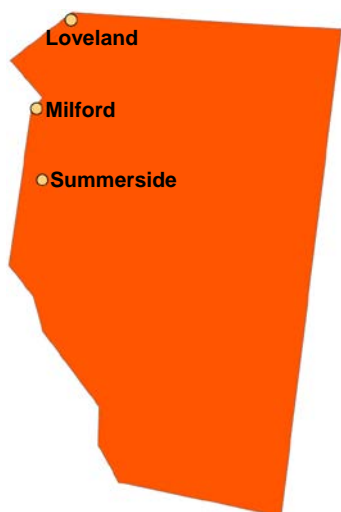


Ozone Challenges

- **Manufacturing:** Manufacturing composes 11% of employment in Clark County. This includes such companies as Dole Fresh Vegetables, Honda of America, and International Truck and Engine Corporation.
- **Transportation:** The transportation sector accounts for 88% of NOx emissions in the county.

Clermont County, east of Cincinnati, has a large coal-fired power plant. A second large coal-fired plant closed in 2014.

County Map



Summary Statistics

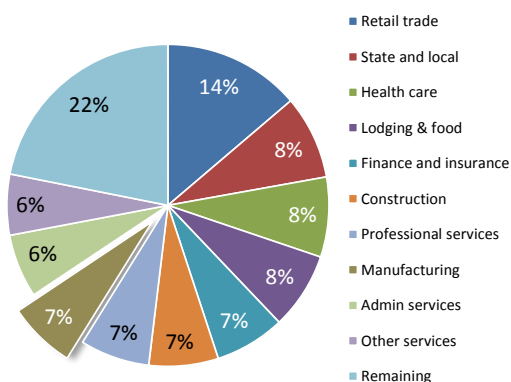
Population (2014) ¹	201,560
Households (2009-2013) ²	73,728
Total Employment (2013) ³	86,507
Manufacturing Employment (2013) ³	5,860
Unemployment Rate (2014) ⁴	5.3%
Employee Compensation (2014\$) ⁵	\$3.1 Bn
GDP estimate (2014\$) ⁶	\$11.7 Bn
Median Household Income (2014\$) ⁷	\$62,707
Poverty Rate ⁸	9.7%
2011-2013 Average Ozone ⁹	79

Employment Highlights

Top Employers

- Clermont County
- Total Quality Logistics
- American Modern Ins Group
- Tata Consultancy Services
- Milford Exempted Village Schools
- Siemens PLM (formerly UGS)
- West Clermont School District
- L-3 Fuzing & Ordnance
- Milacron Plastics Technologies
- Mercy Hospital - Clermont
- Duke Energy
- International Paper/xpedx
- Multi-Color Corporation
- Dualite
- Lykins Companies

Employment by Sector

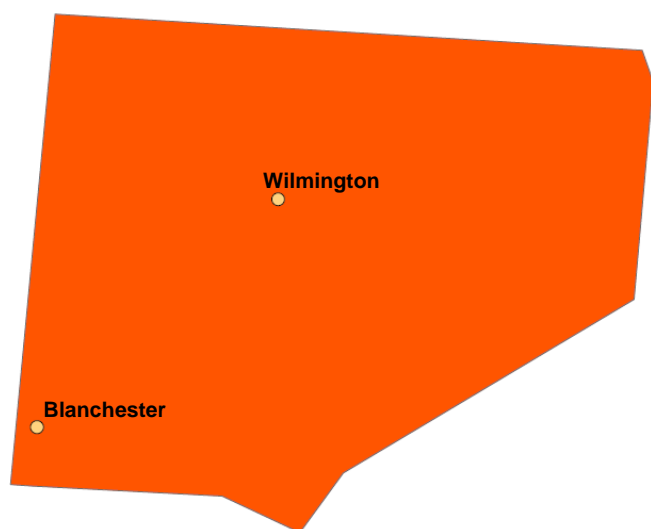


Ozone Challenges

- **Manufacturing:** Manufacturing composes 7% of employment in Clermont County. This includes such companies L-3, Milacron Plastics Technologies and Dualite.
- **Power Generation:** Clermont County has a large coal-fired power plant – WH Zimmer (1,300 MW) . Another large coal-fired plant -- Walter C Beckjord (1,024 MW) -- closed in 2014.

Clinton County is a small county in southeast Ohio with a sizable percentage employed in manufacturing (16%); the transportation sector accounts for 82% of NOx emissions.

County Map



Summary Statistics

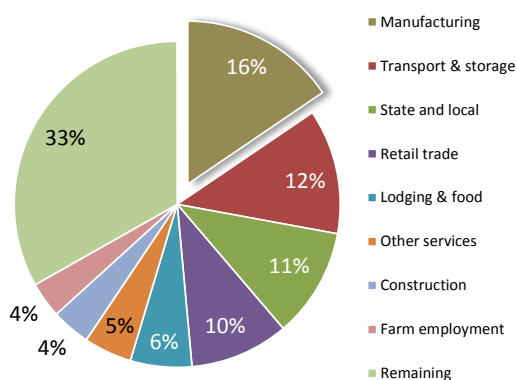
Population (2014) ¹	41,835
Households (2009-2013) ²	15,969
Total Employment (2013) ³	21,006
Manufacturing Employment (2013) ³	3,257
Unemployment Rate (2014) ⁴	7.6%
Employee Compensation (2014\$) ⁵	\$0.9 Bn
GDP estimate (2014\$) ⁶	\$1.6 Bn
Median Household Income (2014\$) ⁷	\$47,835
Poverty Rate ⁸	17.3%
2011-2013 Average Ozone ⁹	78

Employment Highlights

Top Employers

- Ahresty Wilmington Corp
- Alkermes Inc
- ATSG/ABX Air
- Clinton Memorial Hospital
- Ferno-Washington Inc
- Nippon Seiki/New Sabina Industries
- R & L Carriers
- Showa Corp/American Showa
- Wilmington City Schools
- Wilmington College

Employment by Sector

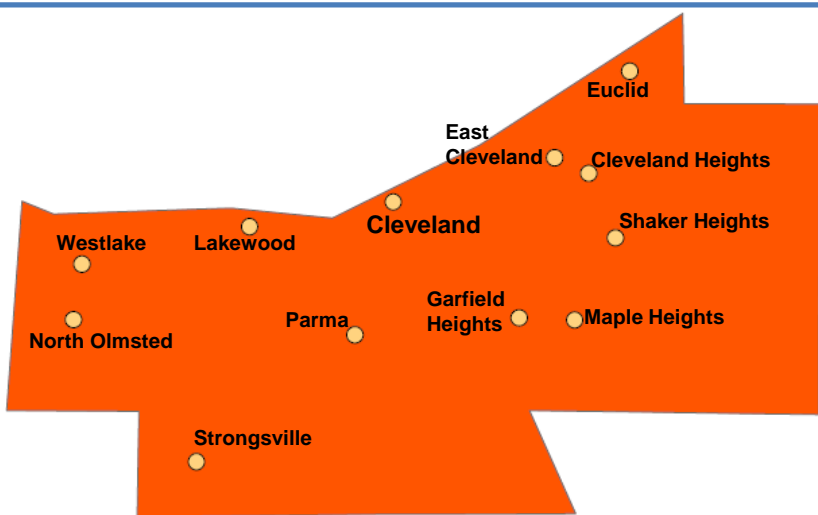


Ozone Challenges

- **Manufacturing:** Manufacturing composes 16% of employment in Clinton County. This includes such companies as Nippon Seiki and American Showa.
- **Transportation:** The transportation sector accounts for 82% of NOx emissions in the county.

Cuyahoga County, home to Cleveland, is the most populous Ohio county. It has the largest manufacturing workforce in the state. Its largest coal-fired power plant closed in April.

County Map



Summary Statistics

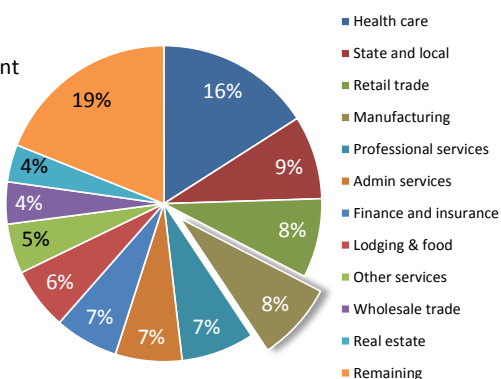
Population (2014) ¹	1,259,828
Households (2009-2013) ²	534,476
Total Employment (2013) ³	903,449
Manufacturing Employment (2013) ³	72,877
Unemployment Rate (2014) ⁴	6.4%
Employee Compensation (2014\$) ⁵	\$50.8 Bn
GDP estimate (2014\$) ⁶	\$77.9 Bn
Median Household Income (2014\$) ⁷	\$45,504
Poverty Rate ⁸	19.2%
2011-2013 Average Ozone ⁹	78

Employment Highlights

Top Employers

- Cleveland Clinic
- University Hospitals
- U.S. Office of Personnel Management
- Progressive Corp.
- Cuyahoga County
- Cleveland Metro School District
- City of Cleveland
- The MetroHealth System
- KeyCorp
- Group Management Services Inc.
- Case Western Reserve University
- Swagelok Co.
- Giant Eagle Inc.
- Sherwin-Williams Co.
- U.S. Postal Service

Employment by Sector

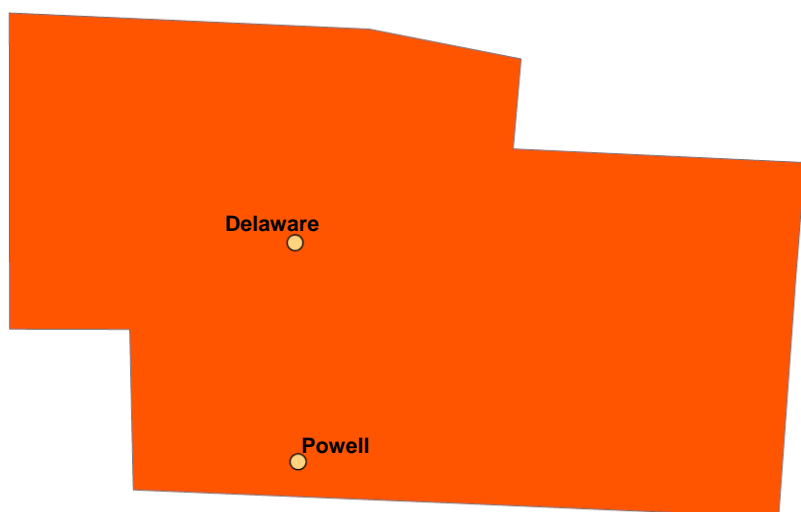


Ozone Challenges

- **Manufacturing:** Manufacturing composes 8% of employment in Cuyahoga County. ArcelorMittal has a 68 MW generator powered by blast furnace gas.
- **Transportation:** Cuyahoga is an E-Check county that requires VOC vehicle emissions testing every two years.
- **Power Generation:** There are 3 small fossil fuel fired power generation plants in the county. FirstEnergy closed its Lake Shore plant (245 MW, Coal) in April 2015.
 - Cleveland Peaking (11 MW, Distillate)
 - Collinwood (16 MW, Gas)
 - West 41st Street (32 MW, Gas)

Delaware County, which includes the northern suburbs of Columbus, has a small manufacturing sector. Transportation accounts for 90% of NOx emissions in the county.

County Map



Summary Statistics

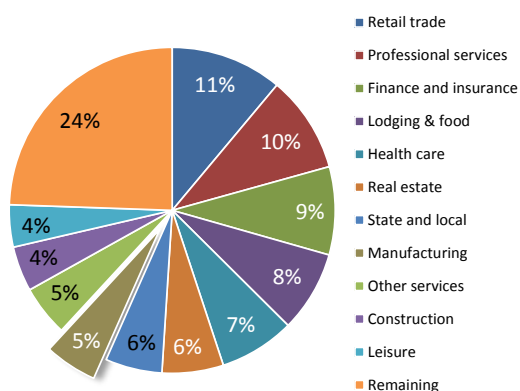
Population (2014) ¹	189,113
Households (2009-2013) ²	64,208
Total Employment (2013) ³	128,152
Manufacturing Employment (2013) ³	6,690
Unemployment Rate (2014) ⁴	4.0%
Employee Compensation (2014\$) ⁵	\$5.7 Bn
GDP estimate (2014\$) ⁶	\$11.4 Bn
Median Household Income (2014\$) ⁷	\$93,240
Poverty Rate ⁸	5.6%
2011-2013 Average Ozone ⁹	73

Employment Highlights

Top Employers

- J.P. Morgan Chase and Co.
- Kroger Company
- Olentangy Local School District
- Delaware County
- Delaware City School District
- Meijer, Inc.
- Ohio Health (Grady Memorial Hospital)
- Ohio Wesleyan University
- American Showa, Inc.
- WalMart Real Estate Business Trust

Employment by Sector

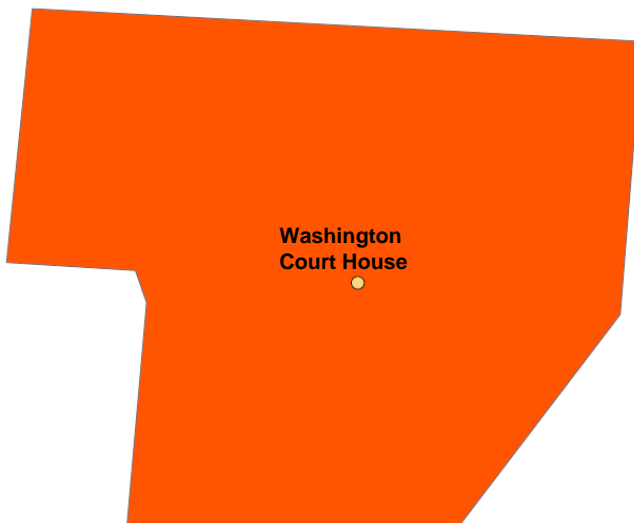


Ozone Challenges

- **Manufacturing:** Manufacturing composes 5% of employment in Delaware County and includes such companies as American Showa.
- **Transportation:** The transportation sector accounts for 90% of NOx emissions in the county.

Fayette County is a small county with a relatively sizable percentage (10%) employed in the manufacturing sector.

County Map



Summary Statistics

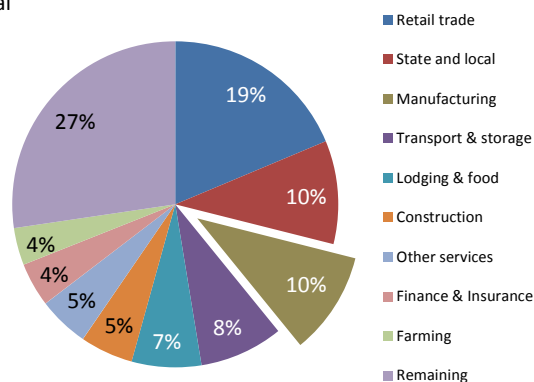
Population (2014) ¹	28,800
Households (2009-2013) ²	11,514
Total Employment (2013) ³	16,765
Manufacturing Employment (2013) ³	1,708
Unemployment Rate (2014) ⁴	5.8%
Employee Compensation (2014\$) ⁵	\$0.5 Bn
GDP estimate (2014\$) ⁶	\$ Bn
Median Household Income (2014\$) ⁷	\$1.0
Poverty Rate ⁸	17.9%
2011-2013 Average Ozone ⁹	72

Employment Highlights

Top Employers

- Fayette County Memorial Hospital
- Lowe's
- Mars Petcare
- McKesson Corp
- Miami Trace Local Schools
- Sugar Creek Packing Co
- TFO Tech Company
- Wal-Mart Stores Inc
- Washington CH City Schools
- Yamashita Rubber/YUSA Corp

Employment by Sector

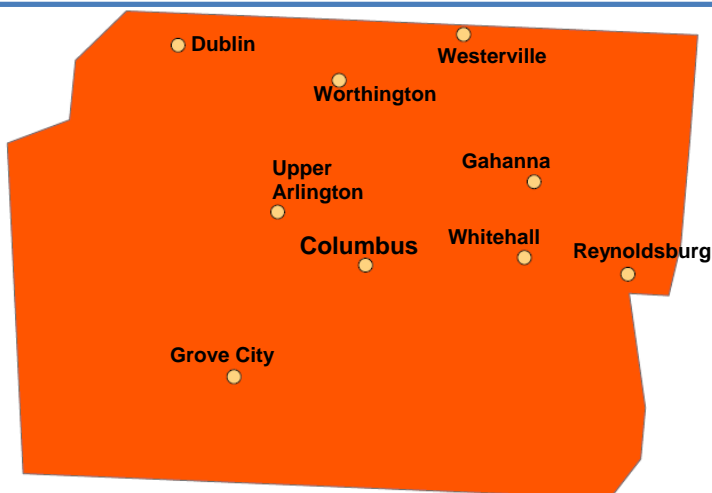


Ozone Challenges

- **Manufacturing:** Manufacturing composes 10% of employment in Fayette County. This includes companies such as Sugar Creek Packing Company and Yamashita Rubber.
- **Transportation:** The transportation sector accounts for 78% of NOx emissions in the county.

Franklin County is the second most populous county in Ohio and home to Columbus. Its manufacturing base is relatively small (4% of employment), and it has minimal fossil fuel generation.

County Map

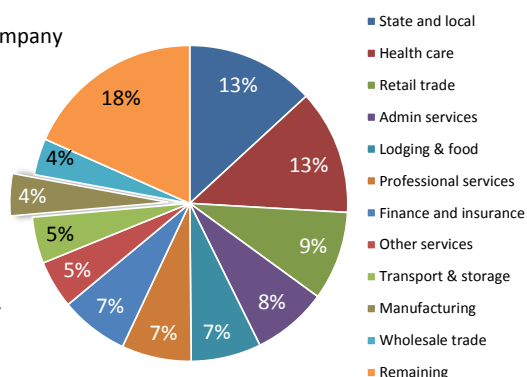


Employment Highlights

Top Employers

- JPMorgan Chase & Co.
- Nationwide Mutual Insurance Company
- Honda of America Mfg., Inc.
- L Brands, Inc.
- Huntington Bancshares Inc.
- Cardinal Health, Inc.
- American Electric Power
- Alliance Data Retail Services
- Defense Supply Ctr Columbus
- PNC Financial Services Group
- Abercrombie & Fitch Co.
- Express Scripts Holding Company
- Whirlpool Corporation
- Exel Inc.
- Discover Financial Services, Inc.

Employment by Sector



Summary Statistics

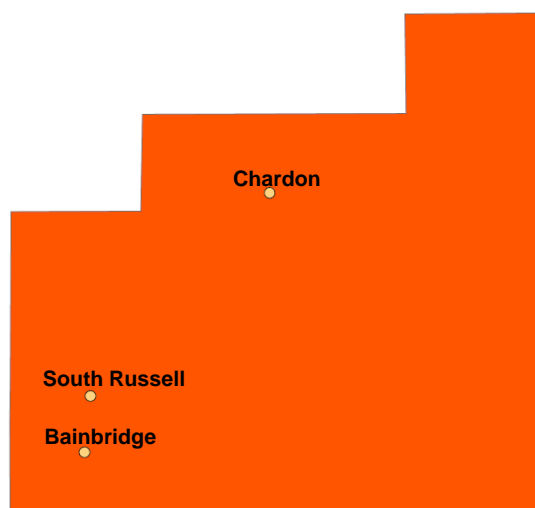
Population (2014) ¹	1,231,393
Households (2009-2013) ²	468,295
Total Employment (2013) ³	882,855
Manufacturing Employment (2013) ³	38,045
Unemployment Rate (2014) ⁴	4.8%
Employee Compensation (2014\$) ⁵	\$49.3 Bn
GDP estimate (2014\$) ⁶	\$74.3 Bn
Median Household Income (2014\$) ⁷	\$52,851
Poverty Rate ⁸	17.7%
2011-2013 Average Ozone ⁹	80

Ozone Challenges

- **Manufacturing:** Manufacturing composes 4% of employment in Franklin County.
- **Transportation:** The transportation sector accounts for 87% of NOx emissions in the county.
- **Power Generation:** Franklin County has 3 small fossil fuel power generation plants :
 - Dodge Park Engine No 1 (1.8 MW, Distillate)
 - Model Gas Power Station (2.8 MW, Gas)
 - City of Columbus (5.1 MW, Distillate)

Geauga County has a significant manufacturing base (15% of employment). The County is an E-Check county for vehicle emissions tests; transportation accounts for 82% of NOx emissions.

County Map



Summary Statistics

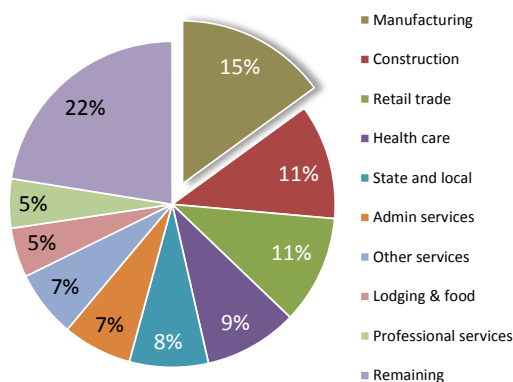
Population (2014) ¹	94,295
Households (2009-2013) ²	34,621
Total Employment (2013) ³	51,887
Manufacturing Employment (2013) ³	7,774
Unemployment Rate (2014) ⁴	5.1%
Employee Compensation (2014\$) ⁵	\$1.8 Bn
GDP estimate (2014\$) ⁶	\$5.8 Bn
Median Household Income (2014\$) ⁷	\$70,288
Poverty Rate ⁸	7.4%
2011-2013 Average Ozone ⁹	73

Employment Highlights

Top Employers

- Kraftmaid Cabinetry Inc.
- Myers Industries, Inc.
- Kent State University
- Great Lakes Cheese
- Chardon Rubber Co.
- Chardon Local School District
- Channel Products
- Flambeau
- Saint Gobain Crystals
- Denora Tech
- West Geauga Local Schools

Employment by Sector

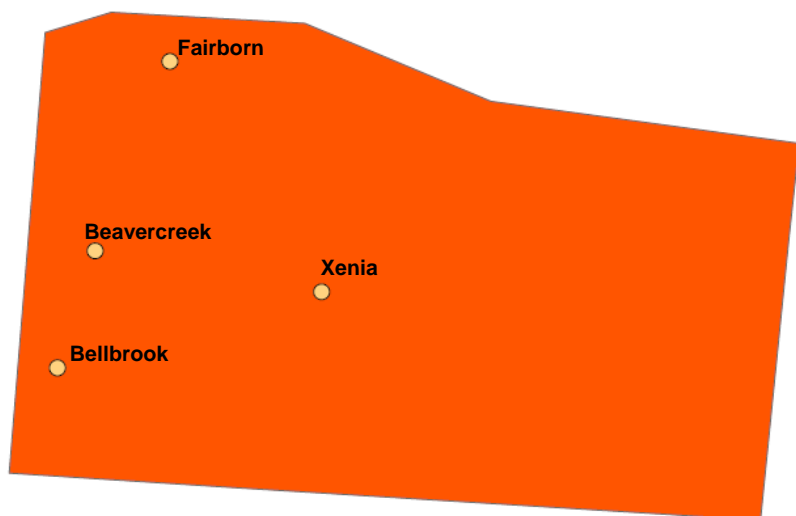


Ozone Challenges

- **Manufacturing:** Manufacturing composes 15% of employment in Geauga County, including companies such as Kraftmaid Cabinetry and Myers Industries.
- **Oil & Gas Production:** Geauga County accounted for 2.1% of Ohio's oil production and 2.9% of Ohio's gas production in 2012.
- **Transportation:** The transportation sector accounts for 82% of NOx emissions in the county. Geauga is an E-Check county that requires VOC vehicle emissions testing every two years.

Greene County is located in central southwest Ohio and is home to Wright Patterson Air Force Base. Cement manufacturing represents a large percentage of stationary NOx emissions.

County Map



Summary Statistics

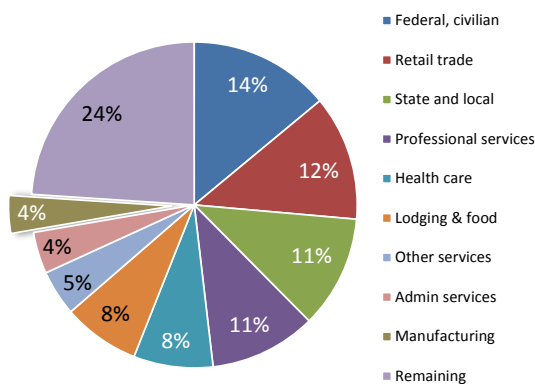
Population (2014) ¹	163,820
Households (2009-2013) ²	62,836
Total Employment (2013) ³	99,123
Manufacturing Employment (2013) ³	3,709
Unemployment Rate (2014) ⁴	5.2%
Employee Compensation (2014\$) ⁵	\$5.2 Bn
GDP estimate (2014\$) ⁶	\$8.0 Bn
Median Household Income (2014\$) ⁷	\$60,334
Poverty Rate ⁸	12.8%
2011-2013 Average Ozone ⁹	73

Employment Highlights

Top Employers

- Wright Patterson AFB
- Wright State University
- Beavercreek City Schools
- Teleperformance USA
- Greene County
- Kroger
- Unison Industries
- Cedarville University
- Greene Memorial Hospital
- Fairborn City Schools
- Xenia Community Schools
- Target
- Kohl's
- Fairborn City
- Twist

Employment by Sector



Ozone Challenges

- **Manufacturing:** Manufacturing composes 4% of employment in Greene County. CEMEX in Xenia is not a large employer, but the facility is responsible for 15% of NOx emissions in the county.
- **Transportation:** The transportation sector accounts for 72% of NOx emissions in the county.

Hamilton County is home to Cincinnati and the 1,000 MW Miami Fort coal-fired plant. Manufacturing employs nearly 50,000 people in the county.

County Map



Summary Statistics

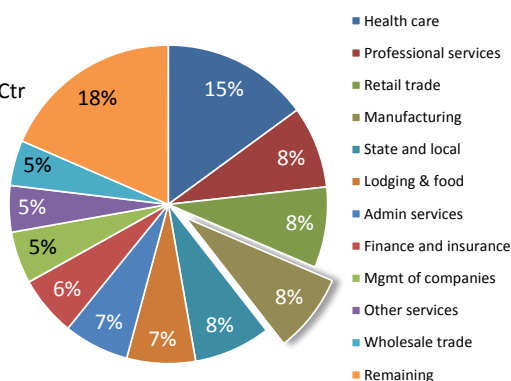
Population (2014) ¹	806,631
Households (2009-2013) ²	327,914
Total Employment (2013) ³	608,746
Manufacturing Employment (2013) ³	48,875
Unemployment Rate (2014) ⁴	5.3%
Employee Compensation (2014\$) ⁵	\$37.6 Bn
GDP estimate (2014\$) ⁶	\$46.7 Bn
Median Household Income (2014\$) ⁷	\$50,478
Poverty Rate ⁸	18.7%
2011-2013 Average Ozone ⁹	81

Employment Highlights

Top Employers

- Kroger Company
- University of Cincinnati
- The Procter & Gamble Company
- Cincinnati Children's Hosp Medical Ctr
- TriHealth Inc
- Mercy Health Partners
- Archdiocese of Cincinnati
- GE Aviation
- Wal-mart Stores
- St. Elizabeth Healthcare
- Fifth Third Bancorp
- Internal Revenue Service
- U.S. Postal Service
- City of Cincinnati
- Cincinnati Public Schools

Employment by Sector



Ozone Challenges

- **Manufacturing:** Manufacturing composes 8% of employment in Hamilton County. Procter & Gamble has a 11.7 MW coal-fired power generating facility.
- **Power Generation:** Hamilton has 3 power plants, all fossil fuel fired, which total nearly 1,300 MW of capacity:
 - Central Utility Plant Cincinnati (42 MW, Gas; 2 MW, Distillate)
 - East Campus Utility Plant (3 MW, Distillate; 1 MW, Gas)
 - Miami Fort (1,183 MW, Coal; 57 MW, Distillate) – an additional 163 MW of coal-fired capacity is expected to be retired in 2015.

Jefferson County, on the state's eastern border, has roughly 12% of Ohio's total power generation capacity, with two large coal-fired plants accounting for nearly all of it.

County Map

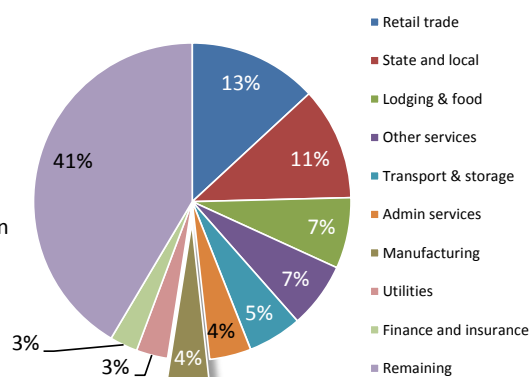


Employment Highlights

Top Employers

- Franciscan Univ. of Steubenville
- Trinity Health Systems
- Diocese of Steubenville
- Eastern Gateway Comm College
- First Energy
- Wal-Mart Distribution Center
- Titanium Metals Corporation
- American Electric Power
- Buckeye Local Board of Education
- Wal-Mart Stores
- Kroger Company
- City of Steubenville
- Indian Creek School District
- Edison Local School District
- Fraley and Schilling

Employment by Sector



Summary Statistics

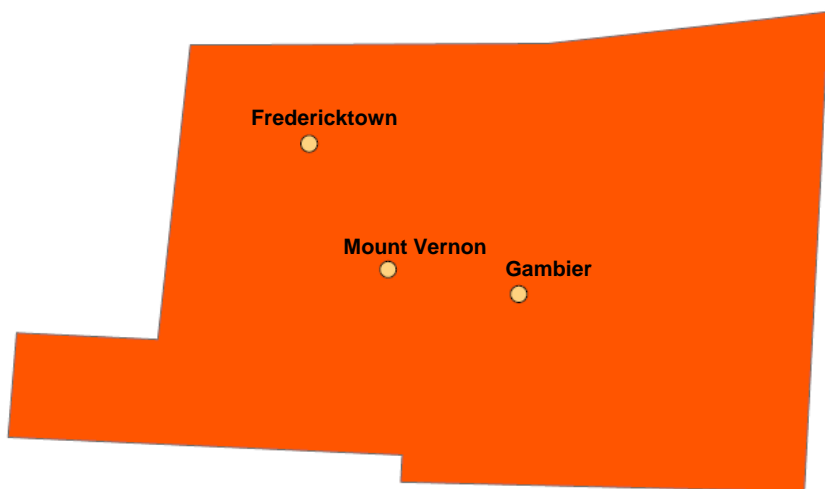
Population (2014) ¹	67,694
Households (2009-2013) ²	28,326
Total Employment (2013) ³	27,517
Manufacturing Employment (2013) ³	1,167
Unemployment Rate (2014) ⁴	8.0%
Employee Compensation (2014\$) ⁵	\$1.1 Bn
GDP estimate (2014\$) ⁶	\$2.1 Bn
Median Household Income (2014\$) ⁷	\$42,151
Poverty Rate ⁸	18.4%
2011-2013 Average Ozone ⁹	71

Ozone Challenges

- **Manufacturing:** Manufacturing composes 4% of employment in Jefferson County.
- **Oil & Gas Production:** Jefferson County accounted for 1.5% of Ohio's gas production in 2014.
- **Power Generation:** Jefferson County has 3 fossil fuel fired power plants, with a total capacity exceeding 4,000 MW, roughly 12% of total generation capacity for the state:
 - Cardinal (1,800 MW, Coal)
 - FirstEnergy W H Sammis (2,220 MW, Coal; 13 MW, Distillate)
 - Mingo Junction Energy Center (30 MW, Gas)

Knox County, a small county located in central Ohio, has a relatively strong manufacturing sector (17% of employment).

County Map



Summary Statistics

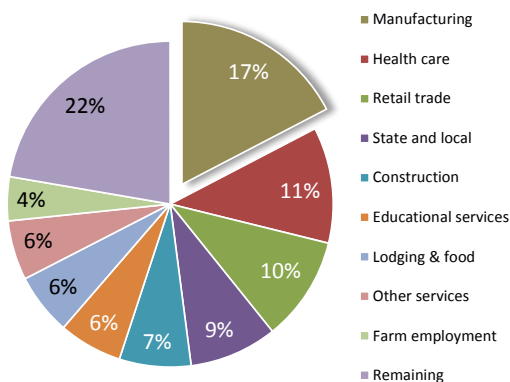
Population (2014) ¹	61,167
Households (2009-2013) ²	22,583
Total Employment (2013) ³	29,875
Manufacturing Employment (2013) ³	5,186
Unemployment Rate (2014) ⁴	5.2%
Employee Compensation (2014\$) ⁵	\$1.1 Bn
GDP estimate (2014\$) ⁶	\$2.1 Bn
Median Household Income (2014\$) ⁷	\$51,680
Poverty Rate ⁸	14.5%
2011-2013 Average Ozone ⁹	73

Employment Highlights

Top Employers

- Ariel Corporation
- Rolls-Royce Energy Systems, Inc.
- Knox Community Hospital
- Kenyon College
- Jeld-Wen
- FT Precision, Inc.
- Kokosing Construction Co, Inc.
- Knox County
- Mount Vernon City Schools
- Mount Vernon Nazarene Univ'y
- Wal-Mart
- Mount Vernon Developm'l Ctr
- Sanoh America, Inc.
- First-Knox National Bank
- City of Mount Vernon

Employment by Sector

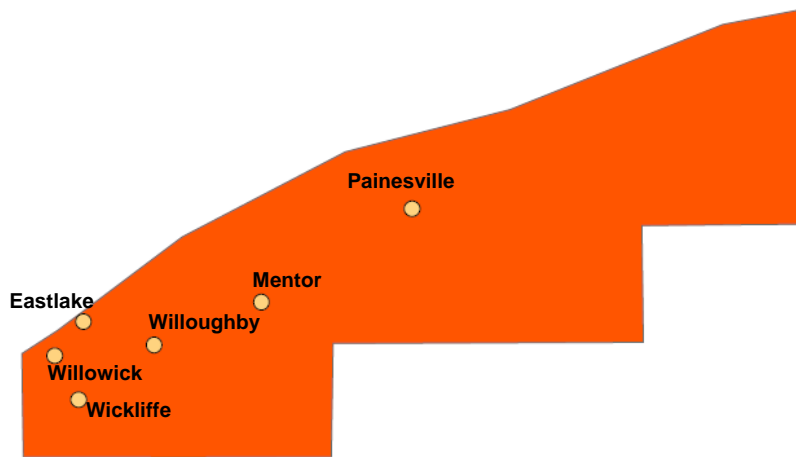


Ozone Challenges

- **Manufacturing:** Manufacturing composes 17% of employment in Knox County. This includes such companies as FT Precision and Sanoh America.
- **Oil & Gas Production:** Knox County accounted for 1.0% of Ohio's oil production in 2014.
- **Transportation:** The transportation sector accounts for 78% of NOx emissions in the county.

Lake County, just east of Cleveland, recently saw its largest coal-fired plant closed. It has a large manufacturing base.

County Map



Summary Statistics

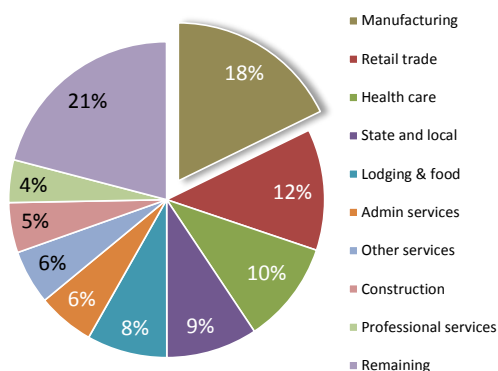
Population (2014) ¹	229,230
Households (2009-2013) ²	94,048
Total Employment (2013) ³	119,412
Manufacturing Employment (2013) ³	21,216
Unemployment Rate (2014) ⁴	5.6%
Employee Compensation (2014\$) ⁵	\$5.5 Bn
GDP estimate (2014\$) ⁶	\$14.2 Bn
Median Household Income (2014\$) ⁷	\$58,191
Poverty Rate ⁸	9.4%
2011-2013 Average Ozone ⁹	80

Employment Highlights

Top Employers

- Lake Hospital System, Inc.
- The Lubrizol Corporation
- STERIS Corporation
- Wal-Mart Stores, Inc.
- ABB Automation Inc
- Macy's, INC.
- Lincoln Electric Holdings, Inc.
- JPMorgan Chase Bank, NA
- Ohio Presbyterian Retirem't Svcs
- NHVS International, Inc.
- Avery Dennison Corporation
- Marous Brothers Const. Inc.
- Sears, Roebuck and Co.
- Parker-Hannifin Corp.
- Pako, Inc.

Employment by Sector

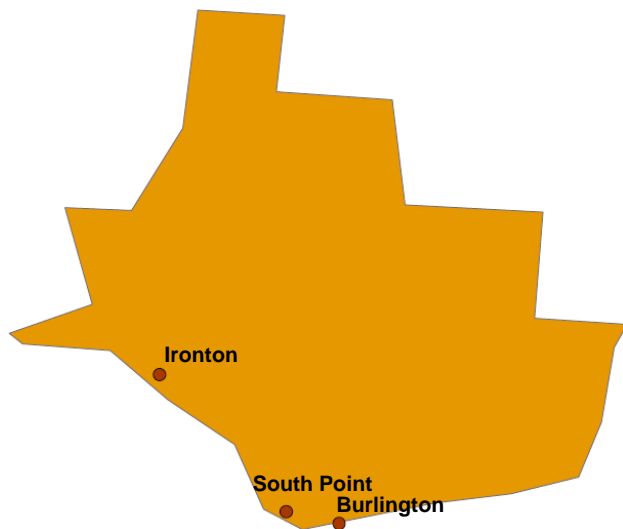


Ozone Challenges

- **Manufacturing:** Manufacturing composes 18% of employment in Lake County.
- **Transportation:** Lake County is already an E-Check county that has annual vehicle emissions testing.
- **Power Generation:** Coal-fired power generation has been the source for 50% of NOx emissions in the county, but First Energy closed the primary facility – Eastlake (396 MW) in April.
 - The small Painesville plant (Painesville (47 MW, Coal; 2 MW, Distillate) remains the only fossil-fueled plant.
 - Nearly all of the power generation in Lake County now comes from the Perry Nuclear Plant (1,240 MW).

Lawrence County has a very small manufacturing sector. Its power generation infrastructure includes the Hanging Rock Energy Facility, a large natural gas power plant.

County Map

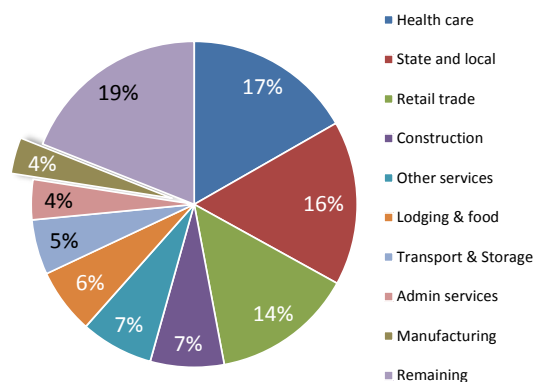


Employment Highlights

Top Employers

- Dow Chemical Co
- Emerson Electric/Liebert Corp
- Ironton City Schools
- Jo-Lin Health Center
- Lawrence County Government
- McGinnis Inc
- McSweeneys Inc
- Ohio University
- Rock Hill Local Schools
- South Point Local Schools
- SunCoke Energy
- Wal-Mart Stores Inc

Employment by Sector



Summary Statistics

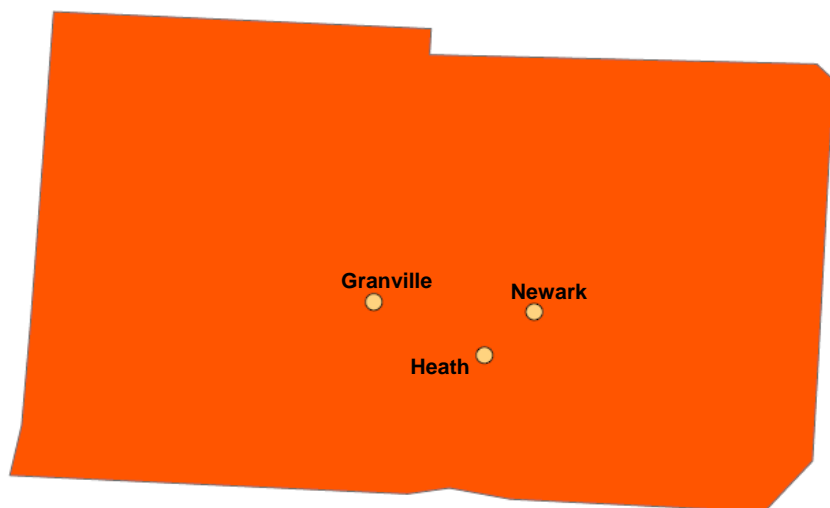
Population (2014) ¹	61,623
Households (2009-2013) ²	24,009
Total Employment (2013) ³	18,405
Manufacturing Employment (2013) ³	658
Unemployment Rate (2014) ⁴	6.5%
Employee Compensation (2014\$) ⁵	\$0.6 Bn
GDP estimate (2014\$) ⁶	\$2.4 Bn
Median Household Income (2014\$) ⁷	\$43,164
Poverty Rate ⁸	20.6%
2011-2013 Average Ozone ⁹	68

Ozone Challenges

- **Manufacturing:** Manufacturing composes 4% of employment in Lawrence County.
- **Transportation:** The transportation sector accounts for 80% of NOx emissions in the county.
- **Power Generation:** Lawrence County is home to the Hanging Rock Energy Facility, with 1,252 MW of Natural Gas fired capacity.

Licking County is located just east of Columbus with a moderately-sized manufacturing sector. The transportation sector accounts for 81% of NOx emissions in the County.

County Map



Summary Statistics

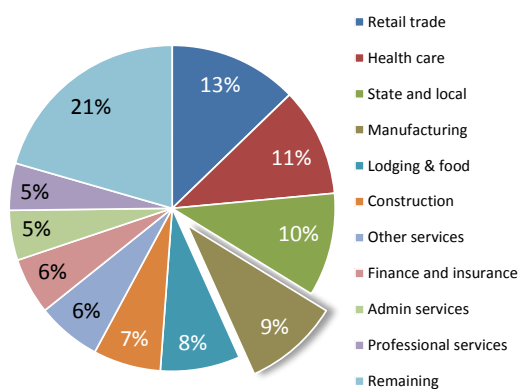
Population (2014) ¹	169,390
Households (2009-2013) ²	64,009
Total Employment (2013) ³	72,580
Manufacturing Employment (2013) ³	6,891
Unemployment Rate (2014) ⁴	5.1%
Employee Compensation (2014\$) ⁵	\$2.8 Bn
GDP estimate (2014\$) ⁶	\$10.2 Bn
Median Household Income (2014\$) ⁷	\$57,252
Poverty Rate ⁸	11.2%
2011-2013 Average Ozone ⁹	73

Employment Highlights

Top Employers

- Licking Memorial Hospital
- Victoria Secret/Limited Brands
- State Farm Insurance Co.
- Newark Campus of OSU/Central OH Tech
- Licking County Government
- Newark City Schools
- Denison University
- Anomatic Corp.
- Owens Corning Corp.
- OSU-N/COTC
- Park National Bank
- Boeing Guidance Repair Center
- City of Newark
- Southwest Licking LSD

Employment by Sector

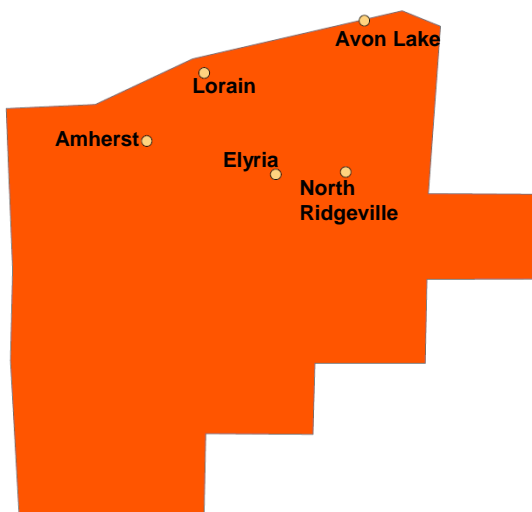


Ozone Challenges

- **Manufacturing:** Manufacturing composes 9% of employment in Licking County. This includes such companies as Owens Corning and Boeing Guidance Repair Center.
- **Oil Production:** Licking County accounted for 1.1% of Ohio's oil production in 2014.
- **Transportation:** The transportation sector accounts for 81% of NOx emissions in the county.

Lorain County, located just west of Cleveland, has a relatively large manufacturing base and 1,300 MW of fossil fuel fired generating capacity.

County Map

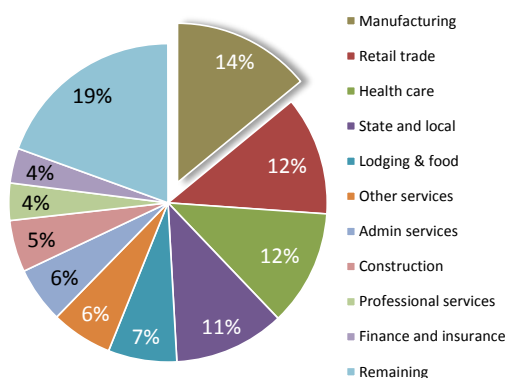


Employment Highlights

Top Employers

- Ford Motor Company
- Mercy Regional Medical Center
- Lorain County Government
- EMH Regional Healthcare System
- Lorain City Schools
- Elyria City Schools
- Oberlin College
- Murry Ridge Production Center
- Avon Lake City Schools
- Invacare Corporation
- PolyOne Corporation
- City of Lorain
- Ridge Tool Company
- United States Steel Corporation
- Ohio Department of Rehabilitation

Employment by Sector



Summary Statistics

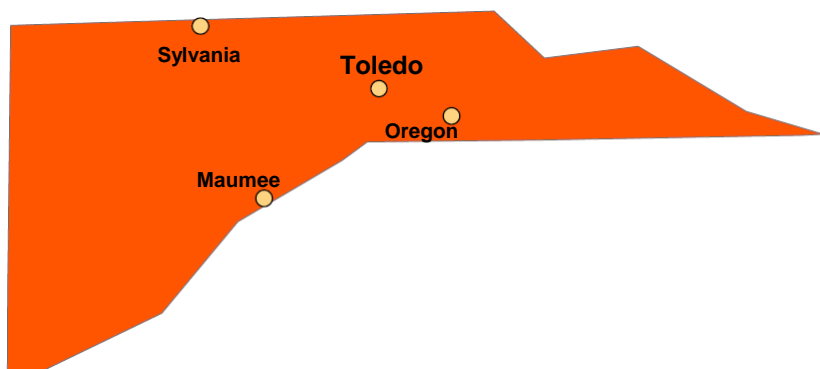
Population (2014) ¹	304,216
Households (2009-2013) ²	116,705
Total Employment (2013) ³	127,309
Manufacturing Employment (2013) ³	17,895
Unemployment Rate (2014) ⁴	6.6%
Employee Compensation (2014\$) ⁵	\$5.6 Bn
GDP estimate (2014\$) ⁶	\$18.8 Bn
Median Household Income (2014\$) ⁷	\$53,826
Poverty Rate ⁸	14.6%
2011-2013 Average Ozone ⁹	71

Ozone Challenges

- **Manufacturing:** Manufacturing composes 14% of employment in Lorain County, including Ford Motor Company.
- **Transportation:** Lorain is an E-Check county that requires VOC vehicle emissions testing every two years.
- **Power Generation:** Coal-fired power plants account for 31% of the county's NOx emissions. 98% of the capacity in Lorain County is fossil fuel fired:
 - Avon Lake (710 MW, Coal; 30 MW Distillate)
 - FirstEnergy West Lorain (425 MW, Gas; 114 MW, Distillate)
 - Oberlin (11 MW, Gas; 9 MW, Distillate)
 - Wellington (1 MW, Distillate)

Lucas County has a moderate manufacturing base. FirstEnergy shut down 500 MW of coal-fired capacity in 2012. The County also has two large oil refineries.

County Map



Summary Statistics

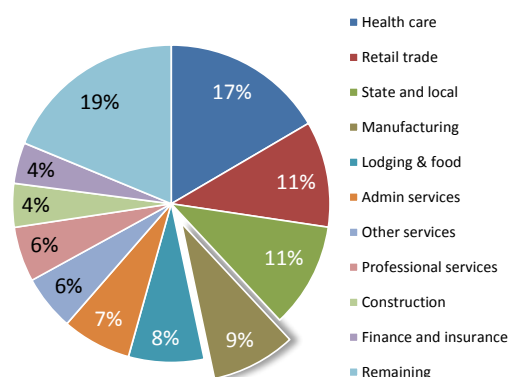
Population (2014) ¹	435,286
Households (2009-2013) ²	178,101
Total Employment (2013) ³	258,612
Manufacturing Employment (2013) ³	22,251
Unemployment Rate (2014) ⁴	6.3%
Employee Compensation (2014\$) ⁵	\$12.5 Bn
GDP estimate (2014\$) ⁶	\$23.2 Bn
Median Household Income (2014\$) ⁷	\$43,168
Poverty Rate ⁸	21.6%
2011-2013 Average Ozone ⁹	74

Employment Highlights

Top Employers

- ProMedica Health Systems
- University of Toledo
- Mercy Health Partners
- Chrysler Toledo Complex
- Toledo Public Schools
- Lucas County
- Kroger
- City of Toledo
- Wal-Mart
- The State of Ohio
- General Motors/Power Train
- Andersons (HQ)
- Meijer, Inc.
- United Parcel Service
- US Postal Service

Employment by Sector

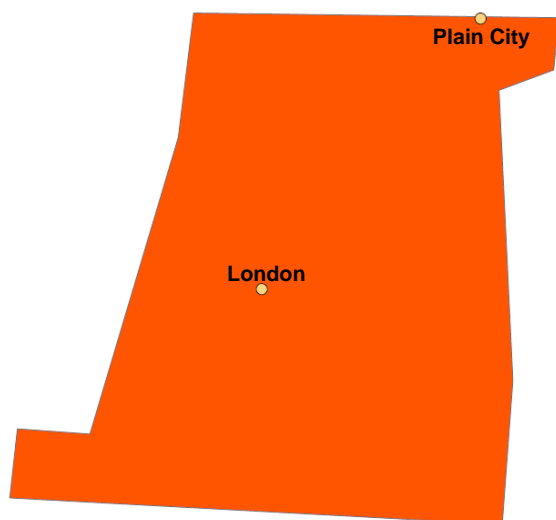


Ozone Challenges

- **Manufacturing:** Manufacturing composes 9% of employment in Lucas County and includes such companies as Chrysler and General Motors.
- **Power Generation:** Lucas County has 4 power generation facilities, 3 of which are fossil fuel fired and make up 95% of generation capacity. First Energy closed nearly 80% of total capacity at Bay Shore in 2012:
 - FirstEnergy Bay Shore (136 MW, Pet Coke; 16 MW, Distillate)
 - Bay View Backup Power Facility (10 MW, Gas; 2 MW, Distillate)
 - Toledo Ref Power Recovery Train (6 MW, Coke).
- **Oil Refining:** Lucas County has two large oil refineries with a combined capacity of over 300 barrels per day.

Madison County is located in central Ohio and has a relatively strong manufacturing sector (15% of employment).

County Map



Summary Statistics

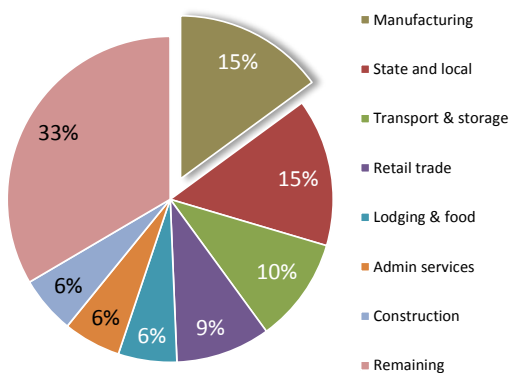
Population (2014) ¹	43,918
Households (2009-2013) ²	14,611
Total Employment (2013) ³	20,645
Manufacturing Employment (2013) ³	3,082
Unemployment Rate (2014) ⁴	4.7%
Employee Compensation (2014\$) ⁵	\$0.8 Bn
GDP estimate (2014\$) ⁶	\$2.6 Bn
Median Household Income (2014\$) ⁷	\$57,088
Poverty Rate ⁸	12.2%
2011-2013 Average Ozone ⁹	74

Employment Highlights

Top Employers

- Stanley Electric U.S. Co.
- Jefferson Industries Corp.
- Target Brands, Inc. Distribution
- Staples
- Restoration Hardware
- Nissan Chemitec
- Battelle
- Matco Services
- Select Sires, Inc.
- Showa Aluminum Inc.

Employment by Sector

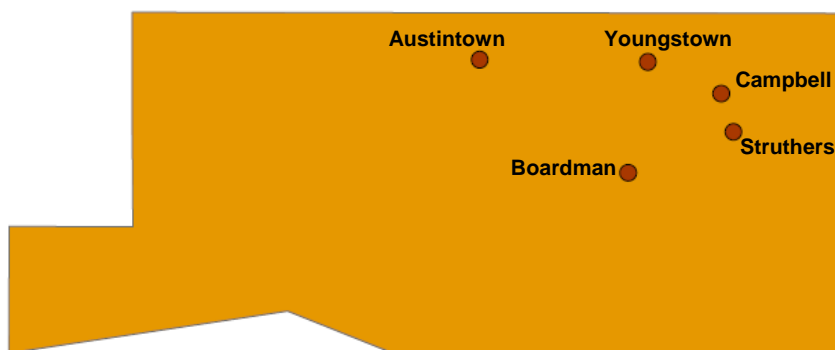


Ozone Challenges

- **Manufacturing:** Manufacturing composes 15% of employment in Madison County. This includes such companies as Stanley Electric, Jefferson Industries and Showa Aluminum.
- **Transportation:** The transportation sector accounts for 84% of NOx emissions in the county.

Mahoning County, located in northeastern Ohio, has 9,700 employed in manufacturing. The transportation sector accounts for 84% of NOx emissions in the County.

County Map



Summary Statistics

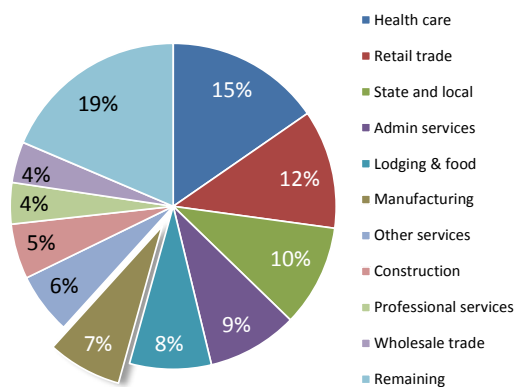
Population (2014) ¹	233,204
Households (2009-2013) ²	98,201
Total Employment (2013) ³	131,266
Manufacturing Employment (2013) ³	9,686
Unemployment Rate (2014) ⁴	6.6%
Employee Compensation (2014\$) ⁵	\$5.1 Bn
GDP estimate (2014\$) ⁶	\$8.2 Bn
Median Household Income (2014\$) ⁷	\$42,651
Poverty Rate ⁸	18.0%
2011-2013 Average Ozone ⁹	70

Employment Highlights

Top Employers

- Humility of Mary Health Partners
- Youngstown State University
- Mahoning County
- Diocese of Youngstown
- Infocision Management
- Windsor House
- Youngstown City School District
- AT&T Call Center
- Austintown Local School District
- Boardman Local School District

Employment by Sector

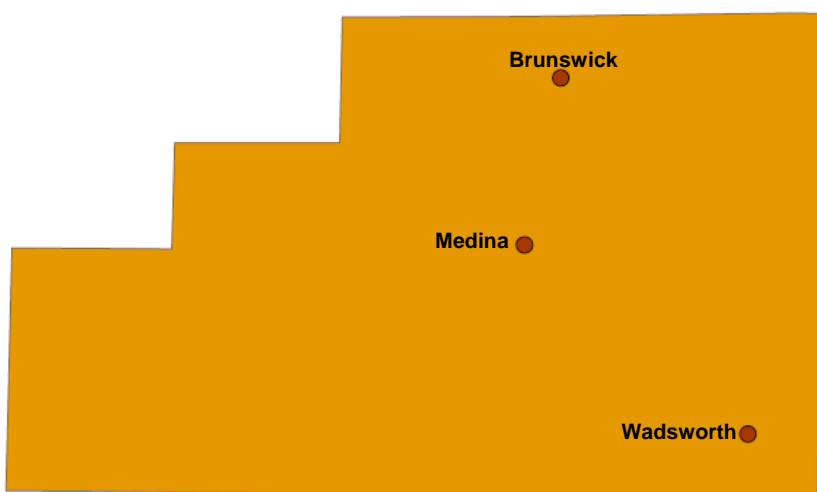


Ozone Challenges

- **Manufacturing:** Manufacturing composes 7% of employment in Mahoning County.
- **Gas Production:** Mahoning County accounted for 1.9% of Ohio's gas production in 2014.
- **Transportation:** The transportation sector accounts for 84% of NOx emissions in the county.

Medina County, southwest of Cleveland, has a moderate manufacturing base and a very small amount of power generation. Transportation accounts for 86% of NOx emissions.

County Map



Summary Statistics

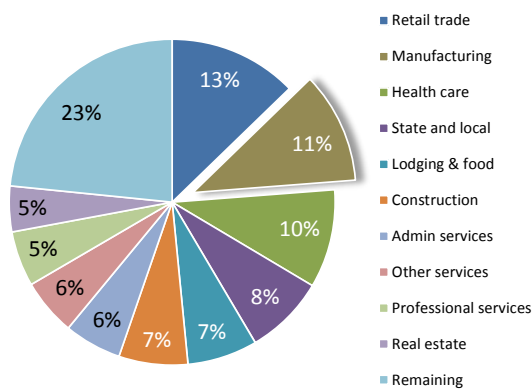
Population (2014) ¹	176,029
Households (2009-2013) ²	65,499
Total Employment (2013) ³	84,463
Manufacturing Employment (2013) ³	9,323
Unemployment Rate (2014) ⁴	5.2%
Employee Compensation (2014\$) ⁵	\$3.2 Bn
GDP estimate (2014\$) ⁶	\$10.9 Bn
Median Household Income (2014\$) ⁷	\$68,510
Poverty Rate ⁸	6.6%
2011-2013 Average Ozone ⁹	69

Employment Highlights

Top Employers

- Medina County
- Medina General Hospital
- Medina City Schools
- Drug Mart
- Sandridge Foods
- Plastipak Packaging
- City of Medina
- Friction Products
- A.I. Root
- Sealy Mattress
- Jacobson Manufacturing
- MTD Products, Inc.
- Arnold Corp
- Sandridge Food Corp
- Mack Industries, Inc.

Employment by Sector

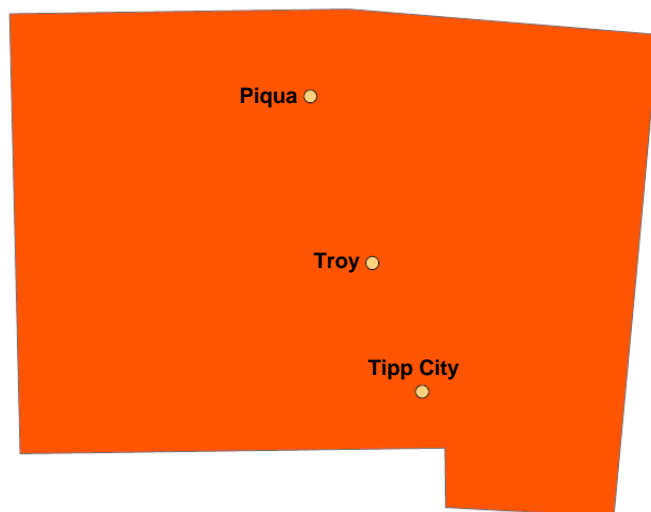


Ozone Challenges

- **Manufacturing:** Manufacturing composes 11% of employment in Medina County.
- **Transportation:** The transportation sector accounts for 86% of NOx emissions in the county. Medina is an E-Check county that requires VOC vehicle emissions testing every two years.
- **Power Generation:** Both power generation facilities in Medina County (Seville, Wadsworth) are distillate-fired, each with 5.4 MW capacity.

Miami County, located in western Ohio, north of Dayton, has a relatively strong manufacturing sector (20% of employment).

County Map



Summary Statistics

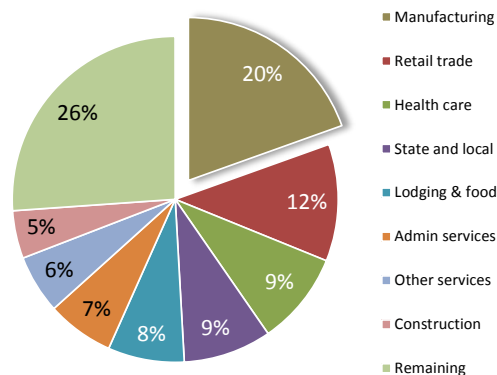
Population (2014) ¹	103,900
Households (2009-2013) ²	41,293
Total Employment (2013) ³	52,686
Manufacturing Employment (2013) ³	10,263
Unemployment Rate (2014) ⁴	5.3%
Employee Compensation (2014\$) ⁵	\$2.1 Bn
GDP estimate (2014\$) ⁶	\$5.0 Bn
Median Household Income (2014\$) ⁷	\$54,059
Poverty Rate ⁸	10.1%
2011-2013 Average Ozone ⁹	74

Employment Highlights

Top Employers

- Upper Valley Medical Center
- Clopay Building Products
- F&P America
- UTC Aerospace Systems
- Meijer Distribution Center
- ConAgra Foods
- American Honda
- Hobart Brothers
- Industry Products
- ITW Food Equipment Group

Employment by Sector

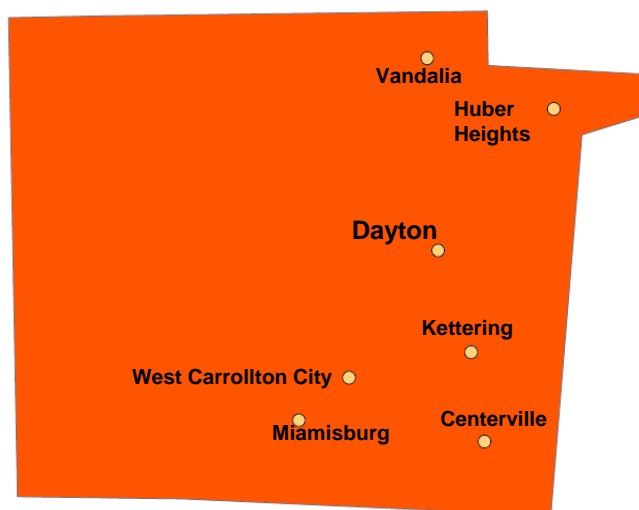


Ozone Challenges

- **Manufacturing:** Manufacturing composes 20% of employment in Miami County. This includes companies such as Clopay Building Products, UTC Aerospace Systems, and ITW Food Equipment Group.
- **Power Generation:** Miami County is home to the Piqua Power Plant, which has 36.5 MW of capacity and is distillate-fired.
- **Transportation:** The transportation sector accounts for 86% of NOx emissions in the county.

Montgomery County, located in southwestern Ohio, employs over 25,000 people in manufacturing.

County Map



Summary Statistics

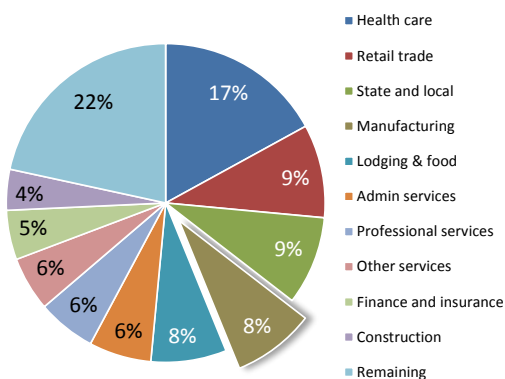
Population (2014) ¹	533,116
Households (2009-2013) ²	222,578
Total Employment (2013) ³	304,599
Manufacturing Employment (2013) ³	25,477
Unemployment Rate (2014) ⁴	6.0%
Employee Compensation (2014\$) ⁵	\$15.2 Bn
GDP estimate (2014\$) ⁶	\$25.9 Bn
Median Household Income (2014\$) ⁷	\$45,058
Poverty Rate ⁸	18.8%
2011-2013 Average Ozone ⁹	76

Employment Highlights

Top Employers

- Wright-Patterson Air Force Base
- Premier Health Partners
- Kettering Health Network
- Montgomery County
- The Kroger Company
- LexisNexis
- Wright State University
- Sinclair Community College
- Dayton Public Schools
- AK Steel Corporation
- Honda of America Manufacturing
- Community Mercy Health Partners
- University of Dayton
- National City
- VA Medical Center

Employment by Sector

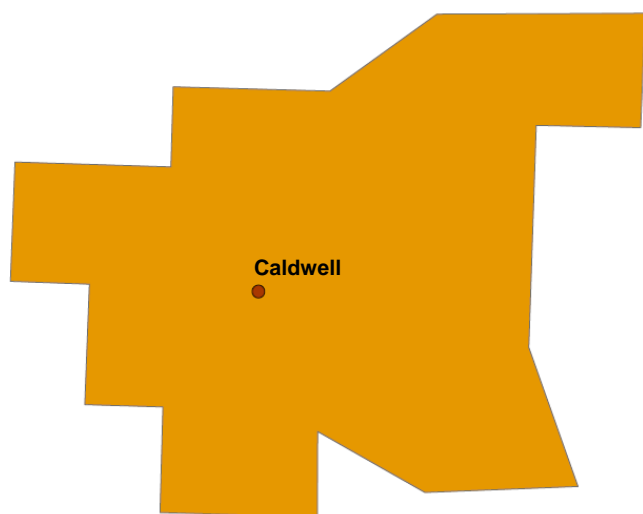


Ozone Challenges

- **Manufacturing:** Manufacturing composes 8% of employment in Montgomery County, including AK Steel and Honda.
- **Power Generation:** Montgomery County has over 700 MW of natural gas capacity. AES shut down its coal units at OH Hutchings earlier this year.
 - Frank M Tait (256 MW, Gas; 10 MW, Distillate)
 - Tait Electric Generating Station (340 MW, Gas)
 - Monument (12 MW, Distillate),
 - O H Hutchings (25 MW, Gas) – shut down 365 MW coal capacity this year.
 - Yankee Street (100 MW, Gas; 1 MW, Solar).
- **Transportation:** The transportation sector accounts for 83% of NOx emissions in the county.

Noble County is the least populous of the nonattainment counties in Ohio. It is the third and fourth largest producer of oil and natural gas in the state, respectively.

County Map



Summary Statistics

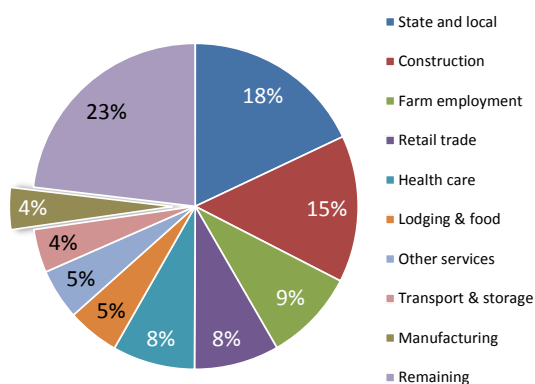
Population (2014) ¹	14,363
Households (2009-2013) ²	4,883
Total Employment (2013) ³	5,272
Manufacturing Employment (2013) ³	219
Unemployment Rate (2014) ⁴	7.6%
Employee Compensation (2014\$) ⁵	\$0.2 Bn
GDP estimate (2014\$) ⁶	\$0.4 Bn
Median Household Income (2014\$) ⁷	\$39,776
Poverty Rate ⁸	17.3%
2011-2013 Average Ozone ⁹	66

Employment Highlights

Top Employers

- Noble Correctional Institution
- Noble County
- Summit Acres
- Magnum Magnetics
- Noble Local Schools
- International Converter
- Caldwell School District
- B&N Coal Inc.

Employment by Sector



Ozone Challenges

- **Manufacturing:** Manufacturing composes 4% of employment in Noble County.
- **Oil & Gas Production:** Noble County accounted for 14.8% of Ohio's oil production and 7.8% of Ohio's gas production in 2014.
- **Transportation:** The transportation sector accounts for 81% of NOx emissions in the county.

Portage County, southeast of Cleveland, has a relatively strong manufacturing sector (13% of employment). Transportation accounts for 88% of NOx emissions.

County Map

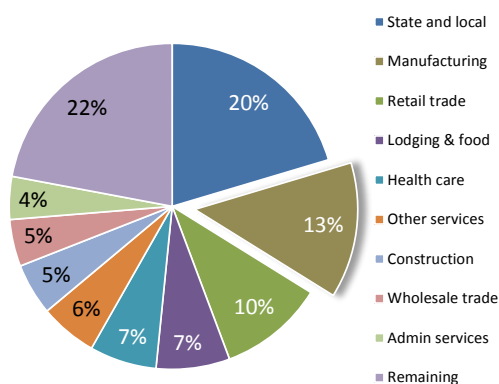


Employment Highlights

Top Employers

- Kent State University
- Robinson Memorial Hospital
- Portage County Government
- Kent City School District
- East Manufacturing
- Parker Hannifin (Kent & Ravenna Plants)
- Ravenna City School District
- Step 2 Corporation
- McMaster-Carr
- NEOMED
- Davey Tree Expert Company
- Automated Packaging
- Hattie Larlham
- Hiram College
- Technical Consumer Products

Employment by Sector



Summary Statistics

Population (2014) ¹	161,882
Households (2009-2013) ²	60,992
Total Employment (2013) ³	76,326
Manufacturing Employment (2013) ³	10,280
Unemployment Rate (2014) ⁴	5.8%
Employee Compensation (2014\$) ⁵	\$3.2 Bn
GDP estimate (2014\$) ⁶	\$10.0 Bn
Median Household Income (2014\$) ⁷	\$54,742
Poverty Rate ⁸	16.9%
2011-2013 Average Ozone ⁹	67

Ozone Challenges

- **Manufacturing:** Manufacturing composes 13% of employment in Portage County.
- **Oil Production:** Portage County accounted for 2.1% of Ohio's oil production in 2014.
- **Transportation:** The transportation sector accounts for 88% of NOx emissions in the county. Portage is an E-Check county that requires VOC vehicle emissions testing every two years.
- **Power Generation:** The Summit Street Power Plant (12 MW, Gas) powers Kent State University.

Preble County, is a small county located in southwest Ohio with a large percentage (20%) of jobs in the manufacturing sector.

County Map



Summary Statistics

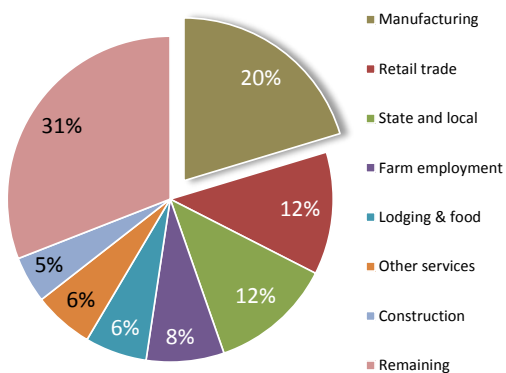
Population (2014) ¹	41,586
Households (2009-2013) ²	16,238
Total Employment (2013) ³	14,957
Manufacturing Employment (2013) ³	3,041
Unemployment Rate (2014) ⁴	5.6%
Employee Compensation (2014\$) ⁵	\$0.5 Bn
GDP estimate (2014\$) ⁶	\$0.9 Bn
Median Household Income (2014\$) ⁷	\$50,238
Poverty Rate ⁸	13.1%
2011-2013 Average Ozone ⁹	72

Employment Highlights

Top Employers

- Neaton Auto Products Mfg Inc
- Henny Penny Corporation
- Parker-Hannifin Corporation
- Lam Research Corp. SILFEX
- Wal-Mart Stores Inc
- Provimi North America Inc.
- Lewisburg Container Company
- International Paper Company
- L & M Products Inc.
- Trinity Mission New Paris Care
- October Enterprises Inc.
- Health Care Retirement Corp Amer. Heartland
- Hueston Woods State Park Lodge
- Marsh Supermarkets Inc
- Timken Company

Employment by Sector

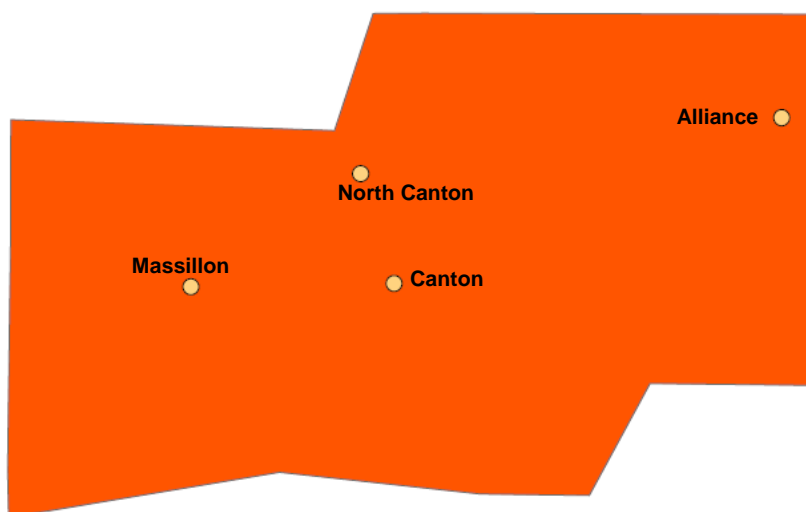


Ozone Challenges

- **Manufacturing:** Manufacturing composes 20% of employment in Preble County. This includes companies such as Neaton Auto Products, Provimi, Lewisburg Container Company and International Paper.
- **Transportation:** The transportation sector accounts for 83% of NOx emissions in the county.

Stark County has a large percentage (13%) of jobs in the manufacturing sector and produces 4% of the state's oil. It has a large steel manufacturing sector and an oil refinery.

County Map



Summary Statistics

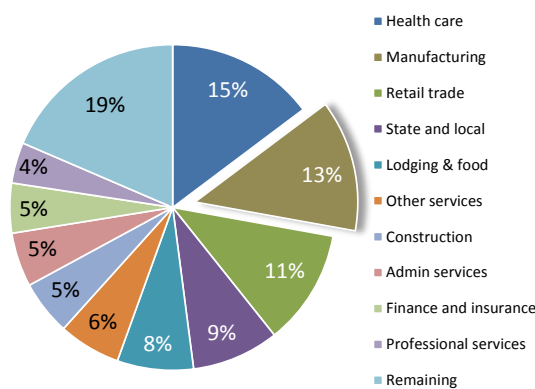
Population (2014) ¹	375,736
Households (2009-2013) ²	150,003
Total Employment (2013) ³	209,281
Manufacturing Employment (2013) ³	27,369
Unemployment Rate (2014) ⁴	5.7%
Employee Compensation (2014\$) ⁵	\$8.6 Bn
GDP estimate (2014\$) ⁶	\$15.2 Bn
Median Household Income (2014\$) ⁷	\$47,412
Poverty Rate ⁸	15.4%
2011-2013 Average Ozone ⁹	76

Employment Highlights

Top Employers

- Aultman
- The Timken Company
- Stark County Government
- Mercy Medical Center
- Diebold, Inc.
- Alliance Community Hospital
- Freshmark, Inc.
- Giant Eagle
- GE Money
- Affinity Hospital
- Fisher Foods Marketing, Inc.
- Stark State College of Technology
- Republic Engineered Products, Inc
- S.C.I. Direct Mailing Service
- Nationwide Insurance

Employment by Sector



Ozone Challenges

- **Manufacturing:** Manufacturing composes 13% of employment in Stark County, including large steel producers Timken and Republic.
- **Oil & Gas Production:** Stark County accounted for 4.0% of Ohio's oil production and 1.0% of Ohio's gas production in 2014.
- **Oil Refining:** Marathon oil has a refinery in Canton that has 350 employees and 300 contract workers.

Summit County employs over 30,000 people in manufacturing. It is a E-Check county, and transportation sector accounts for 85% of its NOx emissions.

County Map



Summary Statistics

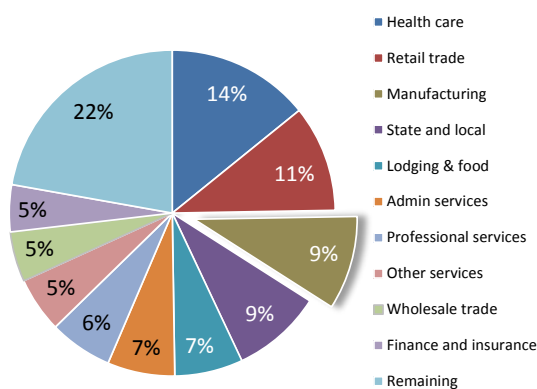
Population (2014) ¹	541,943
Households (2009-2013) ²	220,375
Total Employment (2013) ³	331,215
Manufacturing Employment (2013) ³	30,826
Unemployment Rate (2014) ⁴	5.8%
Employee Compensation (2014\$) ⁵	\$16.3 Bn
GDP estimate (2014\$) ⁶	\$33.5 Bn
Median Household Income (2014\$) ⁷	\$51,596
Poverty Rate ⁸	14.8%
2011-2013 Average Ozone ⁹	68

Employment Highlights

Top Employers

- Summa
- FirstMerit
- Akron General
- Akron Children's
- Goodyear
- The University of Akron
- FirstEnergy
- Sterling Jewelers
- Kent State University
- Akron Public Schools
- The University of Akron
- FirstMerit Corp
- Akron Children's Hospital

Employment by Sector

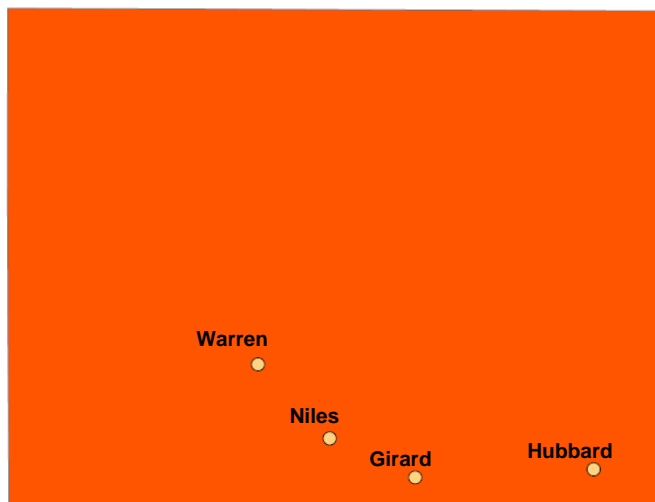


Ozone Challenges

- **Manufacturing:** Manufacturing composes 9% of employment in Summit County. Akron is the global headquarters for Goodyear.
- **Oil & Gas Production:** Summit County accounted for 1.1% of Ohio's oil production and 0.5% of Ohio's gas production in 2014.
- **Transportation:** The transportation sector accounts for 85% of NOx emissions in the county. Summit is an E-Check county that requires VOC vehicle emissions testing every two years.

Trumbull County, located in northeastern Ohio, has a significant manufacturing base (14% of employment). General Motors is the top employer.

County Map

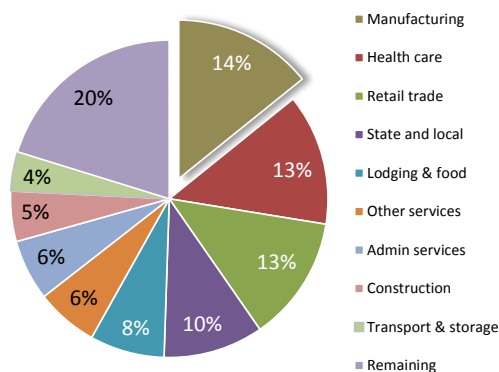


Employment Highlights

Top Employers

- General Motors Corporation
- Valley Care Health Systems
- Youngstown Air Reserve Base
- Youngstown State University
- Trumbull County
- West Corporation
- Delphi Packard
- Warren City Schools

Employment by Sector



Summary Statistics

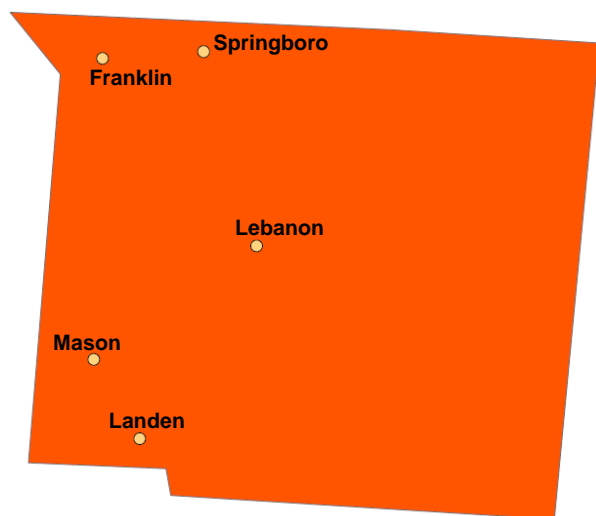
Population (2014) ¹	205,175
Households (2009-2013) ²	86,246
Total Employment (2013) ³	91,714
Manufacturing Employment (2013) ³	13,028
Unemployment Rate (2014) ⁴	7.0%
Employee Compensation (2014\$) ⁵	\$3.8 Bn
GDP estimate (2014\$) ⁶	\$7.2 Bn
Median Household Income (2014\$) ⁷	\$44,544
Poverty Rate ⁸	18.7%
2011-2013 Average Ozone ⁹	76

Ozone Challenges

- **Manufacturing:** Manufacturing composes 14% of employment in Trumbull County.
 - The GM plant in Lordstown employs 4,500 people.
 - ArcelorMittal has a plant in Warren with a 19 MW generator fueled by blast furnace gas.
- **Oil & Gas Production:** Trumbull County accounted for 0.8% of Ohio's oil production and 1.3% of Ohio's gas production in 2014.
- **Power Generation:** NGR has a small power plant in Niles (30 MW, Distillate)

Warren County, northeast of Cincinnati, has a moderate manufacturing sector (10% of employment). The transportation sector accounts for 83% of NOx emissions in the County.

County Map



Summary Statistics

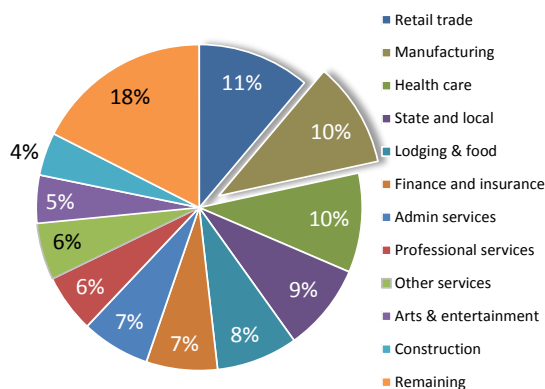
Population (2014) ¹	221,659
Households (2009-2013) ²	76,546
Total Employment (2013) ³	109,266
Manufacturing Employment (2013) ³	11,416
Unemployment Rate (2014) ⁴	4.8%
Employee Compensation (2014\$) ⁵	\$4.9 Bn
GDP estimate (2014\$) ⁶	\$12.8 Bn
Median Household Income (2014\$) ⁷	\$75,299
Poverty Rate ⁸	7.3%
2011-2013 Average Ozone ⁹	76

Employment Highlights

Top Employers

- Warren County
- Countryside YMCA
- Lebanon City School District
- ADVICS Manufacturing Ohio
- Mane, Inc.
- Kroger Marketplace
- HTNA
- Wal-Mart
- City of Lebanon
- JBM Envelope
- Bethesda at Arrow Springs
- LCNB National Bank
- Addison McKee

Employment by Sector

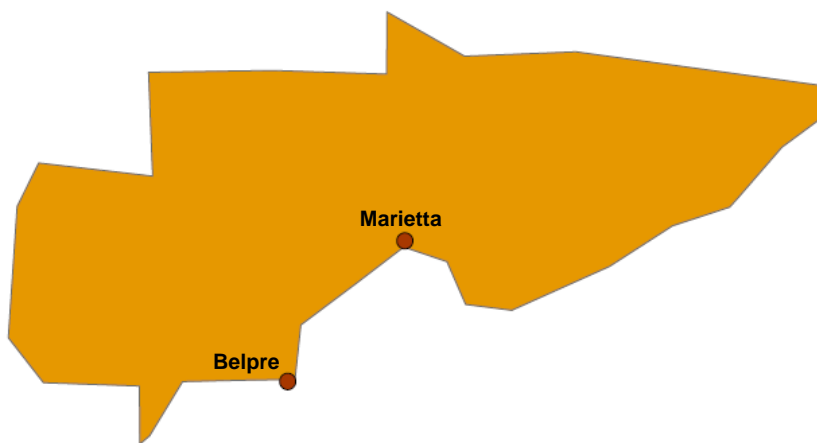


Ozone Challenges

- **Manufacturing:** Manufacturing composes 10% of employment in Warren County, including companies such as ADVICS Manufacturing, JBM Envelope and Addison McKee.
- **Power Generation:** The only power generation in the county is the small (31 MW) Lebanon Power Plant that the city of Lebanon uses for emergency power.
- **Transportation:** The transportation sector accounts for 83% of NOx emissions in the county.

Washington County sits on the Ohio River in the southeast part of the state. AEP closed the county's largest NOx emitter (Muskingum River plant) in May 2015.

County Map



Summary Statistics

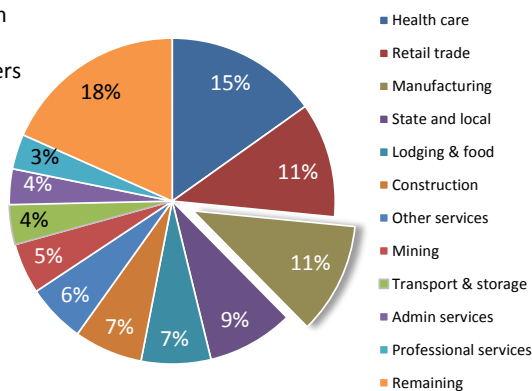
Population (2014) ¹	61,213
Households (2009-2013) ²	25,029
Total Employment (2013) ³	32,443
Manufacturing Employment (2013) ³	3,593
Unemployment Rate (2014) ⁴	6.2%
Employee Compensation (2014\$) ⁵	\$1.4 Bn
GDP estimate (2014\$) ⁶	\$2.4 Bn
Median Household Income (2014\$) ⁷	\$44,496
Poverty Rate ⁸	16.3%
2011-2013 Average Ozone ⁹	69

Employment Highlights

Top Employers

- Marietta Memorial Health System
- Pioneer Pipe
- Eramet – Marietta Kraton Polymers
- Thermo Fisher
- RJF International
- Peoples Bancorp Inc.
- Broughton Foods
- Tata Enterprises
- Solvay Advanced Polymers
- AEP Muskingum River Plant
- Americas Styrenics
- Globe Metallurgical
- Magnum Magnetics
- Flexmag Industries
- Hi-Vac

Employment by Sector

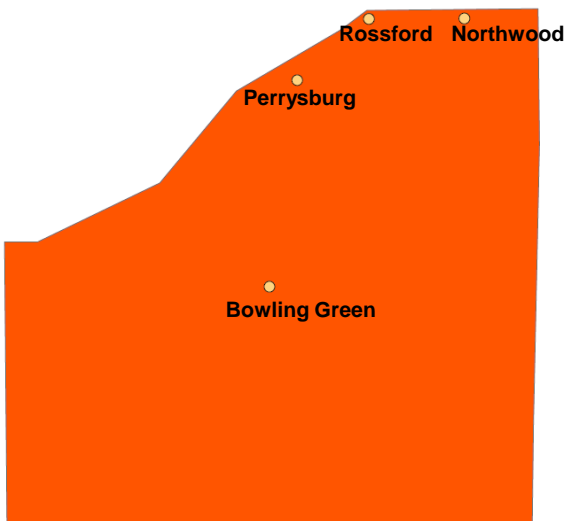


Ozone Challenges

- **Manufacturing:** Manufacturing composes 11% of employment in Washington County.
- **Oil & Gas Production:** Washington County accounted for 0.7% of Ohio's oil production and 0.6% of Ohio's gas production in 2014.
- **Power Generation:** Prior to closing in May 2015, the Muskingum River plant (1,375 MW, Coal) was responsible for 66% of the county's NOx emissions. The county still has two largest natural gas facilities:
 - AEP Waterford (810 MW, Gas)
 - Washington Energy (626 MW, Gas)

Wood County is home to Bowling Green State University. Manufacturing represents 17% of total employment.

County Map



Summary Statistics

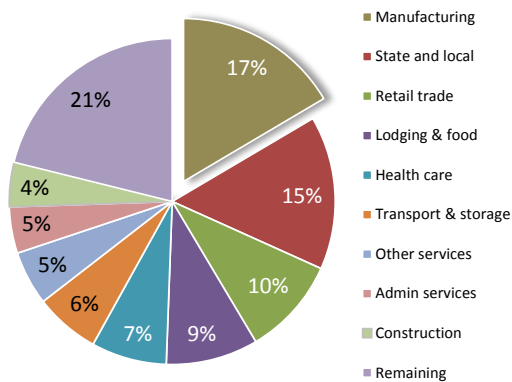
Population (2014) ¹	129,590
Households (2009-2013) ²	49,086
Total Employment (2013) ³	77,814
Manufacturing Employment (2013) ³	12,843
Unemployment Rate (2014) ⁴	5.2%
Employee Compensation (2014\$) ⁵	\$3.6 Bn
GDP estimate (2014\$) ⁶	\$6.9 Bn
Median Household Income (2014\$) ⁷	\$54,089
Poverty Rate ⁸	13.0%
2011-2013 Average Ozone ⁹	71

Employment Highlights

Top Employers

- Bowling Green State University
- Owens Community College
- Wood County
- First Solar, Inc.
- Wood County Hospital
- DaimlerChrysler Corporation
- Walgreens
- Norplas Industries
- TNS Market Research (NFO)
- Cooper Standard Automotive

Employment by Sector



Ozone Challenges

- **Manufacturing:** Manufacturing composes 17% of employment in Wood County.
- **Power Generation:** Wood County has several natural gas and distillate power plants. It also has a 7 MW wind farm outside of Bowling Green.
 - Troy Energy LLC (584 MW, Gas)
 - Bowling Green Generating Station (38 MW, Gas)
 - Bowling Green Peaking (29 MW, Gas)
 - Bowling Green (9 MW, Distillate)

End Notes

- ¹ U.S. Census Population estimates, July 1, 2014, accessed at <http://www.census.gov/quickfacts/>
- ² U.S. Census Household 5-Year estimates 2009 - 2013, American Community Survey, accessed at <http://www.census.gov/quickfacts/>
- ³ BEA 2013 Employment estimates, accessed at <http://bea.gov/index.htm>.
- ⁴ U.S. Department of Labor, Bureau of Labor Statistics, 2014 unemployment rate, accessed at <http://data.bls.gov/map/>
- ⁵ U. S. Bureau of Economic Analysis 2013 Compensation of Employees by NAICS Industry adjusted to 2014 dollars, accessed at <http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1>
- ⁶ BEA 2013 GDP by State and MSA adjusted to 2014 dollars; U. S. Bureau of Economic Analysis 2013 Compensation of Employees by NAICS Industry adjusted to 2014 dollars and applied a GDP multiplier, accessed at <http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1>
- ⁷ U.S. Census Median Household Income estimates 2009-2013 in adjusted to 2014 dollars, accessed at <http://www.census.gov/quickfacts/>
- ⁸ U.S. Census Persons in poverty, percent, accessed at <http://www.census.gov/quickfacts/>
- ⁹ U.S. EPA Counties Violating the Primary Ground-level Ozone Standard, accessed at <http://www.epa.gov/groundlevelozone/pdfs/20141126-20112013datatable.pdf>