# NOBLE COUNTY ECONOMIC DEVELOPMENT STRATEGIC PLAN

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Prepared for:
Noble County

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# Executive Summary

This report, developed by Ohio University's Voinovich School of Leadership and Public Affairs, investigates strategies to enhance economic development for Noble County, Ohio as requested by the Ohio State University Extension Office in Noble County. This "Economic Development Strategic Plan" was funded by the U.S. Economic Development Administration (EDA) and the Appalachian New Economy Partnership, a program of the Ohio Department of Higher Education and the State of Ohio.

Noble County has seen population stagnation over the last two decades, as well as overall decline in working age adults and school enrollment. Over 40% of Noble County's population is 55 or older. The availability of quality housing is limited, which restricts Noble County's ability to address this population decline and boost school enrollment by attracting middle-class families. Additionally, the closure of MAHLE Engine Components in 2009 resulted in 190 direct job losses and hundreds of indirect job losses as the automotive industry declined in Noble County. Subsequently, oil and gas production and transportation has become Noble County's top industry.

Noble County has key decisions to make to stabilize and ultimately reverse this population decline and ancillary challenges. This plan specifically recommends four focus areas: 1) Broadband Feasibility; 2) Water Infrastructure; 3) Tourism; and 4) Workforce Development. Concentrated strategic investment and support of these themes may help capitalize on emerging business opportunities, infrastructure improvements, and ways to retain and attract families to the area. Noble County should focus on implementing the priorities put forth in this plan.

# Noble County Economic Development Strategic Plan

# 1. Introduction

In the fall of 2018, the Extension Educator from the Ohio State University Extension Office in Noble County asked Ohio University's Voinovich School of Leadership and Public Affairs for assistance in crafting an economic development strategic plan for Noble County, Ohio. A team of researchers was in contact with the Extension Educator in early December. The Voinovich School developed a scope of work in late December, and ultimately began work on the plan in January of 2019. The project was funded by the U.S. Economic Development Administration (EDA) program and the Appalachian New Economy Partnership, a program of the Ohio Department of Higher Education and the state of Ohio.

The Rural Universities Consortium (RUC) University Center, a partnership between Ohio University and Bowling Green State University, is a designated U.S. EDA University Center. Collectively, the RUC serves 59 rural Ohio counties: 32 Appalachian counties and 27 counties in Northwestern Ohio with direct business assistance services, applied research initiatives, and annual State of the Region Conferences.

This student-led, and faculty and staff supported, effort proposes several recommendations that were developed through the findings of core research tasks. These tasks included a comprehensive economic scan and workforce inventory, interviews with key community stakeholders, community engagement (e.g., public meetings) intended to identify economic development desires, and an analysis of regional industry clusters. We identified several areas for improvement of Noble County's regional economy, which are noted in the executive summary.

# 2. Existing Conditions & Community Trends

The first task associated with this work involved a demographic and economic scan in order to compile a foundation of solid information on key economic and demographic descriptors (e.g., unemployment rates, income, labor markets, etc.) of Noble County and the surrounding areas.

This section provides the existing population and household trends and characteristics of Noble County and Ohio, including age, educational attainment, school enrollment, and household incomes.

## 2.1 Population Growth Trends[1]

As shown in Figure 1, the population of Noble County experienced a 27% increase from 1990-2017, growing from around 11,331 individuals in 1990 to around 14,406 in 2017. Ohio's population also increased from 1990 to 2017. The population increased from 10,847,115 in 1990 to 11,609,756 in 2017.

**Figure 1: Noble County Population, 1990-2017**



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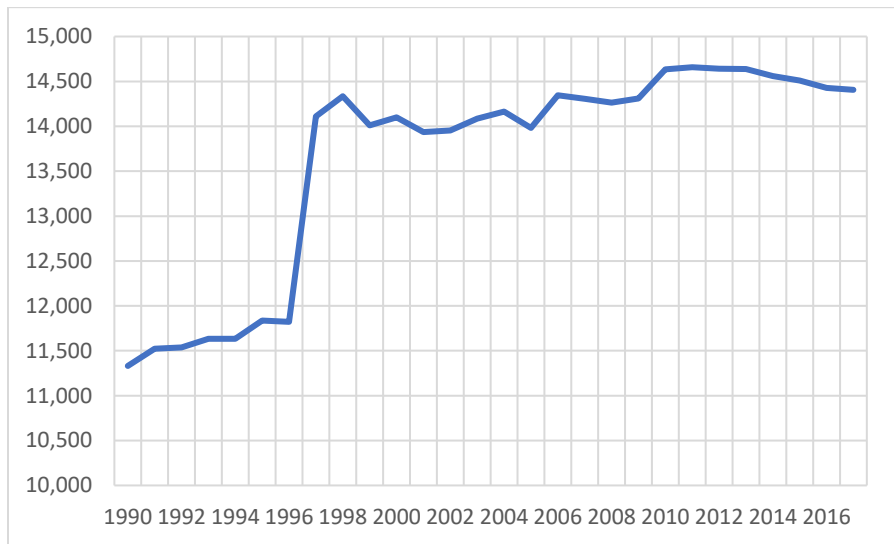
## 2.2 Age Distribution

As shown in Table 1, 43.4% of the population of Noble County was older than 55 in 2016 compared to 29% in Ohio, signifying a large senior population in Noble County. In contrast, about 15.4% of the Noble County population was younger than 15, compared to 18.8% in Ohio in 2016. Moreover, Noble County had a median age of 47.9 while Ohio had 39.3, further suggesting that Noble County has an older population. Additionally, the median age of both Noble County and Ohio increased from 2010 to 2016. Finally, the total working age (people of age 15-64) of Noble County in 2010 was 9,892 and fell to 8,813 in 2016. Noble County's working age population decreased more than 10.9% from 2010 to 2016.

**Table 1: Age Distribution: Noble County and Ohio, 2010 and 2016**

| Age Range | 2010 | | 2016 | | Percent Change |
|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | |
| **Noble County** | | | | | |
| Under 15 | 1,883 | 12.9 | 2,219 | 15.4 | 17.8 |
| 15-24 | 1,846 | 12.6 | 1,491 | 10.3 | -19.2 |
| 25-34 | 1,951 | 13.3 | 1,745 | 12.1 | -10.6 |
| 35-44 | 1,425 | 9.7 | 1,426 | 9.9 | 0.1 |
| 45-54 | 2,196 | 15 | 1,285 | 8.9 | -41.5 |
| 55-64 | 2,474 | 16.9 | 2,866 | 19.9 | 15.8 |
| 65 and over | 2,859 | 19.5 | 3,397 | 23.5 | 18.8 |
| **Total Population** | **14,634** | | **14,429** | | -1.4 |
| **Median Age** | **46.2** | | **47.9** | | 3.7 |
| **Ohio** | | | | | |
| Under 15 | 2,265,348 | 20 | 2,178,344 | 18.8 | -4.6 |
| 15-24 | 1,591,089 | 14 | 1,564,237 | 13.5 | -2.2 |
| 25-34 | 1,414,705 | 12 | 1,471,542 | 12.7 | 3.3 |
| 35-44 | 1,546,960 | 13 | 1,413,607 | 12.2 | -9 |
| 45-54 | 1,745,227 | 15 | 1,598,998 | 13.8 | -9.2 |
| 55-64 | 1,364,403 | 12 | 1,564,237 | 13.5 | 13.4 |
| 65 and over | 1,584,699 | 14 | 1,795,976 | 15.5 | 12.3 |
| **Total Population** | **11,584,699** | | **11,586,941** | | 0 |
| **Median Age** | **38.3** | | **39.3** | | 2.6 |

Source: U.S. Census Bureau, American Community Survey, Demographic and Housing Estimates, 2010-2016

## 2.3 Educational Attainment

Table 2 shows estimations of the educational attainment of residents at three levels. In 2016, roughly 34% of the population of Noble County reported having some amount of college education, compared to roughly 56% in Ohio. This shows that Noble County trails in the statewide averages. Additionally, 15.9% of Noble County's population did not have a high school diploma, while only 10.5% of the population in Ohio did not have a high school diploma. From 2010 to 2016, the proportion of the population that reported having some college education increased from roughly 31% to 34%. Additionally, the proportion that did not have a high school diploma decreased from 19.8% to 15.9%. This shows that both the number of residents of Noble County attaining at least some higher education and the number of residents graduating from high school has increased.

**Table 2: Educational Attainment: Noble County and Ohio, 2010 and 2016**

|  | 2010 | | 2016 | | Percent |
|---|---|---|---|---|---|
|  | **Number** | **Percent** | **Number** | **Percent** | **Change** |
| **Noble County** | | | | | |
| Some high school or less | 2,159 | 19.8 | 1,708 | 15.9 | -20.9 |
| High school diploma | 5,398 | 49.5 | 5,342 | 49.8 | -1 |
| Some college, no degree | 1,701 | 15.6 | 1,857 | 17.3 | 9.2 |
| Associate's degree | 665 | 6.1 | 799 | 7.5 | 20.2 |
| Bachelor's degree | 578 | 5.3 | 585 | 5.5 | 1.2 |
| Graduate or professional degree | 414 | 3.8 | 428 | 4 | 3.4 |
| **Population 25 years and over** | **10,905** | | **10,719** | | **-1.7** |
| **Ohio** | | | | | |
| Some high school or less | 964,655 | 12.6 | 825,155 | 10.5 | -14.5 |
| High school diploma | 2,740,846 | 35.8 | 2,654,140 | 33.8 | -3.2 |
| Some college, no degree | 1,538,855 | 20.1 | 1,616,966 | 20.6 | 5.1 |
| Associate's degree | 558,888 | 7.3 | 658,910 | 8.4 | 17.9 |
| Bachelor's degree | 1,171,367 | 15.3 | 1,310,995 | 16.7 | 11.9 |
| Graduate or professional degree | 673,727 | 8.8 | 781,880 | 10 | 16.1 |
| **Population 25 years and over** | **7,648,338** | | **7,848,046** | | **2.6** |

Source: U.S. Census Bureau, American Community Survey, Educational Attainment, 2010-2016

## 2.4 School Enrollment Trends[2]

Figure 2 visualizes the number of students enrolled in Noble County's school districts from 1990 to 2017. Enrollment declined consistently from 1998 until 2017, decreasing from 2,547 students to 1,675, an overall loss of roughly 34%. To show how this compares to the overall state, Figure 3 shows the total enrollment of all schools in Ohio. The enrollment for the state also peaked in 1998 with a total enrollment of 1,824,451 students. This declined to 1,724,858 in 2017, an almost 5.5% decrease. Therefore, while the state's school enrollment has decreased over the last two decades, Noble County's schools have been hit especially hard.

**Figure 2: Noble County School Enrollment, 1990-2016**
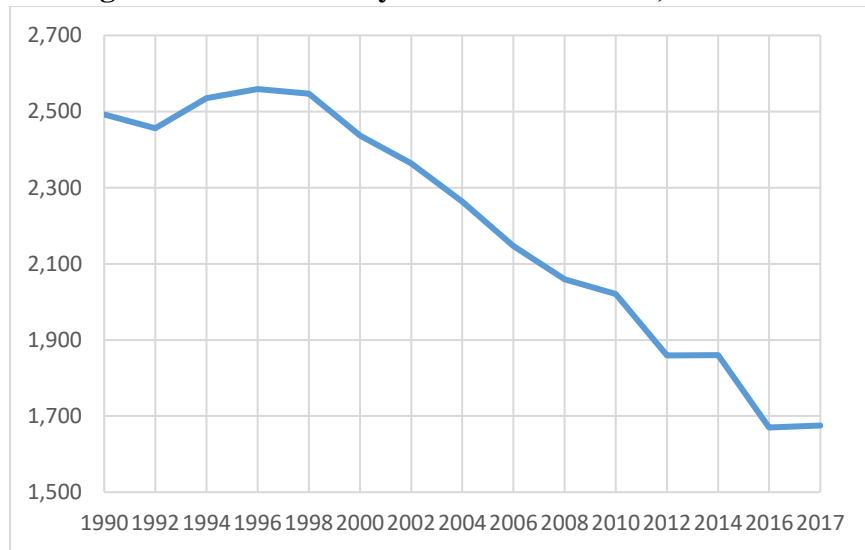


**Figure 3: Ohio School Enrollment, 1990-2017[3]**



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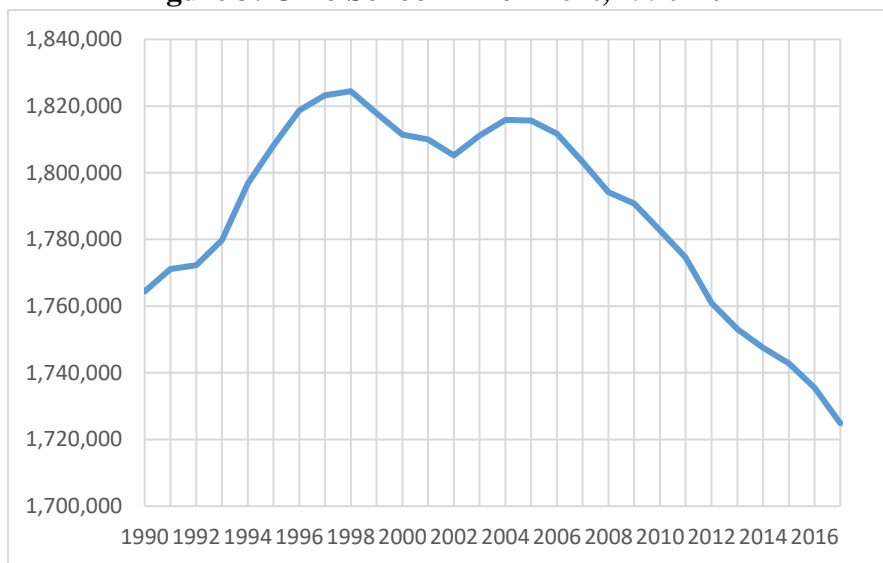
[2] Figures 2 and 3 were developed by authors from the Ohio Department of Education. Figure 2 includes the following Noble County schools: Noble Local and Caldwell Exempted Village.
[3] Figure 3 includes all of the school districts in Ohio.

## 2.5 Household Income Distribution

Table 3 describes the number and annual income distributions of households in Noble County and Ohio for the years of 2010 and 2016. By the Census Bureau definition, household income is the sum of annual earnings for all residents of a household, related or unrelated to the homeowner, who are at least 15 years old. In 2016, Noble County lagged behind Ohio with a median household income of $41,398 compared to $50,674 for Ohio. The largest percent of both Noble County and Ohio households fell into the $50,000 to $74,999 income range. Furthermore, 27.4% of Noble County's households earned less than $25,000 in 2016, compared to 24.5% for Ohio. Noble County's median income grew by 4.81% from 2010 to 2016, a slower growth than Ohio's 7%. The number of households in Noble County also declined by 0.8% during this timeframe.

**Table 3: Household Income Distribution: Noble County and Ohio, 2010 and 2016**

| Household Income | 2010 Number | 2010 Percent | 2016 Number | 2016 Percent | Percent Change |
|---|---|---|---|---|---|
| **Noble County** | | | | | |
| Less than $10,000 | 416 | 8.5 | 292 | 6 | -29.8 |
| $10,000 to $14,999 | 514 | 10.5 | 297 | 6.1 | -42.2 |
| $15,000 to $24,999 | 568 | 11.6 | 744 | 15.3 | 31 |
| $25,000 to $34,999 | 691 | 14.1 | 739 | 15.2 | 6.9 |
| $35,000 to $49,999 | 858 | 17.5 | 710 | 14.6 | -17.2 |
| $50,000 to $74,999 | 887 | 18.1 | 1,069 | 22 | 20.5 |
| $75,000 to $99,999 | 451 | 9.2 | 598 | 12.3 | 32.6 |
| $100,000 to $149,999 | 338 | 6.9 | 282 | 5.8 | -16.6 |
| $150,000 to $199,999 | 147 | 3 | 68 | 1.4 | -53.7 |
| $200,000 or more | 39 | 0.8 | 73 | 1.5 | 87.2 |
| **Total Households** | **~4909** | | **~4872** | | **-0.8** |
| Median income | $39,500 | | $41,398 | | 4.81 |
| Mean income | $50,424 | | $53,284 | | 5.67 |

| Household Income | 2010 | | 2010 | 2016 | Percent |
| | Number | Percent | Number | Percent | Change |
|---|---|---|---|---|---|
| **Ohio** | | | | | |
| Less than $10,000 | 373,286 | 8.2 | 363,514 | 7.9 | -2.6 |
| $10,000 to $14,999 | 268,584 | 5.9 | 248,478 | 5.4 | -7.5 |
| $15,000 to $24,999 | 532,616 | 11.7 | 515,362 | 11.2 | -3.2 |
| $25,000 to $34,999 | 518,959 | 11.4 | 492,355 | 10.7 | -5.1 |
| $35,000 to $49,999 | 691,945 | 15.2 | 653,405 | 14.2 | -5.6 |
| $50,000 to $74,999 | 874,036 | 19.2 | 851,268 | 18.5 | -2.6 |
| $75,000 to $99,999 | 546,272 | 12 | 561,376 | 12.2 | 2.8 |
| $100,000 to $149,999 | 482,541 | 10.6 | 561,376 | 12.2 | 16.3 |
| $150,000 to $199,999 | 145,673 | 3.2 | 188,659 | 4.1 | 29.5 |
| $200,000 or more | 118,359 | 2.6 | 170,253 | 3.7 | 43.8 |
| **Total Households** | **4,552,271** | | **~4,606,046** | | **1.2** |
| Median income | $47,358.00 | | $50,674 | | 7 |
| Mean income | $62,205.00 | | $68,341 | | 9.86 |

Source: U.S. Census Bureau, American Community Survey, Income in the Past 12 Months, 2010-2016

## 2.6 Year Housing Structure Built

Table 4 shows the distribution of when housing structures were built in Noble County and Ohio. It shows that 39.2% of housing structures in Noble County were constructed since 1980. This is greater than that of Ohio, which had 31.9%. This shows that Noble County has had little recent construction, especially when considering that 15.9% of that construction happened between 1990 and 1999. Furthermore, 16.1% of housing units in Noble County were constructed before 1970, while 33% were constructed in Ohio. This shows that Noble County has constructed less new housing units, but also has fewer amounts of much older housing units compared to the statewide averages.

**Table 4: Year Structure Built: Noble County and Ohio, 2016**

| | Noble County | | Ohio | |
|---|---|---|---|---|
| YEAR BUILT | Number | Percent | Number | Percent |
| Built 1940 to 1949 | 263 | 4.4 | 327,211 | 6.4 |
| Built 1950 to 1959 | 367 | 6.1 | 736,303 | 14.3 |
| Built 1960 to 1969 | 337 | 5.6 | 632,473 | 12.3 |
| Built 1970 to 1979 | 951 | 15.8 | 733,865 | 14.3 |
| Built 1980 to 1989 | 631 | 10.5 | 465,388 | 9 |
| Built 1990 to 1999 | 960 | 15.9 | 609,783 | 11.8 |
| Built 2000 to 2009 | 641 | 10.6 | 506,744 | 9.8 |
| Built 2010 to 2013 | 127 | 2.1 | 59,013 | 1.1 |
| Built 2014 or later | 9 | 0.1 | 11,249 | 0.2 |
| **Total Housing Units** | **6,034** | | **5,146,944** | |

Source: U.S. Census Bureau, American Community Survey, Selected Household Characteristics, 2016

**2.7 Housing Property Values**

Below, Table 5 displays the current property value distribution of housing structures in Noble County and Ohio. This data shows that the property values in Noble County are much lower than that of the surrounding area. The median value in Noble County is $87,100, which is $44,800 lower than the rest of Ohio. This is further supported by the fact that 57.3% of Noble County's housing units are valued at less than $100,000, while only 34.5% of Ohio's are worth less than $100,000.

**Table 5: Property Values: Noble County and Ohio, 2016**

| | Noble County | | Ohio | |
|---|---|---|---|---|
| VALUE | Number | Percent | Number | Percent |
| Less than $50,000 | 863 | 21.2 | 301,321 | 9.9 |
| $50,000 to $99,999 | 1,471 | 36.1 | 747,622 | 24.6 |
| $100,000 to $149,999 | 763 | 18.7 | 698,057 | 23 |
| $150,000 to $199,999 | 366 | 9 | 524,549 | 17.3 |
| $200,000 to $299,999 | 497 | 12.2 | 455,855 | 15 |
| $300,000 to $499,999 | 57 | 1.4 | 228,661 | 7.5 |
| $500,000 to $999,999 | 53 | 1.3 | 65,169 | 2.1 |
| $1,00,000 or more | 4 | 0.1 | 14,251 | 0.5 |
| **Median (dollars)** | **$87,100** | | **$131,900** | |

Source: U.S. Census Bureau, American Community Survey, Selected Household Characteristics, 2016

## 2.8 Rent Distribution

Table 6 presents the rent payment distribution of Noble County and Ohio in 2016. The highest rent range that Noble County has is $1,500 to $1,999 which only accounts for 0.2% of the units. This shows that Noble County lacks higher end rental units. Collectively, Tables 4 and 6 show that 11% of Noble County's households live in rent paying units, which is lower than the rest of Ohio at 28.8%. This shows that a decent portion of Noble County's population does not have a permanent residence.

**Table 6: Units Paying Rent: Noble County and Ohio, 2016**

|  | Noble County | | Ohio | |
| --- | --- | --- | --- | --- |
| GROSS RENT | Number | Percent | Number | Percent |
| Less than $500 | 186 | 28 | 254,304 | 17.1 |
| $500 to $999 | 459 | 69.1 | 915,671 | 61.7 |
| $1,000 to $1,499 | 18 | 2.7 | 252,675 | 17 |
| $1,500 to $1,999 | 1 | 0.2 | 40,683 | 2.7 |
| $2,000 to $2,499 | 0 | 0 | 12,065 | 0.8 |
| $2,500 to $2,999 | 0 | 0 | 3,773 | 0.3 |
| $3,000 or more | 0 | 0 | 5,215 | 0.4 |
| **Total Units** | **664** |  | **1,484,386** |  |
| **Median (dollars)** | **607** |  | **743** |  |
| **No rent paid** | **142** |  | **81,578** |  |

Source: U.S. Census Bureau, American Community Survey, Selected Household Characteristics, 2016

## 2.9 Health Outcomes[4]

Figure 4 depicts the percentages of asthma diagnosed in children and adults, diagnosed diabetes, and obesity prevalence in Noble County and Ohio in 2013 and 2014. A lower percentage of asthma was recorded in persons of Noble County, with 9.7% of adults and 10.1% of children diagnosed as compared to the 10.8% of adults and 14.2% of children in all of Ohio in 2014. In contrast, both Noble County's population's proportion of diagnosed diabetes of 14% and obesity prevalence of 33.5% were higher than Ohio averages. Diagnosed diabetes recorded as roughly 5% greater than the state's percentage, and the obesity prevalence was 3% higher than the state's percentage.

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[4] Figure 4 was created using data from Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2013 and 2014. Figure 5 was developed with data from National Center for Chronic Disease Prevention and Health Promotion, Division for Heart Disease and Stroke Prevention, 2013-2016. Table 7 was created using the University of Wisconsin Population Health Institute, County Health Rankings, 2018.

**Figure 4: Asthma, Diabetes, and Obesity Percentages: Noble County and Ohio**
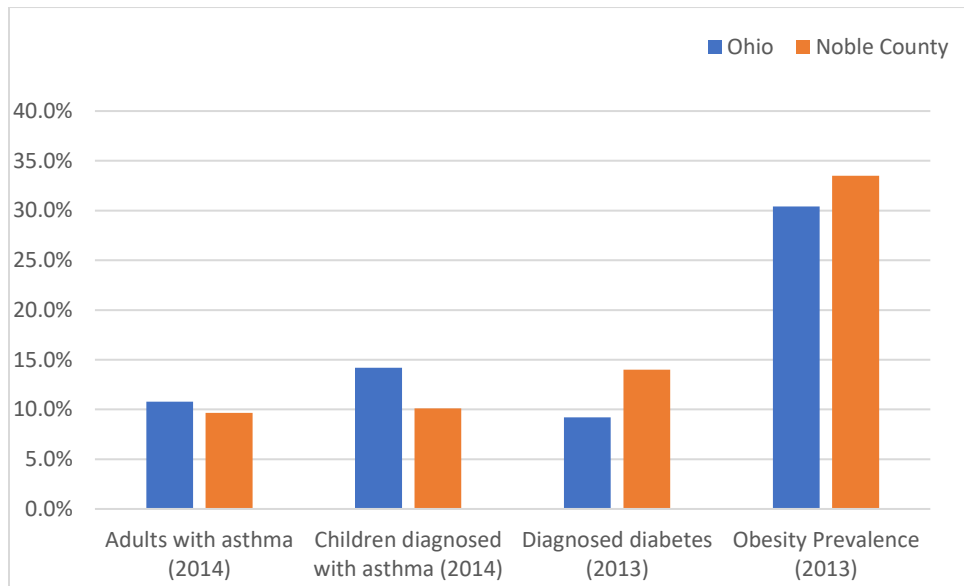


Figure 5 presents heart disease and stroke hospitalization rates from 2013-2015 and death rates from 2014-2016 in Noble County and Ohio. Per 100,000 persons, about 120 were hospitalized for heart disease and almost 20 were hospitalized for stroke in Noble County, showing that the county's hospitalization rates were slighter higher than those recorded in Ohio. However, death rates in Noble County were lower than those in the state, with about 40 more heart disease patients and 6 more stroke patients surviving hospitalization.

**Figure 5: Heart Disease and Stroke Hospitalization and Death Rates: Noble County and Ohio**
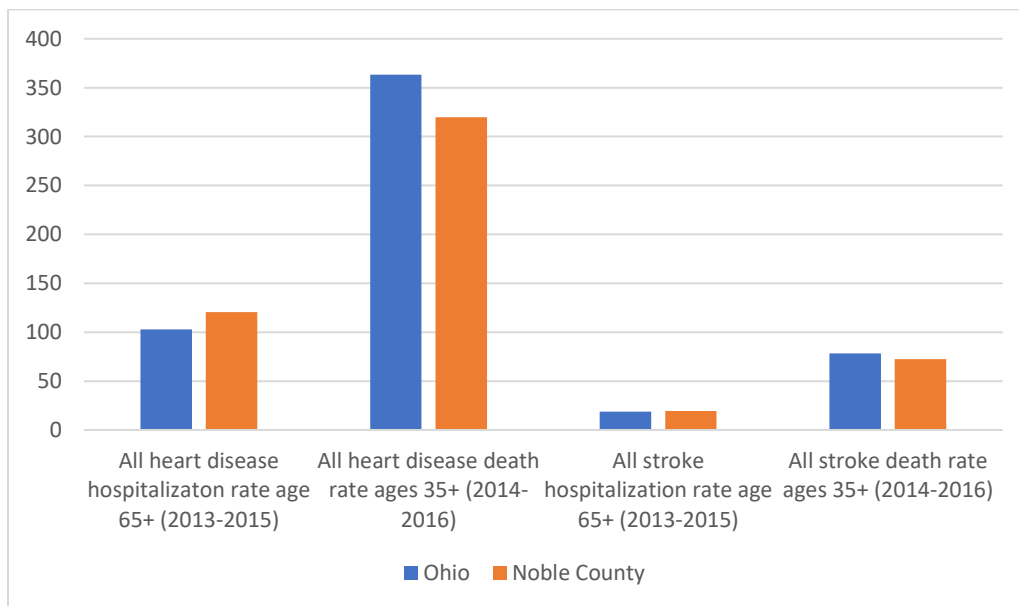
Table 7 compares the results of certain measures used to rank health statistics for the United States, Ohio, and Noble County in 2018. The table lists the rankings of health outcomes as well as health factors including health behaviors, clinical care, social and economic factors, and physical environments. Most notably, Noble County trails behind national and state ratios comparing the population to clinical care providers available. Although the county's graduation rate from high school surpasses data found in state and country records, the college graduation rate is lower and the unemployment rate is higher than those measured in Ohio and the United States.

**Table 7: Health Rankings with Measures and Results: United States, Ohio, and Noble County, 2018**

| Measure | Description | US | OH | OH Minimum | OH Maximum | Noble County |
|---|---|---|---|---|---|---|
| **HEALTH OUTCOMES** | | | | | | |
| **Premature Death** | Years of potential life lost before age 75 per 100,000 population | 6,700 | 7,700 | 3,800 | 11,700 | 6,807 |
| **Poor or fair health** | % of adults reporting fair or poor health | 16% | 17% | 10% | 23% | 15% |
| **Poor physical health days** | Average # of physically unhealthy days reported in past 30 days | 3.7 | 4.0 | 3.0 | 4.7 | 3.7 |
| **Poor mental health days** | Average # of mentally unhealthy days reported in past 30 days | 3.8 | 4.3 | 3.3 | 4.7 | 3.9 |
| **Low birthweight** | % of live births with low birthweight (< 2500 grams) | 8% | 9% | 5% | 11% | 7% |

| Measure | Description | US | OH | OH Min | OH Max | Noble County |
|---------|-------------|----|----|--------|--------|--------------|
| **HEALTH FACTORS** | | | | | | |
| **HEALTH BEHAVIORS** | | | | | | |
| **Adult Smoking** | % of adults who are current smokers | 17% | 23% | 14% | 25% | 18% |
| **Adult obesity** | % of adults that report a BMI ≥ 30 | 28% | 32% | 27% | 40% | 33% |
| **Food environment index** | Index of actors that contribute to a healthy food environment, (0-10) | 7.7 | 6.6 | 5.7 | 8.9 | 7.0 |
| **Physical inactivity** | % of adults aged 20 and over reporting no leisure-time physical activity | 23% | 26% | 19% | 36% | 30% |
| **Access to exercise opportunities** | % of population with adequate access to locations for physical activity | 83% | 85% | 16% | 97% | 16% |
| **Excessive drinking** | % of adults reporting binge or heavy drinking | 18% | 19% | 16% | 21% | 17% |
| **Alcohol-impaired driving deaths** | % of driving deaths with alcohol involvement | 29% | 34% | 16% | 60% | 9% |
| **Sexually transmitted infections** | # of newly diagnosed chlamydia cases per 100,000 population | 478.8 | 489.3 | 84.3 | 847.2 | 37 |
| **Teen births** | # of births per 1,000 female population ages 15-19 | 27 | 28 | 8 | 53 | 32 |

| Measure | Description | US | OH | OH Minimum | OH Maximum | Noble County |
|---------|-------------|-----|-----|-----------|-----------|--------------|
| **CLINICAL CARE** | | | | | | |
| **Uninsured** | % of population under age 65 without health insurance | 11% | 8% | 4% | 22% | 8% |
| **Primary care physicians** | Ratio of population to primary care physicians | 1,320:1 | 1,310:1 | 14,780:1 | 750:1 | 4,775:1 |
| **Dentists** | Ratio of population to dentists | 1,480:1 | 1,660:1 | 15,310:1 | 980:1 | 3,574:1 |
| **Mental health providers** | Ratio of population to mental health providers | 470:1 | 560:1 | 10,980:1 | 340:1 | 2,042:1 |
| **Preventable hospital stays** | # of hospital stays for ambulatory-care sensitive conditions per 1,000 Medicare enrollees | 49 | 57 | 33 | 120 | 53 |
| **Diabetes monitoring** | % of diabetic Medicare enrollees ages 65-75 that receive HbA1c monitoring | 85% | 85% | 74% | 93% | 84% |
| **Mammography screening** | % of female Medicare enrollees ages 67-69 that receive mammography screening | 63% | 61% | 48% | 69% | 56.5% |

| Measure | Description | US | OH | OH Minimum | OH Maximum | Noble County |
|---|---|---|---|---|---|---|
| **SOCIAL AND ECONOMIC FACTORS** | | | | | | |
| **High school graduation** | % of ninth-grade cohort that graduates in four years | 83% | 81% | 33% | 98% | 94% |
| **Some college** | % of adults ages 25-44 with some post-secondary education | 65% | 65% | 19% | 83% | 33.80% |
| **Unemployment** | % of population aged 16 and older unemployed but seeking work | 4.9% | 4.9% | 3.2% | 11.1% | 8.6% |
| **Children in poverty** | % of children under age 18 in poverty | 20% | 20% | 5% | 32% | 18% |
| **Income inequality** | Ratio of household income at the 80th percentile to income at the 20th percentile | 5 | 4.8 | 3.5 | 6.9 | 3.8 |
| **Children in single-parent households** | % of children that live in a household headed by a single parent | 34% | 36% | 8% | 47% | 23% |
| **Social associations** | # of membership associations per 10,000 population | 9.3 | 11.3 | 5.4 | 22.5 | 15.4 |
| **Violent crime** | # of reported violent crime offenses per 100,000 population | 380 | 290 | 20 | 794 | 0 |
| **Injury deaths** | # of deaths due to injury per 100,000 population | 65 | 75 | 40 | 111 | 64 |

| Measure | Description | US | OH | OH Minimum | OH Maximum | Noble County |
|---|---|---|---|---|---|---|
| **PHYSICAL ENVIRONMENT** | | | | | | |
| **Air pollution - particulate matter** | Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5) | 8.7 | 11.3 | 10.5 | 13.0 | 11.1 |
| **Drinking water violations** | Indicator of the presence of health related drinking water violations. Yes - indicates the presence of a violation, No - indicates no violation. | NA | NA | No | Yes | No |
| **Severe housing problems** | % of households with overcrowding, high housing costs, or lack of kitchen or plumbing facilities | 19% | 15% | 8% | 24% | 12% |
| **Driving alone to work** | % of workforce that drives alone to work | 76% | 83% | 53% | 89% | 85% |
| **Long commute - driving alone** | Among workers who commute in their car alone, % commuting > 30 minutes | 35% | 30% | 16% | 57% | 44% |

# 3. Economic Scan and Workforce Inventory

This section provides a report of the current and historic industry and occupational employment trends for Noble County and Ohio, as well as an analysis of regional employed resident commuter behavior.

## 3.1 Employment by Industry

Table 8 breaks down industry-specific employment data for Noble County and Ohio in 2010 and 2016. The education services, and health care and social assistance industry is Noble County's most significant employer with 22.3% of the county's working population. This industry is also the most significant employer for Ohio.

Noble County had 5 industries with employment growth from 2010 to 2016, compared to 7 with employment decline. Of the growth industries, 2 had a growth rate of over 25%, including 50% growth in information. On the other hand, 4 of the 7 loss industries experienced employment declines of greater than 25%, including losses of over 50% in agriculture, forestry, fishing and hunting, and mining and in wholesale trade. In particular, Noble County experienced a 68.5% employment decline in agriculture, forestry, fishing and hunting, and mining despite a growth of 6.1% for this industry in Ohio.

**Table 8: Employment by Industry: Noble County and Ohio, 2010 and 2016**

| Industry | 2010 Estimate | 2010 Percent | 2016 Estimate | 2016 Percent | Percent Change |
|---|---|---|---|---|---|
| **Noble County** | | | | | |
| Agriculture, forestry, fishing and hunting, and mining | 248 | 5.2 | 78 | 2 | -68.5 |
| Construction | 338 | 7.1 | 259 | 6.6 | -23.4 |
| Manufacturing | 758 | 15.8 | 562 | 14.3 | -25.9 |
| Wholesale trade | 207 | 4.3 | 103 | 2.6 | -50.2 |
| Retail trade | 556 | 11 | 541 | 13.8 | -2.7 |
| Transportation and warehousing, and utilities | 397 | 8.3 | 407 | 10.4 | 2.5 |
| Information | 32 | 0.7 | 48 | 1.2 | 50 |
| Finance and insurance, and real estate and rental and leasing | 118 | 2.5 | 168 | 4.3 | 42.4 |
| Professional, scientific, and management, and administrative and waste management services | 232 | 4.8 | 248 | 6.3 | 6.9 |
| Educational services, and health care and social assistance | 1,184 | 24.7 | 875 | 22.3 | -26.1 |
| Arts, entertainment, and recreation, and accommodation and food services | 258 | 5.4 | 196 | 5 | -24 |
| Other services, except public administration | 188 | 3.9 | 145 | 3.7 | -22.9 |
| Public administration | 275 | 5.7 | 302 | 7.7 | 9.8 |
| Civilian employed population 16 years and over | 4,791 | | 3,932 | | -17.9 |

| Industry | 2010 Estimate | Percent | 2016 Estimate | Percent | Percent Change |
|---|---|---|---|---|---|
| **Ohio** | | | | | |
| Agriculture, forestry, fishing and hunting, and mining | 54,903 | 1 | 58,264 | 1.1 | 6.1 |
| Construction | 301,725 | 5.6 | 277,035 | 5.1 | -8.2 |
| Manufacturing | 859,548 | 16 | 841,515 | 15.5 | -2.1 |
| Wholesale trade | 163,458 | 3 | 148,026 | 2.7 | -9.4 |
| Retail trade | 626,512 | 11.7 | 633,530 | 11.7 | 1.1 |
| Transportation and warehousing, and utilities | 266,567 | 5 | 262,232 | 4.8 | -1.6 |
| Information | 105,502 | 2 | 91,987 | 1.7 | -12.8 |
| Finance and insurance, and real estate and rental and leasing | 353,630 | 6.6 | 347,200 | 6.4 | -1.8 |
| Professional, scientific, and management, and administrative and waste management services | 478,692 | 8.9 | 509,829 | 9.4 | 6.5 |
| Educational services, and health care and social assistance | 1,254,969 | 23.4 | 1,310,242 | 24.1 | 4.4 |
| Arts, entertainment, and recreation, and accommodation and food services | 454,730 | 8.5 | 497,112 | 9.2 | 9.3 |
| Other services, except public administration | 239,248 | 4.5 | 240,997 | 4.4 | 0.7 |
| Public administration | 210,373 | 3.9 | 207,678 | 3.8 | -1.3 |
| Civilian employed population 16 years and over | 5,369,857 | | 5,425,647 | | 1 |

Source: U.S. Census Bureau, American Community Survey, Industry by Sex and Median Earnings, 2010-2016

### 3.2 Labor Force Overview[5]

Figure 6 reports data for labor force eligibility and employment in Noble County from 2010 to 2016. This data reveals to what degree Noble County recovered from the 2008 financial crisis. In 2010, the county's labor force included more than 5,239 individuals, of whom around 4,791 were employed and 448 were unemployed. This corresponds to an 8.6% unemployment rate for the year. Figure 7 shows how the Noble County unemployment rate compares with Ohio's rate. In it, Noble County's data is equivalent to that recorded for Ohio in 2010. In 2016, unemployment fell to 6.9%, a decrease of almost 2%, placing it 0.3% below the state rate. However, while unemployment dropped to 290 individuals, the labor force dropped to 4,226, which equates to a loss of more than 1,000 workers. To represent this change, Figure 8 shows the participation rate of Noble County and Ohio. In this graph, the county is shown to have dropped from a participation rate of 41.5% in 2010 to a rate of 35.1% in 2016, equaling a loss of almost 6.5%. For context, this places Noble County almost 32% below Ohio in 2016. To further explore why Noble County's rate was significantly lower, Figure 9 separates the county's participation rate by gender. Women consistently have a higher rate than men, with there being nearly a 25% difference between the genders in 2016.

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[5] Figures 6-9 were developed by authors from the U.S. Census Bureau, American Community Survey, Selected Economic Characteristics, 2010-2016
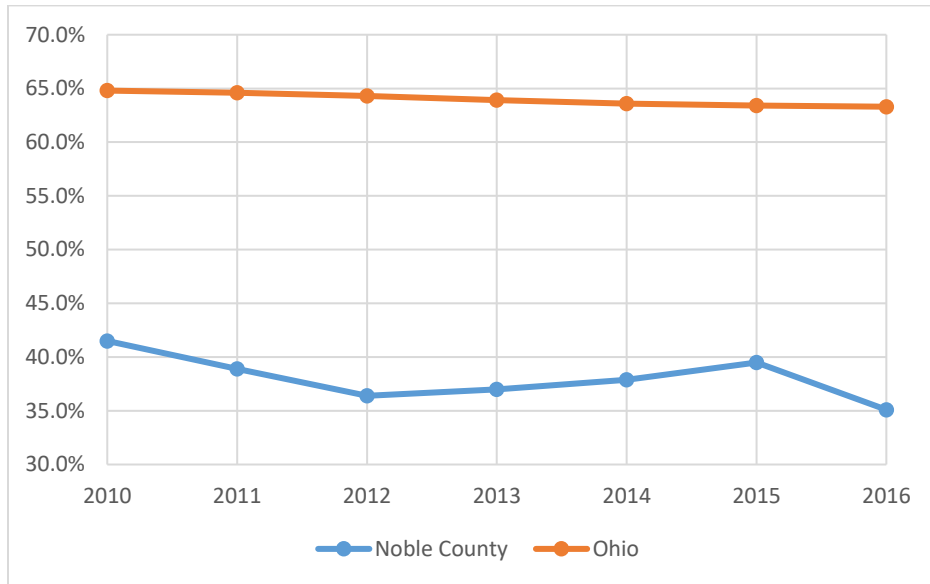
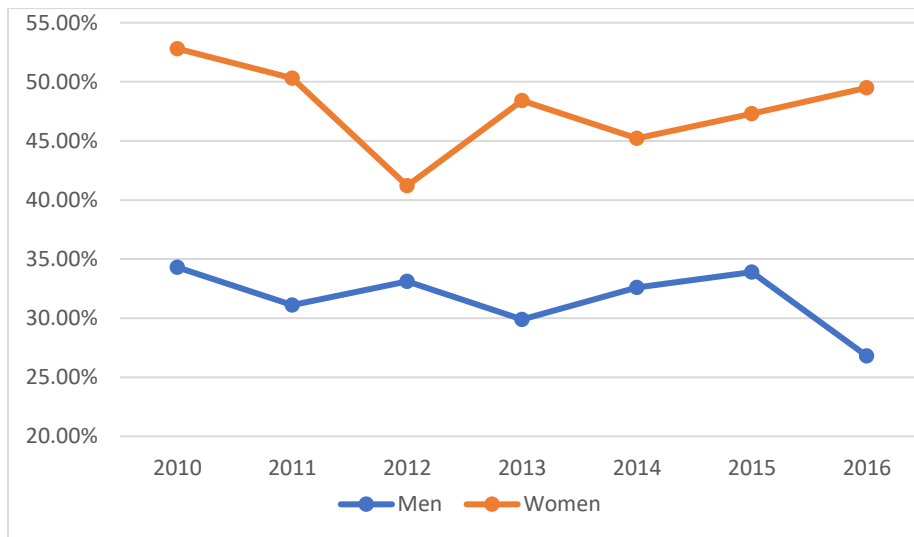**Figure 6: Noble County Labor Force and Employment, 2010-2016**
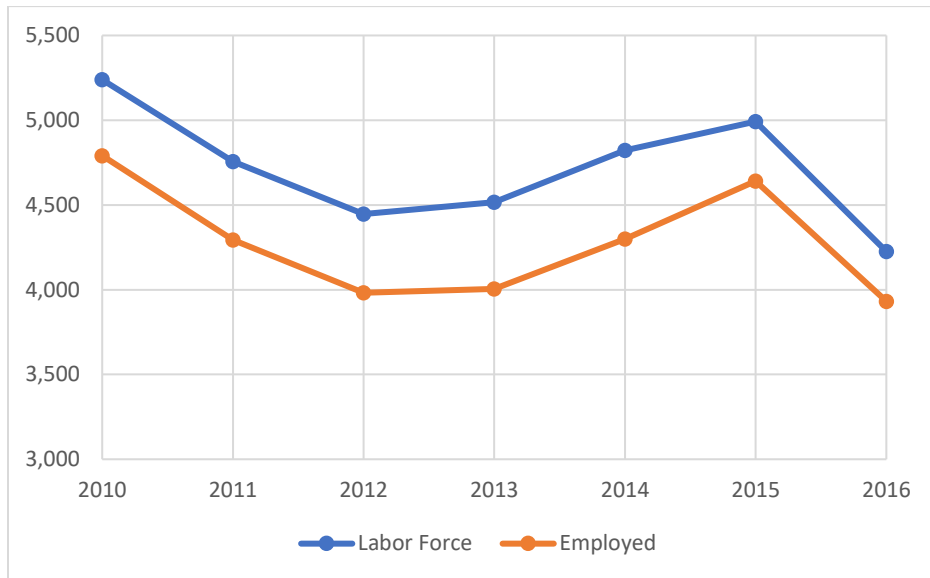


**Figure 7: Unemployment Rate: Noble County and Ohio, 2010-2016**
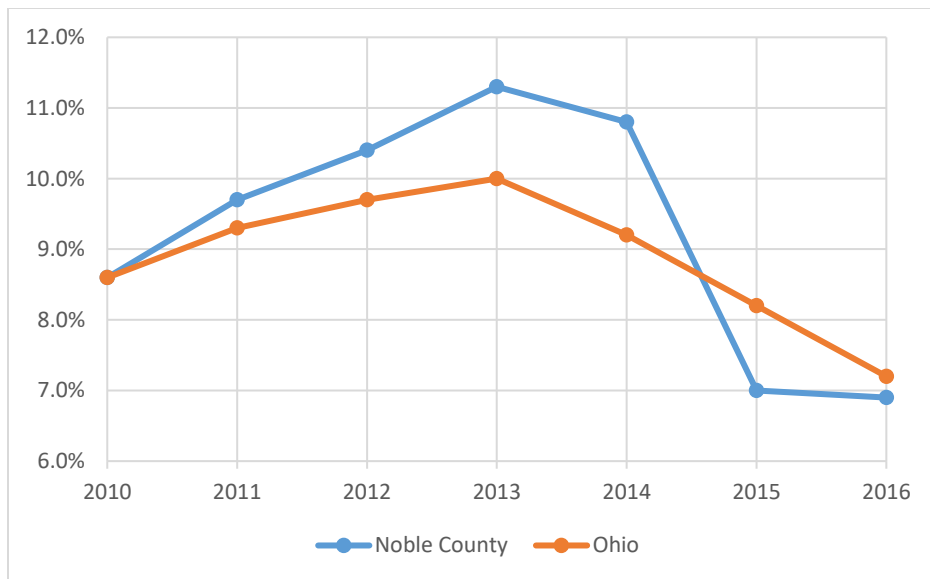
**Figure 8: Participation Rate: Noble County and Ohio, 2010-2016**



**Figure 9: Noble County Participation Rate by Gender, 2010-2016**

**3.3 Employed Resident Commute Shed[6]**

Figure 10 shows the distribution of the Noble County workforce. 49.1% of Noble County residents stayed in-county to work. Of the 50.9% who left the county, 19.9% commute to Guernsey County. Overall, 7.1% of Noble County residents left the state in their commutes, with 0.1% commuting to Wetzel County, 3.5% commuting to Wood County, and 3.5% commuting to other out-of-state locations. Noble County had 3,976 working residents, ranking the county 7th out of 8 counties.

Noble County hosted 3,051 workers, 4.6% of which commuted from other counties. Guernsey and Monroe counties contributed over half to this total. Noble County ranked last among the counties in terms of workers hosted.

**Figure 10: Noble County Workforce Place of Work, 2009-2013**
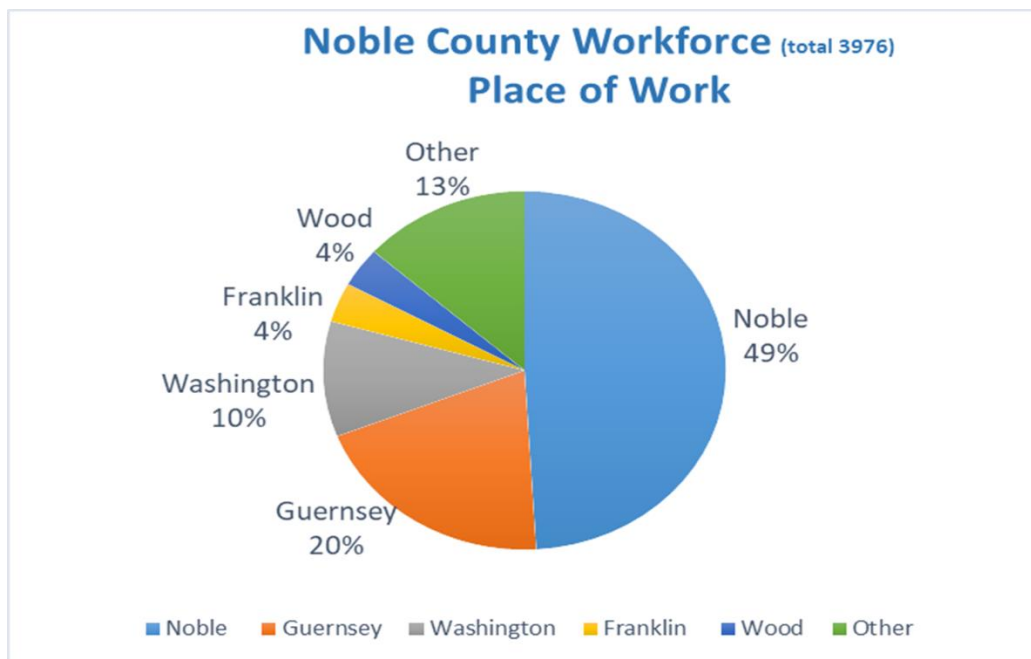


# 4. Industry Cluster Analysis

Our research team also investigated the prominent industry clusters in the region for local targeting. Industry clusters are "geographic concentrations of interconnected companies and institutions in a particular field" (Porter, 1998, 78) that are "linked by similar needs such as production inputs, specialized labor, and technology," (Hagadone & Grala, 2012, 16). In other words, these clusters are geographically concentrated and include interrelated businesses, vendors, and other organizations within a certain industry.

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[6] Figure 10 was developed by authors from the U.S. Census Bureau, 5-Year American Community Survey, Commuting Flows, 2009-2013

## 4.1 Industry Employment by Cluster[7]

In 2008, the automotive industry was the largest employer in Noble County, employing around 400 people, as shown in Figure 11. However, in 2009, MAHLE Engine Components closed, laying off 190 workers. This led to a decline in the automotive industry overall in Noble County and by 2016 the automotive industry was no longer a significant source of employment in Noble County. In 2016, the largest industry employer was the Oil and Gas Production and Transportation Industry, as shown in Figure 12. Noble County is located in the Marcellus and Utica Shale region. As this source of oil and gas has gained popularity, employment in the industry has grown in Noble County.

**Figure 11: Employment by Traded Cluster: Noble County 2008**
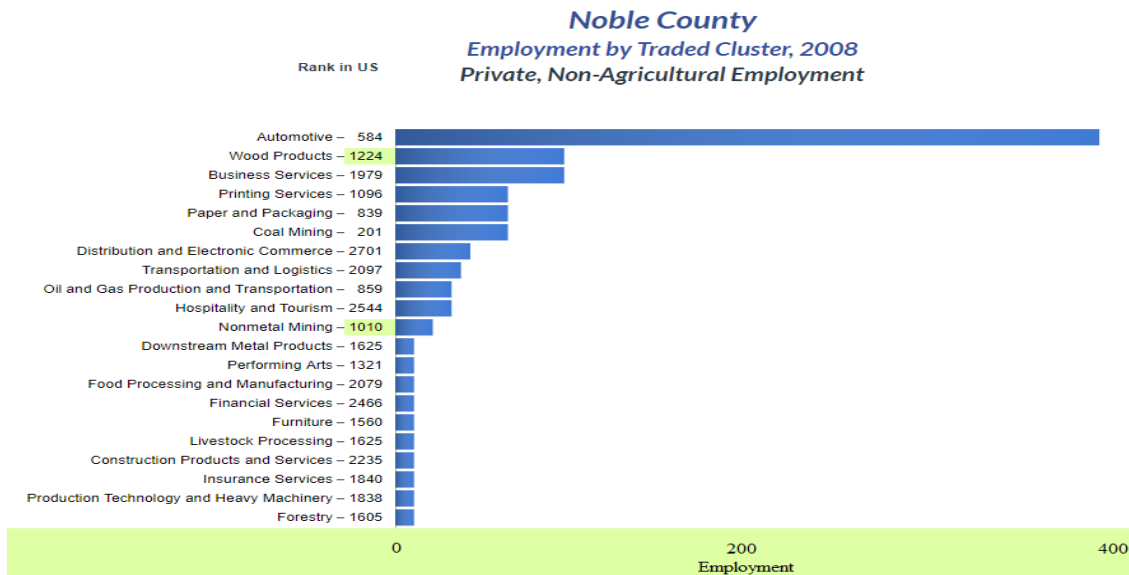


**Figure 12: Employment by Traded Cluster: Noble County 2016**



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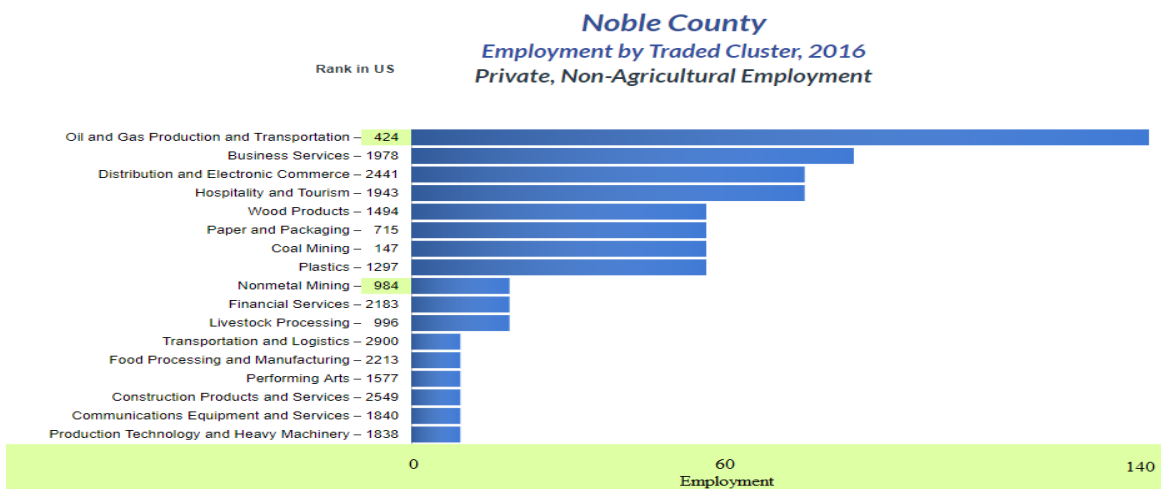
[7] Figures 11 and 12 were developed by authors from the U.S. Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School.

# 5. Community Engagement

Our research team completed two distinct tasks to support task two: Community Engagement in Economic Development Priorities. First, we conducted 21 semi-structured, phone and in-person interviews with local business owners, government officials, and community members, and other stakeholders. This list was gathered from an informed source that was knowledgeable about the key economic development related stakeholders in the community, and thus, our sample was not random. Next, we conducted a public meeting in Caldwell on April 4, 2019 to present the data from our economic development scan and ask for comprehensive input to economic development priorities for Noble County in a public setting. Overall, these community engagement activities helped identify community goals and promote buy-in from the citizenry.

Our series of interviews specifically contained individuals from local government entities, businesses, and schools. The interviews ranged from 30 minutes to 1 hour in length. Several reoccurring themes emerged from this interview process. First, a majority of interviewees mentioned the lack of broadband access across the county. Secondly, many interviewees discussed the underutilization of the tourist attractions in or nearby Noble County, like Wolf Run State Park and Senecaville Lake. Discussions on this topic centered on how these attractions are lacking upgrades to the grounds that could attract more visitors to the area. A number of interviewees specifically recommended further development of the state parks in the surrounding area as a way of getting individuals to stop and visit the county.

Our second aspect of the community engagement research for this project involved a formal meeting that was open to the public. This meeting served as a platform to provide citizens and Noble County leadership with objective information about the area's economy and subsequently seek feedback on determining the community's economic development priorities. We invited local stakeholders, such as the county commissioners and other government officials, local OhioMeansJobs workers, business owners, journalists, health department employees, and other community stakeholders.

After a formal presentation of the economic scan data (e.g., age, educational attainment, household income, unemployment rates, employment by industry, school enrollments, commuter patterns, etc.), our team shared the results of our interviews with community stakeholders and placed the responses on a series of posters, and then asked attendees to place a green sticky dot next to each of the categories that they felt should be focused on. Each attendee was given four green dots to place on the posters they agreed with. The detailed results of this exercise are displayed below in Table 9.

**Table 9: What are the major opportunities to pursue in Noble County?**

| Opportunities to Pursue | # of Votes from Community Members |
|---|:---:|
| Broadband | 9 |
| Tourism (Wolf Run) | 8 |
| Workforce training (apprenticeship programs) | 6 |
| Downtown revitalization | 5 |
| Enhance marketing of community | 4 |
| Agri-tourism | 4 |
| Shale/Gas & oil supply chain | 4 |
| Other areas in county to expand | 3 |
| Attraction of manufacturing companies | 3 |
| Health care expansion into Appalachian Region | 2 |
| Stand up a deal making entity to manage ED projects | 2 |
| Health care (free standing ERs, dentists, etc.) | 1 |
| Pursue sustainable funding for economic development | 1 |
| Using assets in a new way (e.g., fairgrounds) | 1 |
| MAGNUM project development in anticipation of potential cracker plant in Belmont County | 0 |
| Development of multi-county SR 78 – Appalachian Scenic Byway | 0 |
| Small business development | 0 |

# 6. Priorities

Utilizing the information gathered from the economic scan and community engagement sections, 4 priorities were identified for Noble County: Broadband Feasibility, Water Infrastructure, Tourism, and Workforce Development. Tables 10-13 break down each priority into objectives to be achieved in Noble County.

**6.1 Broadband Feasibility**

The lack of access to Broadband was mentioned in a majority of interviews and was the top voted opportunity to pursue by the community. Objectives have been created to establish the feasibility of providing Broadband in Noble County. Additionally, Table 10 outlines the resources, timeline, and budget for each objective.

**Table 10: Noble County Strategic Plan Priorities: Broadband Feasibility**

| Broadband Feasibility | | | |
|---|---|---|---|
| **Objective** | **Resources** | **Timeline** | **Budget** |
| **Participate in APEG Regional Broadband Team efforts**<br>- **Regional Mapping**<br>- **Meetings with key stakeholders**<br>- **Policy**<br>- **Feasibility & Funding Effort**<br>- **"Dig Once" options** | Noble OSU Extension CD Educator Serving as APEG Broadband Team Co-Chair | TBD by APEG Team | None required |
| **Research Community "Hot Spots"**<br>- **Library, School bus, Downtown**<br>- **Funding Availability** | Noble OSU Extension CD Educator | Q3&4 – 2019 | None required for research Implementation budget TBD |
| **Monitor Status Regional (Washington Electric Cooperative) ARC POWER Feasibility Study outcomes** | Noble OSU Extension CD Educator Noble Chamber of Commerce ED Noble Health Commissioner | Following ARC Grant Announcement | None required for monitoring Provide local support if funding for implementation requested *(grant letters of support; regional input to grant writing)* |

### 6.2 Water Infrastructure

Although originally excluded from the community engagement section, Water Infrastructure was identified as a priority by Gwynn Stewart of the Ohio State University Extension Office in Noble County. The objectives created will address the water and sewer systems in Noble County. Additionally, Table 11 outlines the resources, timeline, and budget for each objective.

**Table 11: Noble County Strategic Plan Priorities: Water Infrastructure**

| Water Infrastructure | | | |
|---|---|---|---|
| **Objective** | **Resources** | **Timeline** | **Budget** |
| **Participate in RCAP Mapping of water and sewer assets**<br>- **Finalize Contract with Commissioners & RCAP** (OSU)<br>- **Secure local "match"** (OSU)<br>- **Contact Water Companies** (EMA) | Noble County Commissioners<br>Noble County Planning Commission<br>Noble OSU Extension CD Educator<br>Noble County EMA Director<br>Noble County GIS Coordinator | Ends by Oct. 1, 2020 | USDA grant project through RCAP Local "match" TBD *(through OSU "carry-over")* |
| **Develop Scope of Work for Noble County Water Expansion Feasibility Study**<br>- **Finalize Scope of Work** (Commissioners & Village)<br>- **Secure county "match"** (OSU) | Noble County Commissioners<br>Noble OSU Extension CD Educator<br>Noble County EMA Director<br>Caldwell Village Council & Caldwell Board of Public Affairs | June 2019 | Local county "match" TBD *(through OSU "carry-over")* |
| **Conduct OSU Strategic Decision-Making BRIDGE Model** | Noble County Commissioners<br>Noble County Planning Commission<br>*Subcommittee*<br>Noble OSU Extension CD Educator | Following receipt of Feasibility Study Results | $1,100 paid by OSU Noble |

### 6.3 Tourism

Many interviews mentioned tourism as a concern for Noble County. Likewise, tourism was the second highest voted opportunity to pursue by the community. In particular, the community mentioned upgrading Wolf Run State Park to increase visitation to Noble County. The community also mentioned Senecaville Falls, agri-tourism, and using the fairgrounds in a new way as possible opportunities to pursue. Objectives were created for researching and implementing new tourism and marketing approaches in Noble County. Additionally, Table 12 outlines the resources, timeline, and budget for each objective.

**Table 12: Noble County Strategic Plan Priorities: Tourism**

| Tourism | | | |
|---|---|---|---|
| **Objective** | **Resources** | **Timeline** | **Budget** |
| **Finalize SR 78 Appalachian Byway Corridor Management Plan approval with ODOT** | Noble OSU Extension CD Educator | Q3 2019 | None |
| **Develop Noble County Plan for Marketing Appalachian Byway** | Noble OSU Extension CD Educator<br>Noble Chamber of Commerce ED | Q4 2019 | Develop logo and brochure ($1,500 to be shared by 4 counties) |
| **Coordinate meeting with ODNR Park Manager at Wolf Run to discuss Park Needs, possible funding in new state biennium, participation with State Park Task Force** | Noble County Commissioners<br>Noble OSU Extension CD Educator<br>Noble Chamber of Commerce ED<br>ODNR Park Manager | Q3 2019 | None required for research |
| **Research costs and timelines for OSU "First Impressions" program for Caldwell & SR 78 Appalachian Byway** | Noble OSU Extension CD Educator<br>Noble Chamber of Commerce ED | July 2019 | $250 |

| Tourism (continued) | | | |
|---|---|---|---|
| **Objective** | **Resources** | **Timeline** | **Budget** |
| **Research OSU options for identifying Environment and Natural Resources unique to Noble County – i.e.: bird species, wildlife, etc.**<br><br>**Once Identified, develop marketing approach to targeted groups i.e.: Ohio Ornithological Society, etc.** | Noble OSU Extension CD Educator<br>Noble Chamber of Commerce ED<br>ODNR Park Naturalist *(as available)* | Q3-4 | None required for research |
| **Develop planning group for creative community activities (kayaking at Wolf Run, County Fairground Flea Market)** | Noble Chamber of Commerce ED | 2020 | TBD |

### 6.4 Workforce Development

Workforce development was the third highest voted opportunity to pursue by the community. Objectives were created to support existing and implement additional workforce development programing and resources. Additionally, Table 13 outlines the resources, timeline, and budget for each objective.

**Table 13: Noble County Strategic Plan Priorities: Workforce Development**

| Workforce Development | | | |
|---|---|---|---|
| **Objective** | **Resources** | **Timeline** | **Budget** |
| **Coordinate Work Keys Programming** | Noble County One Stop Director & Business Service Representative | 2020 | TBD |
| **Support ongoing Noble County Apprenticeship Programming** *(Plumbers & Pipefitters; Water Department; Electricians)* <br><br> **Identify Additional Business Partners** | Apprentice Ohio Noble County One Stop Director & Business Service Representative Noble Chamber of Commerce ED Noble OSU Extension CD Educator | Ongoing | None |
| **Support Implementation of OSU Alber Enterprise Center "Student Leadership Excellence" program** | OSU Alber Enterprise Center Noble OSU Extension CD Educator Noble Local Schools Supt. | TBD | TBD |
| **Support Noble County presence with Appalachian Ohio P-20 Council and the "Complete to Compete" effort** | Apprentice Ohio Noble County One Stop Director & Business Service Representative Noble Chamber of Commerce ED Noble OSU Extension CD Educator | Ongoing | None |

# 7. Conclusion

This report represents a student-led and faculty/staff supported effort to assist Noble County in identifying economic and community development opportunities. The recommendations found in the Executive Summary and expanded upon in '6. Priorities' provide a framework of both short-term and long-term steps, for Noble County to pursue as part of the county's economic development agenda. Our hope is that this study and the accompanying public meetings act as a starting point for the community to continue conversations about Noble County's future economic development.

The Voinovich School commits to returning in December 2019 (date to be determined) to assess progress and facilitate any efforts needed to retool or adjust this plan with changing conditions and outcomes.

# References

Hagadone, T. A., & Grala, R.K. (2012). Business clusters in Mississippi's forest products industry. *Forest Policy and Economics, 20*, 16-24.

Porter, M.E. (1998). Clusters and the new economics of competition. *Harvard Business Review, 76*(6), 77-90.