

# Chapter 5: Enable the Economy

## Introduction

### Overview

Broadly defined, economic development refers policy interventions that aim to improve the well-being of a community that is achieved through the creation or growth of businesses and jobs. Economic security is linked directly to quality of life for individuals and for society, which is often measured by income and tax base respectively, with income providing personal wealth and buying power and a tax base providing public services for all. The past 50 years mark a dramatic shift from the booming economic growth and expansion of Northeast Ohio prior to 1970, but there are signs that key sectors have emerged to help the region position itself for future opportunities. To do so, it is necessary to understand where the Northeast Ohio economy is currently and how it reached this point.

A regional economy needs to be inclusive, where all people and places prosper. Greater Cleveland has a growing health care sector as well as a manufacturing sector that remains strong, despite declines in employment. Decentralization of jobs and housing away from historical population centers, however, has created a spatial mismatch. This gap between where workers live and where employers locate is especially problematic for low-income and minority workers who lack affordable and reliable access to jobs.

This chapter will describe:

- The regional economy from past to present
- Geographic, income and racial disparities
- Current conditions of key industries
- Economic development stakeholders
- Current NOACA programs, policies and projects
- Strategies and initiatives around Northeast Ohio used to address current and future economic development
- Highlights of potential threats and opportunities from climate change and pollution

This chapter will integrate how transportation influences the development of Northeast Ohio's economy, particularly through NOACA's role to inform transportation policy decisions and fund projects. Finally, this chapter will discuss potential future transportation scenarios (introduced in Chapter 3) and how they might impact regional economic development by the year 2050.

### What Role Can NOACA Play?

In 2015, the NOACA Board of Directors developed a Regional Strategic Plan with a vision statement that comprises five goals (see Chapter 1). One of those goals is to “support economic development.” The Board outlined several objectives to undergird this goal, largely based on NOACA scoring criteria. NOACA prioritizes projects that:

1. Provide for the movement of goods essential to the economic viability of the region;
2. Are consistent with state, regional and local economic development priorities, policies and strategies;

3. Support the retention and expansion of Cleveland-area businesses or attract new businesses to areas served by existing infrastructure;
4. Support the development of the region's manufacturing base, health-care system, and other areas of regional economic strength and economic development focus;
5. Create realistic opportunities for job retention and economic development.

NOACA's Board also seeks to ensure it includes the expertise of business, medical, higher education and nonprofit sector representatives through the Business, Community, Emerging Leaders and Rural Advisory Councils. The primary mission of the councils is to provide input into the NOACA planning process and connect with the community. In addition to participating in the development of strategies to prioritize projects, they facilitate regional cooperation in the areas of economic development and job retention as it relates to transportation.

NOACA's primary role as a transportation planning agency positions it well to leverage opportunities through improved workforce accessibility. NOACA should continue to explore how to better connect workers to jobs through greater transportation choice. This is one of NOACA's best tools to coordinate a more cohesive regional approach toward equity.

## Where Have We Been?

### Pre-World War II

After a long period of Native American habitation, Europeans began to settle Northeast Ohio in the late 18<sup>th</sup> century. Lake Erie and its major tributaries provided easy access to the most viable transportation option at the time: shipping. The completion of the Ohio and Erie Canal in 1830 connected the region to the population centers of the East Coast and the Gulf of Mexico to facilitate further growth. Over the next 30 years, railroads connected the region overland to the East Coast and eventually the southern and western United States. The advent of the automobile by the turn of the 20<sup>th</sup> century brought both local and federal roads. This robust infrastructure system enabled rapid growth, primarily in manufacturing. Key industries at the time not only took advantage of these modes of transportation, but also facilitated their expansion: iron and steel, shipbuilding, automobile, electrical equipment and light, and telegraph were the predominant employers. These industries attracted workers from around the country and from overseas.<sup>1</sup> By 1910, Cleveland's population had grown to make the city the fifth largest in the United States.<sup>2</sup> Neighboring cities, such as Lorain and Elyria, also enjoyed robust growth in the shipbuilding, steel, and auto industries. Regional growth continued after World War I, predominantly from migrants who moved from Appalachia and Eastern Europe, as well as a significant number of African Americans from the South (e.g., The First Wave of the Great Migration).<sup>3</sup>

### Post-World War II (1945-1970)

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<sup>1</sup> Northeast Ohio Sustainable Communities Consortium (NEOSCC), *Vibrant NEO 2040: A Vision, Framework, and Action Products for Our Future* (Cleveland: NEOSCC, 2014), 16-17; <https://vibrantneo.org/vibrantneo-2040/vneo-2040-full-report/> (accessed February 15, 2021).

<sup>2</sup> Case Western Reserve University, *Encyclopedia of Cleveland History*; <https://case.edu/ech/timeline> (accessed February 15, 2021).

<sup>3</sup> NEOSCC, *Vibrant NEO 2040*, 16-17.

During and after World War II, the regional population continued to grow, primarily due to increased birth rates (the Baby Boom) and the Second Wave of the Great Migration, as African Americans continued to leave the South in search of relief from poverty and Jim Crow regulations. However, discriminatory practices such as redlining concentrated African American residents in specific neighborhoods limited their economic opportunities (see Chapter 6). A 2019 paper from the National Bureau of Economic Research recognizes that “recent scholarship has also highlighted the role of discriminatory government policies in supporting residential segregation by race and disadvantaging black wealth accumulation through home ownership...there is clear consensus that real estate markets and housing policy were integral in fostering the disadvantage.”<sup>4</sup> Population and jobs began to depart the city shortly after the war, and the City of Cleveland began to decline from its 1950 population peak. Initial decline and decentralization of legacy industrial cities such as Cleveland and Lorain was small at first, and the growth of suburban and exurban areas of Northeast Ohio continued to foster regional growth in the 1950s and 1960s; however, decline accelerated and expanded beyond the urban core by the 1970s and the region as a whole entered a period of population decline.

### The “Rust Belt” (Post-1970)

After 1970, the region as a whole lost people and jobs, and the decline of both in Cleveland accelerated. This was partially driven by an exodus of manufacturing businesses to southern states or overseas. Additionally, technological advances over the decades meant that even if businesses remained in the region, they did not need to employ as many workers, which led many former manufacturing sector workers to leave Northeast Ohio in search of new jobs. This trend in population loss subsided briefly in the 1990s and early 2000s, but resumed with the Great Recession and housing crisis in 2008.

For the past decade, the NOACA region has seen pockets of development, and even a resurgence of downtown Cleveland, but this has been a shifting of people from one community to another rather than broader growth. Furthermore, the pockets of recovery have not benefited all groups equally; minority populations suffered a disproportionate share of loss during the Great Recession (see Chapter 6). This is important because the region’s arterial and highway network was built in anticipation of a far greater population than ever materialized. The envisioned public transportation system, however, has not been fully built, which disproportionately strands low-income and minority populations who struggle to access employment opportunities. The loss of population and the tax revenues they would have generated exacerbate the region’s struggles with infrastructure maintenance, including funding, and raises the prospect of tax increases to compensate. Both crumbling infrastructure and higher taxes discourage economic development and sharpen inequality, so it is critical that stakeholders manage a more efficient, multimodal transportation system to support strategic economic development to benefit as many residents of the region as possible.

### Where Are We Now?

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<sup>4</sup> Prottoy A. Akbar, Sijie Li, Allison Shertzer, and Randall P. Walsh, “Racial Segregation in Housing Markets and the Erosion of Black Wealth,” Working Paper 25805 (Cambridge, MA: National Bureau of Economic Research, May 2019), JEL No. J15, N12, R31.2; [https://www.nber.org/system/files/working\\_papers/w25805/w25805.pdf](https://www.nber.org/system/files/working_papers/w25805/w25805.pdf). (accessed February 15, 2021).

This section provides an overview of the economy as measured by gross domestic product (GDP), a widely used metric for economic activity. To address some of the causes of economic inequity, the discussion turns to key economic sectors that drive Northeast Ohio’s economy, so that low-income and minority residents can not only find jobs but also access them. NOACA can play a significant role in workforce mobility through the efforts of its Board and staff, so this is a topic of keen focus.

## Gross Domestic Product

Greater Cleveland as a whole represents nearly 20% of Ohio’s GDP. GDP is a comprehensive measure of economic activity that measures the value of all of the final goods and services produced. The U.S. Bureau of Economic Analysis states that changes in GDP are the most popular indicator of the nation’s overall economic health.<sup>5</sup> It is important to note, however, that GDP, does not capture everything. The Organization for Economic Cooperation and Development (OECD) notes that several measures of well-being are unrelated to GDP growth, including income inequality, housing affordability, gender wage differences, air pollution, life expectancy, household debt, and others. The OECD does note that GDP growth is significantly related to several other quality of life metrics, such as higher household incomes and employment rates.<sup>6</sup> For these reasons, it is important to track GDP as one of several measures for regional quality of life.

Table 5-1 shows the GDP of the NOACA counties and their rank in Ohio. Even as county population has declined for decades, Cuyahoga still leads the economy for the entire state; however, the Franklin County (Columbus) economy places a very close second (within 0.098%). Hamilton County (Cincinnati) is third largest, but its GDP is 20% behind Cuyahoga’s. Summit (Akron) and Montgomery (Dayton) round out the top five Ohio counties, but their GDPs are each only about one-third that of Cuyahoga. Given that Summit County borders the NOACA region, this may mean there are greater opportunities for collaboration between the two counties to leverage their combined economies rather than act independently.

**Table 5-1. 2019 Gross Domestic Product (GDP) by Northeast Ohio County<sup>7</sup>**

County	2019 Real GDP (in thousands of dollars)	State Rank
Cuyahoga	\$87,921,020	1
Lake	\$10,266,470	11

<sup>5</sup> U.S. Bureau of Economic Analysis, Gross Domestic Product, <https://www.bea.gov/data/gdp/gross-domestic-product> (accessed February 11, 2021).

<sup>6</sup> Organization for Economic Cooperation and Development (OECD), How’s Life? 2020: Measuring Well-being (Paris: OECD Publishing, 2020), Chapter 1, 54; <https://doi.org/10.1787/9870c393-en> (accessed March 1, 2021).

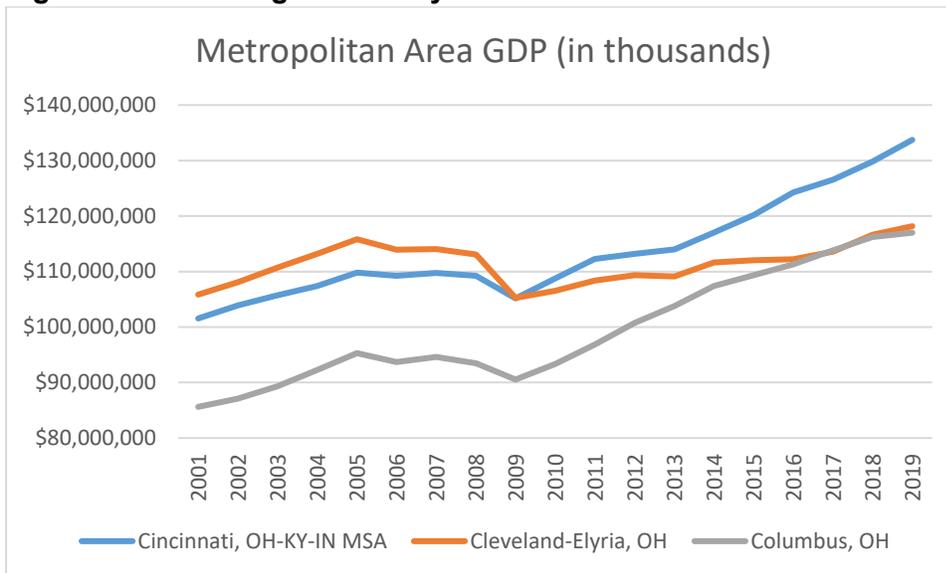
<sup>7</sup> U.S. Bureau of Economic Analysis, Gross Domestic Product by County, 2019, News Release BEA 20-62; [https://www.bea.gov/sites/default/files/2020-12/lagdp1220\\_2.pdf](https://www.bea.gov/sites/default/files/2020-12/lagdp1220_2.pdf) (accessed February 11, 2021).

Lorain	\$9,390,279	12
Medina	\$6,802,952	18
Geauga	\$3,797,778	32

Source: U.S. Bureau of Economic Analysis

The Great Recession, combined with continued population loss, has negatively affected Greater Cleveland relative to Ohio’s other two largest metropolitan areas: Cincinnati and Columbus. Figure 5-1 shows GDP trends for all three regions over the past 20 years. The previous paragraph noted that Franklin County’s GDP is larger than Hamilton County’s GDP; however, the Greater Cincinnati metropolitan area has the largest economy of any metropolitan region in the State of Ohio. While the Greater Cleveland GDP remains second, it does so by only a very slim margin. Greater Columbus has nearly surpassed the Cleveland-Elyria metropolitan area due to robust growth since the end of the Great Recession in 2009.

**Figure 5-1. Peer Region GDP by Year<sup>8</sup>**



Source: U.S. Bureau of Economic Analysis

GDP alone does not tell the full story, though. It is also important to compare the population of each region, which then enables us to see the GDP per capita (see Table 5-2). Greater Cleveland fares slightly better by this metric, but Greater Cincinnati is still clearly first, while Greater Columbus is a close third behind Greater Cleveland.

<sup>8</sup> U.S. Bureau of Economic Analysis, Gross Domestic Product Summary by County and Metropolitan Area, <https://apps.bea.gov/regional/downloadzip.cfm> (accessed February 11, 2021).

**Table 5-2. 2019 Peer Region Population and GDP per Capita<sup>9</sup>**

Metropolitan Area	2019 Population	2019 GDP per Capita
Cincinnati	2,219,750	\$60,246
Cleveland-Elyria	2,048,449	\$53,235
Columbus	2,122,271	\$52,709

Source: U.S. Census Bureau. The Per Capita GDP calculation is GDP divided by Population.

Furthermore, GDP's real value is really the extent to which it reflects quality of life (e.g., higher GDP corresponds to higher quality of life). This is not always the case. For example, an investment of one billion dollars to rebuild a damaged community after a tornado or a flood increases GDP within that region by that amount, but the storm itself may have cost lives, property damage, and severe hardship. For this reason, another important metric is wealth distribution throughout the population.

### Income and Poverty

GDP measures the size of the economy, but it does not necessarily translate into how much money individuals have to provide for themselves. What matters more to people is their ability to pay bills and meet daily needs. This subsection provides data on income, poverty, and inequality, and explains how these factors are related to other important variables (e.g., geographic location, race, gender, etc.).

Table 5-3 shows per capita income in the NOACA region compared to peers. It is the lowest of the three regions and lower than that of the United States, although higher than that of Ohio. Lower incomes typically also mean higher poverty. Table 5-4 shows that Greater Cleveland has the highest overall poverty rate and child poverty rate relative to peers, the state, and country.

**Table 5-3. 2019 Peer Region Per Capita Income<sup>10</sup>**

Geography	Per Capita Income
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<sup>9</sup> U.S. Census Bureau, 2019 American Community Survey, 1-year, Demographic and Housing Estimates, Table DP05;

[https://data.census.gov/cedsci/table?q=310M100US18140\\_310M300US17460\\_310M500US17140&d=ACS%201-Year%20Estimates%20Data%20Profiles&tid=ACSDP1Y2019.DP05&hidePreview=false](https://data.census.gov/cedsci/table?q=310M100US18140_310M300US17460_310M500US17140&d=ACS%201-Year%20Estimates%20Data%20Profiles&tid=ACSDP1Y2019.DP05&hidePreview=false), (accessed February 15, 2021).

<sup>10</sup> U.S. Census Bureau. 2019 American Community Survey, 1-year, Demographic and Housing Estimates, Selected Economic Characteristics, Table DP03;

[https://data.census.gov/cedsci/table?q=0100000US\\_0400000US39\\_310M100US18140\\_310M300US17460\\_310M500US17140&d=ACS%201-](https://data.census.gov/cedsci/table?q=0100000US_0400000US39_310M100US18140_310M300US17460_310M500US17140&d=ACS%201-)

Cincinnati MSA	\$36,878
Cleveland-Elyria MSA	\$34,200
Columbus MSA	\$36,285
Ohio	\$32,780
United States	\$35,672

Source: U.S. Census Bureau

**Table 5-4. 2019 Peer Region Poverty and Under-18 Child Poverty<sup>1112</sup>**

Geography	Poverty Rate	Child Poverty Rate	Percent of Population Under 18
Cincinnati MSA	11.3%	15.5%	23.2%
Cleveland-Elyria MSA	13.5%	19.2%	20.9%
Columbus MSA	11.5%	15.7%	23.3%
Ohio	13.1%	18.4%	22.0%
United States	12.3%	16.8%	22.2%

Source: U.S. Census Bureau

While this data may describe a serious situation in Northeast Ohio, it is important to note that many households in the region are financially prosperous. Table 5-5 shows that more than one-quarter of area households have incomes greater than \$100,000, although this rate is lower than that of peers, state, and country. Table 5-5 shows that the region has far more households at the lowest end of the income distribution as well, compared with peers, state, and country.

**Table 5-5. 2019 Peer Region Population by Household Income Bracket<sup>13</sup>**

Geography	Household Income
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[Year%20Estimates%20Data%20Profiles&tid=ACSDP1Y2019.DP03&hidePreview=false](#) (accessed February 15, 2021).

<sup>11</sup> Ibid.

<sup>12</sup> U.S. Census Bureau, 2019 American Community Survey, 1-year, Age and Sex, Table S0101; [https://data.census.gov/cedsci/table?q=S0101&g=0100000US\\_0400000US39\\_310M100US18140\\_310M300US17460\\_310M500US17140&tid=ACSST1Y2019.S0101&hidePreview=false](https://data.census.gov/cedsci/table?q=S0101&g=0100000US_0400000US39_310M100US18140_310M300US17460_310M500US17140&tid=ACSST1Y2019.S0101&hidePreview=false)

<sup>13</sup> U.S. Census Bureau, 2019 American Community Survey, 1-year, Income in the Past 12 Months (in 2019 Inflation-Adjusted Dollars), Table S1901; [https://data.census.gov/cedsci/table?q=S1901&g=0100000US\\_0400000US39\\_310M100US18140\\_310M300US17460\\_310M500US17140&tid=ACSST5Y2016.S1901&hidePreview=false](https://data.census.gov/cedsci/table?q=S1901&g=0100000US_0400000US39_310M100US18140_310M300US17460_310M500US17140&tid=ACSST5Y2016.S1901&hidePreview=false) (accessed February 15, 2021).

	<b>Less than \$10,000</b>	<b>\$10,000-\$14,999</b>	<b>\$15,000-\$24,999</b>	<b>Total (Less than \$25,000)</b>	<b>\$100,000 and up</b>
Cincinnati MSA	5.8%	3.7%	8.4%	17.9%	32.7%
Cleveland-Elyria MSA	6.9%	5.1%	9.4%	21.4%	25.4%
Columbus MSA	4.7%	3.2%	8.4%	16.3%	32.2%
Ohio	6.3%	4.3%	9.5%	20.1%	25.5%
United States	5.8%	4.0%	8.3%	18.1%	31.4%

Source: U.S. Census Bureau

Table 5-5 suggests that Northeast Ohio has substantial income inequality (nearly 47% of its households make less than \$25,000 or at least \$100,000). This statistic exceeds that of the State of Ohio (just over 45%); however, its peers (Columbus, 48%, and Cincinnati, 51%) and the United States (50%) are higher. One way to measure income inequality is the Average to Median Income Ratio (see Table 5-6), which compares the average income to the median income—a higher ratio of average income to median income indicates skewness in the income distribution (i.e., a relatively smaller number of very wealthy households skew the results for the whole region). Table 5-6 shows that Cleveland’s number is higher than its peers or the state, but not as high as the United States.

**Table 5-6. 2019 Peer Region Average to Median Income Ratio<sup>14</sup>**

<b>Geography</b>	<b>Ratio</b>
Cincinnati MSA	1.378
Cleveland-Elyria MSA	1.382
Columbus MSA	1.361
Ohio	1.356
United States	1.405

Source: NOACA Calculation of U.S. Census Bureau

Evidence of income inequality in Northeast Ohio receives further support by an analysis in Table 5-7 conducted by the Economic Policy Institute (EPI), a Washington, D.C.-based think tank. In 2018, researchers used individual tax returns (2015) from the IRS to determine the average individual income of the wealthiest 1% of each area’s (region, state, country, etc.) residents and the average individual income of the remaining residents.<sup>15</sup> A higher ratio indicates greater inequality. Once again, Greater Cleveland’s ratio is higher than those of its peers and the State

<sup>14</sup> Ibid.

<sup>15</sup> Estelle Sommeiller and Mark Price, “The New Gilded Age: Income Inequality in the U.S. by State, Metropolitan Area, and County” (Washington, DC: Economic Policy Institute, 2018); <https://www.epi.org/publication/the-new-gilded-age-income-inequality-in-the-u-s-by-state-metropolitan-area-and-county/> (accessed February 15, 2021).

of Ohio, but not as high as the United States ratio (also worth noting that the average individual income of Cleveland’s wealthiest 1% is higher than that of its peers and the State of Ohio).

**Table 5-7. 2015 Peer Region Individual Income of Highest Earners**

<b>Geography</b>	<b>Average Income of Top 1%</b>	<b>Average Income of Remaining 99%</b>	<b>Ratio</b>
Cincinnati MSA	\$1,028,180	\$55,087	18.7
Cleveland-Elyria MSA	\$1,038,532	\$48,257	21.5
Columbus MSA	\$989,323	\$54,097	18.3
Ohio	\$858,965	\$46,157	18.6
United States	\$1,316,985	\$56,107	26.3

Source: Economic Policy Institute analysis of IRS data

While these two independent analyses corroborate each other, a third supporting study comes from Bloomberg. Its analysis of 2018 Census data found Cleveland was the fifth most unequal city in the country when the income of the top 5% of earners was compared to the bottom 50% of earners, among cities with at least 250,000 people.<sup>16</sup> Each of these three studies suggests that income inequality is sharper in Greater Cleveland than in peer metros such as Columbus and Cincinnati. This inequality can be seen within the NOACA region as well (Table 5-8) through disparate average household incomes and poverty rates by county.

**Table 5-8. 2019 Household Income and Poverty by County<sup>17</sup>**

<b>County</b>	<b>Average Household Income</b>	<b>Poverty Rate</b>
Cuyahoga	\$75,382	16.1%
Geauga	\$104,403	4.9%
Lake	\$79,074	8.6%
Lorain	\$77,894	14.3%
Medina	\$97,415	4.9%

Source: U.S. Census Bureau

Table 5-8 indicates Cuyahoga County has the highest poverty rate in the NOACA region, but the situation in the City of Cleveland is worse. Census estimates data show that Cleveland became the poorest large city in the nation in 2019. The nonprofit Center for Community Solutions notes that, additionally, Cleveland’s senior citizens had the second-highest poverty

<sup>16</sup> “Cleveland Moves to the No. 5 Spot in Bloomberg’s City Inequality Ranking,” *Crain’s Cleveland Business*, Nov. 21, 2019; <https://www.crainscleveland.com/economic-outlook/cleveland-moves-no-5-spot-bloombergs-city-inequality-ranking> (accessed February 15, 2021).

<sup>17</sup> U.S. Census Bureau, 2019 American Community Survey, 1-year, Income in the Past 12 Months (in 2019 Inflation-Adjusted Dollars), Table S1901; [https://data.census.gov/cedsci/table?q=S1901&g=0100000US\\_0400000US39\\_310M100US18140\\_310M300US17460\\_310M500US17140&tid=ACSST5Y2016.S1901&hidePreview=false](https://data.census.gov/cedsci/table?q=S1901&g=0100000US_0400000US39_310M100US18140_310M300US17460_310M500US17140&tid=ACSST5Y2016.S1901&hidePreview=false) (accessed February 15, 2021).

rate and its children the highest poverty rate among large cities in the United States.<sup>18</sup> Cleveland is the largest city in the region and the anchor of the regional economy. Improved economic conditions in the City of Cleveland could have a tremendous positive effect on all of Northeast Ohio.

The nonpartisan Center on Budget and Policy Priorities uses data from the Census Bureau, IRS, Federal Reserve, and Congressional Budget Office to determine national income and wealth inequality. All these different sources and methodologies indicate national inequality continues to increase over time as well.<sup>19</sup> As with GDP, income inequality is just one metric among many. The upshot for NOACA is that there is the potential to boost economic development through increased access to opportunity that may lift low-income residents out of poverty.

### Racial Inequality

Table 5-9 shows the poverty levels of black, Native American, and Hispanic/Latino residents in the region are each more than three times higher than the poverty level for Non-Hispanic/Latino white residents.

**Table 5-9. 2019 Regional Poverty Rate by Race/Ethnicity<sup>20</sup>**

Race/Ethnicity	MSA Poverty Rate
White, Not Hispanic/Latino	7.7%
Asian	13.5%
Black/African American	27.2%
Native American	29.4%
Hispanic/Latino	31.0%

Source: U.S. Census Bureau

Most minority residents in the region live in Cuyahoga County. Table 5-10 shows that Cuyahoga County has the most minorities both in absolute terms and as a percentage of the population. This is partly a result of past housing and transportation policies. In particular, the robust investment in building the highway system, combined with the lack of similar investment in expanding public transit, which is disproportionately used by low income and minority populations, contributed to this outcome. In recent decades, NOACA has made and continues to make transportation investments to achieve a more equitable transportation system relative to access and mobility.

<sup>18</sup> Emily Campbell, “Cleveland Is Now the Poorest Big City in the Country,” Center for Community Solutions, Sept. 21, 2020; <https://www.communitysolutions.com/cleveland-now-poorest-big-city-country/> (accessed February 23, 2021).

<sup>19</sup> Chad Stone, Danilo Trisi, Arloc Sherman, and Jennifer Beltran, “A Guide to Statistics on Historical Trends in Income Inequality,” Washington, D.C.: Center on Budget and Policy Priorities, 2020); <https://www.cbpp.org/research/poverty-and-inequality/a-guide-to-statistics-on-historical-trends-in-income-inequality> (accessed February 26, 2021).

<sup>20</sup> U.S. Census Bureau, 2019 American Community Survey, 1-year, Poverty Status in the Past 12 Months, Table S1701; [https://data.census.gov/cedsci/table?q=S1701&g=0100000US\\_0400000US39\\_310M100US18140\\_310M300US17460\\_310M500US17140&tid=ACSST1Y2019.S1701&hidePreview=false](https://data.census.gov/cedsci/table?q=S1701&g=0100000US_0400000US39_310M100US18140_310M300US17460_310M500US17140&tid=ACSST1Y2019.S1701&hidePreview=false) (accessed February 15, 2021).

**Table 5-10. 2018\* Race/Ethnicity by County<sup>21</sup>**

County	Total Population	White, Not Hispanic/Latino		Non-White		Asian	Black/African American	American Indian	Hispanic/Latino**
		#	%	#	%				
Cuyahoga	1,243,857	778,016	62.5%	465,841	37.5%	38,700	363,507	3,432	76,732
Geauga	94,031	91,037	96.8%	2,994	3.2%	674	1,211	188	1,509
Lake	230,514	208,276	90.4%	22,238	9.6%	2,941	10,504	133	10,738
Lorain	309,461	265,593	85.8%	43,868	14.2%	3,396	25,734	1,071	31,642
Medina	179,146	170,228	95.0%	8,918	5.0%	1,885	2,575	104	3,823

Source: U.S. Census Bureau

\*2019 is not available.

\*\*Hispanic or Latino people may identify as any race.

For the past few years, the idea of a “spatial mismatch” or “disconnect” between jobs and workers has moved to the forefront of economic development discussions. Put simply, this means businesses and workers are located far apart. The term, “spatial mismatch,” was originally coined in 1968 and referred specifically to housing segregation that reduced job opportunities and increased unemployment for black people. Recent research published by the National Bureau of Economic Research combines the spatial mismatch theory with racial disparities in employer hiring practices. The authors show that black job seekers have fewer job openings available near them, and that discrimination in hiring becomes greater for black people as the community where the job is located becomes less black.<sup>22</sup>

Chapter 3 introduced this concept of “spatial mismatch” as it manifests itself in Northeast Ohio through workforce mobility and access. As a transportation planning agency, NOACA has been engaged in efforts to better connect people and jobs, particularly for poor and minority residents. Chapter 9 describes four possible future scenarios for transportation infrastructure investment, including performance measures and targets to illustrate how different priorities for transportation infrastructure investment in each scenario will impact low-income and minority populations differently. Improved regional mobility, particularly within and between job hubs and environmental justice communities, is one way NOACA can help achieve racial equality in Northeast Ohio.

<sup>21</sup> U.S. Census Bureau, 2018 American Community Survey, 1-year, Demographic and Housing Estimates, Table DP05; [https://data.census.gov/cedsci/table?q=0500000US39035\\_39055\\_39085\\_39093\\_39103&d=ACS%201-Year%20Estimates%20Data%20Profiles&tid=ACSDP1Y2018.DP05&hidePreview=false](https://data.census.gov/cedsci/table?q=0500000US39035_39055_39085_39093_39103&d=ACS%201-Year%20Estimates%20Data%20Profiles&tid=ACSDP1Y2018.DP05&hidePreview=false) (accessed February 15, 2021).

<sup>22</sup> Amanda Y. Agan and Sonja B. Starr, “Employer Neighborhoods and Racial Discrimination,” Working Paper 28153 (Cambridge, MA: National Bureau of Economic Research, 2020), JEL No. J23, J71, R23; [https://www.nber.org/system/files/working\\_papers/w28153/w28153.pdf](https://www.nber.org/system/files/working_papers/w28153/w28153.pdf) (accessed February 15, 2021).

## Access to Job Hubs from Environmental Justice Areas

In Chapter 1, NOACA identified Environmental Justice Areas as defined by substantial low-income or minority populations; these are targeted areas to improve accessibility to jobs. Although Environmental Justice area populations are not all low-income or all minority (or both), they are areas characterized by substantial low-income and minority representation and their accessibility to major regional job hubs is critical for the future economic success of Northeast Ohio.

The following table illustrates the dramatic differences between average auto and average transit commute times from Environmental Justice Areas to Northeast Ohio’s major regional job hubs (see Table 5-11). At this point, the review only includes the major regional job hubs to illustrate the challenge. NOACA will further study the connection to major, minor and legacy job hubs as indicated in the recommendations at the end of this chapter.

**Table 5-11. Morning Work Commute Times from Environmental Justice Areas to Major Regional Job Hubs by Auto and Transit**

Auto & Transit Work Commute Times During 2020 AM Peak Period		Origin					
		EJ Areas					
		AM Work Commute Time by Transit (Minutes)			AM Work Commute Time by Auto (Minutes)		
Destination	Major Job Hub	Min	Average	Max	Min	Average	Max
	Cleveland Downtown	17	53	219	3.1	25	69
	University Circle	18	56	241	2.6	27	76
	Solon	38	93	217	3.7	36	81
	Chagrin Highlands	27	83	264	3.3	30	77
	Independence	45	90	263	5.7	27	66
	Hopkins Airport Area	52	101	181	4.3	27	73

NOACA’s Regional Survey revealed a lower level of vehicle ownership among respondents (total number of respondents referenced as “base”) from Environmental Justice Areas (Table 5-12). When broken down by income/race groups, the contrast becomes even more striking (Table 5-13). The fact that lower-income/nonwhite respondents report an average of one vehicle per household compared with an average of two vehicles per household reported by higher-income/white households illustrates the lack of access to private vehicles by lower-income, minority populations.

**Table 5-12. Average Number of Vehicles per Household: Environmental Justice Area**

	COLUMNS: Average number of vehicles per household		
	NOACA Region	NOACA Environmental Justice areas	Non-EJ
<b>BASE</b>	<b>2,448</b>	<b>1,169</b>	<b>1,239</b>
<b>Vehicles</b>	1.67	1.45	1.88
<b>Bicycles</b>	1.11	0.97	1.24
<b>Hybrid vehicles</b>	0.09	0.09	0.08
<b>Electric vehicles</b>	0.07	0.10	0.07

**Table 5-13. Average Number of Vehicles per Household: Income/Race Group**

	Average number of vehicles per household				
	NOACA Region	Higher- income white	Lower- income white	Higher- income Nonwhite	Lower- income Nonwhite
<b>BASE</b>	<b>2,448</b>	<b>1,218</b>	<b>531</b>	<b>218</b>	<b>233</b>
<b>Vehicles</b>	1.67	1.94	1.39	1.52	1.03
<b>Bicycles</b>	1.11	1.25	0.91	1.03	0.85
<b>Hybrid vehicles</b>	0.10	0.07	0.06	0.14	0.18
<b>Electric vehicles</b>	0.08	0.06	0.03	0.12	0.15

The lack of access to private vehicles by lower-income/nonwhite households becomes even clearer when you consider that these respondents reported higher household sizes than higher-income/white households (Table 5.14). Given an average of 1.03 vehicles per average household size of 2.93, the per-capita vehicle ownership among lower-income/nonwhite respondents is only 0.35 (0.49 for lower-income/white respondents). Compare this to the per-capita vehicle ownership among higher-income/white respondents (0.83). This means that the per-capita vehicle ownership rate for higher-income/white respondents is nearly 2.5 times the rate for lower-income/nonwhite respondents.

**Table 5-14. Average Household Size: Income/Race Group**

	Size of household			
	NOACA Region	Higher- income white	Lower- income white	Higher- income Nonwhite

<b>BASE</b>	<b>2,244</b>	<b>1,217</b>	<b>536</b>	<b>220</b>	<b>237</b>
<b># of people in household</b>	2.50	2.35	2.85	2.10	2.93
<b># under 18 years of age</b>	0.54	0.39	0.71	0.49	0.93

The lower access to private vehicles among lower-income/nonwhite households emphasizes the importance of the non-single occupant vehicle commute for the Environmental Justice Areas defined by substantial low-income or minority populations. A look back at Table 5.11 illustrates the dramatic difference in auto versus transit commute times from Environmental Justice Areas to Northeast Ohio’s major regional job hubs, especially job hubs located outside the City of Cleveland. Individuals that lack access to private vehicles must rely on transit and daily commute times that average three hours are simply untenable to lift up low-income, minority households and boost the regional economy. In this respect, NOACA’s goal to “build a sustainable, multimodal transportation system” directly links to NOACA’s goal to “support economic development.” Chapter 9 illustrates various scenarios for future transportation infrastructure investment and outline performance measures and targets. This data will help the agency identify investments that may close the commute gap and boost access to employment opportunities for populations struggling the most from income and racial inequality.

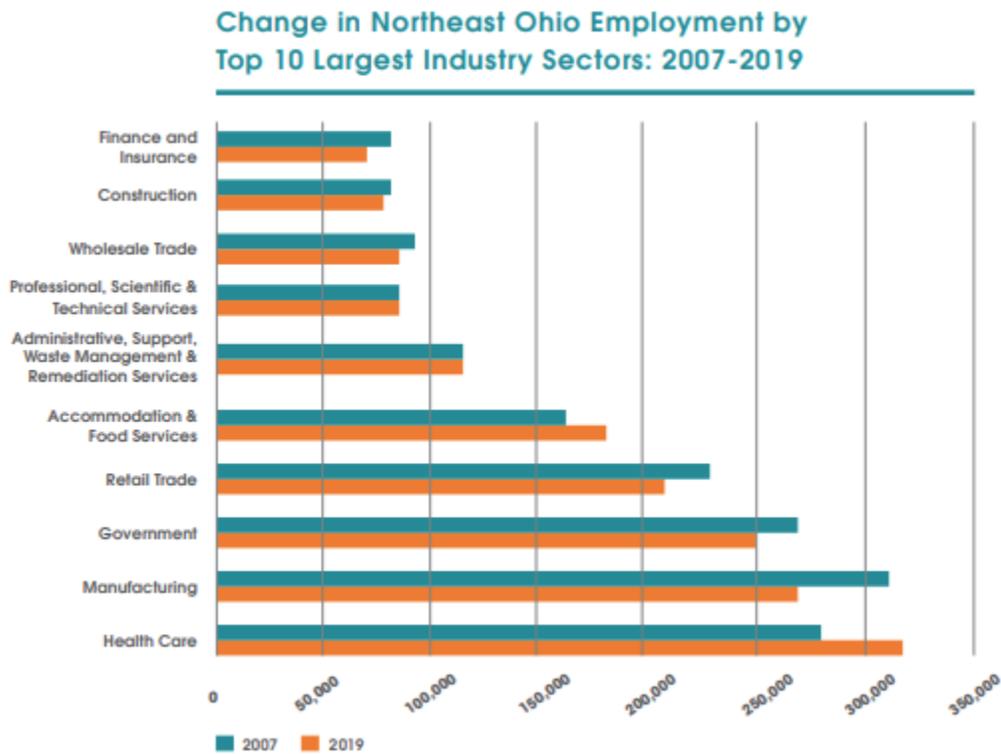
## Key Industries

Northeast Ohio economic development has historically meant manufacturing; for decades, this sector employed more area residents than any other sector, particularly until the Great Recession (2007-2009). As shown in Figure 5-2, it remains the second largest employer today, trailing the rapidly growing health care sector.<sup>23</sup>

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<sup>23</sup> Team NEO, “NEO since the Great Recession,” (Cleveland, OH: TeamNEO, 2019); <https://teamneo.org/wp-content/uploads/2019/11/northeast-ohio-since-great-recession-2019-qer.pdf> (accessed February 15, 2021). Figure 5-3 includes the entire 16-county Team NEO region, while Table 5-13 shows the five NOACA counties follow the same relative pattern of jobs by employment sector.

**Figure 5-2. Change in Employment by Industry, 2007-2019<sup>24</sup>**



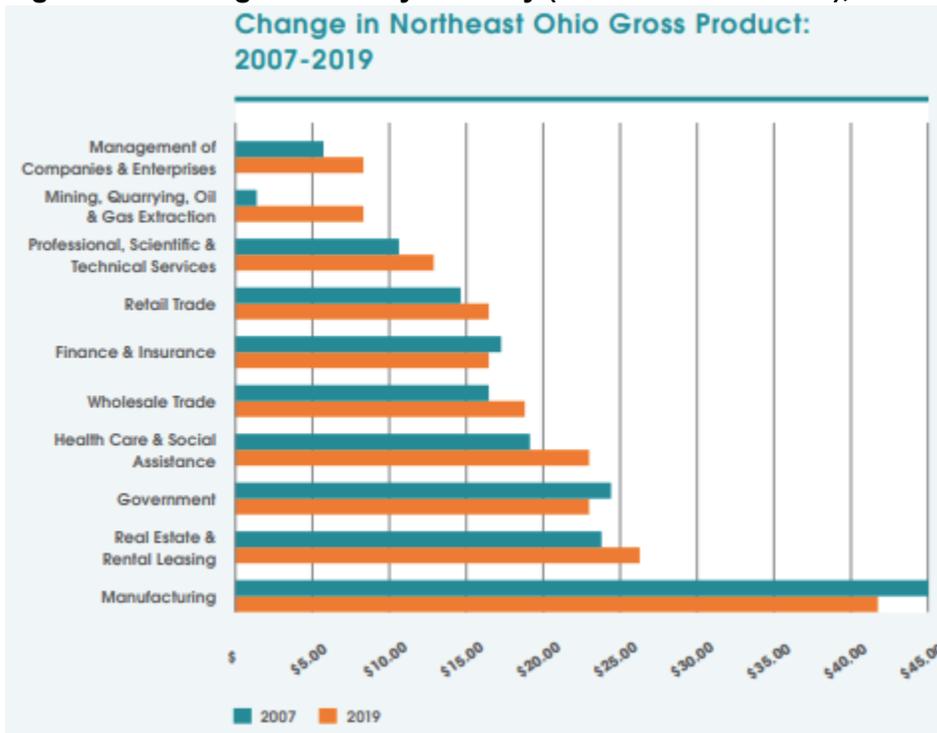
Source: Team NEO

Current employment still remains below pre-recession levels. This is increasingly true in manufacturing, where advancements in automation and robotics mean fewer people are needed to do the same amount of work. Workforce development (i.e., provide skills to area residents so they can find and maintain well-paying jobs) will play a greater role in economic development to increase employment. This section explores some of the industries that may offer such jobs.

While not meant to be exhaustive, this section describes a few key industries and how economic developers can facilitate their growth to have regional benefits. For transportation analysis purposes introduced in Chapter 3 and explored more deeply in Chapter 9, jobs fall into three categories: basic, retail, and service. Put simply, basic jobs produce goods, retail jobs sell goods, and service jobs support basic and retail jobs. From a transportation standpoint, this categorization allows for the modeling of traffic patterns, particularly within and between the regional job hubs and Environmental Justice Areas. NOACA knows locations of the regional job hubs (Chapter 3) and the types of jobs in them, and knows the locations of Environmental Justice Areas (Chapter 1) and the jobs those residents hold. From an economic development standpoint, however, it is critical to examine subsectors of these very broad categories to facilitate economic development and job growth. Figure 5-3 shows the top sectors by GDP and how they have changed since the Great Recession.

<sup>24</sup> Ibid.

**Figure 5-3. Change in GDP by Industry (in billions of dollars), 2007-2019<sup>25</sup>**



Source: Team NEO

This section illustrates representative examples from each category: two in basic, one in service, and one that cuts across service and retail. The selected industries demonstrate significant employment levels, contribution to gross domestic product, ability to grow, and importance for regional economic resilience. Despite the diversity of Northeast Ohio, from dense urban centers to small rural villages, the economies of each of the five counties share many similarities (see Tables 5-15 through 5-17; the top five sectors are highlighted in blue).

In terms of sales or revenue, Table 5-15 shows the top five categories in each county fall within one of the following: manufacturing; wholesale trade, retail trade, professional scientific and technical services, administrative and support and waste management, and health care and social assistance. Interestingly, manufacturing leads every county except Cuyahoga, where health care is the top industry. As previously discussed, Cuyahoga County, which includes Cleveland, was originally established as an international manufacturing hub. The fact that manufacturing is no longer the largest sector (it now ranks third) shows both the rapid growth of the health care industry in Cuyahoga County as well as the relocation of manufacturing jobs to the “sunshine” states and overseas.

<sup>25</sup> Ibid.

**Table 5-15. 2017 Sales or Revenue by Industry in NOACA Counties (\$1000s)<sup>26</sup>**

Industry	Cuyahoga	Geauga	Lake	Lorain	Medina
Utilities	N/A	\$0	\$0	\$0	\$0
Manufacturing	\$23,225,392	\$2,875,339	\$6,531,471	\$6,058,884	\$3,161,914
Wholesale Trade	\$24,854,217	\$585,413	\$1,278,429	\$2,315,415	\$2,460,699
Retail Trade	\$16,920,714	\$1,504,254	\$3,755,526	\$3,875,576	\$3,119,466
Transportation & Warehousing	\$3,779,511	\$149,078	\$147,313	\$230,279	\$234,844
Information	N/A	N/A	N/A	N/A	N/A
Finance & Insurance	N/A	N/A	N/A	N/A	N/A
Real Estate & Rental & Leasing	\$4,518,950	\$41,004	\$207,825	\$141,705	\$117,144
Professional, Scientific, & Technical Services	\$8,492,351	\$177,771	\$486,285	\$338,409	\$560,377
Administrative & Support & Waste Mgmt.	\$3,804,476	\$207,334	\$535,736	\$546,186	\$460,750
Educational Services	\$406,152	\$11,038	\$33,746	\$46,930	\$34,950
Health Care & Social Assistance	\$35,833,922	\$991,174	\$2,156,790	\$3,489,046	\$1,353,144
Arts, Entertainment, & Recreation	\$4,363,910	\$64,824	\$178,540	\$148,334	\$94,350
Accommodation & Food Services	\$3,332,698	\$126,711	\$496,973	\$444,363	\$276,200
Other Services (except Public Admin)	\$4,313,142	\$253,368	\$465,124	\$478,916	\$292,550
Agriculture*	\$6,224	\$36,103	\$73,622	\$133,901	\$51,520
Construction**	\$7,239,503	\$298,910	\$1,062,049	\$787,120	\$1,494,580

Source: U.S. Census Bureau

\*Agriculture is the Market Value of Goods Sold from the U.S. Department of Agriculture<sup>27</sup>

\*\*Source: U.S. Census Bureau<sup>28</sup>

Table 5-16 shows manufacturing and health care are also two of the largest industries by payroll.

<sup>26</sup> U.S. Census Bureau, Economic Census, All Sectors: Summary Statistics for the U.S., States, and Selected Geographies, 2017, Table EC1700BASIC; <https://data.census.gov/cedsci/table?q=DP04&t=Establishments&g=0500000US39035,39055,39085,39093,39103&tid=ECNBASIC2017.EC1700BASIC&hidePreview=false> (accessed February 16, 2021).

<sup>27</sup> U.S. Department of Agriculture, Natural Agricultural Statistical Service, 2017 Census of Agriculture; [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/Ohio/](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Ohio/) (accessed February 16, 2021).

<sup>28</sup> U.S. Census Bureau, Annual Economic Surveys, Annual Business Survey: Statistics for Employer Firms by Industry, Sex, Ethnicity, Race, and Veteran Status for the U.S., States, and Selected Geographies, 2017, Table AB1700CSA01; <https://data.census.gov/cedsci/table?q=revenue&g=0500000US39035,39055,39085,39093,39103&tid=ABSCS2017.AB1700CSA01&hidePreview=false> (accessed March 18, 2021).

**Table 5-16. 2017 Payroll by Industry in NOACA Counties (\$1000s)<sup>29</sup>**

Industry	Cuyahoga	Geauga	Lake	Lorain	Medina
Utilities	\$161,190	\$0	\$0	\$0	\$0
Manufacturing	\$3,932,677	\$406,846	\$1,041,133	\$939,457	\$487,505
Wholesale Trade	\$2,021,782	\$68,916	\$146,720	\$162,431	\$147,915
Retail Trade	\$1,581,480	\$127,409	\$319,485	\$330,474	\$226,644
Transportation & Warehousing	\$886,881	\$28,709	\$39,715	\$85,898	\$85,766
Information	\$1,378,258	\$11,625	\$44,202	\$30,867	\$20,192
Finance & Insurance	\$4,105,292	\$40,838	\$95,574	\$131,661	\$181,609
Real Estate & Rental & Leasing	\$735,544	\$9,004	\$30,244	\$28,160	\$18,749
Professional, Scientific, & Technical Services	\$3,390,547	\$57,910	\$204,292	\$143,771	\$220,394
Administrative & Support & Waste Mgmt.	\$1,748,992	\$69,796	\$298,511	\$202,520	\$248,517
Educational Services	\$140,002	\$6,004	\$12,566	\$18,920	\$14,300
Health Care & Social Assistance	\$15,791,298	\$404,142	\$925,678	\$1,463,684	\$566,776
Arts, Entertainment, & Recreation	\$2,030,530	\$10,844	\$54,238	\$43,584	\$13,421
Accommodation & Food Services	\$955,048	\$36,425	\$135,331	\$123,474	\$80,708
Other Services (except Public Admin)	\$1,228,882	\$72,128	\$136,226	\$134,030	\$91,788
Construction*	\$1,407,293	\$117,477	\$212,890	\$186,155	\$175,342

Source: U.S. Census Bureau. Agriculture data not available.

\*Source: U.S. Census Bureau.<sup>30</sup>

Large payrolls are partly driven by large numbers of employees. Table 5-17 shows all five counties exhibit similar dominance by manufacturing and health care by numbers of employees.<sup>31</sup>

<sup>29</sup> U.S. Census Bureau, Economic Census, All Sectors: Summary Statistics for the U.S., States, and Selected Geographies, 2017, Table EC1700BASIC; <https://data.census.gov/cedsci/table?q=DP04&t=Establishments&g=0500000US39035,39055,39085,39093,39103&tid=ECNBASIC2017.EC1700BASIC&hidePreview=false> (accessed February 16, 2021).

<sup>30</sup> U.S. Census Bureau, Annual Economic Surveys, All Sectors: County Business Patterns by Legal Form of Organization and Employment Class Size for U.S., States, and Selected Geographies, 2017, Table CB1700CBP; <https://data.census.gov/cedsci/table?q=payroll&g=0500000US39035,39055,39085,39093,39103&tid=CBP2017.CB1700CBP&hidePreview=false> (accessed March 18, 2021).

<sup>31</sup> This is complicated somewhat by the fact that farm data comes from different sources and many farm owners have other off-farm jobs. If all farmland owners and all farmworkers are combined in a single category, this would become the fifth largest industry by employment in Geauga County.

**Table 5-17. 2017 Number of Employees by Industry in NOACA Counties<sup>32</sup>**

Industry	Cuyahoga	Geauga	Lake	Lorain	Medina
Utilities	1,746	0	0	0	0
Manufacturing	65,044	8,025	18,802	15,443	9,153
Wholesale Trade	33,298	1,176	2,622	2,599	2,554
Retail Trade	61,527	4,382	12,390	13,044	8,601
Transportation & Warehousing	17,082	540	1,163	1,788	2,183
Information	23,468	195	804	708	46
Finance & Insurance	44,596	771	1,766	2,071	2,734
Real Estate & Rental & Leasing	13,273	207	806	787	503
Professional, Scientific, & Technical Services	42,985	1,103	3,780	3,467	4,320
Administrative & Support & Waste Mgmt.	53,761	2,038	6,535	5,877	7,011
Educational Services	6,142	226	624	864	590
Health Care & Social Assistance	294,208	9,866	23,254	31,284	14,836
Arts, Entertainment, & Recreation	27,258	719	2,550	2,162	650
Accommodation & Food Services	56,378	2,710	9,875	8,874	6,106
Other Services (except Public Admin)	37,140	2,372	5,002	5,192	3,122
Public Administration*	21,537	1,646	4,479	5,452	2,499
Construction**	20,514	1,856	3,546	3,514	2,923
Agriculture; Forestry; Fishing & Hunting; Mining*	1,202	280	392	1,027	1,130
Farm Producers (primary owner of land)***	187	1,816	358	1,688	1,920

Source: U.S. Census Bureau

\*Source: U.S. Census Bureau, but based on where the employee lives; all other rows are based on place of employment.<sup>33</sup>

\*\*Source: U.S. Census Bureau<sup>34</sup>

\*\*\*Source: U.S. Department of Agriculture.<sup>35</sup> Many of these producers may have a different primary occupation that falls into another row here as well.

<sup>32</sup> U.S. Census Bureau, Annual Economic Surveys, All Sectors: County Business Patterns by Legal Form of Organization and Employment Class Size for U.S., States, and Selected Geographies, 2017, Table CB1700CBP.

<sup>33</sup> U.S. Census Bureau, 2017 American Community Survey, 1-year, Industry by Occupation for the Civilian Population 16 Years and Over, Table S2405; <https://data.census.gov/cedsci/table?q=DP04&t=Industry&g=0500000US39035,39055,39085,39093,39103&tid=ACSST1Y2017.S2405&hidePreview=false> (accessed March 18, 2021).

<sup>34</sup> U.S. Census Bureau, Annual Economic Surveys, All Sectors: County Business Patterns by Legal Form of Organization and Employment Class Size for U.S., States, and Selected Geographies, 2017, Table CB1700CBP; <https://data.census.gov/cedsci/table?q=payroll&g=0500000US39035,39055,39085,39093,39103&tid=CBP2017.CB1700CBP&hidePreview=false> (accessed March 18, 2021).

<sup>35</sup> U.S. Department of Agriculture, Natural Agricultural Statistical Service, 2017 Census of Agriculture; [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/Ohio/](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Ohio/). (accessed February 16, 2021).

## Health Care

The largest employment sector in Northeast Ohio is the health care industry. World-renowned institutions include the Cleveland Clinic, Metrohealth, and University Hospitals (UH), as well as research institutions such as Case Western Reserve University (CWRU) and Cleveland State University. With the Clinic, UH, and CWRU all in close proximity, University Circle has become a major regional job hub and economic engine for Northeast Ohio and the entire state. NOACA identified job hubs such as University Circle to prioritize transportation and infrastructure spending to better connect the regional workforce, particularly low-income and minority populations, to these hubs.

Northeast Ohio has seen multiple businesses launch to commercialize academic research and take advantage of the huge talent pool provided by its health care institutions. Data from the U.S. Patent and Trademark Office shows that health care was the most innovative sector in the region between 2013 and 2018, and likely still is today. CWRU is the top patent generator in the region, and the Cleveland Clinic ranks second.<sup>36</sup> This is important because research from CSU shows innovation and talent are important factors for metropolitan area growth.<sup>37</sup>

Health care matters not just for the jobs it provides, but also its function. The national population continues to increase and age, so demand for quality health care continues to rise. Nationally recognized health care institutions can help attract and retain residents. Furthermore, health care organizations cannot easily automate or outsource many jobs, even though numerous doctor's appointments have gone virtual due to the coronavirus. Health care providers still rely on human interaction for tests and treatments.

Health care jobs also require a broad array of tasks, skills, and supportive training and education. In addition to doctors and nurses with advanced degrees, the health care sector provides numerous opportunities for workers without formal degrees. Many of these positions may be a point of entry into the health care sector by low-income and underrepresented minority populations. Figure 5-4 shows nearly 25% of healthcare workers come from minority groups.<sup>38</sup>

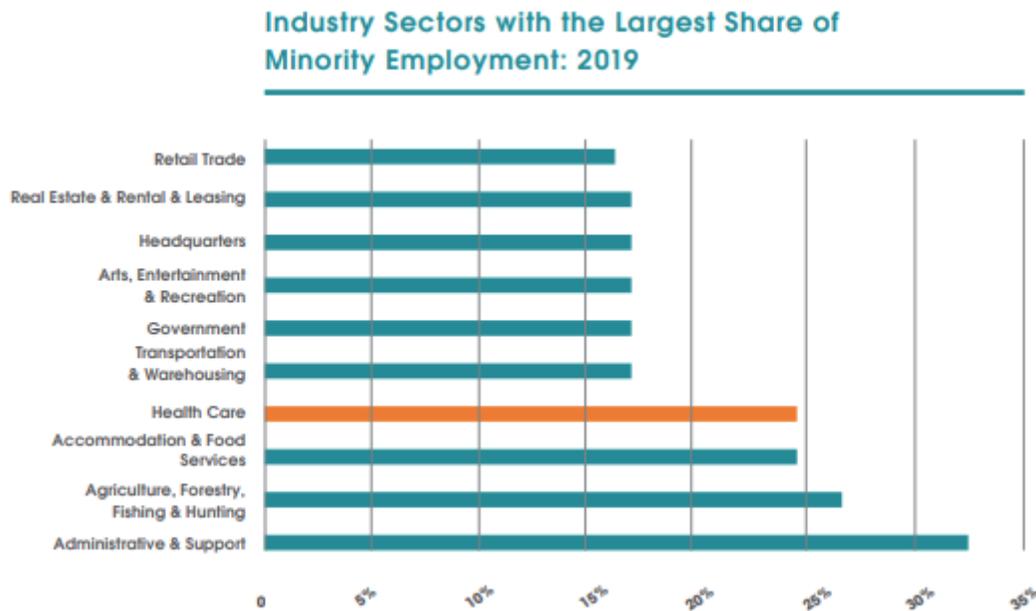
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<sup>36</sup> CBRE, "Cleveland Viewpoint – The New Industrial Revolution – Cleveland Finds Its Place in the Knowledge Economy – February 2019; <https://www.cbre.com/research-and-reports/Cleveland-Viewpoint--The-New-Industrial-Revolution--Cleveland-Finds-Its-Place-in-the-Knowledge-Econo> (accessed February 15, 2020).

<sup>37</sup> Iryna Lendel, Merissa Piazza, Molly Schnoke, Jinhee Yun, Nora Walsh, "Moving Cleveland Above the Trend: Benchmarking Regional Performance (Report)" (Cleveland: Cleveland State University, Sept, 25, 2020), *Urban Publications. 0 1 2 3 1677. 4*; [https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=2670&context=urban\\_facpub](https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=2670&context=urban_facpub). (accessed February 15, 2021).

<sup>38</sup> Team NEO, "NEO Since the Great Recession." Because the figure comes from Team NEO, it shows all 16 counties of the region Team NEO covers; however, health care is the largest employment sector in Cuyahoga County (Table 5-17), Cuyahoga is the largest county in the region, Cuyahoga has a large minority (nonwhite) population (Table 5-10), and the NOACA region is the largest metro area within Team NEO's coverage. These factors combined mean Figure 5-17 may actually understate minority employment in health care in the five NOACA counties.

**Figure 5-4. Minority Employment by Industry<sup>39</sup>**



Source: Team NEO

For the reasons stated above, regional economic development stakeholders should continue to facilitate growth in the health-care sector. Stakeholders could support growth through transportation, particularly robust multimodal workforce mobility. This is important for all job hubs, but especially for hubs such as University Circle and Chagrin Highlands where health-care sector jobs make up a substantial portion of total jobs (see Table 5-18).

**Table 5-18. Percentage of Health Care Sector Jobs in Six Major Regional Job Hubs for Northeast Ohio**

JOB HUB	Health Care
Airport	1.3%
Chagrin Highlands	16.4%
Downtown	7.7%
Independence	6.8%
Solon	2.9%
University Circle	72.8%

<sup>39</sup> Ibid.

Access to hubs with significant health-care jobs, especially by transit and paratransit, is important not just for workers, but also low-income, minority, and disabled individuals who need access to medical appointments and other services. Chapter 4 showcased results from the Crowd Gauge Tool, where respondents chose “I can easily get to fresh food and healthcare” as the third-highest priority out of 15 options. Table 5-19 contains NOACA Regional Survey results, which show nearly one-third of lower-income, nonwhite respondents do not agree that their community provides access to hospitals and health care (double the same response across the entire region). As an example of how to remedy this, the Greater Cleveland Regional Transit Authority (GCRTA) announced in January 2021 that it will provide free transit passes to new and expecting mothers in three Cleveland-area zip codes.<sup>40</sup> GCRTA also announced in March 2021 that it will provide free transit service to those who need to reach the Cleveland State University Wolstein Center COVID-19 mass vaccination site and other vaccination sites throughout Cuyahoga County. GCRTA will use a \$773,000 grant from the Ohio Department of Transportation to partner with Cuyahoga County and the City of Cleveland to distribute free, all-day passes through hundreds of social service agencies and community centers. The Wolstein Center is strategically adjacent to the Stephanie Tubbs Jones Transportation Center, a major bus hub on the east side of downtown Cleveland served by GCRTA.<sup>41</sup>

**Table 5-19. NOACA Survey Results on Access to Health Care**

	NOACA Region	My community provides me with access to hospitals and health care			
		Higher-income white	Lower-income white	Higher-income Nonwhite	Lower-income Nonwhite
<b>BASE</b>	<b>2,463</b>	<b>1,217</b>	<b>537</b>	<b>220</b>	<b>239</b>
Strongly Agree (5)	54.41%	60.97%	51.40%	49.55%	37.66%
Somewhat Agree (4)	29.68%	27.86%	31.28%	31.82%	30.54%
Neutral (3)	10.80%	7.72%	11.73%	12.27%	22.18%
Somewhat Disagree (2)	3.86%	2.96%	4.28%	4.09%	6.28%
Strongly Disagree (1)	1.26%	0.49%	1.30%	2.27%	3.35%
	100%	100%	100%	100%	100%
<b>MEAN</b>	<b>4.32</b>	<b>4.46</b>	<b>4.27</b>	<b>4.22</b>	<b>3.93</b>

**Manufacturing**

As mentioned earlier, Northeast Ohio has historically been a manufacturing powerhouse. Proximity to Lake Erie provided an abundance of fresh water, which is often needed for

<sup>40</sup> Courtney Astolfi, “New, Expectant Mothers to Get Free RTA Passes under Program Aimed at Reducing Infant Mortality,” *cleveland.com*, Jan. 19, 2021; <https://www.cleveland.com/news/2021/01/new-expectant-mothers-to-get-free-rta-passes-under-program-aimed-at-reducing-infant-mortality.html> (accessed February 11, 2021).

<sup>41</sup> Kim Palmer, “RTA will provide free rides to COVID-19 vaccination sites,” *Crain’s Cleveland Business*, March 15, 2021; <https://www.crainscleveland.com/government/rta-will-provide-free-rides-covid-19-vaccination-sites> (accessed March 17, 2021).

manufacturing processes. It also allowed for inexpensive and easy shipping of goods through the Great Lakes, particularly before the interstate highway system. Even with declines over time, manufacturing is still the second-largest employment sector in the region and by far the greatest contributor to regional gross domestic product, as seen earlier in Figure 5-3.<sup>42</sup>

Although manufacturing no longer employs as many workers, Table 5-20 shows the manufacturing sector still thrives in Northeast Ohio. This is particularly important for high-school graduates without college degrees, because the Ohio Department of Jobs and Family Services notes that many manufacturing jobs are available to this segment of the population.<sup>43</sup>

**Table 5-20. 2019 Manufacturing Earnings Compared to Median Earnings for the Entire Region and Adults without a High School Diploma<sup>44</sup>**

<b>Group of Workers</b>	<b>Median Wages</b>
All Workers in Cleveland-Elyria MSA	\$39,792
Manufacturing Workers in the MSA	\$48,674
Residents with High School Diploma as Highest Educational Level in the MSA*	\$30,801

Source: U.S. Census Bureau

\*Source: U.S. Census Bureau<sup>45</sup>

As noted in the discussion about health-care jobs, innovation is the leading metric for regional economic growth. Manufacturing remains an incredibly innovative sector, which is partly why jobs have decreased even as productivity has grown. Manufacturing simply means “to make a good.” If Northeast Ohio does not make things, it will have to import them. If it does make things, it can be an exporter for the country and the world, which will help increase jobs.

Manufacturing is especially reliant on robust transportation infrastructure, which means there are two ways to facilitate growth: 1) ensure a robust multimodal passenger transportation system to connect available workers with jobs, and 2) ensure a robust intermodal freight transportation system so businesses can easily ship by truck, rail, air, or water. Two of the major regional job hubs are also two of the largest manufacturing centers in the region: Solon and Cleveland Hopkins International Airport (see Table 5-21). Hopkins Airport is also one of six NOACA freight hubs. Freight hubs are areas where large volumes of freight shift from one transportation mode to another (e.g., airplane to truck). These “intermodal” facilities are critical

<sup>42</sup> Team NEO, “NEO Since the Great Recession.”

<sup>43</sup> Ohio Department of Jobs and Family Services, “2026 Job Outlook: Cleveland-Elyria Metropolitan Statistical Area” (Columbus: July 2019); <https://ohiolmi.com/portals/206/proj/MSA/Cleveland.pdf> (accessed February 12, 2021).

<sup>44</sup> U.S. Census Bureau, 2019 American Community Survey, 1-year, Industry by Sex and Median Earnings in the Past 12 Months (in 2019 Inflation-adjusted Dollars), Table S2413; <https://data.census.gov/cedsci/table?q=s2413&g=310M300US17460&tid=ACSST1Y2019.S2413&hidePreview=false> (accessed February 16, 2021).

<sup>45</sup> U.S. Census Bureau, 2019 American Community Survey, 1-year, Median Earnings in the Past 12 Months (in 2019 Inflation-adjusted Dollars) by Sex by Educational Attainment for the Population 25 Years and Over, Table B20004; <https://data.census.gov/cedsci/table?q=b20004&g=310M300US17460&tid=ACSDT1Y2019.B20004&hidePreview=false> (accessed February 16, 2021).

to support a wide variety of businesses. NOACA workforce mobility efforts that connect workers with these job and freight hubs through multimodal transportation can help strengthen the regional economy and create a more equitable future, particularly if focused on workers from Environmental Justice Areas.

**Table 5-21. Percentage of Manufacturing Sector Jobs in Six Major Regional Job Hubs for Northeast Ohio<sup>46</sup>**

<b>Job Hub</b>	<b>Manufacturing</b>
Airport	12.4%
Chagrin Highlands	2.5%
Downtown	1.8%
Independence	0.8%
Solon	36.8%
University Circle	0.2%

Source: U.S. Census Bureau

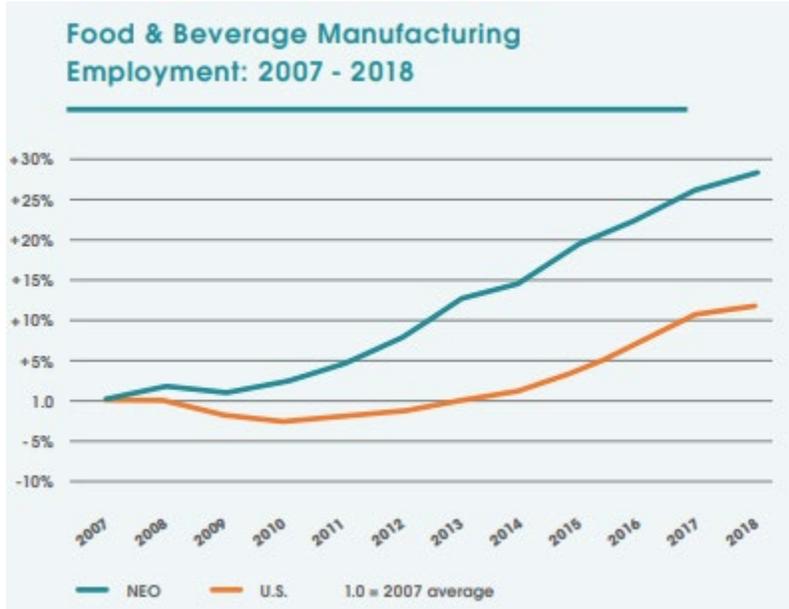
## Agriculture

Although farming itself does not provide many jobs in Northeast Ohio, it is critical to three of the NOACA counties that have a substantial rural population (Geauga, Lorain and Medina). Moreover, the entire agricultural ecosystem (food processing, preparation, and distribution) does provide a significant number of jobs to the region. By GDP, it is the ninth largest sector in Ohio.<sup>47</sup> Furthermore, Figure 5-5 shows that food processing and manufacturing is one of the only subsectors of manufacturing that has increased employment and should continue to do so. In fact, it is growing faster in Northeast Ohio than in the rest of the United States. This suggests our region has a competitive advantage in that sector, so it can be a key job creator and exporter. The region has this competitive advantage because agriculture is based on climate, soil, and water; Northeast Ohio has a good mix of these factors that support a variety and abundance of crops and livestock.

<sup>46</sup> U.S. Census Bureau, Center for Economic Studies, Longitudinal Employer-Household Dynamics (LEHD) Program, 2017, OnTheMap Origin-Destination Employment Statistics (retrieved May 9, 2019 from <https://onthemap.ces.census.gov/>).

<sup>47</sup> Ohio Development Services Agency, Economic Overview, 2020; <https://development.ohio.gov/files/research/E1000.pdf> (accessed February 12, 2021).

**Figure 5-5. Change in Food and Beverage Manufacturing Employment, 2007-2018<sup>48</sup>**



Source: Team NEO

Agriculture is also important from a resilience standpoint—food is necessary for survival. The coronavirus pandemic has shown how disruptions to national and global supply chains can cause food shortages and hardship; growth and processing of food locally for local consumption means the region is less subject to shocks.

*Vibrant NEO 2040* (Chapter 1) lists “Supporting sustainable agriculture and the local food system in Northeast Ohio” as one of its nine key recommendations. It is an important enough industry across the region that it is the only one that *Vibrant NEO 2040* specifically highlights among nine recommendations and 41 initiatives. One analysis concluded that if Northeast Ohio residents obtained 25% of their food from local farms (currently only 1-2%), it would create 27,664 new jobs, increase regional output by \$4.2 billion, and increase state and local tax collections by \$126 million.<sup>49</sup>

Table 5-22 shows that more than one-third of lower-income, nonwhite residents do not agree that they have access to stores and services, including grocery stores (more than double the same response across the entire region). Improved multimodal transportation access from Environmental Justice Areas to stores and services, including groceries, will provide greater

<sup>48</sup> TeamNEO, *Across Northeast Ohio: Food and Beverage Manufacturing*, June 2019; <https://teamneo.org/wp-content/uploads/2019/07/quarterly-economic-review-june-2019.pdf> (accessed February 23, 2021).

<sup>49</sup> Masi, Brad, Leslie Schaller, Michael H. Shuman, “The 25% Shift: The Benefits of Food Localization for Northeast Ohio & How to Realize Them,” December 2010; <https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/report-masi-et-al.pdf>. (accessed February 12, 2021).

equity and stimulate this sector of the regional economy. This again fits with the third-highest preference from the Crowd Gauge Tool: “I can easily get to fresh food and healthcare.”

**Table 5-22. NOACA Survey Results on Access to Stores and Services, Including Fresh Food/Grocery**

	My community provides me with access to stores and services (including fresh food/grocery)				
	NOACA Region	Higher-income white	Lower-income white	Higher-income Nonwhite	Lower-income Nonwhite
<b>BASE</b>	<b>2,463</b>	<b>1,217</b>	<b>537</b>	<b>220</b>	<b>239</b>
Strongly Agree (5)	49.78%	55.22%	46.74%	44.55%	34.31%
Somewhat Agree (4)	33.13%	32.95%	34.64%	32.73%	31.38%
Neutral (3)	11.21%	8.63%	13.22%	13.18%	19.67%
Somewhat Disagree (2)	4.10%	2.71%	3.72%	5.91%	10.04%
Strongly Disagree (1)	1.79%	0.49%	1.68%	3.64%	4.60%
	100%	100%	100%	100%	100%
<b>MEAN</b>	<b>4.25</b>	<b>4.40</b>	<b>4.21</b>	<b>4.09</b>	<b>3.81</b>

Local agricultural sector growth has benefits across counties, as rural areas produce the food consumed by the population centers. The benefits are not limited to those large urban areas. Geauga and Lake Counties present a great example with their wineries. Because they produce a good, they house “manufacturers.” Because these counties also grow the fruit to make the wine, they house “farmers.” Because people from across the region and state visit their wineries, these counties also serve as destinations for travelers and tourists. Support for local agriculture, therefore, cuts across economic sectors and can contribute to shared, regional economic growth.

**Travel & Tourism**

While not the largest sector, travel and tourism can (under normal conditions) play a substantial role because it attracts visitors and spending from outside the region. In a way, the region itself can be thought of as a key export because it is something that is sold to people from other places. Additionally, tourism has the potential to turn tourists into residents, who then grow the regional economy through the purchase of houses and other products and services, some of which may also lead to additional tax payments. Most businesses that engage in travel and tourism fall under the retail trade industry, which is one of the largest industries in terms of revenues, employees, and payroll.

In 2018, Cuyahoga County attracted 19.2 million visitors, an increase of 720,000 visitors (4%) from 2017.<sup>50</sup> In 2019 about \$12.2 billion in tourism sales occurred in the five-county NOACA

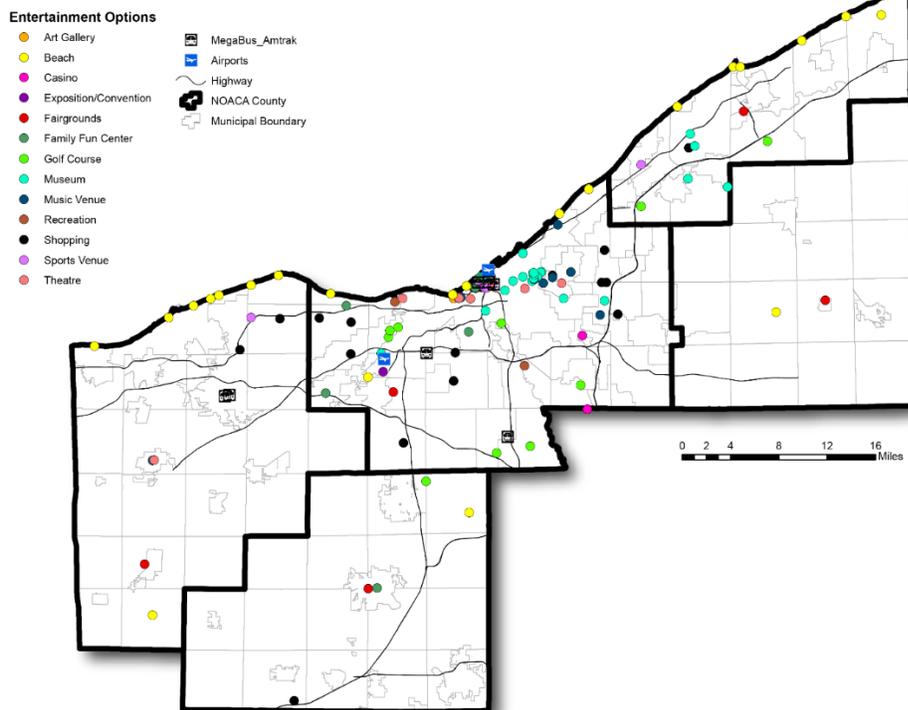
<sup>50</sup> Destination Cleveland, “Harnessing the Power of the Visitor,” *2018 Convention & Leisure Tourism: Metrics Report* (Cleveland: Destination Cleveland, 2018); <https://www.thisiscleveland.com/ThisIsCleveland/media/Documents/Tourism%20Metric%20Reports/2018-convention-leisure-tourism-metrics-report.pdf?quality=75&cache=3.0> (accessed February 15, 2021).

region, the largest of any region in Ohio. This industry supports 97,389 jobs in the region, with a total of \$3.3 billion in direct and indirect income in 2019.<sup>51</sup> Tourism supports between 5% and 10% of jobs in each NOACA county. To retain a robust tourism sector, the region must ensure the multimodal transportation system is accessible, easy to navigate, well-maintained, and resilient.

Travel and tourism is an important economic sector because it extends across the region, from professional sports stadiums in downtown Cleveland to wineries in Lake County to Amish villages in Geauga County (see Figure 5-6). Additionally, Lake Erie attracts people from around the country primarily for fishing, but also sailing, swimming, and other recreation. According to the Ohio State University Stone Laboratory, scientists estimate Lake Erie contains 50% of all fish in the Great Lakes system, despite only having 2% of the water.<sup>52</sup> A robust park system in all five counties provides more outdoor opportunities, as well as connections and access to the lake and its tributaries for fishing, boating, and kayaking.

**Figure 5-6. Key Regional Attractions**

Travel & Tourism



<sup>51</sup> Lake County Visitors Bureau, "Economic Impact of Tourism in Lake County, Ohio 2019." Prepared by Tourism Economics.

<sup>52</sup> Mark Brush, "Lake Erie Has 2% of the Water in the Great Lakes, but 50% of the Fish," *Michigan Radio*, Nov. 5, 2013; <https://www.michiganradio.org/post/lake-erie-has-2-water-great-lakes-50-fish#:~:text=Your%20Membership%20Online-,%20Lake%20Erie%20has%202%25%20of%20the%20water%20in%20the%20Great,%20but%2050%25%20of%20the%20fish&text=The%20stat%20comes%20from%20Jeff.just%202%25%20of%20the%20fish> (accessed February 15, 2021).

Travel and tourism is also a sector where transportation infrastructure can play an important role. Visitors who travel to key attractions (or events) in the region (via plane, regional bus, Amtrak, personal vehicle, etc.) should experience strong connections with sufficient signage to other travel modes so they can get reach their destinations safely and quickly. Many of these trips involve two or more modes.

The NOACA Regional Survey asked respondents to identify all the various travel modes they use for errands, social visits, and fun times in Northeast Ohio (Table 5-23). Although not tourists, the diverse array of responses (more than half of respondents in every county reported walking; more than one-third reported cycling; one-third of Cleveland respondents used public transportation) suggest that visitors to Northeast Ohio may also likely use different transportation modes, and possibly more so, given that they don't live in the region and may not have as ready access to a private vehicle. A robust multimodal transportation system is vital for leisure and recreational travel within the region, whether by residents or visitors.

**Table 5-23. NOACA Survey Results on Modes of Transportation Used for Non-Work Trips**

Popularity of travel options for errands, social visits, and fun times in Northeast Ohio	Errands, social, fun trips						
	NOACA Region	Cleveland	Cuyahoga	Lorain	Lake	Medina	Geauga
BASE	2,447*	444	1,083	359	269	204	88
	%	%	%	%	%	%	%
Personal vehicle	79.12	63.96**	82.55	83.57	83.27	79.41	81.82
Walk	55.25	59.01	55.49	50.97	56.13	53.92	51.14
Bicycle	39.03	43.47	38.60	39.55	34.94	34.80	42.05
Uber, Lyft	23.70	33.33	24.01	19.22	18.59	17.16	20.45
Public transportation	17.90	32.43	16.53	11.98	15.24	11.27	9.09
Carpool or vanpool	17.70	24.55	15.24	17.83	15.24	18.14	19.32
Airplane	13.12	15.99	13.02	13.09	11.52	10.78	10.23
Motorcycle	12.63	15.54	9.51	14.76	14.87	13.73	18.18
Scooter	10.91	19.37	8.13	11.14	10.78	6.37	12.50
Taxi	10.13	16.67	8.68	9.19	8.18	7.35	11.36
Telecommute	9.69	14.41	8.31	8.08	10.78	8.82	7.95
Greyhound	7.11	12.84	5.54	6.96	5.95	4.9	6.82
Charter bus	7.07	12.61	5.26	5.29	7.81	5.39	10.23
Amtrak rail	6.70	11.26	5.54	5.57	5.95	4.90	9.09

\* All residents provided their travel options for errands, social, and fun trips.

\*\* We can be 99% confident that fewer people in Cleveland, compared with people in suburban areas, drive themselves to errands, social, and fun trips.

## Current and Projected Employment

According to NOACA’s Regional Survey, residents are only in slight agreement that the economy is headed in the right direction and provides good job opportunities (see Table 5-24)).

**Table 5-24. Survey Respondent Opinions on the State of the Economy**

5 = Highest 1 = Lowest  BASE = 2,454	Agreement with statements about Northeast Ohio		
	NEO’s economy is headed in the right direction	NEO is a good place for employment opportunities	It’s easy to find affordable housing in NEO
Cleveland	3.20	3.36	3.27
Cuyahoga	3.22	3.46	3.59
Lorain	3.19	3.32	3.51
Lake	3.36	3.66	3.53
Medina	3.25	3.49	3.50
Geauga	3.43	3.55	3.53
NOACA Region	3.24	3.45	3.51

In Chapter 1, the data showed that the region has lost population, yet still expanded its development footprint. Having fewer people spread out over more space consumes greater resources per capita to maintain services and amenities, including infrastructure. Table 5-25 shows this trend may continue, with job totals in Cuyahoga County essentially stagnant while every other county seeing a double-digit percentage increase; total regional employment will only grow by 7% over the next 30 years. It will be critical to ensure growth happens in places already serviced by infrastructure. Continued outward migration will further stress the region and its counties (both financially and environmentally).

**Table 5-25. NOACA Region Employment Projections<sup>53</sup>**

County	Employment		Employment	Employment	Projected Employment
	2010	2020	Projection 2050	Change (%) 2010-2020	Change (%) 2020-2050
Cuyahoga	714,017	776,178	791,900	9	2
Geauga	34,148	38,811	42,895	14	11
Lake	97,271	105,083	116,947	8	11
Lorain	97,025	109,876	134,466	13	22
Medina	59,816	68,411	85,708	14	25
NOACA	1,002,27	1,098,35	1,171,916	10	7

Source: Team NEO, Moody’s Analytics

Studies demonstrate that “proximity promotes agglomeration, helping to grow industries and regional economies. Research continually finds that urban economies benefit when workers and firms locate near one another (or cluster), saving travel time and promoting greater knowledge

<sup>53</sup> TeamNEO, Moody’s Analytics, February 2020.

exchanges.”<sup>54</sup> In other words, clusters of housing (for workers), jobs, and businesses are better for the regional economy. This is an important driver of NOACA’s effort to improve workforce mobility and access to the region’s job hubs (see Chapter 3). Development of neighborhoods (urban, suburban and rural) already served by existing infrastructure is the best way to do this. Improved transportation system linkages and modal choice can further facilitate clusters and make more jobs accessible to more people within a shorter commute time. This is especially important in Environmental Justice Areas (see Chapters 1 and 3). Many such areas contain ample infrastructure that remains underused; these are prime parcels for revitalization.

## Economic Development Stakeholders

Several agencies and organizations already work on economic development across all levels of government. Economic growth can provide jobs for residents and increase tax revenue to help provide services and amenities. The involvement of regional and local stakeholders is critical because they best understand local conditions and have the greatest stake in local growth. The federal government provides funding and technical assistance to state and local entities that it hopes will lead to an improved national economy. The state government likewise provides funding and assistance to improve the state economy. This section, while not meant to be comprehensive, describes stakeholders at all of these levels and how they interact.

### Federal

The federal government typically adopts nationwide policies, while place-based economic development is under the purview of entities that exist within a particular geographic area. The federal government also provides funding to state or local entities for these purposes. The Economic Development Administration (EDA), within the Department of Commerce, is the main stakeholder at the federal level. Its mission is to promote innovation and competitiveness to prepare communities for success in the global economy. To do so, the EDA offers grants for planning, technical assistance, and infrastructure construction. The NOACA region falls under the Chicago Regional Office, which then works with regional and local stakeholders to build economic development knowledge and capacity.

An important, but often overlooked stakeholder, is the U.S. Commercial Service (USCS), also within the Department of Commerce under its International Trade Administration. The USCS promotes the export of goods and services, particularly by small- and mid-sized businesses, to help them grow. It can be a key player to help small or new businesses scale, which will create jobs. The USCS provides international market research, counseling and advocacy, and training programs to help businesses determine if, when, and where it is beneficial to export. It also provides programs to introduce businesses to qualified buyers and distributors in overseas markets.

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<sup>54</sup> Adie Tomer, Joseph W. Kane, and Lara Fishbane, “Connecting People by Proximity: A Better way to Plan Metro Areas,” *Brookings Metropolitan Policy Program*, June 21, 2019; <https://www.brookings.edu/blog/the-avenue/2019/06/21/connecting-people-by-proximity-a-better-way-to-plan-metro-areas/> (accessed February 12, 2021).

## State

Similar to the federal level, the state sets the framework for economic development through laws, regulations, and programs, while county or local jurisdictions handle the details. The main state-level stakeholders are JobsOhio and the Ohio Development Services Agency (ODSA).

JobsOhio is a private, nonprofit corporation with a mission of job retention, creation, and attraction. JobsOhio drives much of the business attraction and investment from outside the state, assisting with site selection and tax incentives. JobsOhio primarily focuses on 11 industries it identifies as key to economic growth at the state level. It then defers to designated regional partners to identify those industries important in their given region, and that partner drives most of the efforts to secure business investment. In Northeast Ohio, the regional partner is Team NEO (discussed below). Table 5-26 lists the 11 industries identified by JobsOhio, several of which are key in the NOACA region, as described earlier in this chapter.

**Table 5-26. Jobs Ohio Key Industries<sup>55</sup>**

<b>Industry</b>
Advanced Manufacturing
Aerospace and Aviation
Automotive
Autonomous Mobility
Energy and Chemicals
Financial Services
Food and Agribusiness
Healthcare
Logistics and Distribution
Military and Federal
Technology

Source: JobsOhio

The ODSA is a fully public department of the state government, committed to job creation and community development while it ensures accountability for taxpayer money. Although JobsOhio and Team NEO may offer tax incentives to businesses, in concurrence with the local jurisdiction, ODSA administers the tax incentive programs for both business and housing development.

## Regional and Local

Economic development agencies at regional and local levels regularly collaborate on attracting and retaining businesses. They often work in partnership as a result of the federal and state organizations and funding sources. Table 5-27 is just a partial list of regional and local stakeholders, grouped together by the geographic scale at which they operate.

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<sup>55</sup> JobsOhio, <https://www.jobsohio.com/#> (accessed February 12, 2021).

**Table 5-27. Regional Economic Development Stakeholders**

<b>Regional</b>	<b>County</b>	<b>City or Neighborhood</b>
<ul style="list-style-type: none"> <li>•Bioenterprise</li> <li>•Cleveland Foundation</li> <li>•Educational Institutions</li> <li>•Federal Reserve Bank of Cleveland</li> <li>•Gund Foundation</li> <li>•Jumpstart</li> <li>•MAGNET</li> <li>•NOACA</li> <li>•Team NEO</li> <li>•Vibrant NEO</li> </ul>	<ul style="list-style-type: none"> <li>•County Chambers of Commerce</li> <li>•County Economic Development Departments</li> <li>•County Jobs &amp; Family Services</li> <li>•County Land Banks</li> <li>•County Port Authorities</li> <li>•Greater Cleveland Partnership</li> </ul>	<ul style="list-style-type: none"> <li>•City Chambers of Commerce</li> <li>•City Economic Development Departments</li> <li>•Community Development Corporations</li> <li>•Community Improvement Corporations</li> <li>•Main Street Organizations</li> </ul>

Team NEO is the state-designated agency for business retention, attraction, and expansion. Every county and most of the mid-to-large-size cities have their own economic development departments, which often work in conjunction with Team NEO. Chambers of commerce such as the Greater Cleveland Partnership, the Lorain County Chamber of Commerce and the Geauga Growth Partnership are private business organizations that also play a role and, again, most counties and even some cities have chambers of commerce. Foundations and like organizations such as the Cleveland Foundation and Fund for Our Economic Future are also heavily involved. They provide research, grant funding, or other services. Some nonprofits focus on specific economic sectors, such as Bioenterprise (biomedical) or MAGNET (manufacturing). Many neighborhoods have Community Development Corporations (e.g., Detroit-Shoreway, Ohio City, University Circle, St. Clair-Superior), and some have Main Street organizations (e.g., Chardon, Medina, Wellington). All of these work with businesses and developers in their neighborhoods to help them grow. Every county also has a workforce development agency through the state-level Ohio Means Jobs program. These agencies complement business stakeholders through job training and other skills development for unemployed or underemployed residents. The educational system, from K-12 to joint vocational schools to community colleges to universities, also plays a critical role. Educational institutions provide a wide variety of training and skills for diverse career paths.

Several of these organizations have representatives on NOACA's various Advisory Councils. Team NEO and some chambers of commerce are also on the NOACA Business Advisory Council (BAC), which is chartered to represent business interests in the transportation planning process. The BAC both informs NOACA planning efforts and helps share those efforts with the business community.

## NOACA Efforts to Increasing Workforce Mobility

### Current Challenges

NOACA plays a significant role in economic development through its planning and distribution of transportation funding. The authors of *Vibrant NEO 2040* recognized the role of transportation in equitable economic growth; they made “Increasing Transportation Choice” one of its four key themes. NOACA can play an especially important role because, as Table 5-28 shows, a higher percentage of Northeast Ohio residents lack personal vehicles than elsewhere in the state and country; transportation choice is critical. The City of Cleveland fares even worse; more than one-fifth of households are without a personal vehicle.

Vehicles are a huge upfront expense, with ongoing payments for insurance, gas, and repairs; many residents cannot afford vehicles or don’t want to own them. This creates a paradox, however, where a car is often needed to access jobs, but jobs are needed to afford cars. The problem is further compounded by exclusionary zoning practices in many suburban or rural areas that make it difficult or even impossible for low-income or minority residents to move closer to jobs (see Chapter 6). Additionally, housing insecurity is known to result in job loss and reduced employment prospects.<sup>56</sup>

This means transit, cycling, and walking improvements, all core functions of NOACA, are particularly relevant in Northeast Ohio to help connect workers and jobs. These multimodal transportation efforts are especially necessary to improve racial equity because low-income, minority residents are more likely to depend on alternative modes.

**Table 5-28. 2019 Percentage of Households without a Personal Vehicle<sup>57</sup>**

Location	Percent of Households without a Vehicle
Cincinnati MSA	7.4%
Cleveland-Elyria MSA	9.9%
Columbus MSA	6.1%
Ohio	7.7%
United States	8.6%
City of Cleveland	20.7%

Source: U.S. Census Bureau

Despite lack of private vehicle ownership, results from NOACA’s Regional Survey show general agreement that vehicles are necessary to reach work (see Table 5-29). Cleveland respondents, with the highest percentage of no-vehicle households but several transit routes, offered the lowest levels of agreement, while Geauga and Medina county residents expressed the strongest agreement. This data supports the need for NOACA and transit agencies to ensure a robust and reliable transit system.

<sup>56</sup> Matthew Desmond and Carl Gershenson, “Housing and Employment Insecurity among the Working Poor,” *Social Problems* 0, 1-22 (Oxford, U.K.: Oxford University Press, 2016); <https://scholar.harvard.edu/files/mdesmond/files/desmondgershenson.sp2016.pdf?m=1452638824> (accessed February 14, 2021).

<sup>57</sup> U.S. Census Bureau, “2019 American Community Survey, 1-year, Selected Housing Characteristics, Table DP04”; [https://data.census.gov/cedsci/table?q=DP04&q=0100000US\\_0400000US39\\_1600000US3916000\\_310M100US18140\\_310M300US17460\\_310M500US17140&tid=ACSDP1Y2019.DP04&hidePreview=false](https://data.census.gov/cedsci/table?q=DP04&q=0100000US_0400000US39_1600000US3916000_310M100US18140_310M300US17460_310M500US17140&tid=ACSDP1Y2019.DP04&hidePreview=false) (accessed February 15, 2021).

**Table 5-29. Survey Respondents Agreement that Vehicles are Necessary**

Agreement with vehicle to work statement below		
In Northeast Ohio, people have to have a vehicle to get to work		
<i>5 = Highest 1 = Lowest</i>	All Respondents	Respondents Employed Full-time or part-time
BASE	2,463	1,194
Cleveland	3.39	3.40
Cuyahoga	3.59	3.60
Lorain	3.96	3.99
Lake	3.69	3.73
Medina	3.96	3.95
Geauga	4.10	4.21
<b>NOACA Region</b>	<b>3.67</b>	<b>3.69</b>

Transportation planning is also critical because workers commute widely throughout the region to access jobs. According to Table 5-25, 70% of jobs are in Cuyahoga County. Table 5-30 shows that Cuyahoga County is the top place of work for residents of every county except Lake, where it is a close second. Based on job densities and commute patterns, NOACA has identified six major regional job hubs in the region, all of which happen to be in Cuyahoga County (see Chapter 3). From an equity standpoint in particular, NOACA must provide multimodal opportunities for workers to access these job hubs and other sub-regional job centers and corridors to facilitate upward economic mobility for low-income households.

**Table 5-30. 2019 NOACA Residents Place of Home and Work<sup>58</sup>**

		Work in				
		Cuyahoga	Geauga	Lake	Lorain	Medina
Live in	Cuyahoga	360,053	4,206	15,192	13,529	7,328
	Geauga	14,967	8,303	4,666	245	198
	Lake	37,937	3,420	41,635	650	480
	Lorain	44,694	374	1,265	44,667	3,165
	Medina	25,590	248	716	2,459	19,675

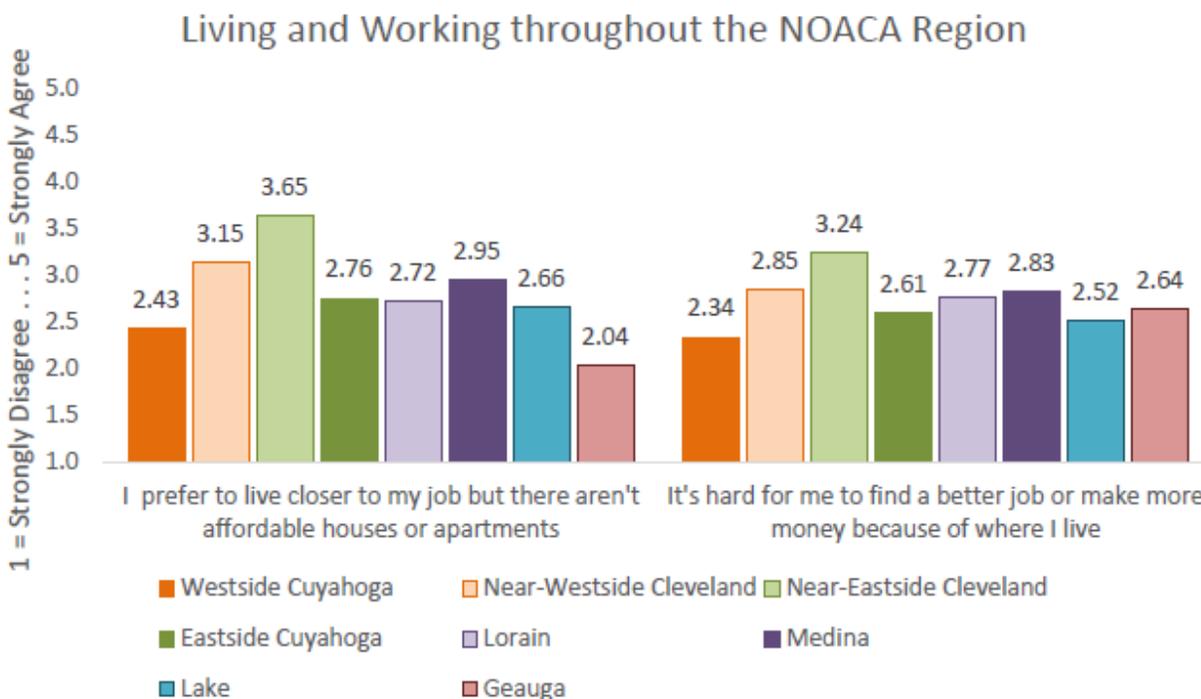
Source: US Census Bureau

NOACA’s Regional Survey included two statements posed to respondents about the jobs-housing disconnect (see also Chapter 6). First, respondents were asked to state the extent to which they agreed or disagreed that they would prefer to live closer to their job but there isn’t affordable housing. Second, respondents were asked the extent to which they agreed or

<sup>58</sup> U.S. Census Bureau, “LEHD Origin-Destination Employment Statistics (2002-2018)” [computer file], LODES 7.5 [version] (Washington, DC: U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program [distributor], 2021), <https://onthemap.ces.census.gov> (accessed February 15, 2021).

disagreed that it was hard for them to find a better job or make more money because of where they lived. Figure 5-7 shows the responses, which vary significantly by location. Cleveland residents indicated the highest level of agreement with both statements; they agree that lack of affordable housing keeps them from living closer to work, and they agree that their current residential location limits their job prospects and earning potential. Suburban respondents generally disagreed with both statements.

**Figure 5-7. NOACA Regional Survey: Respondent Preferences for Living and Working Arrangements**



Several NOACA programs facilitate better multimodal transportation access to employment opportunities. This is particularly true for residents of Environmental Justice Areas, who may not be able to afford a personal vehicle. The following sections provide further details.

NOACA’s Board of Directors outlined specific goals in its 2015 Regional Strategic Plan, including “support economic development” and “improve quality of life” with several supporting objectives.<sup>59</sup> These goals and objectives explicitly demonstrate NOACA’s commitment to promote transportation system infrastructure projects and investment that will also expand economic opportunity across the region to improve stakeholders’ lives. NOACA’s Business, Community, Emerging Leaders and Rural Advisory Councils work toward these goals through the regional leaders who make up their memberships. These council members act as a conduit from NOACA to their communities to inform NOACA Board decision making and provide feedback on NOACA staff efforts.

<sup>59</sup> Northeast Ohio Areawide Coordinating Agency, *NOACA Strategic Plan: Going Forward, Together* (Cleveland: NOACA, 2015); <https://www.noaca.org/home/showpublisheddocument?id=6639> (accessed February 24, 2021).

The NOACA plans, programs, policies, and projects described below can positively influence economic development in Northeast Ohio, particularly through enhanced mobility and access. This is important because research from Cleveland State University (CSU) indicates that location of jobs near population centers is more effective to improve the transport of workers to jobs. Improved workforce accessibility fosters growth and reduces unemployment. These researchers found that manufacturing and retail businesses have been the most likely to leave the urban core for exurban areas, while available workers for those industries remain in the core, and that “it may not be prudent to advocate for limited transportation funding in the creation of transit connections to disparate areas.”<sup>60</sup> Similarly, the Federal Reserve Bank of Cleveland states “longer commute distances have also been found to negatively impact the economic mobility of low-income households from one generation to the next.”<sup>61</sup> The future transportation scenarios introduced in Chapter 3, summarized at the end of this chapter, and described more fully in Chapter 9 address different ways NOACA and stakeholders can best prioritize infrastructure spending. Infrastructure investment can help low-income or minority workers surmount these mobility hurdles, especially those workers in Environmental Justice Areas.

In 2015, the Brookings Institution analyzed studies from around the country and found that “people who live closer to jobs are more likely to work. They face shorter job searches and spells of joblessness” and that “black, female, and older workers tend to be more sensitive to job accessibility. . . . For poor residents, living closer to jobs increases the likelihood of working and leaving welfare.”<sup>62</sup> Brookings then conducted additional analysis that found Greater Cleveland had the largest percent drop nationwide in the number of jobs accessible to the average resident between 2000 and 2012. This means people and jobs have spread farther apart. While 2020 Census data may reveal a shift in this trend, the challenge for workers to live closer to jobs to improve their economic outcomes remains real.

A recent study from the Journal of Urban Economics demonstrates the jobs-housing disconnect impact on metropolitan area growth. As mentioned previously, innovation is the number one determinant of metro area growth. The study found that every 6.2-mile increase in commute distance leads to a 5% decline in the number of patents generated by an inventor and a 7% decrease in patent quality. In other words, a metro region where jobs and people are spread farther apart will be less innovative and experience less growth. The authors conclude that their “findings support the importance of density in urban planning policy” because “increasing zoning

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<sup>60</sup> Richey Piiparinen and Jim Russell, “Center for Population Dynamics Quarterly Brief January 2017: Transportation’s Role in the Economic Restructuring of Cleveland,” *Urban Publications* 0 1 2 3 1427 (Cleveland: Cleveland State University, January 2017); [https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=2431&context=urban\\_facpub](https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=2431&context=urban_facpub). (accessed March 1, 2021).

<sup>61</sup> Brett Barkley and Alexandre Gomes-Pereira, “A Long Ride to Work: Job Access and Public Transportation in Northeast Ohio,” *A Look Behind the Numbers* 6, no. 1. 1 (2015), The Federal Reserve Bank of Cleveland; <https://www.clevelandfed.org/newsroom-and-events/publications/a-look-behind-the-numbers/albfn-20151123-a-long-ride-to-work-job-access-and-public-transportation-in-northeast-ohio.aspx> (accessed February 12, 2021).

<sup>62</sup> Elizabeth Kneebone and Natalie Holmes, “The Growing Distance between People and Jobs in Metropolitan America,” *The Brookings Metropolitan Policy Program* 2 (March 2015); [https://www.brookings.edu/wp-content/uploads/2016/07/srvy\\_jobsproximity.pdf](https://www.brookings.edu/wp-content/uploads/2016/07/srvy_jobsproximity.pdf) (accessed February 12, 2021).

and other land-use restrictions on multifamily construction have an unintended efficiency cost” through increased commute distances.<sup>63</sup>

As a transportation agency, NOACA is best suited to improve transportation options, which is one important way to reduce poverty and increase productivity. Land use is the other side of the coin, however, and local jurisdictions control their own land use. The programs, policies, and projects described in the next section are ways that NOACA can help shape transportation and related development decisions that may ultimately influence local land-use priorities and best connect workers with jobs.

## NOACA Programs

NOACA’s transportation planning programs embody the agency’s goal to “support economic development”; it is typically central to their intended purpose. A business may struggle to realize success in a location without reliable workforce accessibility. Transportation infrastructure is necessary (even if not sufficient) for business expansion and job growth. NOACA, therefore, promotes a variety of programs to optimize transportation investments to support Northeast Ohio’s economy.

### Workforce Mobility

NOACA workforce mobility efforts seek to close the gap between workers and jobs so that all residents can safely and reliably access job sites through multiple transportation options. This can help reduce their overall housing and transportation cost burden, as described in Chapter 6, which will help increase housing security.

As Northeast Ohio population and employment have decentralized from its legacy cities and towns, the distance between businesses and their workers has grown. This is especially harmful for low-income and minority residents (e.g., Environmental Justice area populations), who disproportionately live in historic core communities. Reliable personal vehicles may be cost-prohibitive or unattainable due to disability; transit is often not viable or very infrequent in less dense areas; and distances are too great to walk or bike to work. Table 5-31 provides data from the Brookings Institute study, which shows that, compared to peers, Greater Cleveland fares worse across several jobs-housing connection metrics.

**Table 5-31. Percentage Change in Number of Jobs near Residents from 2000 to 2012<sup>64</sup>**

Location	% Change in Average # of Jobs Near a Resident	% Change in # of Jobs Near High-Poverty Neighborhoods	% Change in # of Jobs Near Majority-Minority Neighborhoods
Cincinnati MSA	-14.5%	-28.3%	-17.0%
Cleveland-Elyria MSA	-26.5%	-35.0%	-28.0%
Columbus MSA	-7.9%	-26.5%	-13.9%

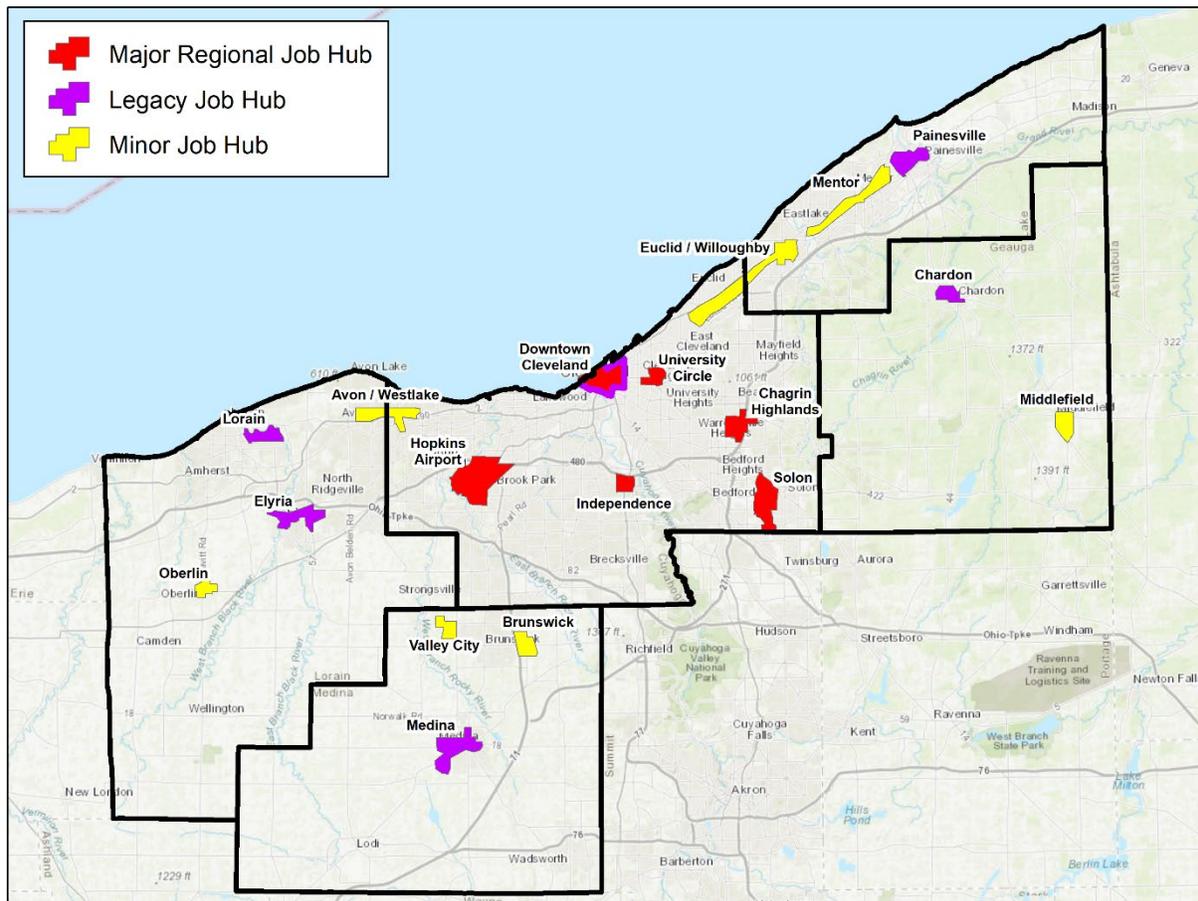
Source: Brookings Metropolitan Policy Program, 2015

<sup>63</sup> [Hong Yu Xiao, Andy Wu, Jaeho Kim, “Commuting and Innovation: Are Closer Inventors More Productive?” \*Journal of Urban Economics\* 121 \(Jan. 2021\), 26; https://doi.org/10.1016/j.jue.2020.103300 \(accessed February 12, 2021\).](https://doi.org/10.1016/j.jue.2020.103300)

<sup>64</sup> Interactive map and table found at <https://www.brookings.edu/research/the-growing-distance-between-people-and-jobs-in-metropolitan-america/> (accessed February 16, 2021).

NOACA has identified regional job hubs, shown in Figure 5-8 (see also Chapter 3). Each is a dense node of at least 10,000 employees or a legacy job hub that has seen significant infrastructure investments over the past decades. These are the areas where transportation spending can best connect businesses within the hubs and employees to the hubs through a multimodal transportation system.

**Figure 5-8. NOACA Regional Job Hubs**



At this point, NOACA has developed workforce mobility strategies and analysis for job hubs. The current work has focused on the six major regional job hubs, which are located in Cuyahoga County, and three legacy and minor job hubs located in one of the collar counties, Medina. NOACA will also extend the detailed study to the remaining legacy and minor job hubs across the region to complete the work. The analysis identifies the predominant jobs in the hubs (for example, health-care workers in University Circle), where workers with those skills live, and how long it takes them to access the job hub by personal vehicle or public transit. NOACA also analyzed commute times from Environmental Justice Areas to determine if and how low-income and minority populations experience disadvantage in their ability to access job hubs. NOACA continues to develop a public tool to inform users about the locations of workers with certain skills, among other features Economic developers and businesses will be able to use the tool to make better siting decisions (e.g., ideally, to locate near their current and prospective employees). Please see the “Where do We Go from Here?” section at the end of this chapter for

more information on how NOACA modeled future transportation infrastructure investment scenarios around access to the major regional job hubs shown in Figure 5-8.

## Transit Planning

NOACA's *Regional Transit Strategic Plan* likewise has a heavy emphasis on how to connect residents to job hubs and other important places in the region through public transit in each county. As described throughout this chapter, transit connections to jobs are particularly important from an equity standpoint. Low-income, minority, and disabled populations are more likely to depend on transit to reach jobs. Older residents may also increasingly turn to transit if their driving abilities diminish. Younger generations have also expressed a greater interest in transit, in part due to environmental concerns and also due to the high cost of vehicle ownership.<sup>65</sup> These groups combine to form a large share of the population interested in transit, whether captive (ride out of necessity) or choice. NOACA must ensure a robust transit network for Northeast Ohio to ensure its businesses can attract and retain these people.

*Transit Oriented Development (TOD)* incorporates these needs through its design. TOD emphasizes dense residential and commercial nodes around transit stations, particularly rail lines. This is especially important for minority and low-income populations because these groups are more dependent on transit. TOD can help these populations more fully participate in the economy by affordably accessing jobs, although there is also the risk of gentrification and rising housing costs within TODs. NOACA conducted a thorough analysis of TOD potential for every rail station, as described in Chapter 2. Through this analysis, NOACA created a [TOD Scorecard and Implementation Plan](#), with goals to increase ridership and promote development in and around rail stations and high performing bus corridors.<sup>66</sup> It grouped all stations into one of seven place typologies based on several characteristics of the surrounding community. NOACA staff then identified TOD "readiness" to identify stations where high-priority investments are needed to support TOD and set timeframes in which development is likely to occur. The Scorecard will help the NOACA Board and local stakeholders make the most efficient use of funding to promote development around transit stations (see also Chapter 7).

## Transportation for Livable Communities Initiative (TLCI)

The Transportation for Livable Communities Initiative (TLCI) also fosters economic development and mobility. NOACA's [TLCI program](#) provides assistance to communities and public agencies for integrated transportation and land-use planning and projects that strengthen community livability. TLCI advances the goals of NOACA's [Regional Strategic Plan](#) through the following objectives:

- Develop transportation projects that provide more travel options through complete streets and context sensitive solutions to increase user safety and support positive public health impacts
- Promote reinvestment in underutilized or vacant/abandoned properties through development concepts supported by multimodal transportation systems
- Support economic development through place-based transportation and land use recommendations, and connect these proposals with existing assets and investments

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<sup>65</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), "Transit Planning" <https://www.noaca.org/regional-planning/transportation-planning/transit-planning-tod/transit-planning> (accessed February 12, 2021).

<sup>66</sup> Ibid.

- Ensure that the benefits of growth and change are available to all members of a community by integrating principles of accessibility and Environmental Justice into projects
- Enhance regional cohesion through collaboration between regional and community partners
- Provide people with safe and reliable transportation choices that enhance their quality of life<sup>6768</sup>

The TLCI program consists of two components: (1) planning and (2) implementation.

1. Planning awards help fund planning studies that can lead to improvements in transportation systems and the neighborhoods they support.
2. Implementation awards help communities move forward with the development and installation of infrastructure from past completed livability studies.

Through TLCI, NOACA has planned or funded several projects around the region that increase worker mobility and advanced economic development. The multimodal focus of the program works to ensure that all residents, regardless of income, race, or other status, have more options to reach more places of employment and that economic development reaches all communities. An evaluation of the program completed by NOACA in 2013 demonstrated that for every dollar spent by NOACA on the development of TLCI plans, \$114.70 is generated in transportation and land use improvements. More precisely, \$5.1 million spent on the studies, spurred \$176.1 million for 31 transportation projects and \$472.5 million for 54 land use projects. The resulting transportation projects were primarily multimodal, while the land use projects included commercial, residential, greenspace and mixed use. A majority of the projects (77%) were located in the urban areas representing communities with higher densities, existing infrastructure, transit services, mixed land uses and large Environmental Justice populations, while 23% were in more suburban and ex-urban areas with needs for primary multi-modal connections. Project sponsors reported that the TLCI program is particularly valuable as a unique means to promote reinvestment in urban core communities as it is truly a catalyst for economic development in that environment.<sup>69</sup>

## Freight Planning

In addition to increased mobility for people, NOACA strives to increase mobility for goods through its freight planning efforts, such as the *NOACA Multimodal Regional Freight Plan*. Chapter 2 described this plan, including the goals and performance measures for the freight system developed with extensive stakeholder input. One of the key themes is resilience: businesses, shippers, and other logistics stakeholders must have multimodal shipping options in case of disaster or other hardship. The coronavirus pandemic has only further stressed the importance of a robust system, showing how plans, schedules, and needs can quickly change. Figure 5-9 shows that trucking dominates regional freight mode share, but other modes play

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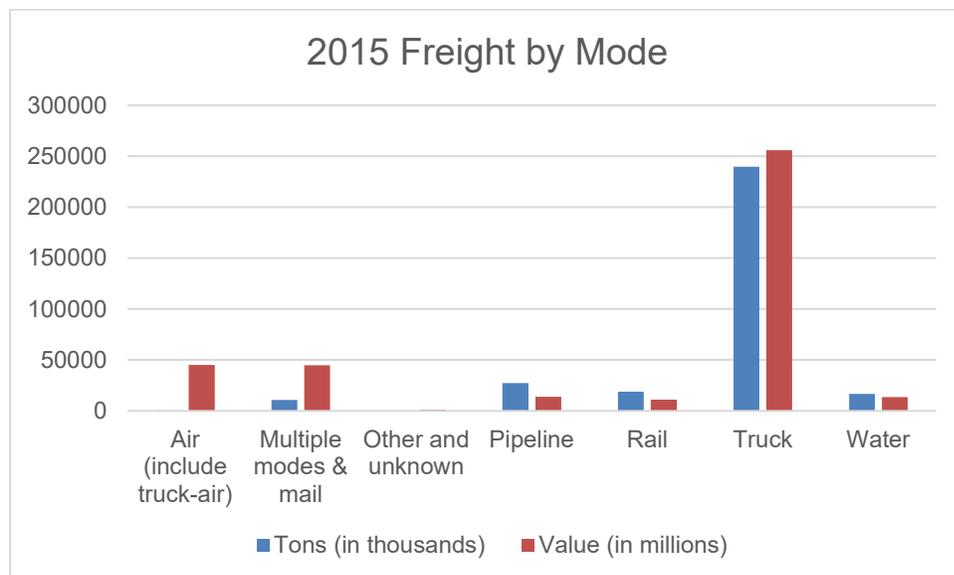
<sup>67</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), "Transportation for Livable Communities Initiative (TLCI)", 2021, <https://www.noaca.org/community-assistance-center/funding-programs/transportation-for-livable-communities-initiative-tlci> (accessed April 13, 2021).

<sup>68</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), "Regional Strategic Plan", 2021, <https://www.noaca.org/regional-planning/major-planning-documents/regional-strategic-plan> (accessed April 13, 2021).

<sup>69</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), "Transportation for Livable Communities Initiative (TLCI)", 2021, <https://www.noaca.org/community-assistance-center/funding-programs/transportation-for-livable-communities-initiative-tlci> (accessed April 13, 2021).

crucial roles as well. A robust intermodal system is therefore a form of economic development because it can lay the groundwork for new or existing businesses to grow.

**Figure 5-9. Freight Tonnage and Value in the NOACA Region<sup>70</sup>**



Because shipping by truck plays such a critical role, NOACA has developed a regional freight network, shown in Figure 5-10. NOACA developed the network through analysis of truck volumes, trucks as a percentage of all vehicles on the road, and the location of intermodal connectors. Importantly, the network extends beyond interstates to include many arterials and other key roads. Interstates are critical for cross-country movement of goods, which helps businesses that import or export goods over long distances. However, businesses are not located on interstates, which by definition are limited access. The regional freight network, therefore, covers locations that include dense concentrations of manufacturers, wholesalers, and retailers that generate large numbers of truck trips. The network helps NOACA prioritize projects for its TIP that will have the biggest impacts on freight movement.

<sup>70</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *Multimodal Regional Freight Plan* (Cleveland: Northeast Ohio Areawide Coordinating Agency, 2017); <https://www.noaca.org/home/showpublisheddocument/21293/637249557653870000> (accessed April 29, 2021). NOACA Analysis of Federal Highway Administration 'Freight Analysis Framework (FAF) 4.0 data. FHWA FAF5.0 data is being released throughout 2021 and contains more recent data, but it is not yet available as of the writing of this plan.

**Figure 5-10. NOACA Freight Network**

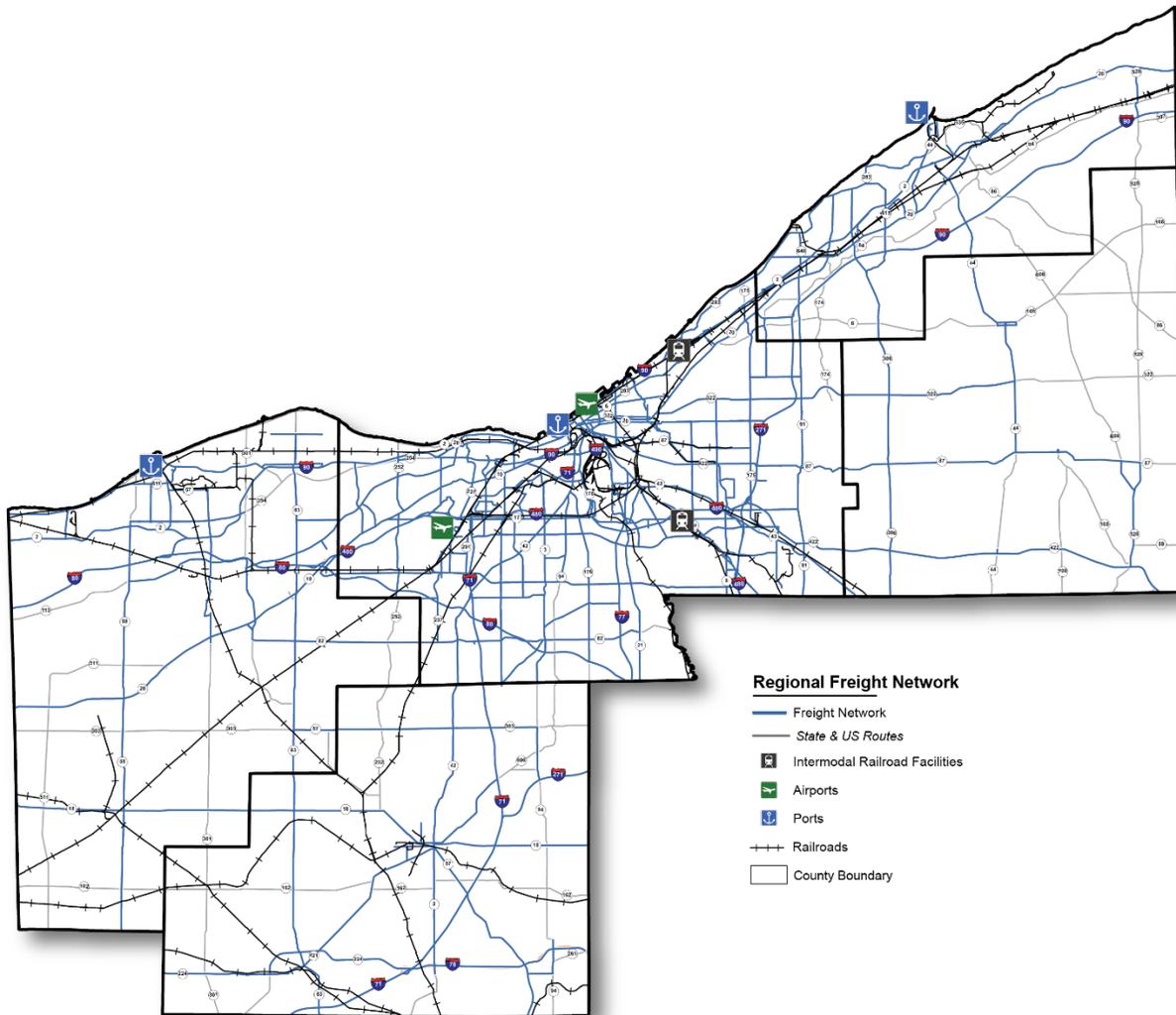


Figure 5-11 shows that NOACA expect both tonnage and value to grow over the timeframe of *eNEO2050*. This will be true even if the regional population does not grow, or grows slowly, because state, national, and global population will likely continue to grow at a faster rate than the population of Northeast Ohio. This means more freight will pass through the region, and the region will generate more freight, through manufacturing, agriculture, and other key industries. If NOACA's population increases robustly (as shown in some of the projected scenarios), freight tonnage and value may increase even more.

**Figure 5-11. Freight Tonnage and Value Projections<sup>71</sup>**

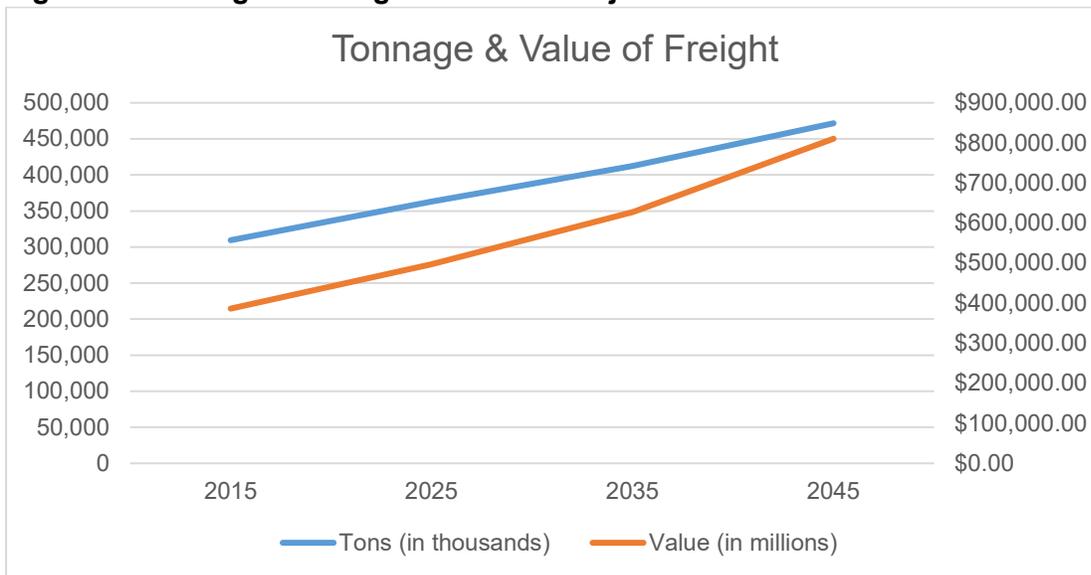


Table 5-32 shows that growth is expected across almost all modes of transportation for both imports and exports; the only exceptions are a slight decline in the value of products shipped via pipeline and a decline in the tonnage of goods exported via rail. When exports and imports are combined, though, all modes see tonnage and value increases.

**Table 5-32. Imports and Exports via Freight Mode<sup>72</sup>**

Mode	2015 Tonnage (in thousands)	2015 Value (in millions)	2045 Tonnage (in thousands)	2045 Value (in millions)	Tonnage Increase	Value Increase
Air	405	\$45,129	1,479	\$193,731	265%	329%
Multiple Modes & Mail	10,748	\$44,886	15,248	\$84,010	42%	87%
Other & Unknown	53	\$1,216	202	\$4,884	283%	302%
Pipe	27,316	\$13,990	37,711	\$15,504	38%	11%
Rail	18,775	\$10,966	21,323	\$19,537	14%	78%
Truck	239,714	\$256,040	370,218	\$445,348	54%	74%
Water	16,840	\$13,727	25,449	\$47,276	51%	244%

Additionally, nearly all individual commodity classes are expected to grow. Out of 42 commodity classes, only building stone, coal, crude petroleum, fuel oils, gasoline, logs, tobacco products,

<sup>71</sup> Ibid.

<sup>72</sup> Ibid.

and wood products are projected to contract in either tonnage or value. Tables 5-33 and 5-34 show the 10 exports and imports, respectively, expected to grow the fastest in tonnage as well as their absolute tonnage. Transportation projects can facilitate this expected growth through identification of business locations, good access, and conditions. Economic developers often choose to focus on exported goods because they have a larger possible market, which means more potential for growth.

**Table 5-33. Top 10 Exports by Tonnage in 2045<sup>73</sup>**

<b>Exports</b>	<b>2045 Tonnage (in thousands)</b>	<b>% Increase</b>
Transportation Equipment	847	311%
	213	226%
Precision Instruments		
Electronics	1,603	185%
Machinery	4,987	125%
Meat/Seafood	392	120%
Chemical products	5,728	114%
Pharmaceuticals	113	111%
Furniture	1,580	93%
Misc. Manufacturing Products	1,304	90%
Alcoholic Beverages	1,377	88%

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<sup>73</sup> Ibid.

**Table 5-34. Top 10 Imports by Tonnage in 2045<sup>74</sup>**

<b>Imports</b>	<b>2045 Tonnage (in thousands)</b>	<b>% Increase</b>
Precision Instruments	256	257%
Electronics	2,133	177%
Machinery	5,646	163%
Furniture	2,144	141%
Pharmaceuticals	451	126%
Transportation Equipment	97	103%
Chemical Products	2,373	99%
Plastics/Rubber	8,164	97%
Animal Feed	1,169	95%
Printed Products	4,438	94%

The tables above reflect some of the key industries described earlier in this chapter. Tables 5-15 through 5-17 noted that manufacturing, health care, and retail are three of the five largest industries in each NOACA county, whether measured by revenues, payroll, or employment. That discussion further noted that agriculture is the ninth largest sector in the state by GDP. All of the commodities in the above tables, with the exception of meat/seafood, are manufactured goods. They are all sold at retail outlets. Pharmaceuticals are critical for the health care industry. Meat/seafood, alcoholic beverages, and animal feed are all part of the agriculture industry. It is therefore critical for the regional economy that NOACA and other stakeholders facilitate the movement of these products.

One key freight planning effort that NOACA has undertaken is the development of freight hubs. Similar to major regional job hubs, a freight hub is a dense concentration of key freight stakeholders. NOACA has focused on intermodal facilities as hubs (see Figure 5-11). Intermodal facilities include airports, water ports, and railyards. NOACA's efforts to ensure businesses have all of these transportation modes at their disposal facilitates economic development. Depending on the type and volume of goods, different businesses have different needs for shipping speeds and cost. Business owners will want to locate where they can access multimodal shipping options. Workforce mobility, to ensure people can access freight hub jobs, will further support economic growth within the hub.

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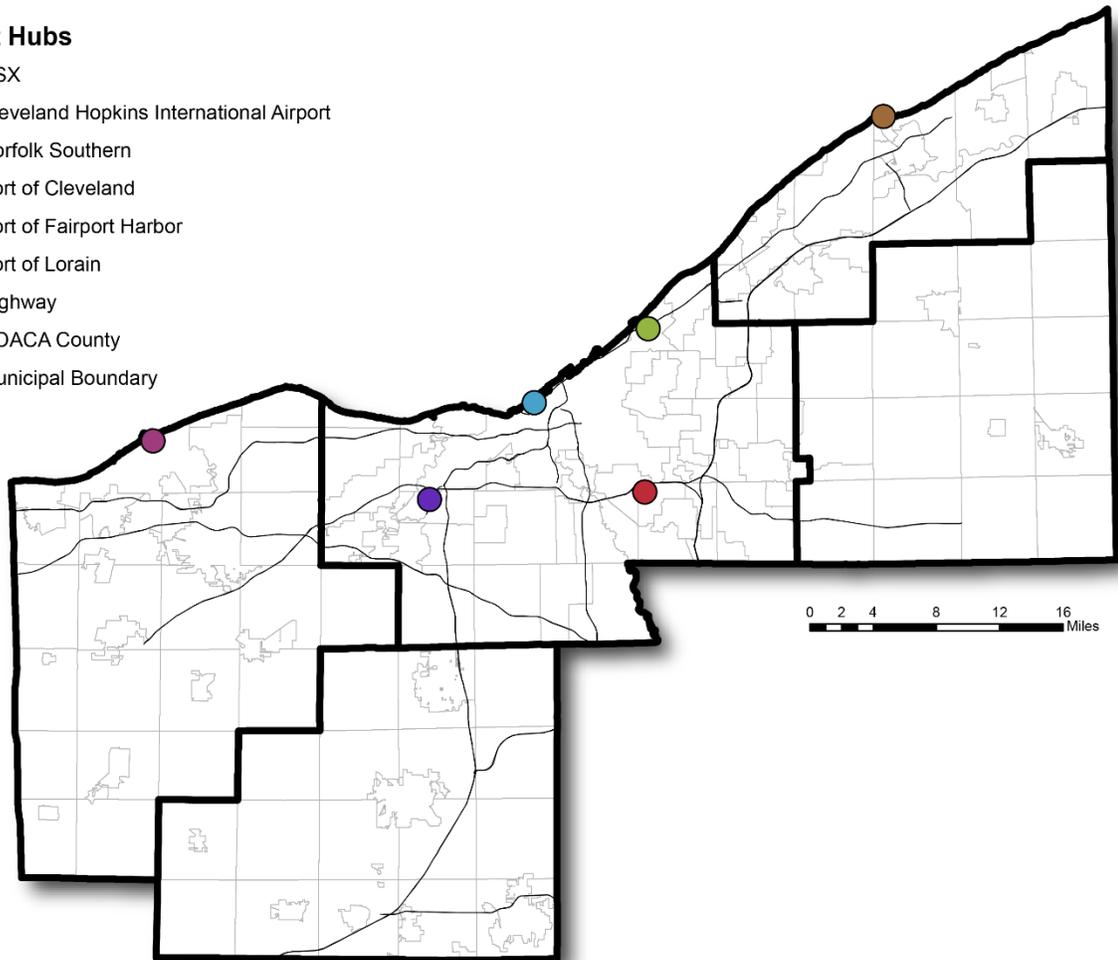
<sup>74</sup> Ibid.

**Figure 5-12. NOACA Region Freight Hubs**

## Freight Hubs

### Freight Hubs

-  CSX
-  Cleveland Hopkins International Airport
-  Norfolk Southern
-  Port of Cleveland
-  Port of Fairport Harbor
-  Port of Lorain
-  Highway
-  NOACA County
-  Municipal Boundary



Since freight stakeholders identified freight hub development as a top priority in 2017, NOACA has completed studies for [Hopkins International Airport](#) and the [Norfolk-Southern](#) railyard; studies of the CSX railyard and Fairport Harbor port are due for completion in 2021.<sup>7576</sup> The studies analyze several metrics for infrastructure around the intermodal facility and adjacent industrially zoned properties, which are likely to contain shippers and manufacturers that use the facility. The studies compare pavement and bridge conditions, congestion, and safety in the freight hub with those same measures in the region as a whole. In this way, NOACA can

<sup>75</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *Hopkins International Airport Freight Hub Study*, (Cleveland: NOACA, January 2020), <https://www.noaca.org/home/showpublisheddocument/24850/637183182592170000> (accessed April 28, 2021).

<sup>76</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *Norfolk Southern Freight Hub Study*, (Cleveland: NOACA, January 2020), <https://www.noaca.org/home/showpublisheddocument/24852/637183182599130000> (accessed April 28, 2021).

determine if hubs fall behind in needed repairs and improvements, which could hurt business retention, expansion, and attraction.

Next, the freight hub studies describe the tonnage and value of goods shipped via the intermodal facility and their projected growth, the main origins and destinations for the goods, and key businesses in the hub engaged in sectors that use these goods (primarily manufacturers). NOACA can ensure that businesses are able to easily access the intermodal facilities and facilitate the projected growth in goods movement.

These businesses cannot thrive without an available workforce. The freight hub studies therefore show Census data on educational attainment and fields of degrees for workers in the hub. This data, combined with the information on businesses and goods in the hub, will allow economic and workforce development agencies to best provide training and other services. Such training and services will ensure that existing and potential businesses have the workers they need to thrive. NOACA also analyzes Census data to show the home Census tracts of employees in the hub and how they commute to work. This data can address gaps in the multimodal transportation system that create disparities in job access, particularly for residents of environmental justice areas.

NOACA combines all of this data to identify any shortfalls in freight or commuting patterns. Examples include: freight bottlenecks, intermodal connectors not in a state of good repair, or gaps in transit coverage that prevent worker access to dense job nodes. NOACA suggests potential projects to remedy these conditions. NOACA improves both intermodal mobility for freight and multimodal mobility for workers, which helps to spur regional economic development and job growth.

## NOACA Policies

NOACA has, and continues to develop, policies to help shape economic development within Northeast Ohio. The region has not enjoyed a growing tax base to support expansion of its development and infrastructure footprint, particularly since road and sewer extensions have merely shifted development from one location to another. NOACA's Board and Committees have developed and approved the following policies to facilitate transportation and environmental planning.

### Diversity and Inclusion Policy

The [\*Diversity and Inclusion Policy\*](#) is a collection of several NOACA policies centered on equity.<sup>77</sup> These include the Disadvantaged Business Enterprise (DBE) Policy, Disadvantaged Communities Policy, Environmental Justice Policy, and Urban Core Communities Policy. The policies give preference or funding to communities that meet certain criteria. For example, the purpose of the Environmental Justice Policy is to ensure that low-income populations and minority populations are not unfairly burdened by transportation investments and are treated fairly in the expenditure of federal funds. This policy allows for NOACA to support reinvestment in defined Environmental Justice Areas and to ensure such groups are not disproportionately impacted by transportation projects. Moreover, this policy outlines the criteria to determine locations of environmental justice concern and the benefits of such a designation.

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<sup>77</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *Diversity and Inclusion Policy*, (Cleveland: NOACA, December 2020), <https://www.noaca.org/home/showpublisheddocument?id=21248> (accessed April 13, 2021).

Many Environmental Justice Areas, Disadvantaged Communities, and Urban Core Communities in the NOACA region feature established infrastructure and underdeveloped or formerly developed properties that no longer serve their highest and best use due to outward migration, disinvestment, and abandonment. Some of these properties are greyfields, while others may be brownfields (see later sections of this chapter). Through focused infrastructure investments, NOACA can aid redevelopment and revitalization of these sites.

### Transportation Asset Management Policy

The [\*Transportation Asset Management Policy\*](#) created the Transportation Asset Management Program (TAMP), which ensures efficient and effective maintenance of transportation infrastructure for Northeast Ohio's present and future needs.<sup>78</sup> Although not directly related to economic development, this policy still matters because a region with inadequate infrastructure may not be able to retain and attract businesses or residents.

### Regional Transportation Investment Policy

Similarly, the [\*Regional Transportation Investment Policy\*](#) also helps prioritize infrastructure funding for the best possible use.<sup>79</sup> It explains how potential projects must meet NOACA's vision statement, goals and objectives, including "support economic development" and "improve quality of life." The policy describes exactly what it means for a project to meet this vision, helping NOACA staff, committees, and the Board prioritize projects in light of fixed funds.

### New or Modified Highway Interchange Projects Policy

In December 2020, NOACA adopted a [\*New or Modified Highway Interchange Projects Policy\*](#).<sup>80</sup> NOACA developed the policy in response to numerous requests from communities for new or expanded highway interchange projects to accommodate potential imminent development or spur potential future economic development. The NOACA policy requires that any new interchange must undergo a thorough review, based on both transportation planning and local/regional impacts criteria to outline an interchange project's potential effect (locally and regionally, short-term and long-term). These criteria, articulated in the policy as rubrics for evaluation, are crucially important for Board review and consideration of a proposed project given the history of transportation planning decisions on Northeast Ohio communities.

As expected, to ensure the highest and best use of the region's resources, a cost-benefit analysis is required for each alternative considered, including a no-build alternative in the Feasibility Study. The total construction and operation and maintenance costs are considered as the total cost of the project and the congestion, safety and emission cost savings are the project benefits. In the analysis, NOACA utilizes United States Department of Transportation

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<sup>78</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *Transportation Asset Management Policy*, (Cleveland: NOACA, 2016), <https://www.noaca.org/home/showpublisheddocument?id=21285> (accessed April 13, 2021).

<sup>79</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *Regional Transportation Investment Policy*, (Cleveland: NOACA, April 2019), <https://www.noaca.org/home/showpublisheddocument?id=13137> (accessed April 13, 2021).

<sup>80</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *New or Modified Highway Interchange Projects Policy*, (Cleveland: NOACA, 2020), <https://www.noaca.org/home/showpublisheddocument?id=25793> (accessed April 13, 2021).

(USDOT) guidelines for its “Benefits/Cost Analysis” for major transportation infrastructure projects, including approach, methods, standards, values, etc.

Furthermore, the first step of the “Local and Regional Impact Criteria” is a good example of the more comprehensive scope of the policy is: “NOACA will analyze the proposal through a set of rubrics to demonstrate whether the new or modified highway interchange maximizes transportation-related benefits across all impacted communities.” In accordance, NOACA will:

1. Identify the impacted communities for either positive or negative impact.
  - a. The community in which the new or modified highway interchange will exist, but also its immediate neighbors. These are the communities that may experience new transportation impacts and new development, or land use impacts, because of the new or modified highway interchange.
  - b. There are other communities within the region, possibly not within the vicinity of the new interchange, which may experience a loss of existing or potential development or a gain of such development because of the new interchange. Some communities may realize these gains/losses immediately based on development driving the new or modified highway interchange (e.g., the relocation of an existing company within the region). Some communities may realize gains/losses at a future time. Losses are particularly critical to the analysis if regional population growth remains stagnant. In this scenario, the new interchange may create development opportunities within its vicinity that were not previously available or as desirable. Such opportunities may draw development from communities where it currently exists or entice future development to locate near the new interchange versus another community where that development may have occurred if the new interchange were not built.
2. Identify the benefits/costs to the impacted communities (including the condition of existing regional transportation assets, social equity/environmental justice impacts, and cost of development incentives packages at local, regional and state level as well as cost of capital infrastructure investment).
  - a. Community within which the new interchange will exist.
  - b. Communities in close proximity to the new interchange.
  - c. Communities potentially far from the new interchange that may experience impacts from existing and future development shifts from their locations to the vicinity of the new interchange.

## NOACA Projects

The programs and policies described above have also led to the implementation of key projects with important economic development components. While not an exhaustive list, this section describes a few recent efforts.

### Irishtown Bend

Irishtown Bend is a sharp turn in the Cuyahoga River near downtown Cleveland. This section of the Cuyahoga River is a major shipping corridor for the steel industry, among others. Shipping through the channel supports 20,000 jobs and \$3.5 billion in yearly economic activity across the region, according to a 2015 economic impact analysis.<sup>81</sup> Along the riverbank, support systems

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<sup>81</sup> Martin Associates, “The Local and Regional Economic Impacts of the Cleveland Harbor,” May 25, 2016; <https://www.noaca.org/home/showpublisheddocument?id=16483> (accessed February 12, 2021).

known as bulkheads prevent erosion of the hillside into the river. The bulkheads are decades old and degraded, which threatens bank stability and risks a catastrophic landslide. Such an event would completely shut down shipping, threatening jobs and economic activity. NOACA worked to secure more than \$9 million in federal funding to reconstruct the bulkheads, and the agency will also provide another \$3 million to support this effort. Several other partners, including the Port of Cleveland, Northeast Ohio Regional Sewer District (NEORS), and the City of Cleveland will contribute additional financial support. After reconstruction, there are plans for a hillside park to benefit current Ohio City stakeholders, as well as future businesses and residents.

## Hyperloop

NOACA entered into a public-private partnership with Hyperloop Transportation Technologies (HyperloopTT) to conduct a [Hyperloop](#) feasibility study. Hyperloop TT is developing a transportation system that brings airplane speeds to the ground safely, efficiently, and sustainably. Passenger and cargo capsules levitate above a track inside a tube through electromagnetic technology, with a linear electric motor for propulsion. Hyperloop will move passengers and goods between cities in minutes, rather than hours (see also Chapter 9).<sup>82</sup> The completion of a feasibility study places Greater Cleveland in a good position to capitalize on the creation of this high-speed and zero emission transportation system that will transform how regions are defined. The “Great Lakes Hyperloop” as the corridor originating from Cleveland to Chicago (with stations in Sandusky, Toledo and South Bend) and Cleveland to Pittsburgh (with a station in Youngstown) is identified, presents an opportunity to capitalize on the assets of the largest mega region in the country containing nearly a third of the nation’s economic activity, Hyperloop will open up these new metro regions as potential places of employment for Greater Cleveland residents in realistic commute times of less than 45 minutes. Furthermore, with spurs connecting to Pittsburg, Detroit, Toronto, Milwaukee, Buffalo and ultimately connecting to the northeast corridor (Boston, New York, Philadelphia, Washington DC), Cleveland is perfectly positioned between the east coast with nation’s largest city, New York and the nation’s capital, Washington DC, and the Midwest, with the third largest city in the United States, Chicago.

Air cargo is the fastest growing mode of freight movement, and it delivers the highest-value goods, such as pharmaceutical and biomedical products that are especially important in the health-care sector. Further, the fastest growing segment of goods shipped is parcel service, which describes packages shipped by USPS, FedEx, UPS, etc. Hyperloop, if realized, will be faster than airplanes and several times faster than trucks, making it well-suited to capture air cargo and parcel delivery in a faster and more environmentally-friendly way. With Hyperloop utilized both for passenger transport as well as freight, the regional economic benefits are substantial (see Table 5-35).

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<sup>82</sup> NOACA, “Great Lakes Hyperloop: What is Hyperloop?” 2019, <https://www.glypherloopoutreach.com/> (accessed March 8, 2021).

**Table 5-35. Hyperloop Regional Economic Benefits (2025-2050)**

Regional Economic Benefits 2025-2050						
Station Name	Income	Property Value	Employment	Property Tax	Local Tax	Income Tax
Unit	\$millions	\$millions	person year	\$millions	\$millions	\$millions
Chicago, IL	21,555	34,045	425,628	570	919	4,225
South Bend, IN	3,503	5,457	67,755	95	150	682
Toledo, OH	3,189	5,169	64,306	85	136	650
Hopkins Airport, OH	1,946	3,037	37,928	52	82	392
Cleveland, OH	7,890	12,257	153,169	214	336	1,575
Youngstown, OH	1,888	2,994	36,592	50	79	373
Pittsburgh, PA	7,605	11,882	146,367	206	319	1,505
<b>Total</b>	<b>47,577</b>	<b>74,842</b>	<b>931,745</b>	<b>1,273</b>	<b>2,021</b>	<b>9,401</b>

NOACA continues to work with HyperloopTT and the U.S. Department of Transportation on the development, safety, and regulation of this potentially transformative mode of travel.<sup>83</sup>

**Electric Vehicle (EV) Charging Stations**

NOACA plans to install dozens of publicly available electric vehicle (EV) charging stations across the region. Electric vehicles have become more popular in recent years, and that trend is expected only to grow as businesses and consumers become increasingly conscientious about climate change. Similar to roads, sewers, broadband, and other utilities, EV charging stations will be a necessary infrastructure component to keep and attract businesses and residents. NOACA plans to site these stations equitably, so they are accessible for historically underserved (Environmental Justice) areas of low-income and minority residents.

**Comprehensive Economic Development Strategy (CEDS)**

Over the next year, NOACA will develop its first Comprehensive Economic Development Strategy (CEDS). The U.S. Economic Development Administration (EDA) recommends a regional CEDS as a way to bring together stakeholders and the general public to develop consensus around economic development goals and a strategy to meet them.<sup>84</sup> Cuyahoga County (with the City of Cleveland), Lorain County, and Medina County all have a current CEDS-like or CEDS alternative plans or have created one in the past several years for their specific jurisdictions, however, there has not been a regional effort. Having a regional CEDS is a prerequisite for local governments and other entities to qualify for many US-EDA funded programs. Many of NOACA’s counterparts across the country, as regional planning agencies, have the responsibility for the development of a CEDS. In fact, EASTGATE and NEFCO in

<sup>83</sup> Transportation Economics and Management Systems in Cooperation with Hyperloop Transportation Technologies, “Great Lakes Hyperloop Feasibility Study,” Prepared for NOACA, 2019; [https://df8e02a7-c9d7-45bc-89b0-ebfa2d7bf712.filesusr.com/ugd/96eba3\\_e0b8f11c5e4548f9b4fdc6e1cdd00d6d.pdf](https://df8e02a7-c9d7-45bc-89b0-ebfa2d7bf712.filesusr.com/ugd/96eba3_e0b8f11c5e4548f9b4fdc6e1cdd00d6d.pdf) (accessed February 12, 2021).

<sup>84</sup> U.S. Economic Development Administration, “Comprehensive Economic Development Strategy (CEDS): CEDS Content Guidelines”; <https://www.eda.gov/ceds/> (accessed February 12, 2021).

Northeast Ohio prepare the CEDS for the multi-county regions of Youngstown and Akron/Canton respectively. Lack of a regional strategy has challenged economic development efforts on a regional scale. It has also led to competition rather than collaboration across political boundaries.

The NOACA board discussed the opportunity to create a CEDS for the 5 county region at its board meeting on March 12, 2021. Preparing a CEDS will particularly support NOACA's vision in regards to strengthening regional cohesion and supporting economic development. The county commissioners and mayors representing the counties and communities that make up NOACA's board have decided that creating a regional CEDS will help everyone in the region to pursue additional EDA funding (Board Resolution No. 2021-013). NOACA has submitted an application to US-EDA for funding to prepare the CEDS. Currently NOACA is assembling a list of stakeholders and engaging the five counties in preliminary scoping of the project.

NOACA is well-suited because of the role transportation plays in economic growth (see previous sections on NOACA programs and policies). The nonprofit Center for Neighborhood Technology (CNT) has an Urban Opportunity Agenda scorecard that analyzes a variety of poverty reduction strategies to spur equitable growth. It found that job access and transportation would have the single largest impact of any metric studied, followed by workforce development.<sup>85</sup> Transportation planners, in collaboration with economic development stakeholders, can best position Northeast Ohio to realize these economic and quality of life improvements.

The results of NOACA's Regional Survey demonstrate how stakeholders perceive the relationship between transportation mode and future job growth and economic development (see Table 5-36). Personal vehicles, public transportation, walking and working closer to home received the highest average scores across the region. When respondents are separated by geography, the reader can also see that airplanes received a very high score among Cuyahoga County respondents and personal vehicles received the highest score among Geauga County respondents. The fact that public transit, walking, and working closer to home all received very high scores suggests TOD may hold considerable promise as a development strategy in Northeast Ohio. Co-locating dense clusters of residents and jobs around transit stations should be a high priority. Conversely, autonomous vehicles, which have not yet entered the mainstream transportation system, received the lowest scores important for future job growth and economic development.

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<sup>85</sup> Center for Neighborhood Technology, "Cleveland, Ohio: Urban Opportunity Agenda Summary Report," <https://uoa.cnt.org/location.php?addr=Cleveland,%20Ohio#report> (accessed February 12, 2021).<sup>86</sup>  
People working closer to home

**Table 5-36. Survey Respondents' Ranking of Travel Modes for Future Economic Development**

	Importance						
	Travel Options for Job Growth and Economic Development						
Ratings for Future Travel Options <i>5 = Highest 1 = Lowest</i>	NOAC A Region	Cleveland	Cuyahoga	Lorain	Lake	Medina	Geauga
<b>BASE</b>	2,459	445	1,084	362	271	207	91
<b>Personal vehicle</b>	4.45	4.35	4.45	4.44	4.57	4.48	4.75
<b>Public transportation</b>	4.04	4.07	4.14	3.99	4.00	3.80	3.67
<b>Walking</b>	3.98	4.16	3.96	3.94	3.97	3.80	3.97
<b>Working closer to home<sup>86</sup></b>	3.97	4.16	3.93	3.96	3.97	3.80	3.86
<b>Airplanes</b>	3.92	3.90	4.04	3.85	3.84	3.68	3.45
<b>Telecommuting</b>	3.67	3.58	3.75	3.64	3.61	3.50	3.77
<b>Bicycles</b>	3.55	3.74	3.53	3.54	3.52	3.40	3.40
<b>Uber, Lyft</b>	3.50	3.63	3.53	3.44	3.39	3.32	3.36
<b>Carpools or vanpools</b>	3.40	3.47	3.40	3.43	3.39	3.25	3.21
<b>Amtrak rail</b>	3.32	3.50	3.37	3.28	3.19	3.04	3.02
<b>Connected vehicles<sup>87</sup></b>	3.21	3.28	3.20	3.25	3.19	3.07	3.13
<b>Greyhound buses</b>	3.20	3.44	3.20	3.13	3.18	2.93	2.91
<b>Taxis</b>	3.09	3.25	3.06	3.05	3.03	3.06	3.09
<b>Charter buses</b>	3.07	3.30	3.07	2.99	3.03	2.85	2.95

<sup>86</sup> People working closer to home

<sup>87</sup> Connected vehicles to enable crash avoidance Popup: also called V2V - vehicles (not drivers) communicate and alert drivers to upcoming danger, hazards, and potential crashes

<b>Scooters<sup>88</sup></b>	2.93	3.15	2.88	2.86	2.99	2.82	2.79
<b>Motorcycles</b>	2.89	2.98	2.82	2.92	3.03	2.81	3.01
<b>Service autonomous vehicle</b>	2.88	3.06	2.87	2.80	2.79	2.91	2.75
<b>Personal autonomous vehicle</b>	2.88	3.05	2.85	2.88	2.84	2.85	2.79
<b>Commercial autonomous vehicle</b>	2.85	3.03	2.82	2.81	2.83	2.81	2.68

## Other Economic Development Strategies

Additional strategies and tactics by other organizations also merit discussion as ways to enable employment; some have been around for decades to foster business and job growth. The following is not meant to be an exhaustive list, but it describes several well-known and frequently used strategies and places them in regional context. It is important to note that NOACA does not actually provide these strategies, such as tax incentives. However, NOACA does acknowledge these strategies as economic development tools; thus, consideration is given to their relationship to transportation and environmental planning.

### Tax Incentives

Tax incentives are possibly the most widely known method of economic development. It is important to understand tax structures and why they matter, which also explains why economic development matters. Tax incentives are designed to incentivize or encourage a particular economic activity with the goal of raising the overall economic welfare of individuals through increasing economic growth. Tax incentives can have both positive and negative impacts on an economy, however. Among the positive benefits, if implemented and designed properly, tax incentives can draw investment to a region, mostly through business attraction and retention, resulting in higher levels of employment, population growth and a stronger tax base, and ultimately an improved quality of life. If tax incentives are not properly structured and executed, they can result in intra-regional competition that is not in the best interest of a long term strategy for a thriving region. They can also have the unintended consequence of weakening certain components of a tax base, such as funding for schools, and result in an inequitable distribution of the tax burden between residents and businesses.

### Brownfield Redevelopment

Brownfields are vacant or abandoned properties that, based on previous uses, are known or expected to have some type of pollutant on site.<sup>89</sup> Businesses often avoid them because they are then legally liable for cleanup, which can be cost prohibitive. The business that was the source of the pollution typically has no legal responsibility because it either no longer exists or discharged the pollutants so long ago that relevant laws and regulations were not in place.

Brownfield cleanup and redevelopment is a priority for economic development in the region. NOACA's CrowdGauge Tool (see Chapter 4) showed that "redevelop 200 acres of brownfields

<sup>88</sup> Scooters (electric, mobility)

<sup>89</sup> U.S. Environmental Protection Agency, "Overview of EPA's Brownfields Program," <https://www.epa.gov/brownfields/overview-epas-brownfields-program> (accessed February 15, 2021).

to attract new employers with 1,000 jobs” was the number one choice by respondents on how to spend regional economic development dollars. Additionally, “I live in an environment with clean water” was the top priority overall and ranked highest in four of five counties. NOACA’s Regional Survey results were a bit more mixed (Chapter 4): investment in brownfield cleanup and redevelopment was one of the lowest “willingness-to-spend” priorities across the region, but reduce climate change impacts, cleaner rivers and lakes, and clean drinking water were some of the highest. U.S. EPA data show that brownfield remediation investment has large benefits for climate change impacts, water quality, and air quality. Brownfield remediation also reduces the need for road expansion, which means more available money for maintenance.<sup>90</sup>

Many cities or counties in the region already have robust brownfield cleanup programs to enable redevelopment. Communities typically work with stakeholders such as chambers of commerce and land banks to identify potential sites based on what is known about the previous use. Importantly, there is no requirement for a brownfield declaration to a public entity such as Ohio EPA, which has funding programs and maintains a brownfield database; it is voluntary. The community, sometimes in partnership with an interested developer, will then conduct soil and water testing for the presence of hazardous substances. If found, the community and developer (if there is one) will then attempt to obtain funding.

### **Greyfield Redevelopment**

Greyfields are former commercial shopping centers or strip malls that are now abandoned.<sup>91</sup> Unlike brownfields, there is no known or expected risk of pollutants on a greyfield. There are also no funding mechanisms specific to greyfields; however, they are similar to brownfields in that redevelopment is often more expensive than new construction. For this reason, the tax incentives may be good options for greyfield redevelopment, especially if it is around transit stations.

### **Infrastructure Investment**

Infrastructure is essential for place-based development. It is important to describe the types of infrastructure, and the best location and time for both maintenance and expansion to foster equitable economic growth.

### **Transportation**

Transportation is often used as an incentive for economic development because it serves as a critical mechanism for commerce. Whether promoting an existing rich transportation system or providing new transportation infrastructure such as building a new interchange, widening roads, or extending transit service, transportation serves as the conduit to getting people to jobs and product to the market.

NOACA’s recently approved New or Modified Highway Interchange Projects Policy will help guide staff review of the proposed interchange for, and the Board’s deliberation of, its impacts. Asset management tools such as NOACA’s TAMP policy, described earlier, can also help the

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<sup>90</sup> U.S. Environmental Protection Agency, “Brownfields Program Environmental and Economic Benefits,” <https://www.epa.gov/brownfields/brownfields-program-environmental-and-economic-benefits> (accessed February 26, 2021).

<sup>91</sup> Delaware Valley Regional Planning Commission, “Brownfields/Greyfields,” <https://www.noaca.org/home/showpublisheddocument?id=6639> (accessed February 24, 2021). The link goes to NOACA’s Reg. Strategic Plan. Do you mean this link?: <https://www.dvrpc.org/Brownfields/>

Board weigh expansion of existing capacity against repair of existing infrastructure and make the best use of limited funding.

### Water and Sewers

Water infrastructure investment is similarly a key incentive for economic development. Existing water and sewer lines allow for continued development or re-development to proceed without much cost or regulatory concerns, while new infrastructure comes with a cost and may require the expansion or modification of Facility Planning Areas as a prerequisite for development, with the latter generating the need for financial incentives.

### Utilities

Other infrastructure is critical to business siting and success as well; most electric and natural gas utilities have economic development departments that work with local officials and businesses to expand these services, particularly into industrial parks that have large demands. As with roads and sewers, investment in utility infrastructure can sway business-siting decisions. Utilities often extend services in greenfields, particularly in more newly developed communities that seek to attract businesses and the accompanying tax benefits.

### Internet

Broadband internet access has become increasingly important for all businesses to access and share information quickly and easily. Private internet service providers may also have economic development departments to facilitate high-speed internet access. However, the private sector is sometimes unwilling or unable to take on the cost.

Internet access is especially important from an equity perspective to ensure access to education, jobs, healthcare and more. Table 5-37 includes Census data that shows that the entire metropolitan region is less likely to have internet access than the state or nation as a whole; there are many underserved areas both in the urban core (e.g., City of Cleveland) as well as in rural townships, particularly Geauga County with its large Amish population. Lorain County, with both urban and rural areas, also has a higher percentage of households without internet access.

**Table 5-37. 2019 NOACA Region Households without Internet Access<sup>92</sup>**

Location	Percent of Households with No Internet Access
Cuyahoga County	18.6%
Gauga County	20.2%
Lake County	10.6%
Lorain County	20.6%
Medina County	14.1%
Cleveland-Elyria MSA	17.7%
City of Cleveland	30.5%

<sup>92</sup> U.S. Census Bureau, "2019 American Community Survey, Types of Computers and Internet Subscriptions, Table S2801,"

[https://data.census.gov/cedsci/table?q=without%20internet%20access&g=0100000US\\_0400000US39\\_0500000US39035.39055.39085.39093.39103\\_0600000US3903516000\\_310M300US17460&tid=ACSST1Y2019.S2801&hidePreview=false](https://data.census.gov/cedsci/table?q=without%20internet%20access&g=0100000US_0400000US39_0500000US39035.39055.39085.39093.39103_0600000US3903516000_310M300US17460&tid=ACSST1Y2019.S2801&hidePreview=false) (accessed February 17, 2021).

Ohio	14.4%
United States	13.4%

Source: U.S. Census Bureau

A nonprofit organization analyzed this same Census data not just for internet access, but also for the extent to which households are actually connected to high-speed internet in every city in the country with at least 65,000 residents.<sup>93</sup> It found Cleveland ranks last in both the state and the nation; the City of Lorain ranks second-to-last in the state.<sup>94</sup> More than 30% of Cleveland households don't have fast internet, and without considering phone-based access, 46% of households have no internet at all. If the Greater Cleveland economy is going to compete for businesses and residents, high-speed internet access for all is imperative.

### Joint Economic District (JEDD) and Cooperative Economic Development Agreement (CEDA)

JEDD and CEDA are tools to foster collaboration between cities and their surrounding townships that were designed by the Ohio legislature to expand infrastructure, yet alleviate the concerns about the creation of winners and losers. *Vibrant NEO 2040* has a special research section devoted to them.<sup>95</sup> Both programs attempt to extend infrastructure and municipal services from a city into a township to promote development that both parties agree is beneficial. In the case of a JEDD, the city can collect income taxes from the township.

The programs have successfully fostered cooperation where the parties used to be in conflict around development. Townships receive increased property tax revenues from additional development, while cities receive increased revenues from: 1) water or sewer service provision, 2) city residents employed by new businesses within the boundaries of the JEDD or CEDA, or 3) new income taxes (in the case of JEDD).

An example from 2020 illustrates the risk and rewards. A certain business announced plans to open a major retail outlet in a township in the NOACA region. With 400 projected jobs and a payroll of \$13 million, it will be one of the largest employers in the township and provide increased tax revenues for services and amenities. The state provided a Job Creation Tax Credit for this reason; TIF is also planned. The Ohio Department of Transportation will provide another incentive through its Jobs and Commerce Division to redesign a nearby intersection and signal system. Because the site is in a township, it lacked some necessary infrastructure to provide certain services for a business of this magnitude. To provide it, the township entered into agreements with nearby cities that will then share in the benefits of the project through tax-revenue sharing or service payments for utilities. This is a good example of regional collaboration that creates benefits for multiple communities.

<sup>93</sup> National Digital Inclusion Alliance, "Worst Connected Cities 2019," 2020, <https://www.digitalinclusion.org/worst-connected-cities-2019/> (accessed February 15, 2021).

<sup>94</sup> Emily Bamforth, "Cleveland Ranks as Worst-Connected Large City for Internet in 2019," *Cleveland.com*, Sept. 23, 2020; <https://www.cleveland.com/news/2020/09/cleveland-ranks-as-worst-connected-large-city-for-internet-in-2019.html> (accessed February 15, 2021).

<sup>95</sup> Northeast Ohio Sustainable Communities Consortium and Sasaki, *Vibrant NEO 2040: A Vision, Framework, and Action Products for Our Future*, (February 2014). , 115; [https://vibrantneo.org/wp-content/uploads/2014/03/Outward\\_MigrationsBarriers\\_Redevelopment.pdf](https://vibrantneo.org/wp-content/uploads/2014/03/Outward_MigrationsBarriers_Redevelopment.pdf) (accessed February 15, 2021).

Conversely, the financial incentives for this project also result in the expansion of infrastructure that creates long-term infrastructure maintenance obligations as well as risk of increased water pollution and flood risk due to the impervious surfaces. As legacy industrial cities, the nearby cities have vacant or abandoned properties that are already well served by road and sewer systems. Unfortunately these sites did not meet the company’s requirements. Additionally, the business will compete with others in a region with stagnant population, so 400 new jobs at this location does not necessarily mean a net increase of 400 jobs for the region.

### Special Improvement Districts (SIDs) and Community Development Corporations (CDCs)

The same *Vibrant NEO 2040* special research section that addressed JEDD and CEDA also describes SIDs and CDCs, which have both increased rapidly through the region with the creation of supportive state legislation.

A Special Improvement District (SID) stems from a majority of property owners in a given geographical area (for example, a downtown business district), who agree to impose a special assessment to voluntarily increase their own taxes, with the funds targeted exclusively within the SID boundary to fund improvements, such as infrastructure maintenance or improvements, including transportation. Their success and popularity even led the state to create an additional form, known as an Energy SID, or ESID, that uses the special assessment to install renewable energy infrastructure or energy efficiency upgrades.

Community Development Corporations (CDCs) often take the lead to secure business owner support for a SID. CDCs are nonprofit organizations that provide a variety of programs and services to support both business and housing development within their boundaries.

CDCs cover the entire City of Cleveland, as shown in Table 5-37, but are not found elsewhere in the region. This is likely because the city provides funding to CDCs through its Community Development Block Grant (CDBG) program. There is no official tax identification or government certification to qualify as a CDC, however; many other organizations in different parts of Northeast Ohio may play similar roles without this specific label.

**Table 5-38. Cleveland Community Development Corporations<sup>96</sup>**

East	West	Downtown
Burten, Bell, Carr Development	Bellaire Puritas Development Corporation	Campus District, Inc.
Greater Colling Development Corporation	Cudell Improvement, Inc.	Downtown Cleveland Alliance
Fairfax Renaissance Development Corporation	Detroit Shoreway Community Development Organization	Historic Gateway Neighborhood Corporation
Famicos Foundation	West Park Kamm’s Neighborhood Development	Historic Warehouse District Development Corporation
Harvard Community Services Center	Ohio City, Inc.	Flats Forward
Little Italy Redevelopment Corporation	Old Brooklyn Community Development Corporation	

<sup>96</sup> Cleveland Neighborhood Progress, “Cleveland CDCs,” <http://www.clevelandnp.org/cleveland-cdcs/> (accessed February 17, 2021).

Midtown Cleveland, Inc.	Metro West Community Development	
Mt. Pleasant NOW Development Corporation	Tremont West Development Corporation	
Slavic Village Development	Westown Community Development Corporation	
St. Clair-Superior Development Corporation		
Union-Miles Development Corporation		
University Circle, Inc.		

Source: Cleveland Neighborhood Progress

CDCs and SIDs focus on redevelopment and revitalization, and regularly work with city officials and other government entities; they are examples of successful public-private partnerships. CDCs regularly collaborate with the City of Cleveland to apply for many NOACA grants that spur transportation improvements and enhance quality of life. Because the area CDCs are all in Cleveland, these partnerships are a great way to foster infill and transit-oriented development to make the best use of existing infrastructure and improve equity.

### Education and Medicine (Eds and Meds)

The Education and Medicine (Eds and Meds) economic development strategy builds on a place-based approach; educational and health-care institutions are local and regional anchors tied to a given place. Residents will always need these services, and the institutions that provide them cannot easily move to a different region of the country or overseas. These industries are also difficult to automate. As noted earlier in this chapter, health care is also the most innovative industry, which supports further business and job creation. These are all reasons that University Circle, home to multiple educational and health-care institutions, is one of the major regional job hubs of Greater Cleveland. Health care and social assistance is also the largest sector in the Chagrin Highlands job hub.

A robust health-care system is critical not just for the jobs it creates, but also for the care it provides. Public health interventions significantly impact economic development when people live healthier and longer lives. David Bloom, a professor of Economics and Demography at Harvard University, summarized research that shows public health interventions often have significant positive impacts on economic growth, in an interview with Boston-based journalist and author Michael Blanding.<sup>97</sup> Health-care providers and public health departments should therefore be considered critical economic development stakeholders. Connection of environmental justice communities to health care through multimodal transportation should be a critical task.

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<sup>97</sup> Michael Blanding, "Public Health and the U.S. Economy," *Harvard T.H. Chan School of Public Health*, Fall 2012; <https://www.hsph.harvard.edu/news/magazine/public-health-economy-election/#bloom> (accessed February 17, 2021).

## Climate Change and Pollution

As described in detail in Chapter 8, the release of greenhouse gases into the atmosphere from a variety of sources (e.g., transportation and electricity generation) can cause climate change.<sup>98</sup> This means that the development of Northeast Ohio's economy—where and how it occurs—will either mitigate or exacerbate the negative impacts of climate change and environmental pollution. Much will depend on increased or decreased energy and transportation demands. The implementation of strategies identified in eNEO2050, such as workforce mobility efforts to improve the special mismatch between jobs and housing, will reduce congestion, commute times, and vehicle miles traveled, which will benefit air quality and reduce the threat of climate change. TOD and nonmotorized forms of transportation within and between job hubs and freight hubs will further facilitate a reduction in single occupancy vehicles and mobile emissions. Regional stakeholders should therefore prioritize multimodal infill for residential, commercial, and industrial development to the greatest extent possible. As described throughout this chapter, this is the best strategy for both economic development and to mitigate climate change and environmental degradation. This is important from an economic standpoint because several key pieces of the regional economy face high exposure to climate risks. Major industries, as well as human health, depend on clean air, water, and soil, and predictable weather patterns. Please see Chapter 8 for more details about the causes of, and potential impacts from, climate change and environmental pollution.

## Where Do We Go From Here?

The Northeast Ohio development footprint has expanded, despite stagnant population over the past 50 years. Infrastructure investment in roads, highways, and interchanges has facilitated this spread, often accompanied by tax incentives that shifted economic activity within the region. The same level of investment has not occurred in public transportation. As a result, low-income and minority populations, many of whom live in Environmental Justice Areas, have reduced levels of accessibility to jobs as the gap between housing and jobs increased. It takes a combination of land use and transportation changes to shrink this gap, and the four future transportation scenarios outlined in this long-range plan detail different paths NOACA can take to address this disconnect. The more successfully NOACA can knit housing and jobs together through multimodal transportation choice, the more likely the region will experience the type of economic development and job growth that benefits everyone, especially low-income and minority stakeholders.

An expanded footprint with a declining population also costs more, as infrastructure investments for anticipated population growth that never materialized place a heavier maintenance burden on fewer people. This results in deficient infrastructure and/or higher taxes, often both. Poor and minority residents are disproportionately affected, and the combination of poor infrastructure and high taxes may also deter business retention, expansion, and attraction.

## Future Development Scenarios

Between 2021 and 2050, there are a number of different, potential paths for the NOACA region to follow. Each path leads to a different future—what planners call a “future scenario” (see Chapter 3). Future scenarios are predictions of how the region will evolve by 2050 and what will happen over the next 30 years. NOACA developed four scenarios based on different priorities

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<sup>98</sup> U.S. Environmental Protection Agency, Climate Change Indicators: Greenhouse Gases,” <https://www.epa.gov/climate-indicators/greenhouse-gases> (accessed February 18, 2021).

and investment levels for transportation infrastructure, with particular focus on worker accessibility to jobs. Chapter 9 presents, analyzes, and compares these four future scenarios (MAINTAIN, CAR, TRANSIT, and TOTAL) in great detail; however, brief summaries of these future scenarios, the measures used to compare them, and their implications for NOACA recommendations and implementation plan actions follow below, with particularly emphasis on economic development and employment growth.

### **Scenario 1: MAINTAIN – State of Good Repair**

Scenario 1 focuses solely on maintenance of the existing transportation system, with no expansion of roads, bridges, highways, or public transit. The scenario assumes no variation from the current population and employment forecasts for the region, which reflect recent trends (slight decrease in population, slight increase in employment).

While the population of the region and total households will both decrease slightly, preservation of the existing transportation system would likely also preserve the economic status quo. Many businesses, particularly manufacturers, will continue to locate where they have easy roadway access and parking so that workers, customers, and freight deliveries can move quickly through the region, continuing to benefit more suburban and ex-urban areas of the region, particularly the collar counties. Other types of businesses may opt, instead, to locate in denser urban areas where they can rely on heavy foot traffic and take advantage of urban amenities, so Cleveland and other urban areas may experience pockets of revitalization.

An emphasis on maintenance will likely encourage continued outward migration of the region and continued de-concentration of development in the urban core. Average commute times will likely decline slightly, but so will the number of people and jobs within a 15-minute (three-quarter-mile) walk of a transit (rail or bus) station. Modal choice will not expand under the MAINTAIN scenario; it's all about a state of good repair with regard to what the region currently has, rather than new investment.

Given the continued outward spread of people and jobs, there will be a limited demand for Transit-Oriented Development (TOD). Any new developments will likely occur in urban neighborhoods that already have momentum and access to jobs (University Circle, neighborhoods close to downtown, inner-ring suburbs near job hubs and rail transit). Workers who are able to afford vehicles will continue to travel primarily by car to and from major regional job hubs; this class of workers will continue to do well. Low-income and minority residents, many in Environmental Justice Areas, will continue to rely on a transit system that is functional in some part of the region, yet minimal or nonexistent in others. This will result in continued challenges in the economic and financial outcomes for some, as the spatial mismatch between jobs and housing makes it difficult for low-income residents reliably to access good jobs and increase their socioeconomic status.

Limited redevelopment and revitalization in traditional urban core communities and inner-ring suburbs is expected with population loss; however, some urban infill projects may persist as professionals and retirees demand housing (high-end, workforce type mix) in urban areas. Increased transportation costs from more driving and less transit may strain budgets a bit, but the improved state of existing roads may reduce vehicle maintenance needs and insurance premiums.

MAINTAIN will continue the economic development and employment trends of the past few decades; there will be little to no change.

## Scenario 2: Captivating Auto Region (CAR) – Single Occupancy Vehicles

In Scenario 2, road capacity expansion is the priority. This includes new and improved infrastructure (roads, highways, bridges, and interchanges) focused on auto access, throughput and congestion management. Like Scenario 1, CAR assumes no change to the projected population (slight decrease) and employment (slight increase) totals by the year 2050.

Despite the expected loss of population and total households in the CAR scenario, improved and expanded highways will accelerate existing migration of people and jobs to peripheral areas of the region. Investment in road capacity expansion will likely accelerate the trends already in place. NOACA models show vehicle miles traveled (VMT) per capita increases the most in this scenario, as more arterial and highway infrastructure induces more driving. This means businesses will increasingly move within the region to areas that are made newly or more favorably accessible by high-speed vehicle travel, with little economic growth for the region. NOACA's developed footprint will continue to expand into existing greenfields. Brownfields and greyfields may increase in number and become less attractive for development, with further disinvestment in legacy cities, towns, and inner-ring suburbs.

The CAR scenario promises an expanded, efficient transportation system for drivers, likely decreasing the demand for housing near job hubs as workers can live anywhere in the region, provided they have access to a private, reliable vehicle. Job hubs may even see increased demand for parking because there will likely be an increase in the number of workers incentivized to drive. The emphasis on personal, single-occupancy vehicles will lower demand for TOD, it will continue to be a useful development strategy for seniors who need accessible, affordable housing of all types. Some suburban and rural residents, however, may even see a decrease in commute times as jobs move closer to them, which could improve their quality of life. Residential and employment density will decline though, making overall connections to job hubs less efficient and transit less viable; it will be even more difficult for minority or low-income residents to access employment opportunities. The percentage of Environmental Justice area workers with a commute less than 30 minutes will also decline. Residents who are currently financially successful will likely remain so because they can access jobs and meet quality of life needs through driving.

CAR will accelerate the economic development and employment trends, as well as the general development patterns of the past few decades; there will be increased spread from the urban core and from major regional job hubs.

## Scenario 3: TRANsportation System with Improved Transit (TRANSIT) – Multimodal Transportation System

Scenario 3, TRANSIT, is essentially the opposite of CAR. TRANSIT expands all transit agencies in the region through implementation of the improved 2017 Visionary Rail Network and increased bus service to Environmental Justice Areas.<sup>99</sup> TRANSIT also includes connections between transit stops and job hubs with autonomous shuttles and new pedestrian and bike routes. In Scenario 3, the projected 2050 population and employment is based on the same NOACA forecasts used in the MAINTAIN and CAR scenarios, plus additional increases as described below.

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<sup>99</sup> Northeast Ohio Areawide Coordinating Agency (NOACA), *AIM Forward 2040*, (Cleveland: NOACA, June 2017); <https://www.dropbox.com/s/1pvfvhx8xszgdlo/AIM%20Forward%202040.pdf?dl=0> (accessed March 16, 2021).

The transit and active transportation investments should stimulate both population and employment increases beyond the original projects used in the MAINTAIN and CAR scenarios. NOACA anticipates a 5% increase in target area population (i.e., transportation analysis zones within a five-mile radius from any rail station or regional job hub would experience this additional 5% increase). NOACA also anticipates 80% of this growth would occur in multifamily housing due to its affordability and closer proximity to existing, denser development; transit stations; and job hubs. By diversifying the housing stock within a ¼ mile of transit nodes, the region at large might become more attractive to high-skilled workers that are seeking an urban lifestyle which can be found in growing areas on the West and East Coast. NOACA also anticipates a 3-8% additional employment increase in each of the six major regional job hubs (although the actual increase will vary based on the primary employment sector at each hub).

This scenario provides greater accessibility to job hubs from Environmental Justice Areas. As noted throughout this chapter, an increase in transit service and an increase in residents living near it will improve economic outcomes for low-income and minority residents, especially those in EJ areas. Extension of rail lines beyond Cuyahoga County along envisioned routes into NOACA's collar counties will dramatically increase population and jobs within a 15-minute walk to rail stations. The expanded transit system will increase the demand for TOD so people and employers can take advantage of greater modal choice, including transit, biking, and walking. TOD could therefore spur brownfield and greyfield cleanup and redevelopment, which can increase efficiency of transportation infrastructure and land use. While TRANSIT does not necessarily help drivers, individuals who cannot afford personal vehicles will have greater mobility and can more easily access jobs. A transit mobile workforce should encourage companies and other employers to focus on and prioritize proximity to transit when they make location decisions.

#### **Scenario 4: Transportation with Optimal Technology and Access for All (TOTAL) – Advanced Multimodal Transportation System**

The fourth scenario, TOTAL, incorporates all projects in the CAR (save highway interchanges) and TRANSIT scenarios. Additionally, the TOTAL scenario includes technological advances in the form of electric vehicle (EV) charging stations, autonomous vehicle lanes, and the futuristic Hyperloop system and stations. The projected 2050 population and employment in TOTAL is based on the same NOACA forecasts used in the other scenarios, plus additional increases as described below.

The wide array of transportation investments should stimulate significant population and employment increases beyond the original projects used in the other scenarios, even the TRANSIT scenario. NOACA anticipates a 10% increase in target area population (transportation analysis zones within a five-mile radius from any rail station or major regional job hub would experience this additional 10% increase). NOACA anticipates 80% of this growth would occur in multifamily housing due to its affordability and closer proximity to existing, denser development; transit stations; and job hubs. NOACA also anticipates a 6-16% additional employment increase in the six major regional job hubs, along with some growth in all job hubs (although the actual increase will vary based on main job category at each particular hub).

A dramatic expansion in capacity for both personal vehicles and transit service will probably have a combination of impacts from the previous three scenarios. Although transit service is improved and expanded, so is the highway and roadway system, so vehicle travel still maintains its advantages relative to transit. The average commute time for auto users will increase

slightly, but transit commute times will decrease by a significant margin. Transit trips are expected to triple, and nearly twice as many people will be within a 15-minute walk of a bus or rail station than even in the TRANSIT scenario. The expanded transit system will increase the demand for TOD. Individuals who cannot afford personal vehicles will have greater mobility and easier access to jobs. Employers and companies should look to existing job hubs and housing when siting their workplaces. Due to the predicted population increase, the scenario still results in more greenfields developed than brownfields revitalized.

From an equity standpoint, this greater concentration of jobs in hubs will help residents of Environmental Justice Areas have better access to these jobs. This scenario has the greatest percentage of residents of EJ areas who are able to access job hubs in less than 30 minutes. TOTAL has the lowest per-capita VMT and emissions; however, it also has the highest amount of total greenhouse gas emissions and associated costs, with implications for climate change impacts. This information suggests a shift in the development patterns to accommodate growth (should it occur) in such a way that Northeast Ohio's economy can flourish, but not at the expense of its natural environment.

A greater emphasis on technology in the TOTAL scenario can be a boon for mobility across the region, but there should be concerted efforts to ensure equal access to these opportunities for all residents. One of the biggest issues related to either the TRANSIT or TOTAL scenarios could be the potential negative environmental impacts from an increase in population in Northeast Ohio. Although 5% and 10% increases over the current baseline projection don't seem like too much, the model predicts that air quality and water quality will bear the brunt of negative impacts from an increase in population, households, and jobs. Chapter 8 (Environment and Health) will explore these issues in greater detail and consider how Northeast Ohio might plan for future transportation investment, maintain and improve the region's environmental quality, and mitigate climate change impacts to improve its resiliency.

## Performance Measures and Targets

Although Chapter 9 will present a much more detailed discussion and analysis of the four future scenarios mentioned above, this section details performance measures to assess progress toward economic development and employment growth. The performance measures are variables used to assess the scenarios comparatively against each other. There are two important values associated with each performance measure: the baseline and the target. The baseline is the value of the performance measure in the current state (2020). The target is the value of the performance measure in the future state (2050). One of the four future scenarios will be the preferred scenario, and its performance measures will be the target values NOACA will use to assess the region's progress from the current state to the preferred future state. Table 5-35 illustrates the performance measures and targets focused on economic development and employment growth.

The outputs are presented in a specific way to help the reader digest the information clearly and concisely with the following guidelines:

1. The baseline represents current conditions (2020 conditions). The outputs reflect how the performance measure will change from the baseline to the target year (2050) under each of the four scenarios.
2. The "-" and "+" (minus and plus) signs shown as outputs for each performance measure under each scenario indicate the direction of change. A "-" (minus) sign indicates a decrease from the baseline and a "+" (plus) sign indicates an increase from the baseline.

There are two sizes for each sign; they represent the magnitude of change (smaller signs indicate slight change; larger signs indicate more substantial change).

3. The colors of the signs and numbers for each output are also important. Red color indicates a negative impact on the region, while green indicates a positive impact on the region. While many people commonly associate “-” signs with a negative impact and “+” signs with a positive impact, that is not always the case. It is possible to have a red “+” sign, meaning the value of that performance measure will increase under a scenario, but that increase is a negative impact on the region.
4. Many of the performance measures in Table 5-39 are qualitative. To help the reader interpret the differences across scenarios, consider the performance measure, “more investment in Environmental Justice Areas?”
  - a. MAINTAIN: Maintenance of the status quo will likely yield similar investment in Environmental Justice Areas as exists now.
  - b. CAR: Prioritization of arterial and highway infrastructure expansion will likely yield a substantial decline in Environmental Justice Areas in favor of new growth.
  - c. TRANSIT: Investment in expansion of transit lines and stations instead of road/highway capacity will substantially benefit developed urban core areas.
  - d. TOTAL: Investment in transit and road capacity expansion will benefit all areas.

**Table 5-39. Performance Measures and Targets (Economic Development and Employment Growth)**

Performance Measure	Scenario 1 MAINTAIN	Scenario 2 CAR	Scenario 3 TRANSIT	Scenario 4 TOTAL	2020 Base
Regional Population	- <b>(42,806)</b>	- <b>(42,806)</b>	+ <b>100,406</b>	+ <b>200,892</b>	2,026,866
Regional Employment	+ <b>55,850</b>	+ <b>55,850</b>	+ <b>66,254</b>	+ <b>132,950</b>	1,421,195
Road/Highway Money: Spend More to Maintain or Spend More to Expand New	+ <b>MAINTAIN</b>	+ <b>EXPAND</b>	- <b>BOTH</b>	+ <b>BOTH</b>	current % region's transportation and infrastructure funding for the TIP is dedicated to maintain and preserve existing infrastructure
Transit Money: Spend More to Maintain or Spend More to Expand New	+ <b>MAINTAIN</b>	- <b>BOTH</b>	+ <b>EXPAND</b>	+ <b>BOTH</b>	current % region's transportation and infrastructure funding for the TIP is dedicated to maintain and preserve existing infrastructure
More investment in Environmental Justice Areas?	<b>SAME</b>	-	+ <b>+</b>	+ <b>+</b>	Current investment within EJ areas
State of Ohio Priority	+ <b>MAINTAIN</b>	+ <b>+</b>	-	+ <b>ROADS</b>	Greater emphasis on arterial and highway infrastructure investment; particularly maintenance.
Maintain Existing NEO Businesses	+ <b>+</b>	+ <b>+</b>	+ <b>+</b>	+ <b>+</b>	Current NEO businesses
Expand Existing NEO Businesses	+ <b>+</b>	+ <b>+</b>	+ <b>+</b>	+ <b>+</b>	Current NEO businesses
Attract New NEO Businesses	+ <b>+</b>	+ <b>+</b>	+ <b>+</b>	+ <b>+</b>	Current NEO businesses
Cleaned Brownfields (formerly developed, polluted sites)	-	-	+ <b>+</b>	-	Current number and acreage of brownfields

### Principal Considerations for Transportation in the Context of Economic Development

There are a number of positive efforts NOACA and collaborative partners can support over the next four years, regardless of what scenario receives preference. Below are key statements regarding the relationship between transportation and economic development; the next section will list specific implementation actions to bring these recommendations to fruition:

1. Economic development supports the quality of life in communities throughout the region.

2. Economic development ensures that communities can maintain their existing character and ensure a high quality of life for their residents.
3. Balancing the needs of the region with local and county needs is critical for regional economic development. NOACA acknowledges that economic development is characterized by issues of regional significance, issues of county significance and issues of local significance.
4. Regional economic development will work to strengthen the urban, suburban and rural economies in Northeast Ohio.
5. One issue of regional significance includes the designation of regional job hubs such as major, minor and legacy job hubs, which have evolved.
6. Regional job hubs and freight hubs should be accessible through multimodal options that reduce vehicle miles traveled and commute times.
7. Communities should collaborate on development, not compete through incentives.
8. Communities should also work to retain residents and businesses, and attract new ones, through quality of life improvements.
9. Workforce development needs to benefit all residents, including and prioritizing low-income and minority residents.
10. NOACA counties demonstrate a diversity in complementary key industries that support the regional economy, and leveraging them as strengths will help increase the economic competitiveness of the region.
11. Economic development needs to be place-based and context sensitive by supporting the unique needs of urban, suburban and rural areas.

### Implementation Actions

NOACA should implement specific actions to move the region toward a more equitable future. Here are actions targeted toward regional economic development and employment growth.

1. NOACA will work with its Business, Community, Rural, and Emerging Leaders Advisory Councils to better understand best practices for economic development in Northeast Ohio across all community types (urban, suburban, exurban, rural).
2. NOACA staff will implement an interactive map based tool to use on its ongoing workforce mobility/job hub efforts.
3. NOACA will refine its transportation model with new data from the 2020 Census once it become available. The new model runs will enable NOACA to update its performance measures and targets, particularly those related to job accessibility, economic development, and employment growth.
4. NOACA will assemble stakeholders in the 5-county region to draft a comprehensive economic development strategy (CEDS) to provide a policy framework and recommendations to leverage the region's strength and opportunities as well as to address its challenges and weaknesses. NOACA will implement recommendations and outcomes from its CEDS effort.
5. NOACA will implement the New or Modified Highway Interchange Projects Policy to review proposed projects, especially those associated with potential development proposals.
6. NOACA will continue to produce its annual State of Freight Report and quinquennial Regional Freight Plan.
7. NOACA will further study the connection to major, minor and legacy job hubs across the region, with particular attention to Environmental Justice areas. This will extend the workforce mobility study and analysis of scenarios presented for the major job hubs.

8. NOACA will focus on Environmental Justice areas as an opportunity for economic development professionals to come together and develop efforts to attract companies to those locations in a proactive approach to increase development.