



2022  
**AEROZONE CURRENT  
CONDITIONS ASSESSMENT**

# ACKNOWLEDGMENTS

## SPECIAL THANKS

Thank you to community stakeholders, regional partners, and the Aerozone Alliance for their ongoing contributions to the future growth and success of the Aerozone.

- City of Berea
- City of Brook Park
- City of Cleveland
- City of Fairview Park
- City of Fairview Park
- City of Middleburg Heights
- City of North Olmsted
- City of Rocky River
- City of Strongsville
- Baldwin Wallace University
- Ceres Enterprises, LLC
- Cleveland Hopkins International Airport (CLE)
- Cleveland Metroparks
- Cleveland Planning Commission
- Cuyahoga County Department of Public Works
- Destination Cleveland
- Fund for Our Economic Future
- Greater Cleveland Regional Transit Authority (GCRTA)
- Industrial Realty Group, LLC (IRG)
- NASA Glenn Research Center
- TeamNEO
- West Park Kamm's (Cleveland CDC)

## COUNTY PLANNING TEAM

Mary Cierebiej, AICP, *Executive Director*  
Patrick Hewitt, AICP, *Planning Manager, Strategy & Development*  
Kevin Leeson, *Planner*  
Daniel Meaney, GISP, *Manager, Information & Research*  
Rachel Novak, AICP, *Senior Planner*  
Nichole R. Laird, *Planner*  
Liam Leveto, *GIS Specialist*  
Paul Triolo, *Planner*

2079 East 9<sup>th</sup> Street  
Suite 5-300  
Cleveland, OH 44115  
216.443.3700  
[www.CountyPlanning.us](http://www.CountyPlanning.us)  
[www.facebook.com/CountyPlanning](https://www.facebook.com/CountyPlanning)  
[www.twitter.com/CountyPlanning](https://www.twitter.com/CountyPlanning)

Our mission is to inform and provide professional services in support of the short and long term comprehensive planning, quality of life, environment, and economic development of Cuyahoga County and its cities, villages and townships.



County Planning

November 30, 2022

Cover Image Source: Cuyahoga County



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# SECTION 1

# INTRODUCTION

Imagine if you will, it is summer of 2032. What is the experience of a newly arrived young family that has just flown into Cleveland Hopkins International Airport, direct from Shanghai, China, for the first time? What will this family find most striking? Will it be the array of Fortune 1000 Aerospace Companies that have established innovation centers around the NASA Glenn Research Center. Will it be the buzz of the young startups looking to capitalize on the evolving and dynamic industries spanning from energy sustainability, deep space communication & propulsion, etc.

Or will it be the Biomimicry corridor incubator that has been successfully designed and deployed and is now a global benchmark on how communities, businesses and learnings from nature can come together to co-create a sustainable economy.

Or will it be the integrated multi-model transit network that is bringing cutting edge solutions such as hydrogen powered mass transit buses, automated drone base cargo delivery, or electrified vertical take-off and landing vehicles.

Or will it be the outdoor public spaces, the vibrancy, the arts, the sculptures that showcase the creative vibrancy and the unique aerospace and aviation history of the region.

Or is it something that we can't yet imagine? The Aerozone District is a canvas upon which the citizens of northeast Ohio have an opportunity to paint their economic vision. The Aerozone District currently is an idea. An idea that is germinating in the minds of key leaders. These leaders are beginning to see beyond the current lackluster identity of the Aerozone District and are beginning to envision a compelling possibility.

The Current Conditions Assessment is the starting place for this compelling journey. We are incredibly thankful to Cuyahoga County Councilman Dale Miller and the Cuyahoga County leadership for their support. We are thankful to the Cuyahoga County Planning Commission for their expertise in leading the study. And, finally are thankful to our many Alliance stakeholders who have provided their valuable insights that have made this study possible.



Hrishue Mahalaha  
Executive Director  
Aerozone Alliance

## WHAT IS THE AEROZONE?

The Aerozone is an employment center of technology, research, development, and logistics jobs clustered within the communities surrounding the Cleveland Hopkins International Airport and NASA Glenn Research Center. These jobs and the accompanying economic development activity support the engineering science and performance fulfillment outcomes of work NASA Glenn Research Center performs in its key role for the mission to Mars. NASA Glenn, with the support of the Aerozone, will continue to play an active role in its success.

The mission of the Aerozone Alliance is to create a world-class innovation hub to attract more smart jobs and greater capital investment to the region. In general, these efforts capitalize on the unique strength of this nearly 50 square mile district to create regional economic growth by working collaboratively with communities and employers alike. This includes both public and private stakeholders to attract small and medium-sized companies, and large multi-national corporations, and entices developing technologies to commercialize in the geographic area near Cleveland Hopkins International Airport and the NASA Glenn Research Center facilities. The vision is further sharpened with the remarkable success NASA Glenn has achieved supporting emerging entrepreneurs and minority and female businesses through the Federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STIR) Programs.

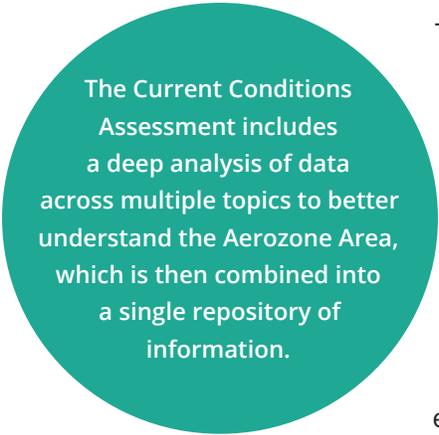
The Aerozone Alliance represents an unprecedented partnership between business representatives, county officials, mayors and managers, community planners, and regional/federal technology and innovation experts. Together, these partners—nonprofits, federal labs, government agencies, private sector actors, and municipalities—are collectively tackling what none of them can accomplish alone: creating a world-class innovation district to live, work, and grow. These partners are empowered to create an environment with fewer obstacles on the path to innovation and business

growth. The district builds upon the already impressive ecosystem radiating from Cleveland Hopkins International Airport and the NASA Glenn facility. The Ohio Department of Transportation estimates the annual economic output from Hopkins alone at \$4.6 billion.

The Aerozone is a prime place to locate for organizations intent on reaching global markets, leveraging highly skilled talent and those that are doing or want to do business with NASA. The proximity to these unique assets can catalyze the commercialization of research & development and spin-off activity. It's a proven cycle with a strong track record: Where smart people and smart organizations congregate, good things happen.

## CURRENT CONDITIONS ASSESSMENT

This document is intended as a first step for an Aerozone Master Plan. The Current Conditions Assessment provides a point-in-time snapshot of the Aerozone area and can identify issues that need to be addressed, areas of overlapping efforts that can be coordinated, clusters of assets that can be built upon, and opportunities for engagement, collaboration, and growth. Additionally, the Current Conditions process allowed for extensive conversations with partners, community leaders, and major employers to share on-the-ground knowledge and their unique perspectives about the Aerozone.



The Current Conditions Assessment includes a deep analysis of data across multiple topics to better understand the Aerozone Area, which is then combined into a single repository of information.

The assessment included a deep analysis across four key topic areas:

- 1) Transportation & Infrastructure
- 2) Land Use & Zoning
- 3) Economic Development
- 4) Workforce

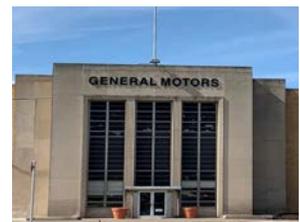
This analysis lays the groundwork for future planning efforts and provides Aerozone communities and partners ideas for early wins.

## PROJECT STUDY AREA

The Aerozone is located approximately 12 miles southwest of Downtown Cleveland (about a 15 minute drive) and includes portions of nine northeast Ohio communities (Strongsville, Berea, Middleburg Heights, Brook Park, North Olmsted, Farview Park, Rocky River, Parma, and Cleveland). It is also approximately 10 miles in diameter, with Cleveland Hopkins International Airport being its central location, and covers approximately 50 square miles (36,246 acres). The airport itself occupies about 5.5% of the Aerozone's total land area, while the remaining 94.5% of the Aerozone includes land, infrastructure, parks, and other features.



## EXAMPLE OF EXISTING AEROZONE DEVELOPMENT & LAND USES



Source: County Planning; Google Earth; Cuyahoga County (City of Berea, Rocky River, North Olmsted)

## PROJECT GOALS

The Goals for this Current Conditions Assessment are reflective of the project's four key topic areas. There are four main Goals to this analysis:



### GOAL 1: INFRASTRUCTURE

Understand how existing infrastructure, roadway configurations, and multi-modal facilities can support future Aerozone development and the movement of goods and people.

### GOAL 2: LAND USE

Understand how land is currently being utilized, and where environmental and zoning constraints could potentially hinder future development.

### GOAL 3: DEVELOPMENT

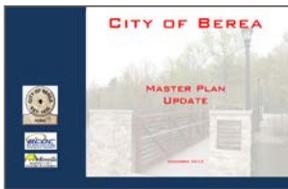
Understand current economic and industry sectors, and how historic building activity and available sites could impact the creation of new jobs.

### GOAL 4: WORKFORCE

Understand the demographics of the population living within close proximity to the Aerozone and identify misalignments between potential workers and available jobs.

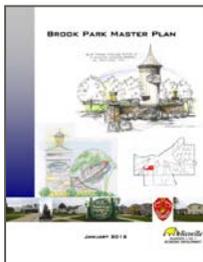
## RECENT PLANNING INITIATIVES

Eight of the nine municipalities that are part of the Aerozone have comprehensive, master, or guide plans. Each of these plans vary in their overall scope, but many have integrated strategies, goals, or priority development sites that directly impact the Aerozone area, Cleveland Hopkins International Airport (CLE), or the NASA Glenn Research Center. The Northeast Ohio Area Coordinating Agency (NOACA) also has two additional plans within the core Aerozone that are highlighted, which focus on transportation and infrastructure improvements. Below is a summary of some of these key planning initiatives.



### CITY OF BEREA MASTER PLAN UPDATE 2010

The City of Berea Master Plan Update focused on promoting and marketing the City's strategic location adjacent to Cleveland Hopkins International Airport (CLE) and called for future redevelopment to compliment this proximity and its uses. Additionally, the plan specifies the North End Revitalization Concept Area, located at the City's northern terminus along Sheldon Road, as a key area for redevelopment—recommending that land use decisions be made based on the financial feasibility of the projects to the City.



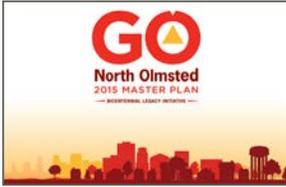
### BROOK PARK MASTER PLAN 2012

The Brook Park Master plan calls for rezoning strategic locations adjacent to the airport and I-71 to permit land uses that generate more economic return for the City. The Master Plan also recommends continued participation and cooperation with surrounding municipalities in creating an "Aerotropolis" business and economic development district. The plan details three relevant concept areas to attract airport related businesses and industries—the Aerospace Concept Area, the Airport Growth and Revitalization Concept Area, and the Ford Forward Concept Area.



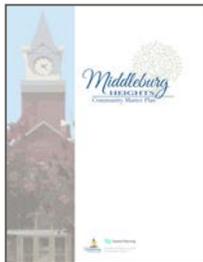
### FAIRVIEW PARK MASTER PLAN UPDATE 2013

The Fairview Park Master Plan Update calls for both preserving the industrial, office, and technological development initiatives along the City's southern edge, while also leveraging its proximity to the airport via Brookpark Road for additional investments. The plan lists several large sites in its Southern Gateway focus area as having potential for commercial campus redevelopment. These include the Ramada Inn and adjacent parcels, and a portion of land near the NASA Glenn Research Center along Brookpark Road as potential sites.



### NORTH OLMSTED MASTER PLAN 2015

The North Olmsted Master Plan includes efforts to develop a marketing strategy for industrial areas in the City, targeting high tech industries. It also calls for assessing the feasibility of upgrades to bus services, which could improve connections to both downtown Cleveland and the Cleveland Hopkins International Airport (CLE). The plan lists the southwest corner of the city, near the I-480 on-ramp on Lorain Road, as a priority redevelopment area.



### MIDDLEBURG HEIGHTS MASTER PLAN 2022

The Middleburg Heights Master Plan recommends additional marketing of the City's assets to attract businesses and retain a competitive workforce, and to become an active member of the Aerozone Alliance to better coordinate economic development efforts. Specific industries, such as healthcare, transportation, and warehousing are mentioned to leverage the City's proximity to I-71 and Cleveland Hopkins International Airport (CLE).



### NOACA TLCI ABRAM CREEK CITY-WIDE TRAIL AND GREENWAY CONNECTIVITY PLAN 2014

The Abrams Creek City-Wide Trail and Greenway Connectivity Plan explores the feasibility and conceptual alignment of an off-road trail connecting the City of Brook Park, the Lake-to-Lake trail in Middleburg Heights, the Rocky River Reservation, and the Big Creek Greenway in Parma. The Greenway Plan is divided into four phases, includes detailed signage and wayfinding concepts, as well as cost estimates for implementation.



### NOACA HOPKINS INTERNATIONAL AIRPORT FREIGHT HUB STUDY 2020

The Hopkins International Airport Freight Hub Study includes specific projects and strategies for the area immediately surrounding the Cleveland Hopkins International Airport (CLE). These include pavement repair or reconstruction efforts, bridge repairs, additional bicycle facilities, transit waiting area improvements, increased frequency or redesigning transit routes to align with job hub hours, coordination across different county transit authorities, and encouraging employers to promote alternative modes of transportation among employees.

## CLEVELAND HOPKINS INTERNATIONAL AIRPORT (CLE)

Cleveland Hopkins International Airport (CLE) officially opened its doors and skies to passengers on July 1, 1925 when an estimated 100,000 people were present for its inaugural event—complete with flying stunts and new night airmail service between New York and Chicago. Since its humble beginnings, CLE has grown from 400 acres to over 1,800 acres in 2022, and is Ohio's busiest airport. Today, CLE is a self-sufficient, non-profit facility with an annual budget funded by airport users through landing fees, rentals, and other similar charges. While the City of Cleveland owns the airport, no taxpayer dollars are used for any of its general operations or maintenance.

In 2022 Cleveland Hopkins International Airport (CLE) provided a preliminary draft update to its Master Plan—which generally provided guidance for future development of the airport to meet continued passenger, cargo, and operations growth. The Master Plan also provided a deep analysis of both existing conditions and future alternatives, and how best to align current needs with planned growth. This is an important step towards long-term planning initiatives at CLE and how non-airport land uses will play an important role for continued economic growth throughout the Aerozone.

CLE is Ohio's busiest airport and ranks above average in customer satisfaction nationally, but below average among similar airports. According to a 2022 J.D. Power survey, Cleveland Hopkins International Airport (CLE) ranked among the lowest in terms of overall customer satisfaction (780/1000 possible points, 3<sup>rd</sup> to last) among other medium sized North American airports. However, CLE's score of 780 was still higher than the national average of 777, which also included the largest airports in the US, and was one of a few airports to improve from its previous year score

(772). This upward trend showcases the region's resiliency and ability to adapt during the COVID-19 pandemic—indicating potential opportunities for new economic growth, strengthening its competitive workforce, and improving the CLE experience.



Source: County Planning; Cuyahoga County; Cleveland Hopkins International Airport, Passenger Volumes, 2019; J.D. Power; Case Western Reserve University, Encyclopedia of Cleveland History, Cleveland Hopkins International Airport

## NASA GLENN'S NORTHEAST OHIO IMPACTS

One of the Aerozone's anchors is the NASA Glenn Research Center. The campus has more than 198 buildings that support research, development, testing, and evaluation activities. This includes both the Lewis Field and Armstrong Test Facilities (Sandusky, Ohio)—world class research and test facilities valued at over \$4.15 billion.

NASA Glenn's economic impact is expansive. In 2021 alone, NASA Glenn had \$557.3 million in direct spending within Northeast Ohio and created an overall economic impact of \$1.77 billion across numerous industries. Additionally, the center created 8,393 new jobs and increased Northeast Ohio's labor income by \$805.4 million.

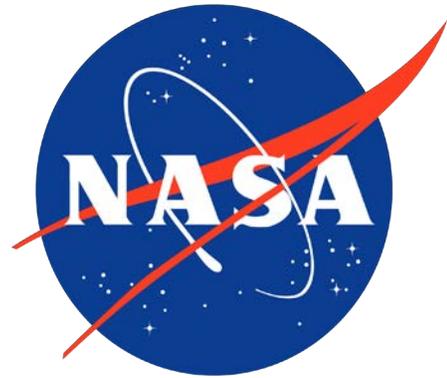
NASA Glenn's pursuit of knowledge sharing and investment in academia are also some of Northeast Ohio's greatest assets. In fiscal year 2021 numerous colleges, universities, and nonprofits were awarded funds in the form of research and development contracts and grants for assisting NASA with their R&D projects—with over 80.2% of all those funds going to the University of Toledo and Case Western Reserve University (\$5.1 million).

NASA facilities around the United States are integral to exploring the secrets of the universe for the benefit of all. NASA Glenn is one of only 10 major centers found throughout the country, making it a critical institution for the advancement of space exploration.

### NASA GLENN ECONOMIC IMPACT, FY 2021

Type	NE Ohio	State of Ohio
Output	\$1,769.6 million	\$1,937.1 million
Value Added	\$1,094.3 million	\$1,182.9 million
Employment	8,393 jobs	9,095 jobs
Labor Income	\$805.4 million	\$853.4 million
Taxes	\$167.7 million	\$210.7 million

Source: NASA Glenn Economic Impact FY 2021



## AIRPORT COMPARISONS

The following is a summary of airports identified as part of the Cleveland Hopkins International Airport's (CLE) 2022 draft Master Plan as being good comparisons for CLE based on a number of factors and land use characteristics, including economic districts like that of the Aerozone.

CLEVELAND HOPKINS INTERNATIONAL AIRPORT	
2019 Total Passenger Volume	10,040,817
# Terminals	1 (3 active concourses)
# Gates	53 active gates
# Runways	3
Overall Size (square miles)	2.7
2019 Total Cargo Handled	180,816,458 lbs
Annual Economic Impact	\$3.5 Billion

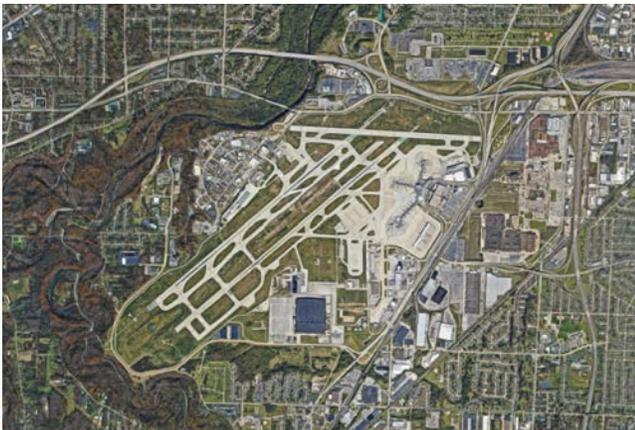
DETROIT METRO WAYNE COUNTY INT. AIRPORT	
2019 Total Passenger Volume	36,769,279
# Terminals	2 (4 concourses)
# Gates	129
# Runways	6
Overall Size (square miles)	7.6
2019 Total Cargo Handled	470,756,095 lbs
Annual Economic Impact	\$10.2 Billion

EMPLOYMENT WITHIN AEROZONE STUDY AREA	
2019 Total Jobs	100,684

TOP 5 INDUSTRY SECTORS	# JOBS % TOTAL
Health Care & Social Assistance	17,639 (18%)
Retail Trade	12,235 (12%)
Manufacturing	11,750 (12%)
Transportation & Warehousing	9,942 (10%)
Accommodation & Food Services	8,298 (8%)

EMPLOYMENT WITHIN 5 MILE RADIUS OF AIRPORT	
2019 Total Jobs	63,101

TOP 5 INDUSTRY SECTORS	# JOBS % TOTAL
Transportation & Warehousing	21,443 (34%)
Manufacturing	14,771 (23%)
Accommodation & Food Services	4,689 (7%)
Wholesale Trade	3,416 (5%)
Administration & Support, Waste Management and Remediation	3,037 (5%)



Source: County Planning; Google Earth; Cleveland Hopkins International Airport, Passenger Volumes, 2019; Detroit Metro Wayne County International Airport, Aviation Statistics, 2019; Memphis International Airport, Activity Report, December 2019; Dallas-Fort Worth International Airport, Fast Facts, Passenger Forecasts & Actuals, 2019; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs within 5 mile radius, 2019

MEMPHIS INTERNATIONAL AIRPORT	
2019 Total Passenger Volume	4,644,490
# Terminals	1 (3 concourses)
# Gates	83
# Runways	4
Overall Size (square miles)	6.1
2019 Total Cargo Handled	9,531,640,512 lbs
Annual Economic Impact	\$19.1 Billion

DALLAS-FORT WORTH INTERNATIONAL AIRPORT	
2019 Total Passenger Volume	73,265,367
# Terminals	5
# Gates	168
# Runways	7
Overall Size (square miles)	26.9
2019 Total Cargo Handled	972,000 lbs
Annual Economic Impact	\$37 Billion

EMPLOYMENT WITHIN 5 MILE RADIUS OF AIRPORT	
2019 Total Jobs	99,010

EMPLOYMENT WITHIN 5 MILE RADIUS OF AIRPORT	
2019 Total Jobs	261,961

TOP 5 INDUSTRY SECTORS	# JOBS % TOTAL
Transportation & Warehousing	44,660 (45%)
Manufacturing	10,379 (10%)
Wholesale Trade	9,502 (10%)
Administration & Support, Waste Management and Remediation	9,137 (9%)
Retail Trade	5,195 (5%)

TOP 5 INDUSTRY SECTORS	# JOBS % TOTAL
Transportation & Warehousing	56,225 (21%)
Finance & Insurance	26,744 (10%)
Administration & Support, Waste Management and Remediation	22,285 (9%)
Accommodation & Food Services	21,551 (8%)
Wholesale Trade	20,964 (8%)



Source: County Planning; Google Earth; Cleveland Hopkins International Airport, Passenger Volumes, 2019; Detroit Metro Wayne County International Airport, Aviation Statistics, 2019; Memphis International Airport, Activity Report, December 2019; Dallas-Fort Worth International Airport, Fast Facts, Passenger Forecasts & Actuals, 2019; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs within 5 mile radius, 2019

## AIRPORT COMPARISONS (CONTINUED)

### Pittsburgh International Airport

2019 Total Passenger Volume	9,779,024
# Terminals	1 (4 active concourses)
# Gates	75
# Runways	4
Overall Size (square miles)	2.5
2019 Total Cargo Handled	165,517,254 lbs
Annual Economic Impact	\$16.6 Billion

### John Glenn Columbus International Airport

2019 Total Passenger Volume	8,637,108
# Terminals	1 (3 concourses)
# Gates	34
# Runways	2
Overall Size (square miles)	3.5
2019 Total Cargo Handled	6,436,102 lbs
Annual Economic Impact	\$5.3 Billion

### EMPLOYMENT WITHIN 5 MILE RADIUS OF AIRPORT

2019 Total Jobs	61,349
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### TOP 5 INDUSTRY SECTORS

	# JOBS % TOTAL
Retail Trade	7,638 (12%)
Management of Companies and Enterprises	7,450 (12%)
Transportation & Warehousing	7,377 (12%)
Professions, Scientific, & Technical Services	6,078 (10%)
Accommodation & Food Services	5,335 (9%)

### EMPLOYMENT WITHIN 5 MILE RADIUS OF AIRPORT

2019 Total Jobs	152,951
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### TOP 5 INDUSTRY SECTORS

	# JOBS % TOTAL
Health Care & Social Assistance	21,834 (14%)
Retail Trade	17,028 (11%)
Finance & Insurance	16,275 (11%)
Transportation & Warehousing	14,860 (10%)
Accommodation & Food Services	12,827 (8%)



Source: County Planning; Google Earth; Cincinnati/Northern Kentucky International Airport, Air Traffic Statistics, 2019, CVG Facts, 2022; Columbus Regional Airport Authority, Traffic Report, 2019, Economic Impact Report, 2017; Indianapolis Airport Authority, Airline Activity Report, 2019; Allegheny County Airport Authority, Pittsburgh International Airport Summary of Airline Traffic, 2019, Economic Impact Study, 2017; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs within 5 mile radius, 2019

Cincinnati/Northern Kentucky Int. Airport	
2019 Total Passenger Volume	9,103,554
# Terminals	1 (2 concourses)
# Gates	50
# Runways	4
Overall Size (square miles)	12.03
2019 Total Cargo Handled	2,497,558,000 lbs
Annual Economic Impact	\$6.8 Billion

Indianapolis International Airport	
2019 Total Passenger Volume	9,537,377
# Terminals	1 (2 concourses)
# Gates	49
# Runways	3
Overall Size (square miles)	12.03
2019 Total Cargo Handled	2,021,650,000 lbs
Annual Economic Impact	\$5.4 Billion

**EMPLOYMENT WITHIN 5 MILE RADIUS OF AIRPORT**

2019 Total Jobs	92,620
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TOP 5 INDUSTRY SECTORS	# JOBS % TOTAL
Transportation & Warehousing	19,383 (21%)
Retail Trade	9,764 (11%)
Accommodation & Food Services	8,594 (9%)
Administration & Support, Waste Management & Remediation	8,537 (9%)
Manufacturing	8,076 (9%)

**EMPLOYMENT WITHIN 5 MILE RADIUS OF AIRPORT**

2019 Total Jobs	99,670
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TOP 5 INDUSTRY SECTORS	# JOBS % TOTAL
Transportation & Warehousing	26,566 (27%)
Manufacturing	11,378 (11%)
Administration & Support, Waste Management & Remediation	11,016 (11%)
Retail Trade	9,644 (10%)
Wholesale Trade	8,493 (9%)



Source: County Planning; Google Earth; Cincinnati/Northern Kentucky International Airport, Air Traffic Statistics, 2019, CVG Facts, 2022; Columbus Regional Airport Authority, Traffic Report, 2019, Economic Impact Report, 2017; Indianapolis Airport Authority, Airline Activity Report, 2019; Allegheny County Airport Authority, Pittsburgh International Airport Summary of Airline Traffic, 2019, Economic Impact Study, 2017; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs within 5 mile radius, 2019

# SECTION 2

## MAJOR FINDINGS

This Current Conditions Assessment provides a close look at the existing composition of the Aerozone by analyzing multiple data sets and perspectives. The following is a summary of the major findings and key takeaways as a result of this analysis and interviews with stakeholders. Additionally, a table is provided below that summarizes the overall statistics of partner communities and their total residential population, total number of businesses, and total number of jobs located within the boundary of the Aerozone.

Throughout the process of data and information gathering, 21 interviews were conducted to better understand the unique needs, current and future planning efforts, and goals of the various

stakeholders found throughout the Aerozone. Each of these entities has on-the-ground knowledge that was important to gain information about the Aerozone.

A list of stakeholders that were interviewed can be seen in the front cover of this document. A special thank you to those stakeholders and partners that provided such detailed feedback and participated in these interviews and Aerozone activities.

### OVERALL AEROZONE COMMUNITY STATISTICS

COMMUNITY	TOTAL POPULATION WITHIN AEROZONE	TOTAL # BUSINESSES WITHIN AEROZONE	TOTAL # JOBS WITHIN AEROZONE
City of Berea	12,801	812	8,061
City of Brook Park	15,496	655	9,653
City of Cleveland	38,380	1,416	25,783
City of Fairview Park	14,122	711	7,950
Village of Linndale	475	13	75
City of Middleburg Heights	16,636	1,595	21,813
City of North Olmsted	21,158	1,093	13,472
City of Parma	4,977	321	6,410
City of Rocky River	12,806	656	3,629
City of Strongsville	4,190	111	3,838

Source: Census 2020; Reference USA, May 2022; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019

## AEROZONE CURRENT CONDITIONS ASSESSMENT: KEY TAKEAWAYS

**100,684**

total jobs are located within the Aerozone.

**10,275**

new jobs were added between 2010 and 2019—an 11% increase.

**18%**

of all jobs are within the Health Care & Social Assistance industry—the highest within the Aerozone.

**63.7%**

labor force participation rate—workers over the age of 16 and live within 45 minutes of the airport.

The Aerozone is more concentrated in: Transportation & Warehousing; Finance & Insurance; Real Estate, Rental, & Leasing; and Retail Trade industries than the seven-county region as a whole.

Current Aerozone workforce is becoming older, holding more advanced degrees, and salaries are growing to reflect these changes.

**55%**

of total land area in the Aerozone is zoned for single-family residential uses.

**69%**

of total land area is being used by two main land uses: single-family and institutional.

**1,135 acres**

of land are available for potential redevelopment.

**61%**

of arterial roadways and interstates are in good condition.

## 2.1 CHARACTER AREAS

Character areas are general locations within and around the Aerozone where broad land use and business types currently exist and where they could be focused in the future. The map is a tool to show how economic and transportation initiatives could be focused to specific areas as part of a comprehensive effort to grow jobs in the Aerozone. These areas were determined through a detailed land use analysis, in addition to stakeholder interviews to best understand how and where growth would make the most sense. There are six overall character areas:

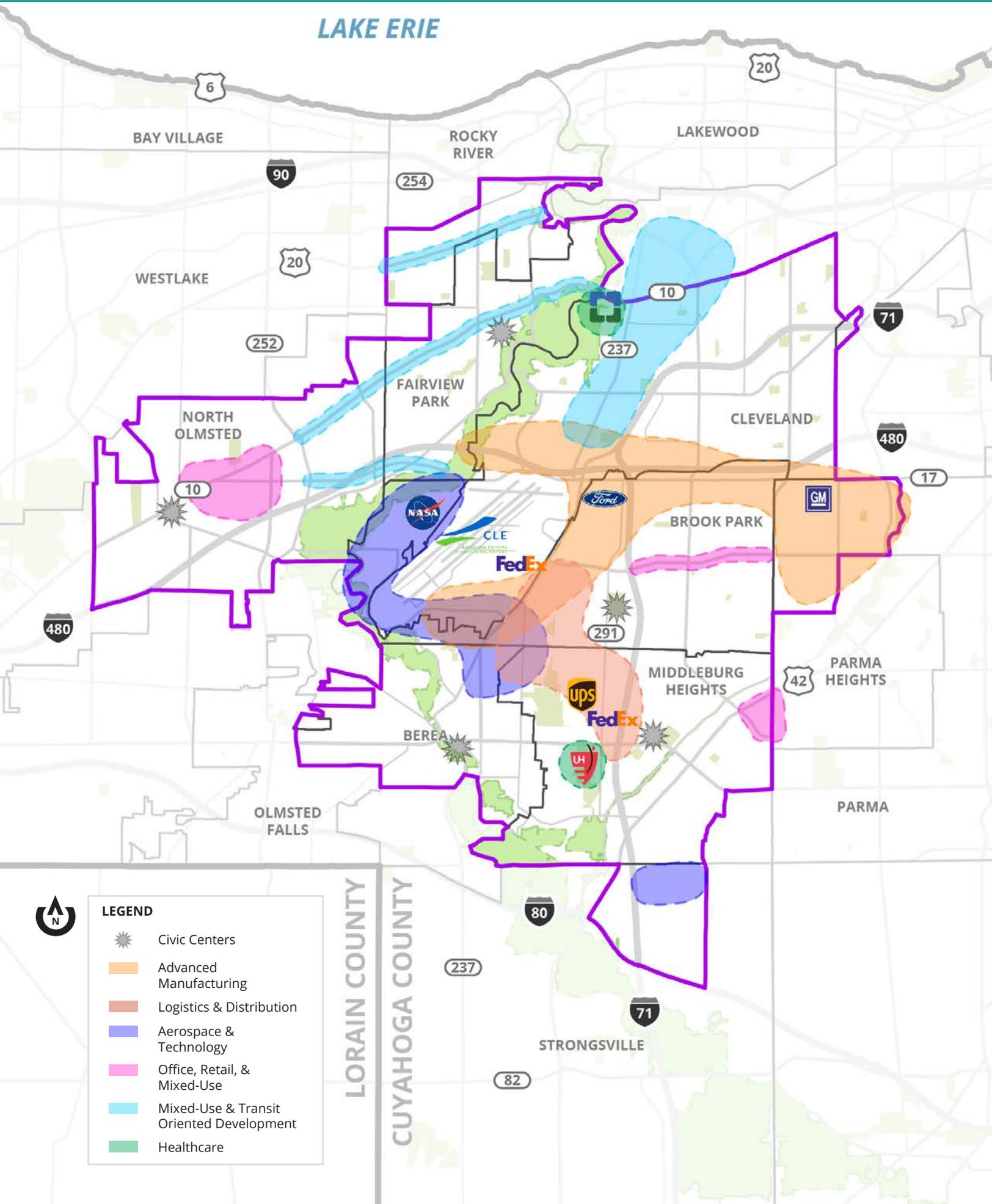
- 1) **Advanced Manufacturing:** This area encompasses many of the existing, major manufacturers within the Aerozone including GM and Ford. This area is primed for advanced manufacturers that can support job growth and harness the transportation assets of the Aerozone District.
- 2) **Aerospace & Technology:** This area encompasses much of the zone around NASA and areas south of the airport, as well as the technology district in Strongsville. This area includes the unique test facilities at NASA Glenn and envisions additional aerospace and technology companies to service and support NASA Glenn and Cleveland Hopkins International Airport.
- 3) **Logistics & Distribution:** This area is shown in the northern half of Middleburg Heights and along Engle Road. It includes existing logistics companies such as FedEx and UPS and is envisioned as an expansion of distribution companies that rely on the Aerozone's transportation assets, especially freight distribution through Cleveland Hopkins International Airport.
- 4) **Mixed-Use & Transit Oriented Development:** These areas follow major existing or planned train and bus routes, especially the GCRTA Red Line that runs north into Cleveland. Higher-density mixed-use development can focus on transit access, and these areas are important for

providing access to jobs, new housing types, and activity hubs for Aerozone workers. Airport.

- 5) **Office, Retail, & Mixed Use:** These areas include the Great Northern Mall area and Snow Road. Similar to the Mixed-Use & Transit-Oriented Development areas, these nodes could provide dense, walkable clusters of office, retail, hotels, and housing development.
- 6) **Healthcare:** These two nodes are centered around Fairview Hospital and Southwest General Hospital. The Aerozone is unique in the number of healthcare jobs located so close to the airport and NASA, and it provides the opportunity to consider how transportation and healthcare can collaborate.

Though broad in nature, these character areas help provide an overview of where different land uses exist and begin to outline targeted attraction zones for continued economic growth.

# CHARACTER AREAS FRAMEWORK



LAKE ERIE

**LEGEND**

-  Civic Centers
-  Advanced Manufacturing
-  Logistics & Distribution
-  Aerospace & Technology
-  Office, Retail, & Mixed-Use
-  Mixed-Use & Transit Oriented Development
-  Healthcare

LORAIN COUNTY  
CUYAHOGA COUNTY

## 2.2 INFRASTRUCTURE ASSETS & OPPORTUNITIES

Infrastructure is a key asset for the Aerozone district, which is sited in a densely developed part of the region. Combining existing assets with opportunities for future improvements can create a dynamic district that attracts and grows jobs and workforce.

### ASSETS

In terms of existing infrastructure, the Aerozone is generally in good condition and poised to support future investments. Some of the largest assets for the district include the robust highway network that includes three major interstates in close proximity; over 23 miles of existing all-purpose trails that largely follow Cleveland Metroparks reservations; and core transit assets including the GCRTA Red Line that provides direct access from the airport to Downtown Cleveland.

Additionally, two of the Aerozone's major employers—NASA Glenn Research Center and Cleveland Hopkins International Airport (CLE)—are major forms of infrastructure as well. NASA Glenn includes substantial research facilities that can be used by corporations and researchers, and CLE is a major airport with connections throughout the United States and internationally, including a direct connection to Europe.

### OPPORTUNITIES

In addition to these robust assets, there are also many opportunities to expand upon existing infrastructure and strengthen the Aerozone District. Throughout the Aerozone there are several key corridors that are excellent candidates for streetscape improvements such as landscaping, signage, and lighting. These corridors could become gateways into the Aerozone and include Engle Road, Snow Road, Brookpark Road, Aerospace Parkway, Rocky River Drive, Berea Freeway, Front Street, Lorain Road, and Center

Ridge Road. Furthermore, roundabouts at Rocky River Drive and Front Street as well as at Aerospace Parkway and Cedar Point Road could help improve the overall safety for users and reduce traffic congestion. Other roadway opportunities include a direct highway connection from I-71 to the airport.

Outside of roadways, other transportation opportunities could also complete a larger network of multi-modal routes in the Aerozone. Trail connections could better link existing networks to facilitate movement around the district and to major employers.

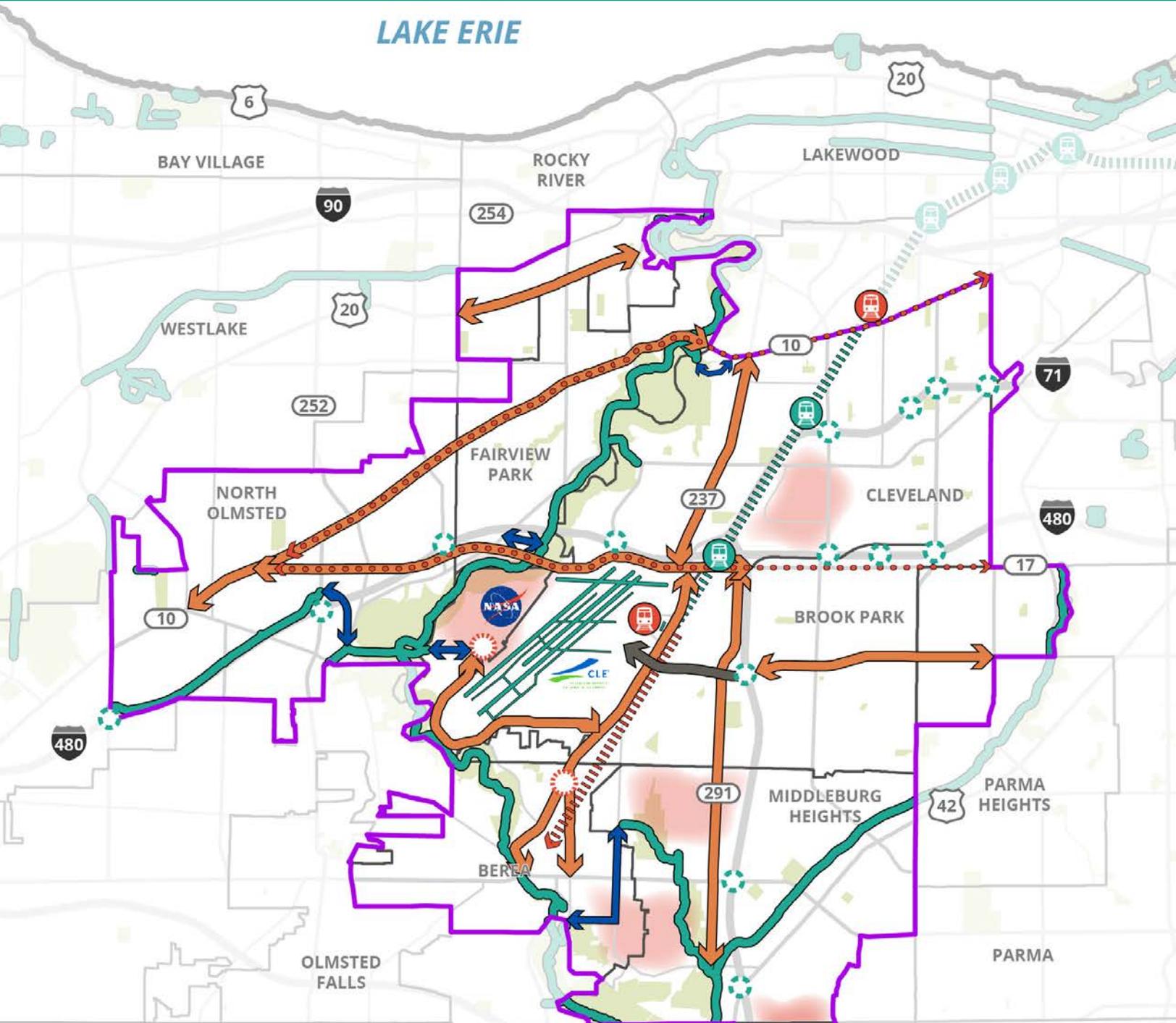
Transit improvements at GCRTA Red Line Stations—especially a rebuild of the West Park Station—could expand access and spur new development. An extension of the Red Line further south to Berea is also an opportunity to increase transit access and develop connections to Baldwin Wallace. Other areas of the Aerozone are also job hubs that are devoid of current transit access. Improved access to these areas could also open employers to a larger workforce.

Overall, there are many opportunities to strengthen and build upon the Aerozone's existing assets, especially improving access to jobs and job centers. However, many of these identified opportunities will need to be coordinated between multiple communities and partners for successful implementation.

Source: County Planning; City of Berea; City of Brook Park; City of Cleveland; City of Fairview Park; City of Middleburg Heights; City of North Olmsted; City of Rocky River; City of Strongsville; West Park Kamm's CDC; Northeast Ohio Aereawide Coordinating Agency (NOACA) Transportation Improvement Program (TIP), 2024-2027

# INFRASTRUCTURE ASSETS & OPPORTUNITIES

## LAKE ERIE



### LEGEND

- |   |   |   |  |
|---|---|---|--|
|  | All-Purpose Trail Extension Opportunity |  | Job Hubs without Public Transit Access |
|  | Streetscape Enhancement Opportunities   |  | Existing All-Purpose Trail             |
|  | Bus Rapid Transit (BRT) Opportunity     |  | Highway Extension Opportunity          |
|  | RTA Red Line Station Opportunity        |  | Existing RTA Red Line Station          |
|  | Roundabout Opportunity                  |  | Existing Highway Ramp                  |
|  | RTA Red Line Extension Opportunity      |   |  |

## 2.3 DEVELOPMENT ASSETS & OPPORTUNITIES

Economic development is the core mission of the Aerozone Alliance. By building off infrastructure assets and focusing development around character areas, the district can develop cohesively. The Development Assets & Opportunities outlines major assets within the district as well as strategic redevelopment areas and sites.

### ASSETS

The Aerozone has a number of major employers that act as anchors for the district. These employers, shown on the map at right, include NASA Glenn, Cleveland Hopkins International Airport, Ford, GM, FedEx, UPS, Cleveland Clinic, and University Hospitals. These core employers, among many other businesses located in the Aerozone, provide the job base that supports future development.

Additionally, there are numerous college and technical schools throughout the Aerozone that provide education and training options for both current workers and the workforce of tomorrow. Baldwin Wallace University and the Polaris Career Center are among the largest educational institutions in the Aerozone and provide various classes and majors to support the higher education goals of workers. Other assets include the many civic centers, recreational centers, and hotels and motels that are part of the Aerozone's development ecosystem.

### OPPORTUNITIES

Future growth in the Aerozone will be guided by additional planning efforts and investments in infrastructure and incentives. This document outlines many of the core assets that can drive growth, and many ideas about future opportunities have been captured in the data and interviews gathered. The map at right includes strategic redevelopment areas, which are areas where

economic investments and land improvement activities should be focused. These areas include economic assets, proposed infrastructure improvements, and potential development areas.

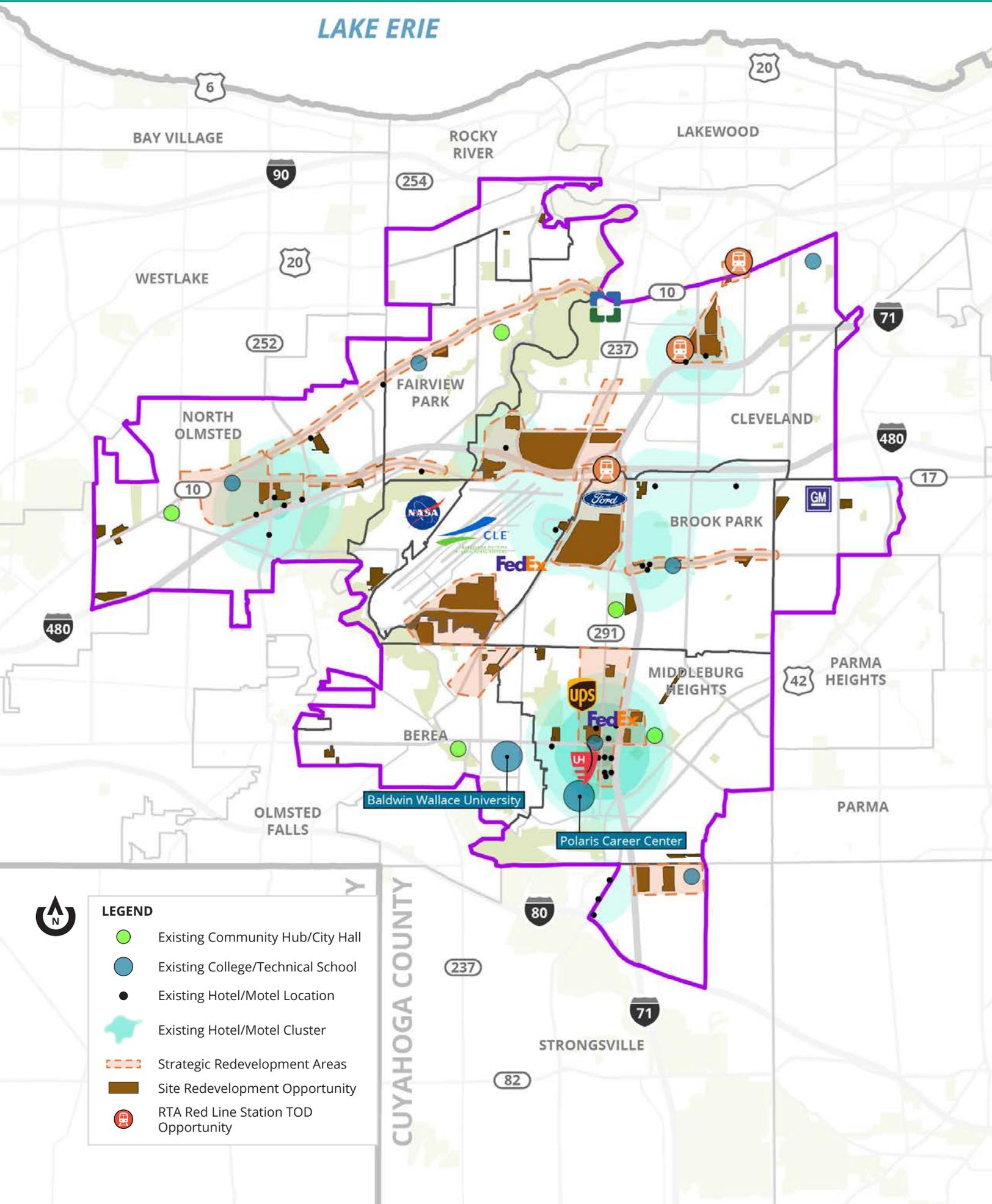
Through land use analysis and conversations with stakeholders, the map at right also shows site redevelopment opportunities. These areas include a diverse array of vacant land, vacant structures, and redevelopment opportunities. There are over 1,135 acres that may be able to accommodate new development and act as an economic driver for the Aerozone. These sites are found throughout the Aerozone, but the largest opportunities exist around Cleveland Hopkins International Airport (CLE) within the cities of Cleveland and Brook Park.

Overall, the Aerozone has significant redevelopment opportunities that should be evaluated together with stakeholders, communities, and developers. By collaborating, the Aerozone and its partners can grow together and support each other through mutual benefit.

Source: County Planning; City of Berea; City of Brook Park; City of Cleveland; City of Fairview Park; City of Middleburg Heights; City of North Olmsted; City of Rocky River; City of Strongsville; West Park Kamm's CDC; Northeast Ohio Aereawide Coordinating Agency (NOACA) Transportation Improvement Program (TIP), 2024-2027

# LAND USE ASSETS & OPPORTUNITIES

## LAKE ERIE



### LEGEND

- Existing Community Hub/City Hall
- Existing College/Technical School
- Existing Hotel/Motel Location
- Existing Hotel/Motel Cluster
- Strategic Redevelopment Areas
- Site Redevelopment Opportunity
- RTA RTA Red Line Station TOD Opportunity

CUYAHOGA COUNTY

# SECTION 3

# DATA ANALYSIS

The Current Conditions Assessment is a powerful analysis that provides insight into the Aerozone and its communities. There are four main topics to this analysis:

- 1) **Transportation & Infrastructure:** This includes topics such as available transportation networks, planned infrastructure projects, traffic volumes, and infrastructure conditions.
- 2) **Land Use & Zoning:** This includes topics such as potential redevelopment sites, the age and height of commercial and industrial buildings, and environmental constraints.
- 3) **Economic Development:** This includes topics such as total number of jobs, employment by industry sector, and employee access to transit lines by industry sector.
- 4) **Workforce:** This includes topics such as demographic details, educational attainment, and income.

Combined, each of these analysis topics will provide a clear picture as to the status of the Aerozone and help understand the assets, issues, and opportunities for the region as a whole.

## KEY DATA & INFORMATION SOURCES

Cuyahoga County

Cuyahoga County Planning Commission

Greater Cleveland Regional Transit Authority (GCRTA)

Northeast Ohio Areawide Coordinating Agency (NOACA): Transportation Improvement Program (TIP)

Ohio Department of Transportation (ODOT): Transportation Information Mapping System (TIMS)

TeamNEO

United States Census Bureau: American Community Survey (ACS), Longitudinal Employer-Household Dynamics (LEHD)

## DATA ANALYSIS TOPICS

TRANSPORTATION & INFRASTRUCTURE



LAND USE & ZONING



ECONOMIC DEVELOPMENT



WORKFORCE

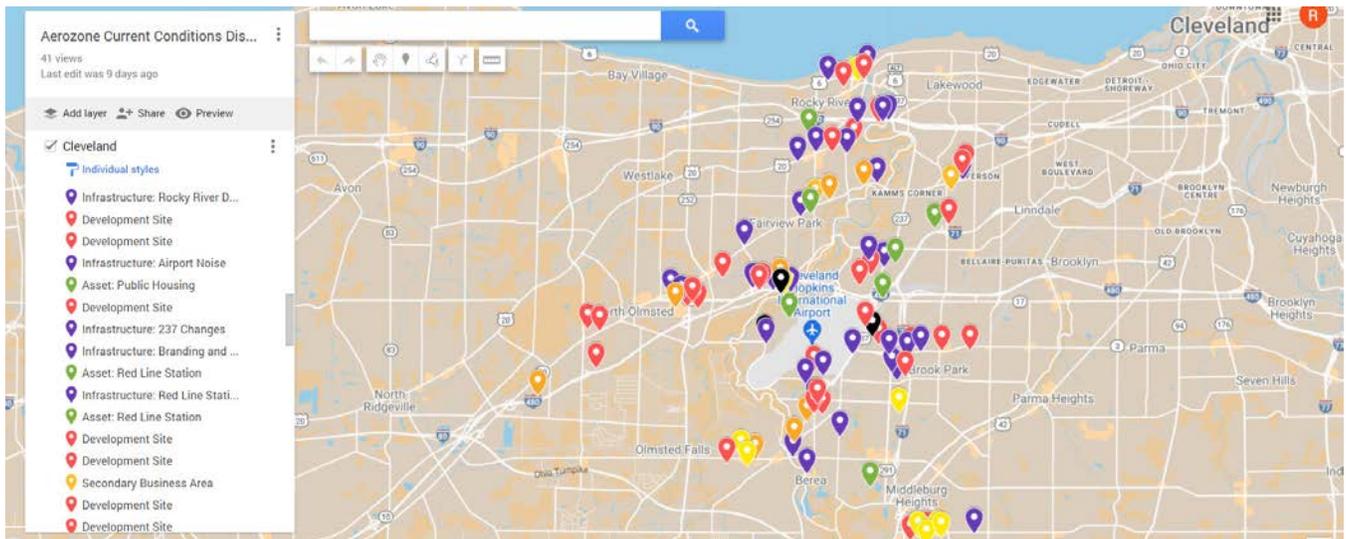


## COMMUNITY & AGENCY MAPPING

As part of the data gathering exercises conducted during this Current Conditions Assessment, 21 stakeholder interviews were held to better understand existing and future plans throughout the Aerozone. This included a mapping exercise where communities, partners, and other key stakeholders were asked a series of questions regarding the four main topics of this analysis—Transportation & Infrastructure, Land Use & Zoning, Economic Development, and Workforce—and what their overall vision was for their community or agency and the Aerozone as a whole.

As seen in the example map below, pins were placed and categorized by community or agency based on project type. For example, purple pins indicate infrastructure needs or projects and green indicates a community asset, while orange identify key business areas and red indicate potential redevelopment sites.

In general, these stakeholder interviews were critical in helping identify plans for the future and where change and redevelopment could occur within the Aerozone.



Source: Google Maps, My Maps, County Planning, 2022; City of Berea; City of Brook Park; City of Cleveland; City of Fairview Park; City of Middleburg Heights; City of North Olmsted; City of Parma; City of Rocky River; City of Strongsville



# TRANSPORTATION & INFRASTRUCTURE

Transportation networks and physical infrastructure are critical components to the success of the Aerozone. Roads, bridges, transit facilities, and even bikeways, trails, and sidewalks are all important elements for the efficient movement of goods and people. At its core the Aerozone is fundamentally a transportation hub, and its infrastructure that is the backbone of the district.

This section explores existing transportation and infrastructure found throughout the Aerozone. This includes topics such as available transportation networks, planned infrastructure projects, traffic volumes, and infrastructure conditions.



## 3.1 INFRASTRUCTURE PROJECTS

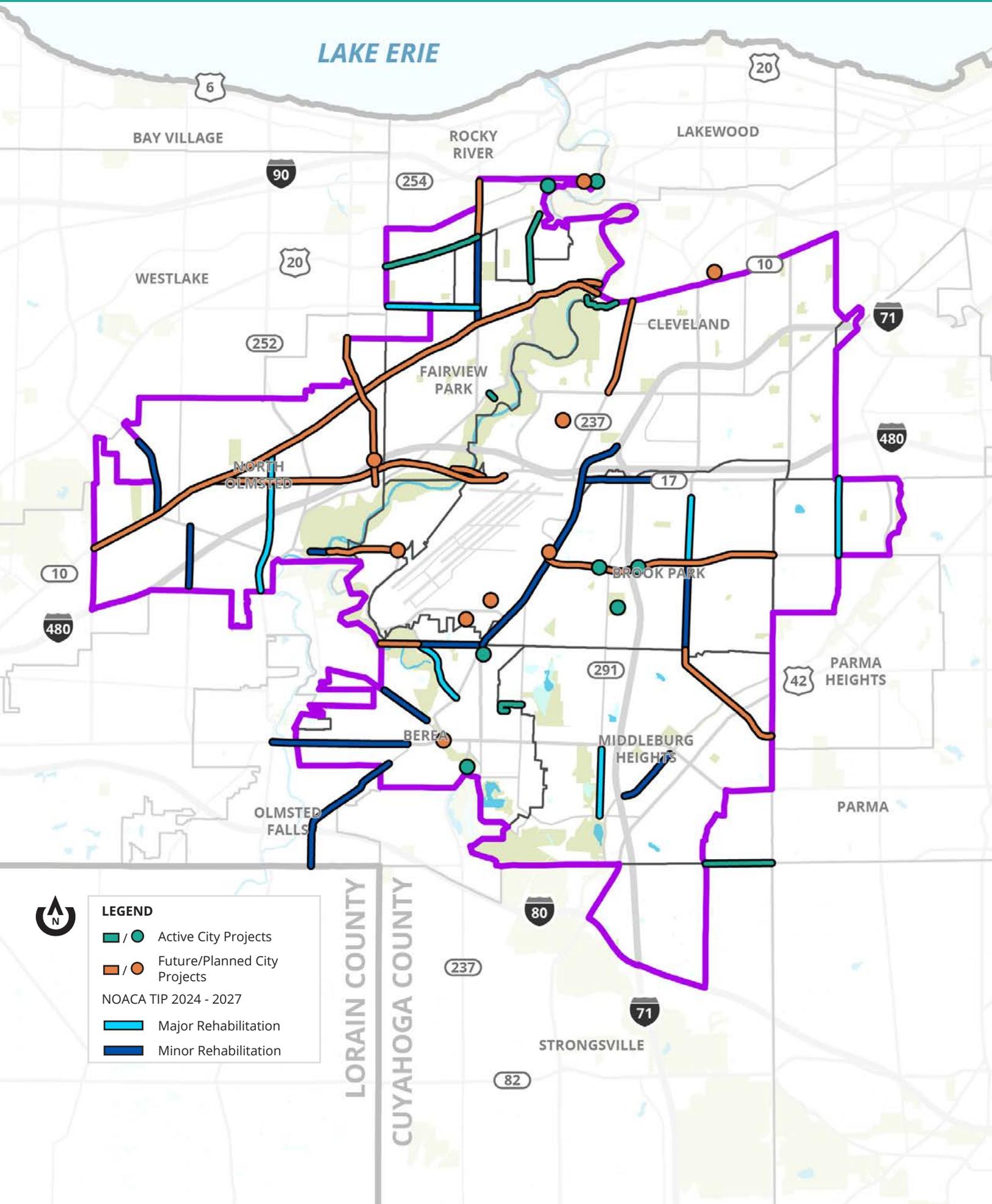
Modern infrastructure is critical to business attraction, retention, and expansion. Well-planned and prioritized infrastructure investments not only support long-term economic growth, but do so in a sustainable manner. By identifying infrastructure gaps and setting actionable goals, the Aerozone can begin to understand, target, and empower partner communities to systematically approach infrastructure investments.

Currently, all of the Aerozone's partner communities have both ongoing and planned infrastructure projects. From tree planting and improved gateways, to roadway reconstruction and trail connections, these projects range greatly in type, scope, and scale. Examples of major proposed community projects include improved gateways on Snow Road near I-71 in Brookpark, bridge reconstruction on Hilliard Boulevard in Rocky River, and a bridge removal at W. Center Street over Valley Parkway in Berea.

Additionally, the Northeast Ohio Areawide Coordinating Agency's (NOACA) Transportation Improvement Program (TIP) also outlines transportation related infrastructure investments. The TIP is a tool for implementing regional projects proposed by local communities, county engineers, the Ohio Department of Transportation (ODOT), transit operators, and other sponsors, that takes into account budgets, priorities, funding options, and time frames. From road resurfacing and reconstruction to transit facilities and traffic calming, these projects can also range widely. Throughout the Aerozone, TIP projects are primarily focused on critical roadway infrastructure and range from base repairs (11 projects) to major rehabilitation (7 projects). Many of the projects in NOACA's TIP overlap with those outlined by individual communities, including Smith Road in Middleburg Heights, Lorain Avenue in Fairview Park, and Cedar Point Road in North Olmsted. This indicates an opportunity for further collaboration on infrastructure investments and potential cost sharing.

Source: County Planning; City of Berea; City of Brook Park; City of Cleveland; City of Fairview Park; City of Middleburg Heights; City of North Olmsted; City of Rocky River; City of Strongsville; West Park Kamm's CDC; Northeast Ohio Areawide Coordinating Agency (NOACA) Transportation Improvement Program (TIP), 2024-2027

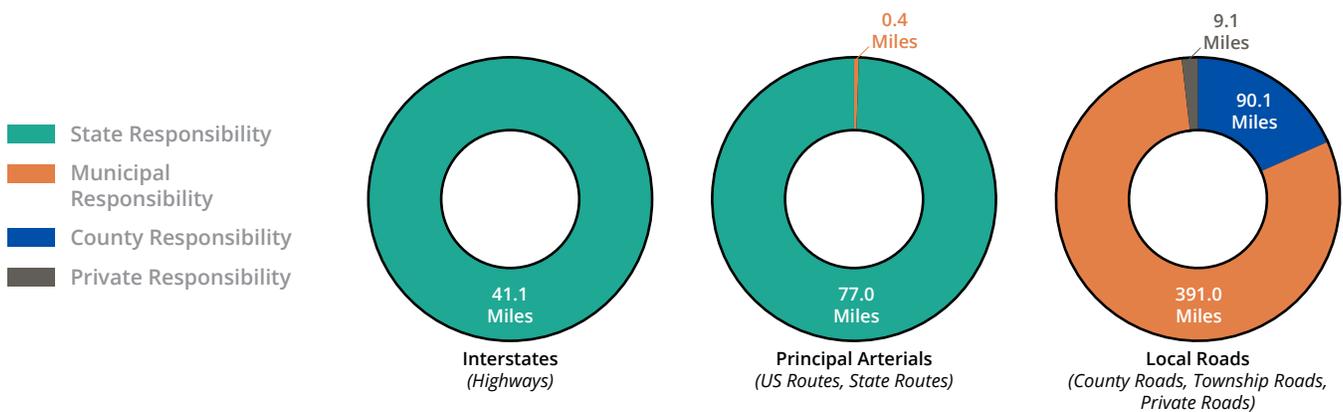
# ACTIVE & PLANNED INFRASTRUCTURE INVESTMENTS



## 3.2 ROADWAY NETWORK

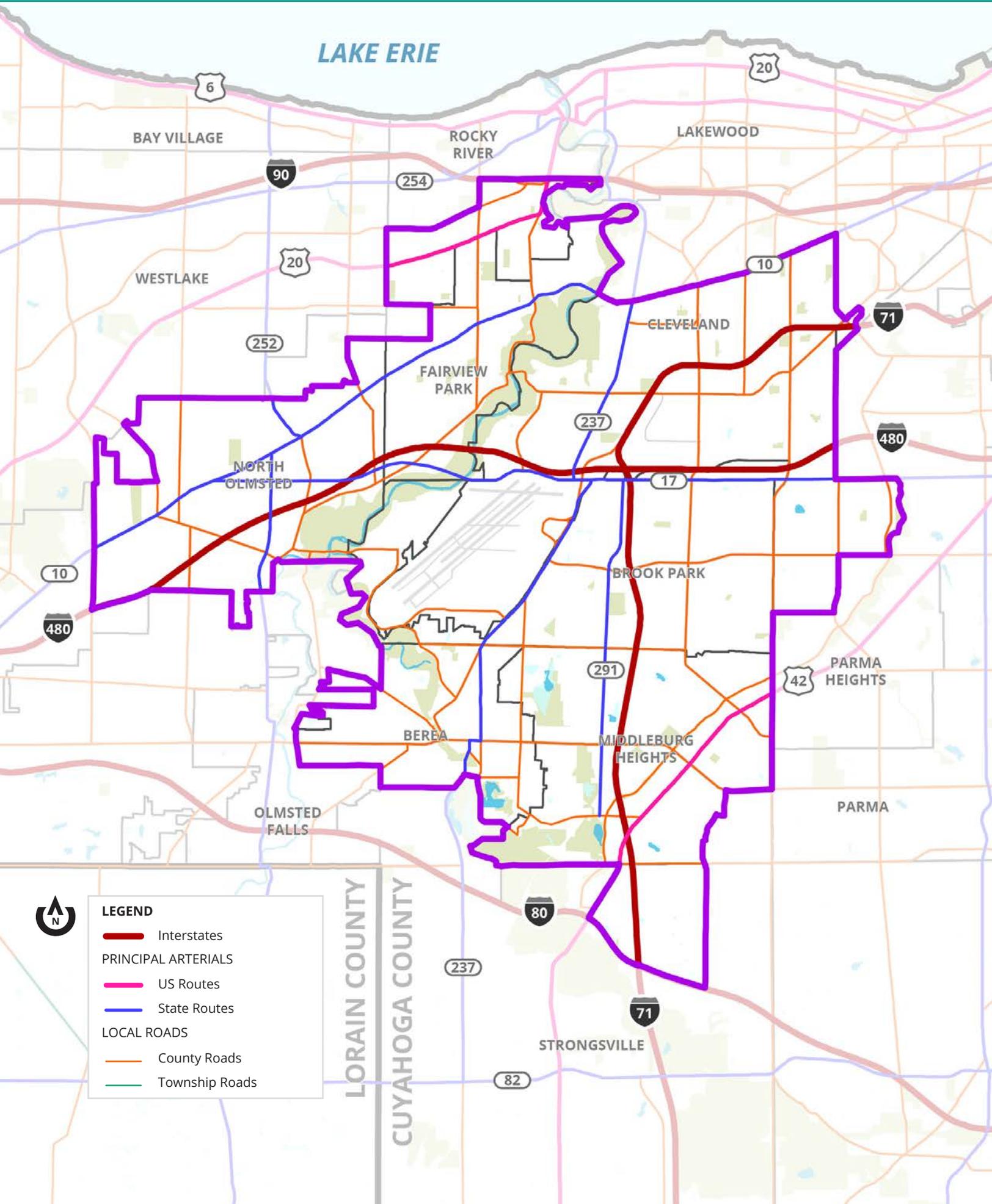
The Aerozone study area contains 609 linear miles of paved roadway, with over 80% considered "local roads," including county roads, township roads, and private roads. The remaining 20% of roads include interstate highways (7%) and other principal arterials roadways (13%), such as US routes and state routes. This indicates that the majority of road improvements and streetscape enhancements would be implemented along local roads, however there are several routes that will be critical for targeted economic redevelopment that are principal arterials. For instance, both Lorain Road and Brookpark Road are important corridors for supporting numerous businesses, accessing amenities such as the Cleveland Hopkins International Airport and NASA Glenn, and for connecting employees to job hubs. While both of these roadways are state routes, early and coordinated partnerships across municipalities will be even more important for coordinated infrastructure and streetscape improvements that support the area.

### MAINTENANCE RESPONSIBILITY BY ROADWAY TYPOLOGY



Source: Northeast Ohio Areawide Coordinating Agency (NOACA), Functional Class, 2022

# EXISTING ROADWAY & INTERSTATE NETWORKS



### 3.3 ROADWAY SAFETY

From 2017 to 2021, the State of Ohio saw 5,433 fatal crashes, including 455 in Cuyahoga County. Of these fatal crashes, 18 were located within the Aerozone or about 4% of all fatal crashes in the County. These fatal crashes were concentrated within three typologies: 1) car on car collisions; 2) car on object collisions; and 3) car on pedestrian collisions. While the State of Ohio has begun to see a slight decline in the number of fatal crashes in recent years, there has been a steady increase in the number of fatal crashes across Cuyahoga County.

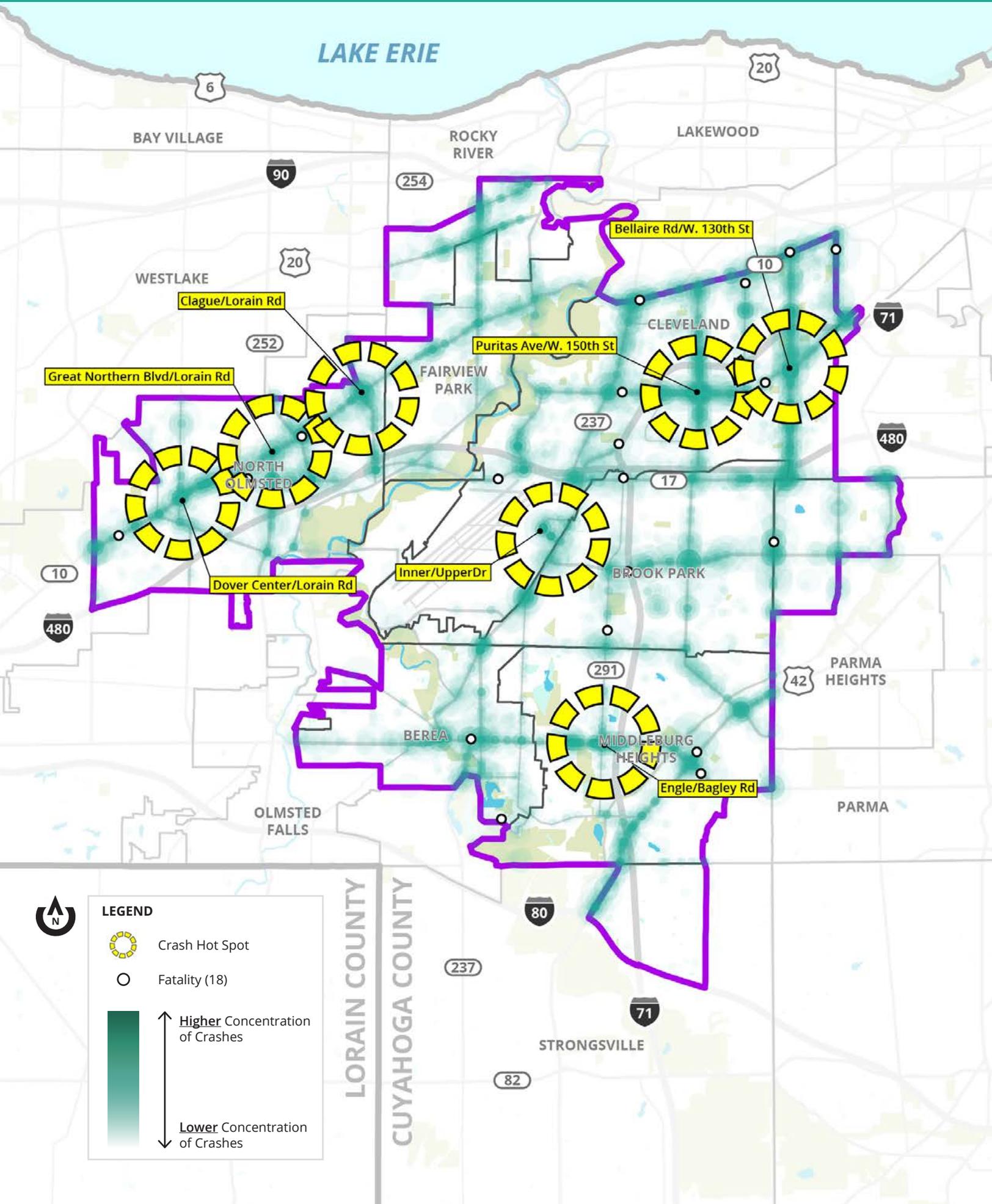
Of the Aerozone's 11,150 crashes from 2017-2021, higher concentrations of roadway crashes were located along key corridors; including Lorain Road, Puritas Avenue, Engle Road, and the Inner/Upper Drives that approach Cleveland Hopkins International Airport. This indicates that crash incidents tend to occur more frequently near areas where there are higher concentrations of conflict points, such as transportation terminals and hubs where there might be more stop and go traffic intermixed with pedestrians.

#### AEROZONE ROADWAY CRASH TYPOLOGIES BY LEVEL OF INJURY SEVERITY, 2017-2021



Source: ODOT Transportation Information Mapping System (TIMS), 2017-2021; Ohio State Highway Patrol Statistics, Operational Reports, 2017-2021

# ROADWAY CRASH CONCENTRATIONS



## LEGEND



Crash Hot Spot



Fatality (18)



↑ Higher Concentration of Crashes

↓ Lower Concentration of Crashes

LORAIN COUNTY

CUYAHOGA COUNTY

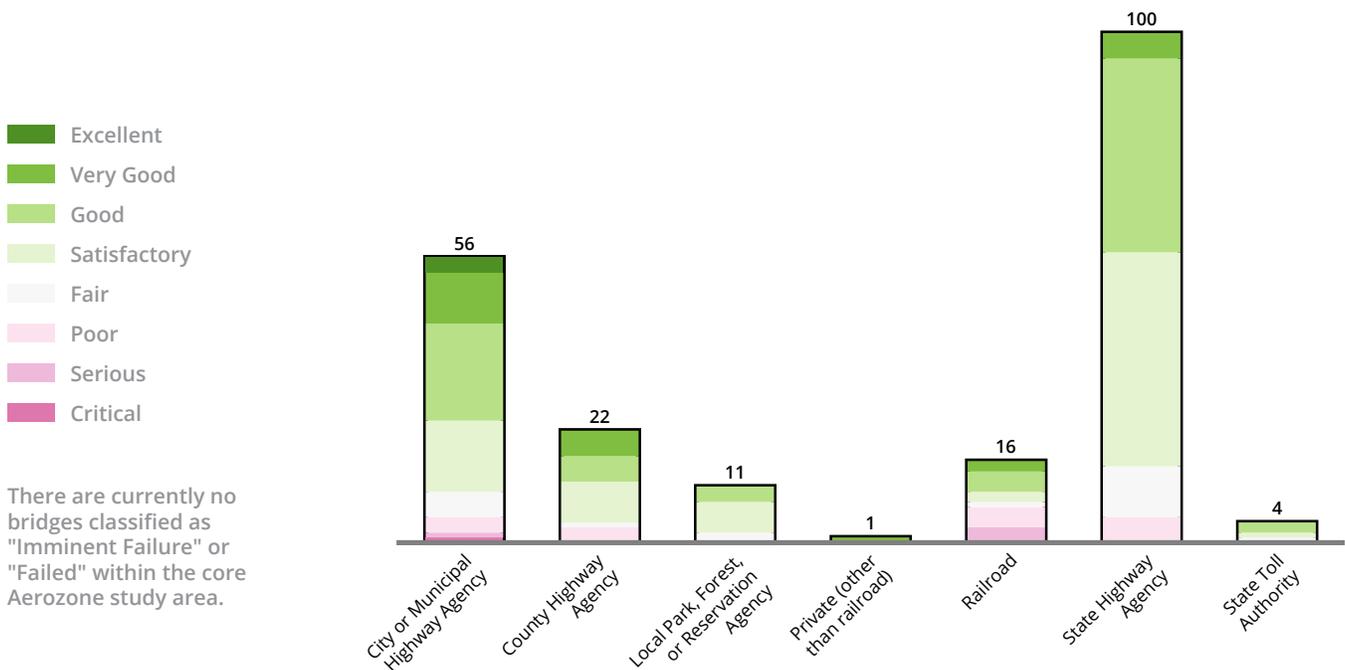
STRONGSVILLE

## 3.4 BRIDGE CONDITIONS

The Aerozone has a total of 210 bridges, with nearly half (48%) being owned by the Ohio Department of Transportation (ODOT). The remainder of bridges are owned by a combination of public and private entities, including municipal agencies (27%), county agencies (10%), railroads (8%), and state toll or park agencies (7%).

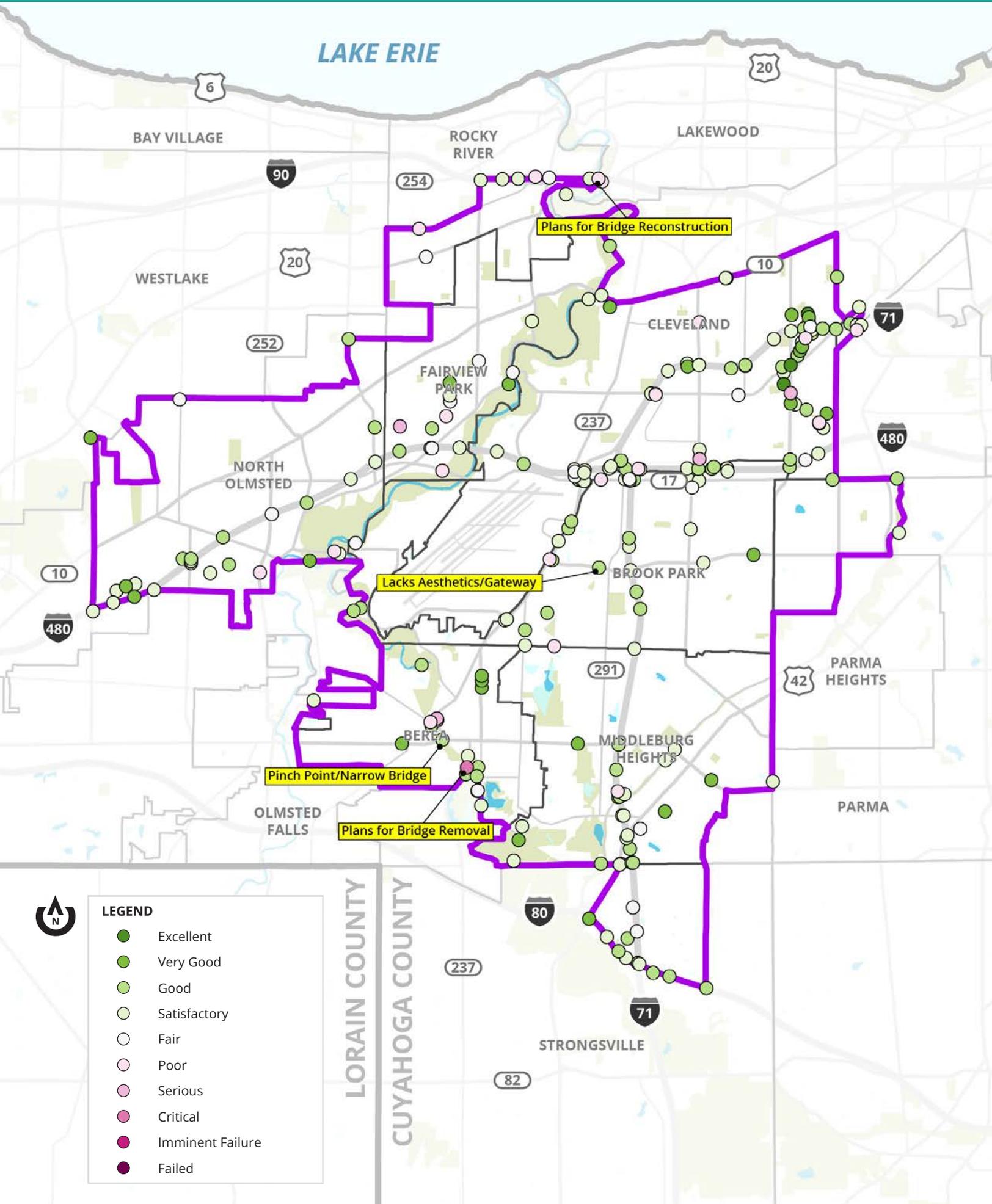
In terms of bridge condition, over 80% of all bridges within the Aerozone are in at least "Satisfactory" condition (170 bridges), and another 17% are in "Fair" or "Poor" condition (35 bridges). However, there are four bridges that are in "Serious" condition and one that is in "Critical" condition; none are in "Imminent Failure" or have "Failed." The four "Serious" condition bridges are located within the cities of Cleveland, Fairview Park, and Berea; the "Critical" condition bridge is also located within the City of Berea. In general, this indicates that the majority of the bridges found within the Aerozone are overall in good condition or better, and with continued maintenance the area should be well-positioned to support continued growth.

### NUMBER OF BRIDGES BY OWNERSHIP AGENCY & OVERALL BRIDGE CONDITION



Source: ODOT Transportation Information Mapping System (TIMS), 2022

# ROADWAY & INTERSTATE BRIDGE CONDITIONS



## 3.5 PAVEMENT CONDITIONS

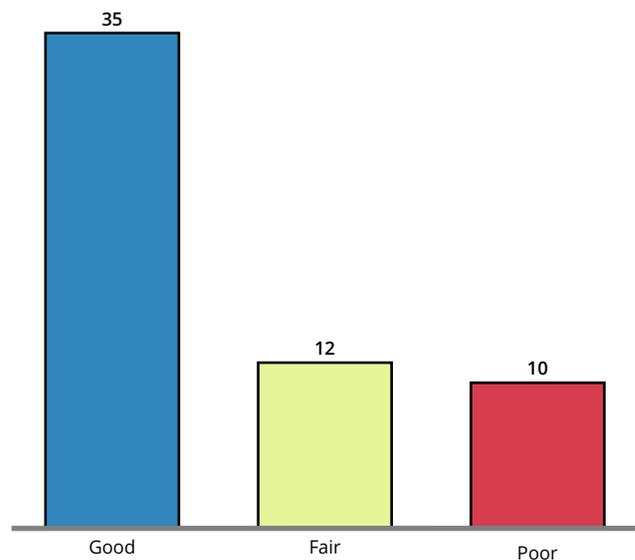
Seeking to further understand roadway performance, Pavement Condition Rating (PCR) is an assessment tool based on the visual inspection of pavement distress that takes into account the various types, levels of severity, and the extent of problems found on the surface of roads. Within the Aerozone, the majority of arterial roadways and interstates are in "Good" condition (61%, 35 miles). However, an additional 21% of arterial roadways and interstates are in "Fair" condition and the remaining 18% are in "Poor" condition. Much of the roadway infrastructure most in need of repair can be found near the Cleveland Hopkins International Airport, and within the Cities of Berea and Middleburg Heights.

Overall, roadway infrastructure within the Aerozone is well-maintained and on a regular maintenance schedule, but there are some areas in need of improvement. This indicates that the existing roadway infrastructure found throughout the Aerozone is well-positioned for new economic growth in the near-future. However, additional investments will need to be made to ensure roadways continue to meet the performance needs of businesses and daily users. Additionally, as roadways are rebuilt, this provides an opportunity for enhancements that can complement the Aerozone's economic goals.

### LINEAR MILES OF ARTERIAL ROADWAYS & INTERSTATES BY PAVEMENT CONDITION RATING (PCR)

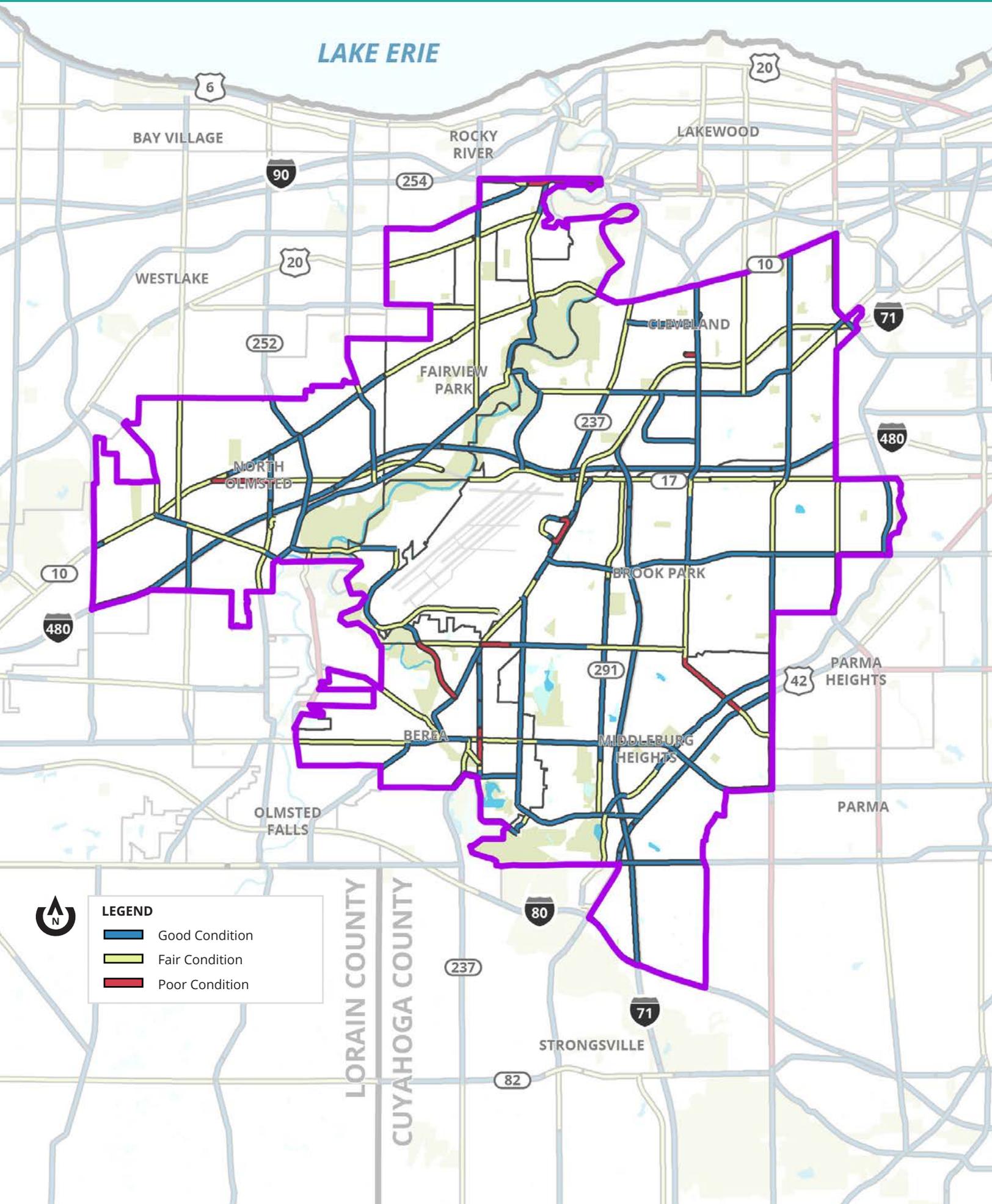
A PCR rating system is important because it can help prioritize roadway infrastructure projects and strategically determine how, when, and where to allocate funds towards construction.

However, the PCR system can be subjective and is beginning to be phased out and replaced by more modern forms of measurements and classifications to better understand roadway conditions.



Source: ODOT Transportation Information Mapping System (TIMS), Road Inventory, 2022

# ROADWAY & INTERSTATE PAVEMENT CONDITION RATING (PCR)

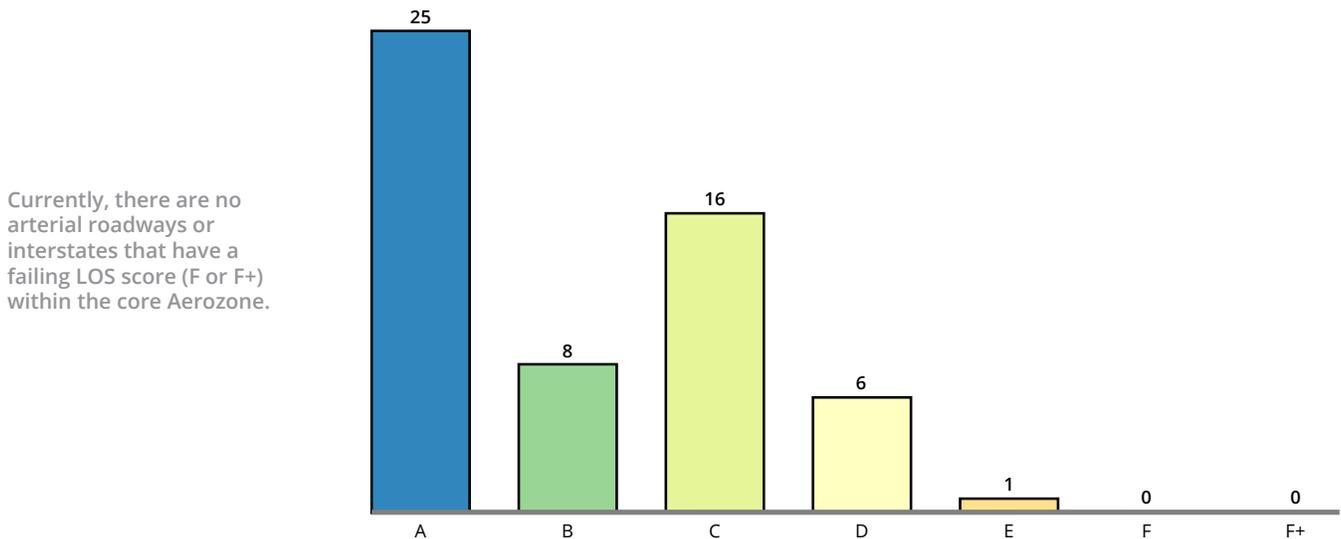


## 3.6 LEVEL OF SERVICE

Level of Service (LOS) refers to the overall quality of motor vehicle travel on roadways as it relates to a number of factors, such as vehicle speed and congestion. It can be used to understand how quickly traffic moves along a road; however, LOS ratings are solely focused on vehicle delays and fail to consider other modes of transportation and their unique needs. For example, if a roadway has a perfect LOS rating, this does not mean it is accommodating to all users, including pedestrians, bicyclists, public transit, and motor vehicles. This simply means that traffic flows quickly and freely.

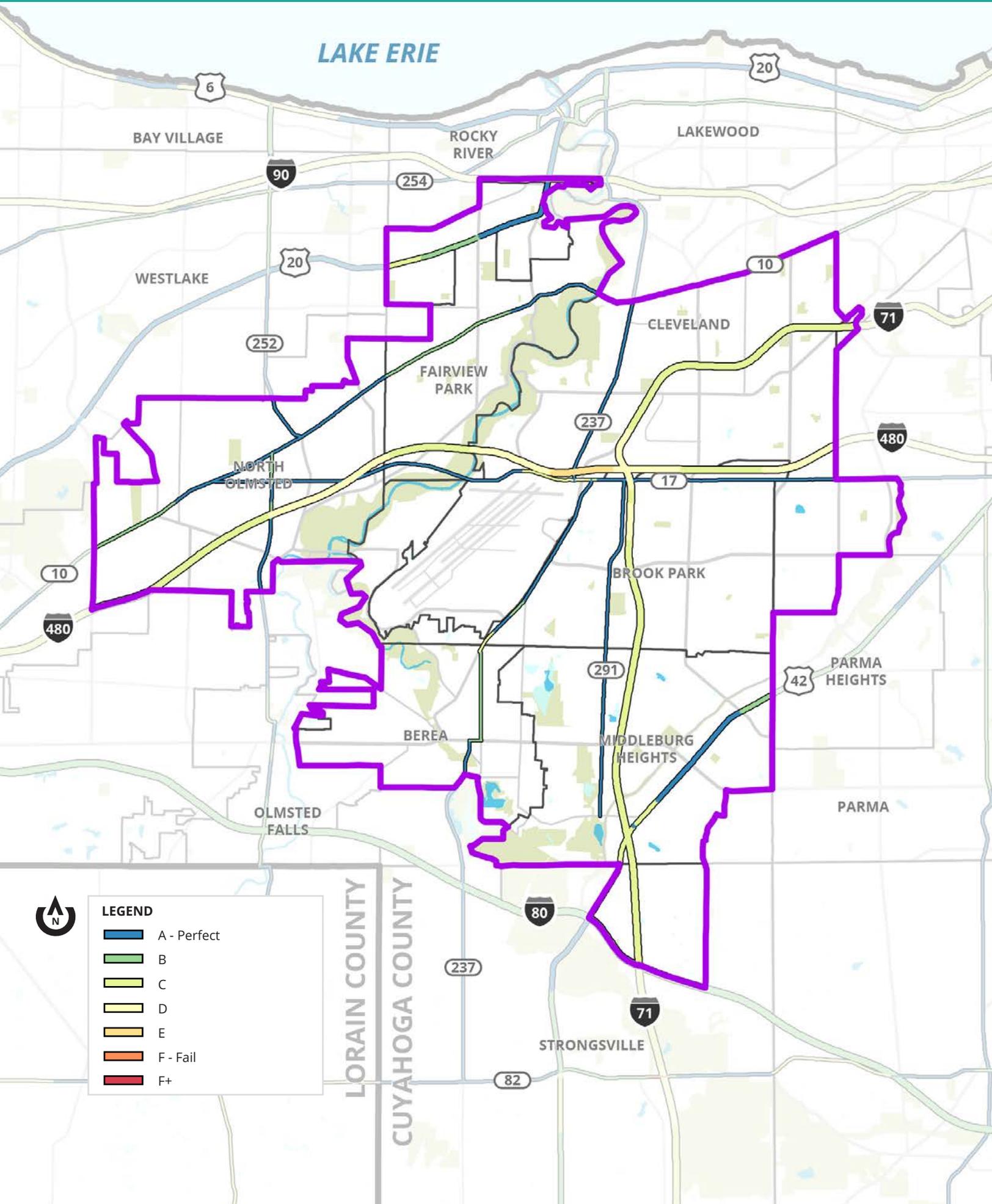
Within the Aerozone the majority of arterial roadways and interstates have a LOS rating of "C" or better (88%, 49 miles), indicating good to excellent travel flow in most areas. However, the remaining 12% (7 miles) of arterial roadways and interstates have a LOS rating of "D" or "E," indicating traffic is not free flowing. These lower LOS ratings are primarily isolated to interstates I-71 and I-480, and have the potential to impact safe motor vehicle travel or could hinder transportation movements in the future. Currently, there are no arterial roadways or interstates that have a failing LOS score (F or F+) within the Aerozone. In general, roadways throughout the Aerozone are operating at a very high level with limited hindrances to safe and efficient vehicle movement. This indicates that some roadways could be oversized based on current LOS ratings, which presents an opportunity for future streetscape and infrastructure improvements to better meet the needs of travelers.

### LINEAR MILES OF ARTERIAL ROADWAYS & INTERSTATES BY LEVEL OF SERVICE (LOS) RATINGS



Source: ODOT Transportation Information Mapping System (TIMS), Road Inventory, 2022

# ROADWAY & INTERSTATE LEVEL OF SERVICE (LOS)



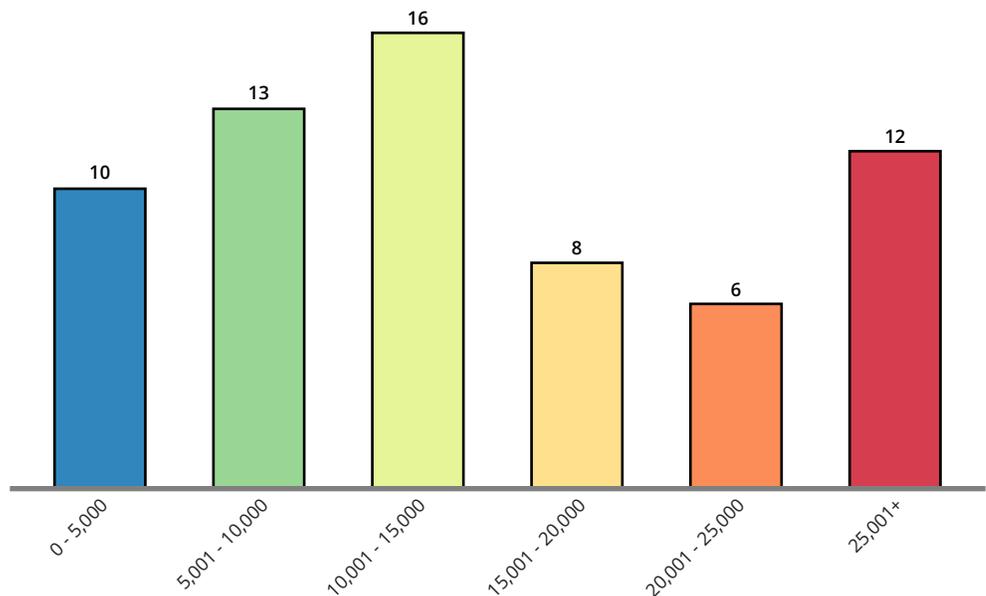
## 3.7 TRAFFIC VOLUMES

The majority of principal arterial roadways and interstates found throughout the Aerozone see Average Daily Traffic (ADT) counts less than 15,000 vehicles per day (60%, 39 miles). Additionally, there are several prominent roadways that average 15,001 to 20,000 vehicles per day (12%, 8 miles). Critical corridors such as Bagley Road, W. 130<sup>th</sup> Street, and Pearl Road average 20,001 to 25,000 vehicles per day, while I-71 and I-480 provide regional access to the Aerozone and can see well over 25,000 vehicles per day.

Wider roadways with an ADT less than 20,000 tend to have excess capacity, and could provide an opportunity for new infrastructure investments to improve roadway performance. In general, this numeric threshold indicates opportunities for evaluating road diet alternatives. A road diet seeks to reduce or shrink a road by developing, realigning, or re-striping corridors within its existing right-of-way to support multi-modal improvements, such as trails, bikeways, and streetscape elements. Lorain Avenue, Brookpark Road, Snow Road, Center Ridge Road, and Engle Road are strong candidates within the Aerozone for potential road diet considerations, which could help improve the overall performance of these roadways and strengthen multi-modal networks to connect workers with jobs and visitors with destinations.

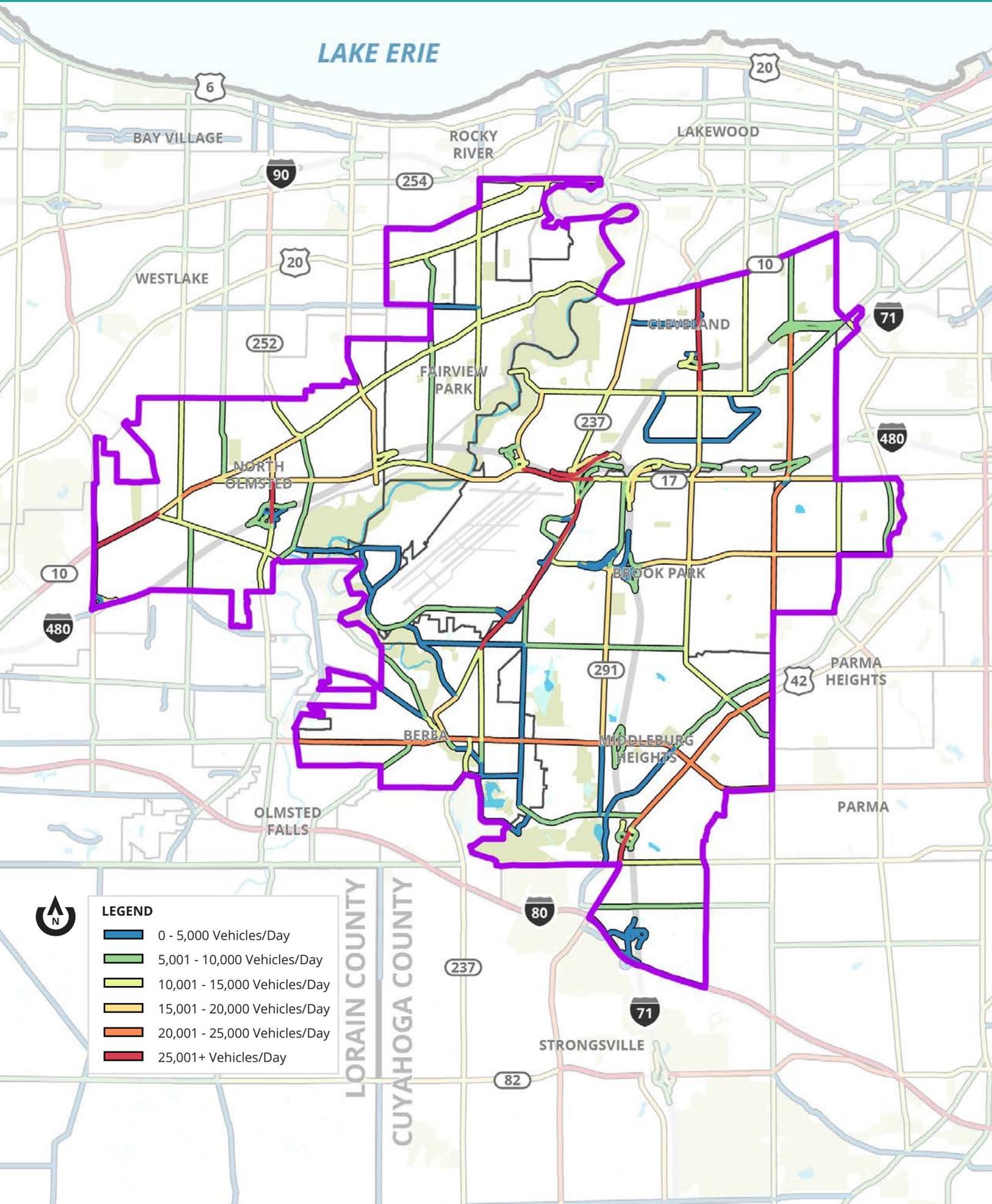
### LINEAR MILES OF ARTERIAL ROADWAYS & INTERSTATES BY TRAFFIC VOLUME (ADT)

The strongest candidates for a road diet generally fall within the 15,001-20,000 ADT category.



Source: ODOT Transportation Information Mapping System (TIMS), Road Inventory, 2022

# ROADWAY & INTERSTATE AVERAGE DAILY TRAFFIC (ADT)



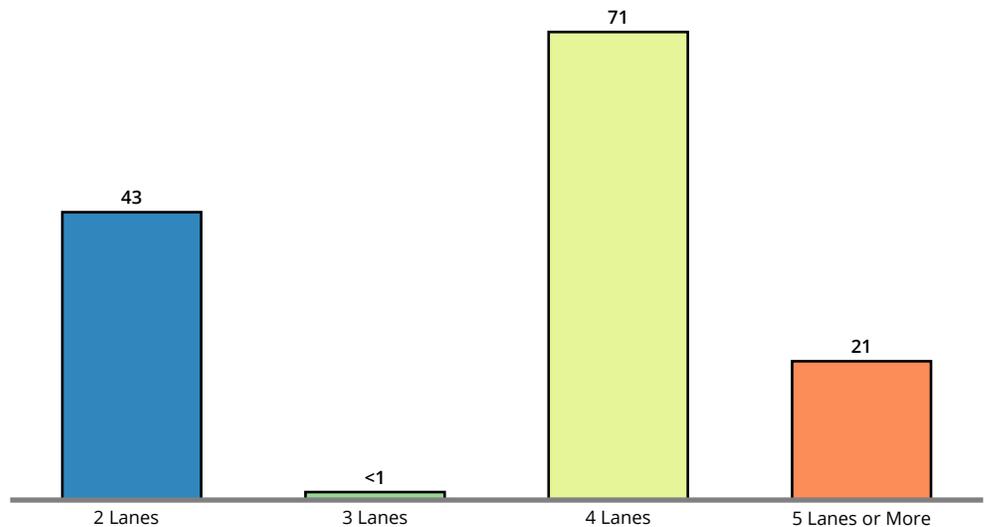
## 3.8 NUMBER OF TRAVEL LANES

The majority of roadways found throughout the Aerozone have at least four travel lanes (68%, 92 miles), which includes 21 miles of interstate systems. The remaining 32% of roadways are predominantly secondary arterial connectors and minor collector streets that provide access to smaller, localized destinations and employers. A number of roadways are overbuilt and have more travel lanes than what is necessary for the safe and efficient traffic flow, as shown by ADT and LOS data. This indicates potential opportunities for lane and roadway width reductions to improve the performance of streets found throughout the Aerozone.

Reducing the number of travel lanes on multi-lane roads can help reduce crossing distances for pedestrians and bicyclists, slow vehicles, and improve the overall safety of multi-modal travel. Key corridors within the Aerozone that could be good candidates for this type of streetscape improvement include Lorain Avenue, Brookpark Road, and Rocky River Drive. These roadways in particular have an existing combination of excess lanes, lower traffic volumes, and higher Level of Service (LOS) to support a lane reduction and improve the overall streetscape.

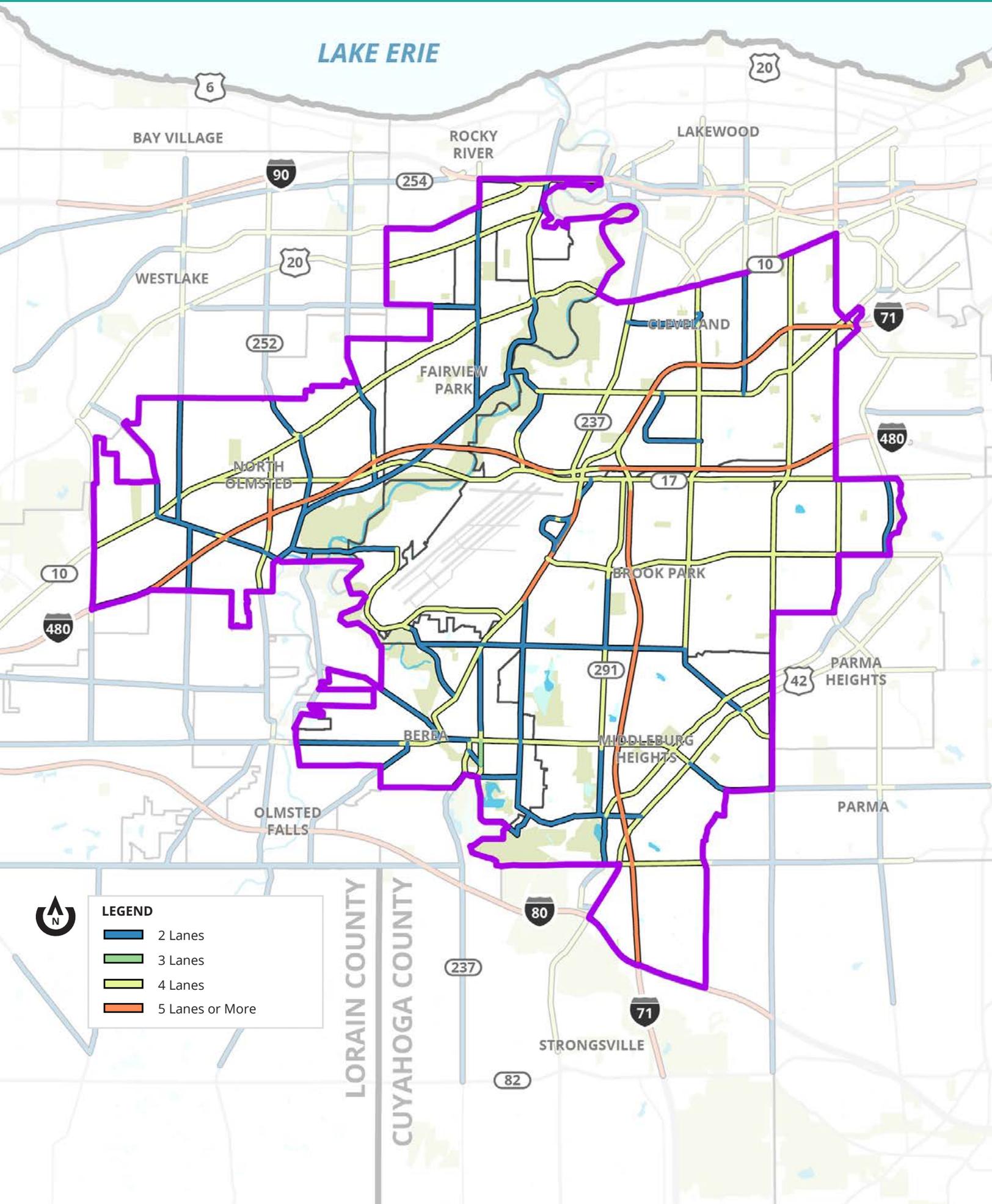
### LINEAR MILES OF ARTERIAL ROADWAYS & INTERSTATES BY NUMBER OF TRAVEL LANES

The majority of roadways within the Aerozone have four or more travel lanes (68%). The remaining roadways are predominantly two lanes (32%), with less than a mile of roadways having three lanes.



Source: Northeast Ohio Areawide Coordinating Agency (NOACA), Functional Class, 2022

# ROADWAY & INTERSTATE NUMBER OF VEHICLE TRAVEL LANES



## 3.9 TRANSIT & RAIL NETWORKS

The Greater Cleveland Regional Transit Authority (GCRTA) has nine lines that run through the core Aerozone study area, two of which operate intermittently and provide access to Park-N-Rides located in the Cities of North Olmsted (55 line) and Stongsville (251 line) during limited service hours. There are also several key bus lines that run along prominent corridors to job hubs and transportation access points, including Brookpark Road, Lorain Avenue, and the Berea Freeway. The Aerozone is also home to the GCRTA Red Line, the only heavy rail line in Ohio and a direct connection between Cleveland Hopkins International Airport and Downtown Cleveland. This rapid transit link has multiple stops within the Aerozone that could attract development and form critical connections. Additionally, Amtrak uses existing rail lines that run through the Aerozone for its long-distance rail services that travel through Cleveland. While a rail stop does not presently exist within the Aerozone, proposals for rail expansion projects may include a future Amtrak stop at the airport.

The most frequently running bus routes within the Aerozone are located along key transportation spines, such as Lorain Avenue, Puritas Avenue/Bellaire Road, Center Ridge Road, and W. 130<sup>th</sup> Street. Secondary to these bus lines, Brookpark Road, the Berea Freeway/Rocky River Drive, and Pearl Road are also key connectors for transit access, however they provide slightly less frequent routes and the majority (75%) of these bus stops have at least a 30 minute interval between buses. This indicates an opportunity to explore transit frequency to job hubs and evaluate future route alternatives that reach key employment centers throughout the Aerozone that support economic growth.

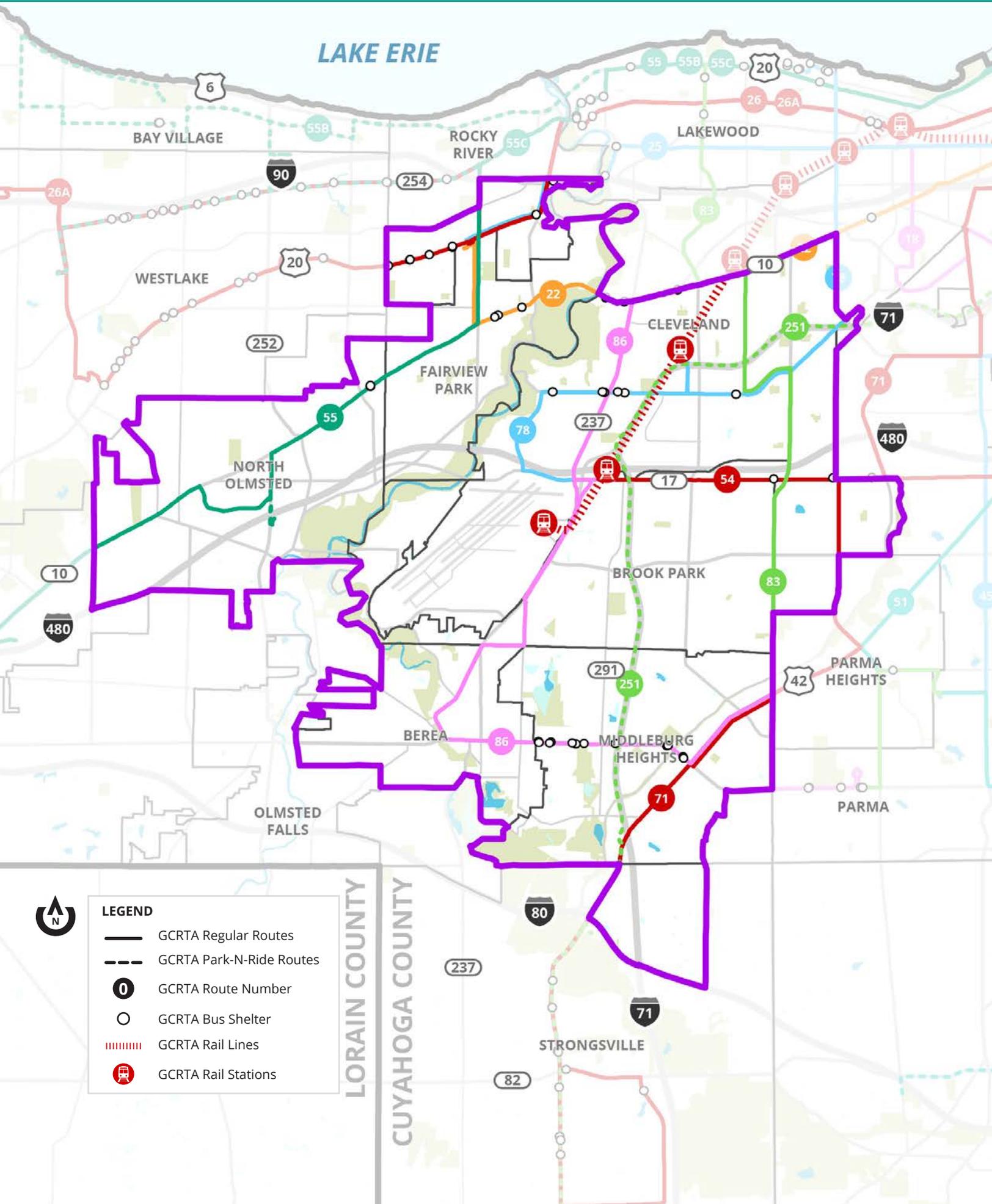
### AEROZONE GCRTA TRANSIT ROUTES BY FREQUENCY

GCRTA ROUTE NUMBER	FREQUENCY
22	15 Minutes
25	30 Minutes
26-26A	15 Minutes
54	15 Minutes
55	30 Minutes
78	30 Minutes
83	30 Minutes
86	1 Hour+
Red Line (rail)	15 Minutes

\*Limited service routes not shown

Source: Greater Cleveland Regional Transit Authority (GCRTA), NEXTGEN, 2022; County Planning

# GCRTA TRANSIT & RAIL NETWORK



LAKE ERIE

BAY VILLAGE

ROCKY RIVER

LAKEWOOD

WESTLAKE

FAIRVIEW PARK

CLEVELAND

NORTH OLMSTED

BROOK PARK

PARMA HEIGHTS

BEREA

MIDDLEBURG HEIGHTS

PARMA

OLMSTED FALLS

STRONGSVILLE

LORAIN COUNTY

CUYAHOGA COUNTY



- LEGEND**
- GCRTA Regular Routes
  - GCRTA Park-N-Ride Routes
  - GCRTA Route Number
  - GCRTA Bus Shelter
  - GCRTA Rail Lines
  - GCRTA Rail Stations

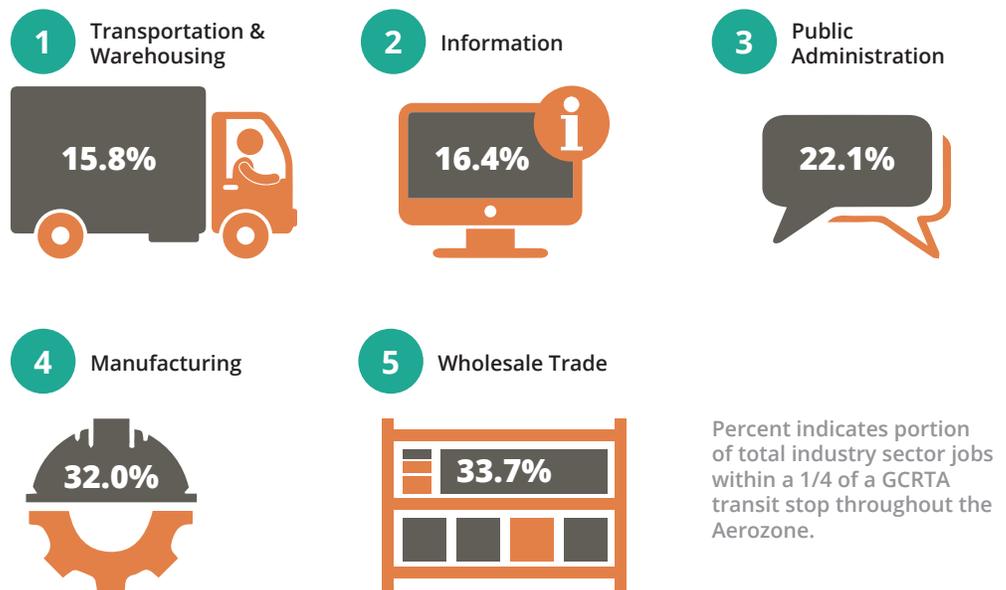
## 3.10 TRANSIT AVAILABILITY

The Greater Cleveland Regional Transit Authority (GCRTA) plays a critical role within the Aerozone by connecting workers with jobs. As the COVID-19 pandemic has slowed and GCRTA has implemented its NextGen routes, enhancing services to better connect to jobs is more important than ever.

By mapping 1/4 mile walksheds around bus stops and 1/2 mile walksheds around train stations, we can show how much of the Aerozone's jobs are located within close proximity to transit. Within the Aerozone only 49% of jobs are located within these walksheds, and there exist pockets of "transit deserts" where high concentrations of jobs are located with limited access to transit.

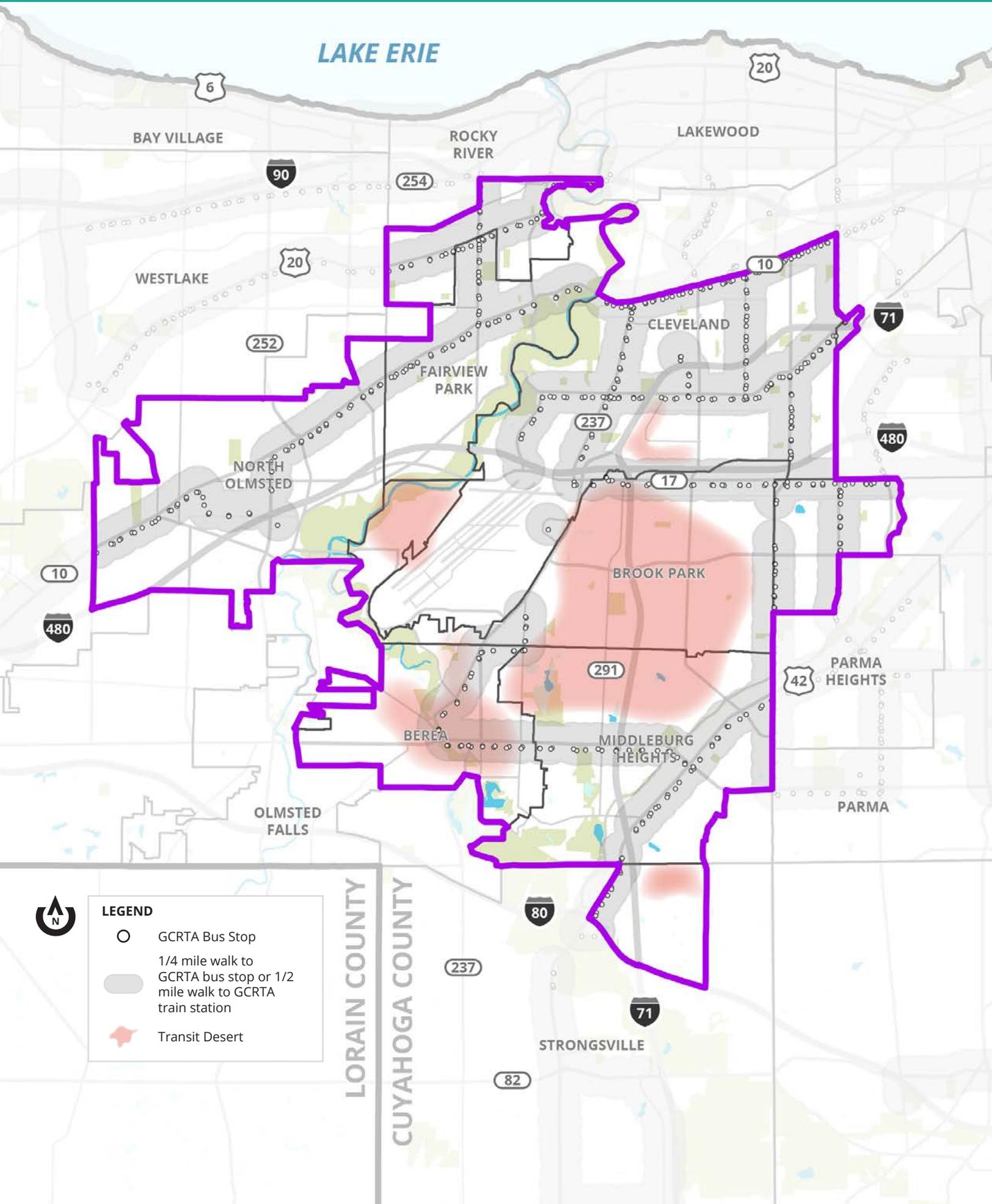
The largest transit deserts are located in areas just west of Cleveland Hopkins International Airport, including NASA, in addition to much of Brookpark's manufacturing core. Other areas include parts of Cleveland's Industrial Parkway and areas in Strongsville. Additionally, where there are regularly operating transit lines in Berea, the average running time between buses is in excess of one hour, making transit use difficult. In general, this indicates a need for strengthened public transit that connects workers to the Aerozone's numerous job hubs.

### LEAST ACCESSIBLE AEROZONE INDUSTRIES BY PERCENT OF TOTAL JOBS WITHIN 1/4 MILE OF EXISTING TRANSIT STOPS



Source: Greater Cleveland Regional Transit Authority (GCRTA), 2022; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019

# GCRTA TRANSIT AVAILABILITY



## LEGEND

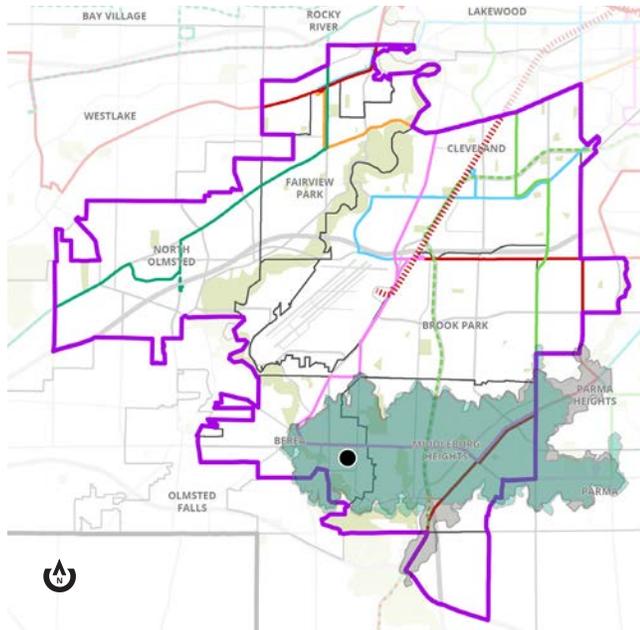
- GCRTA Bus Stop
- 1/4 mile walk to GCRTA bus stop or 1/2 mile walk to GCRTA train station
- ★ Transit Desert

LORAIN COUNTY  
CUYAHOGA COUNTY

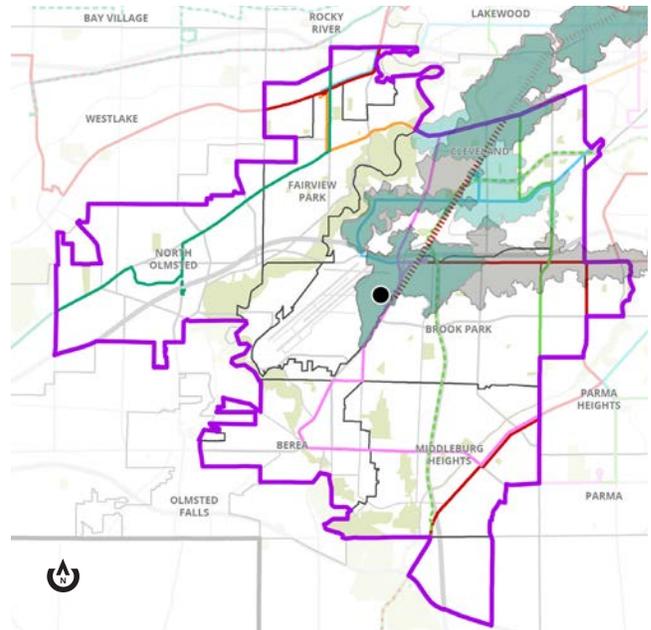
# 3.11 TRANSIT ACCESSIBILITY

This series of maps showcases how far people can access various areas within 30 minutes during rush hour (8:00am and 5:00pm) from key destinations via existing transit routes throughout the Aerozone. As displayed below, regional accessibility varies greatly from these destinations. This is due to a number of factors, such as transit frequency, presence of bus stops, and physical access to bus routes. In general, some key Aerozone destinations and employers have limited reach in terms of regional access via transit—a potential hindrance to workforce attraction and retention efforts, in addition to economic development.

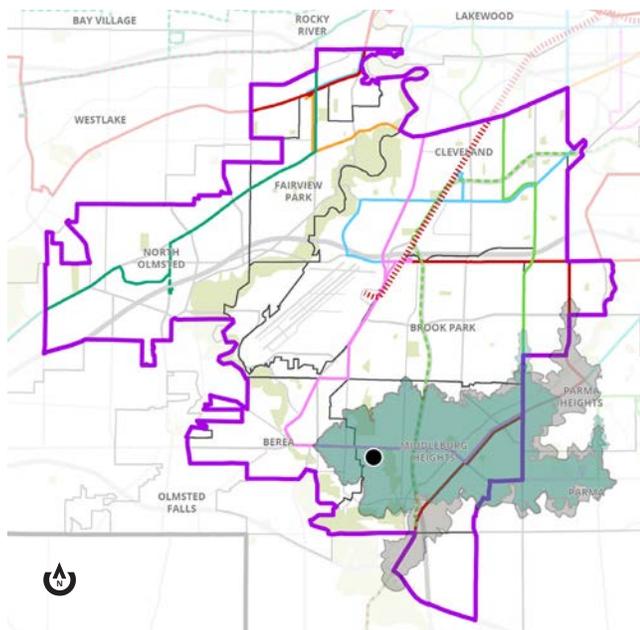
### BALDWIN WALLACE UNIVERSITY



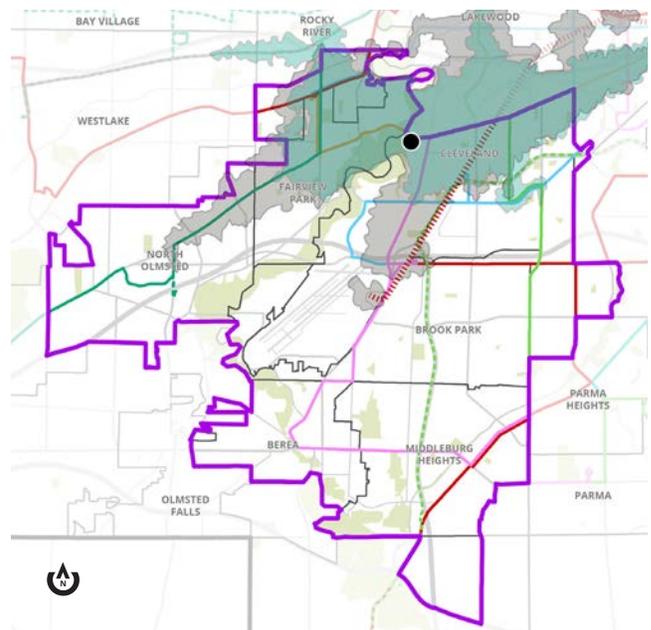
### CLEVELAND HOPKINS INTERNATIONAL AIRPORT



### SOUTHWEST GENERAL HOSPITAL



### FAIRVIEW HOSPITAL

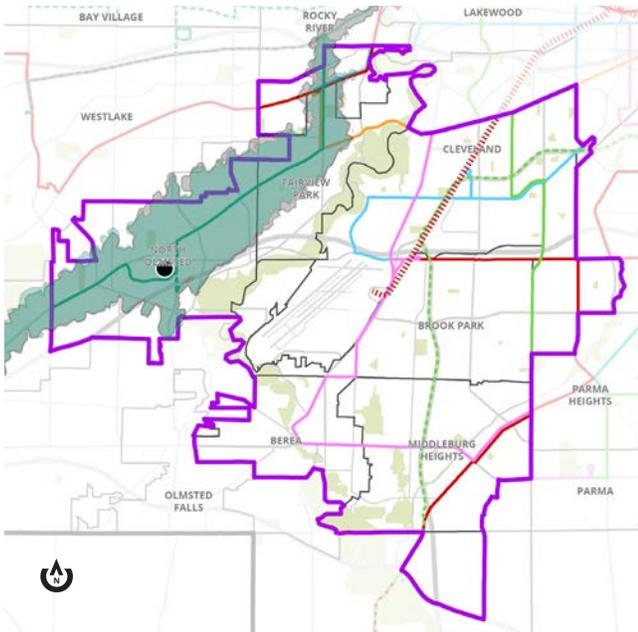


Source: County Planning; Travel Time Maps, 30 minute transit sheds, 8:00am arrival time, 5:00pm departure time

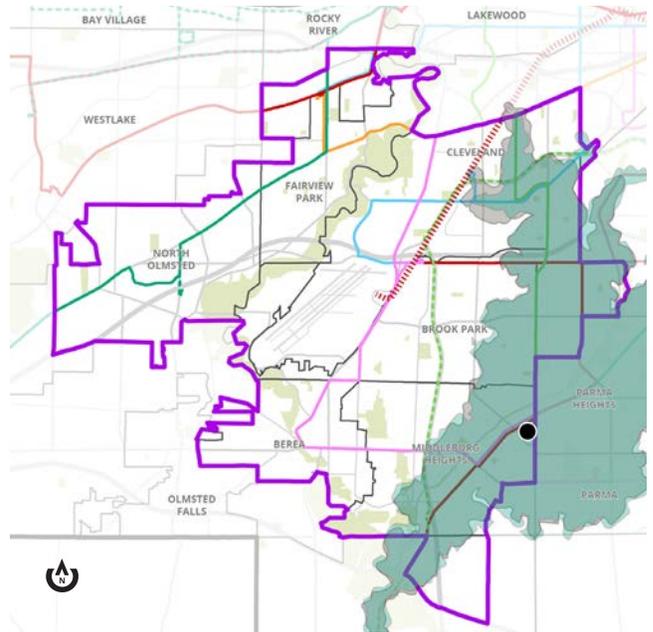
**LEGEND**

- GCRTA Regular Routes
- GCRTA Park-N-Ride Routes
- GCRTA Rail Lines
- Transit Shed Origin Point
- 30 Minute Transit Shed (5:00pm departure)
- 30 Minute Transit Shed (8:00am arrival)

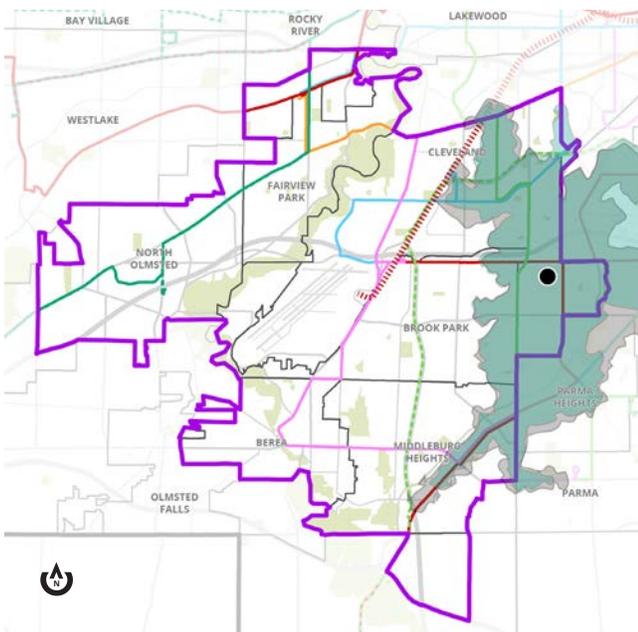
**GREAT NORTHERN MALL**



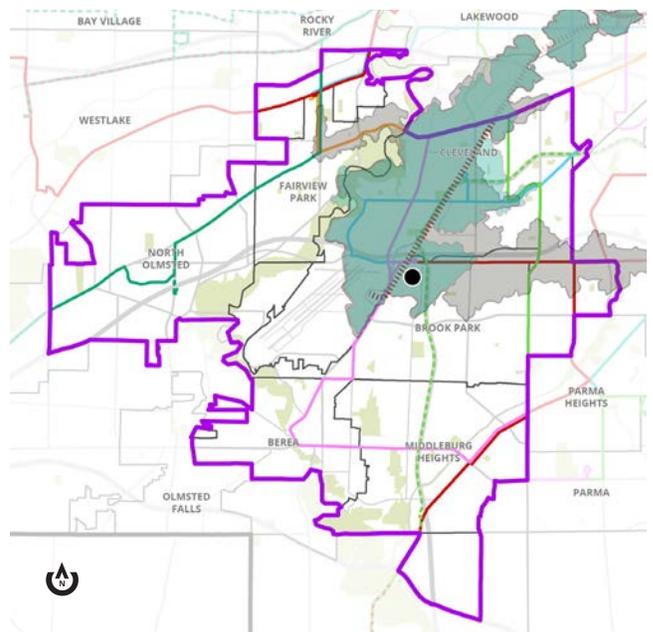
**SOUTHLAND SHOPPING CENTER**



**GM METAL FABRICATION DIVISION**



**FORD MOTOR COMPANY CLEVELAND ENGINE**



Source: County Planning; Travel Time Maps, 30 minute transit sheds, 8:00am arrival time, 5:00pm departure time

## 3.12 RAIL FREIGHT NETWORK

In 2020, the State of Ohio ranked third nationally in terms of total rail miles (5,330 miles), accounting for nearly 4% of the United State's rail network (3.9%); however approximately 2%, or 142 miles, of the State's rail lines are inactive or abandoned. The rail lines located within the Aerozone are owned and operated by two main railroads: 1) Norfolk Southern Corporation; and 2) CSX Transportation, Inc. Combined, both of these railroads operate over 3,000 miles of active Class 1 Rail Lines—which are rail lines that have annual operating revenues in excess of \$447.6 Million—within Ohio and are the most heavily used throughout state. Their highest-density east-west lines are located in the northern portion of the state and run directly through the Aerozone. The rail freight network throughout the Aerozone is highly active and provides the robust infrastructure necessary to directly compete with truck freight alternatives.

There are 22 total active rail crossings within the Aerozone. 17 are owned by CSX and the remaining 5 are owned by Norfolk Southern. All but four crossings occur at-grade, which often carry higher risks for collisions than above or below grade crossings. From 2014-2020 there were 31 train related crashes in Cuyahoga County, including four fatalities. There was one train related crash in 2020 within the Aerozone at Brookpark Road near the GM Plant in the City of Parma.



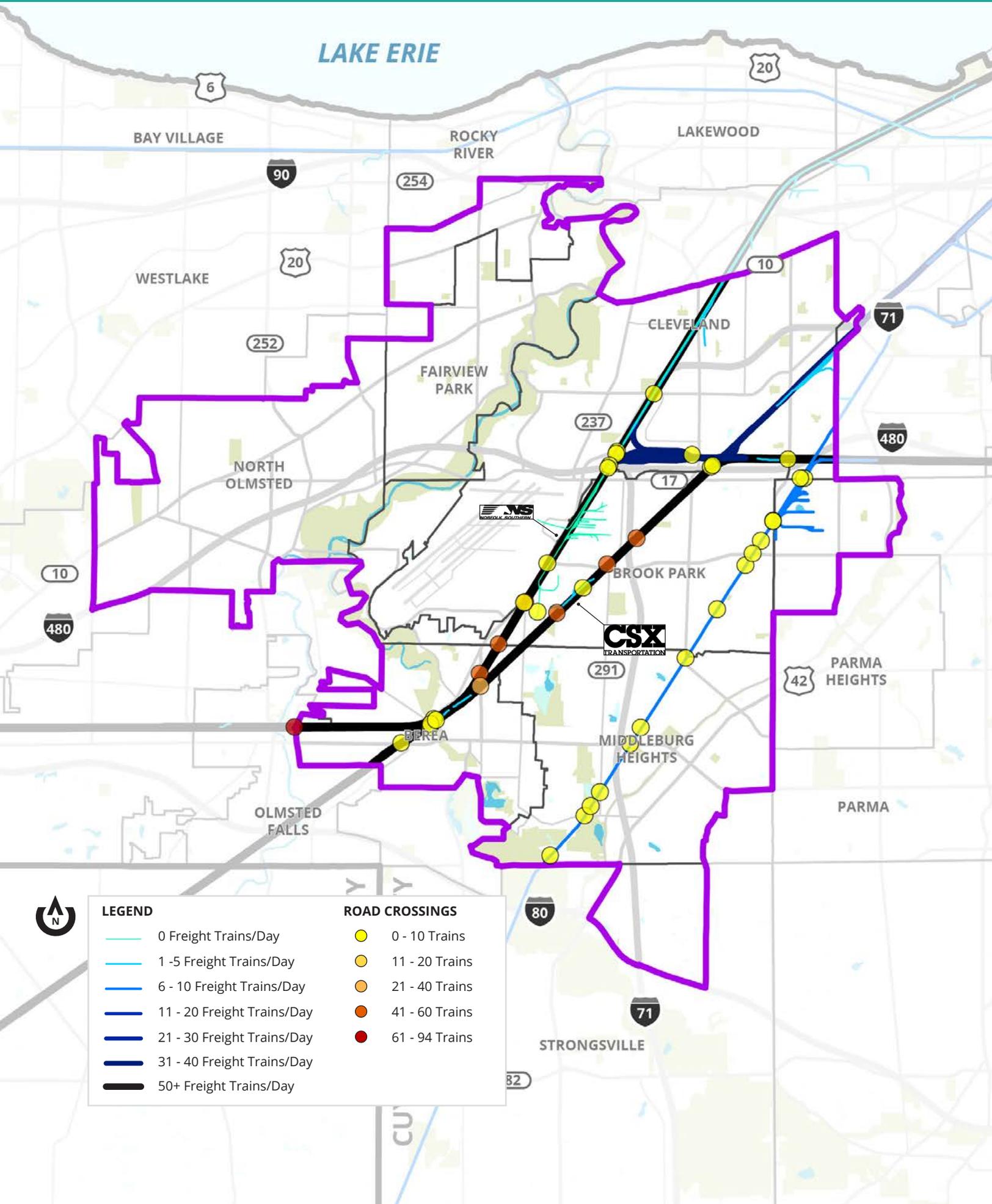
17 Rail Crossings  
3 Over Road (bridge)  
14 At-Grade  
209 Trains/Day



5 Rail Crossings  
1 Below Road (tunnel)  
4 At-Grade  
238 Trains/Day

Source: State of Ohio Rail Plan, Ohio Rail Development Commission, 2019; Transport Ohio Statewide Freight Plan, Ohio Department of Transportation, 2019; Association of American Railroads, Freight Railroads in Ohio, 2019; Rail Statistics Report, Ohio Public Utilities Commission, 2020; ODOT Transportation Information Mapping System (TIMS), Ohio Rail Lines, 2022

# EXISTING RAIL FREIGHT NETWORK



## LEGEND

- 0 Freight Trains/Day
- 1 - 5 Freight Trains/Day
- 6 - 10 Freight Trains/Day
- 11 - 20 Freight Trains/Day
- 21 - 30 Freight Trains/Day
- 31 - 40 Freight Trains/Day
- 50+ Freight Trains/Day

## ROAD CROSSINGS

- 0 - 10 Trains
- 11 - 20 Trains
- 21 - 40 Trains
- 41 - 60 Trains
- 61 - 94 Trains

## 3.13 BICYCLE NETWORK

The Aerozone has an extensive bicycle network that not only helps connect people with destinations and jobs, but also to regional amenities, including the Cleveland Metroparks. Within northeast Ohio, Cleveland Metroparks has over 100 miles of paved all-purpose trails, eight golf courses, and 18 unique reservations that cover more than 24,000 acres across 24 communities. The Aerozone contains nearly all of the Cleveland Metroparks Rocky River Reservation, which includes 13.6 miles of all-purpose trails and 14.2 bridle trails. Additionally, the Aerozone has portions of Cleveland Metroparks' Mill Stream Run Reservation and Big Creek Reservation, which are primarily located in Berea and Middleburg Heights.

While these trail amenities provide key connections and recreational opportunities to residents and workers, there exist gaps in the network that hinder access to job hubs and major employers. As identified through the Cuyahoga Greenways Plan—a vision for a county-wide interconnected system of bicycle facilities—there are numerous opportunities for new on- and off-road facilities along or near key corridors. These connections could improve non-motorized traffic throughout the Aerozone, which will help expand transportation options.

Off-road facilities include bicycle infrastructure separated from the roadway. This generally includes paved all-purpose trails and paths.



**The Aerozone has over 23 miles of existing all-purpose trails...**

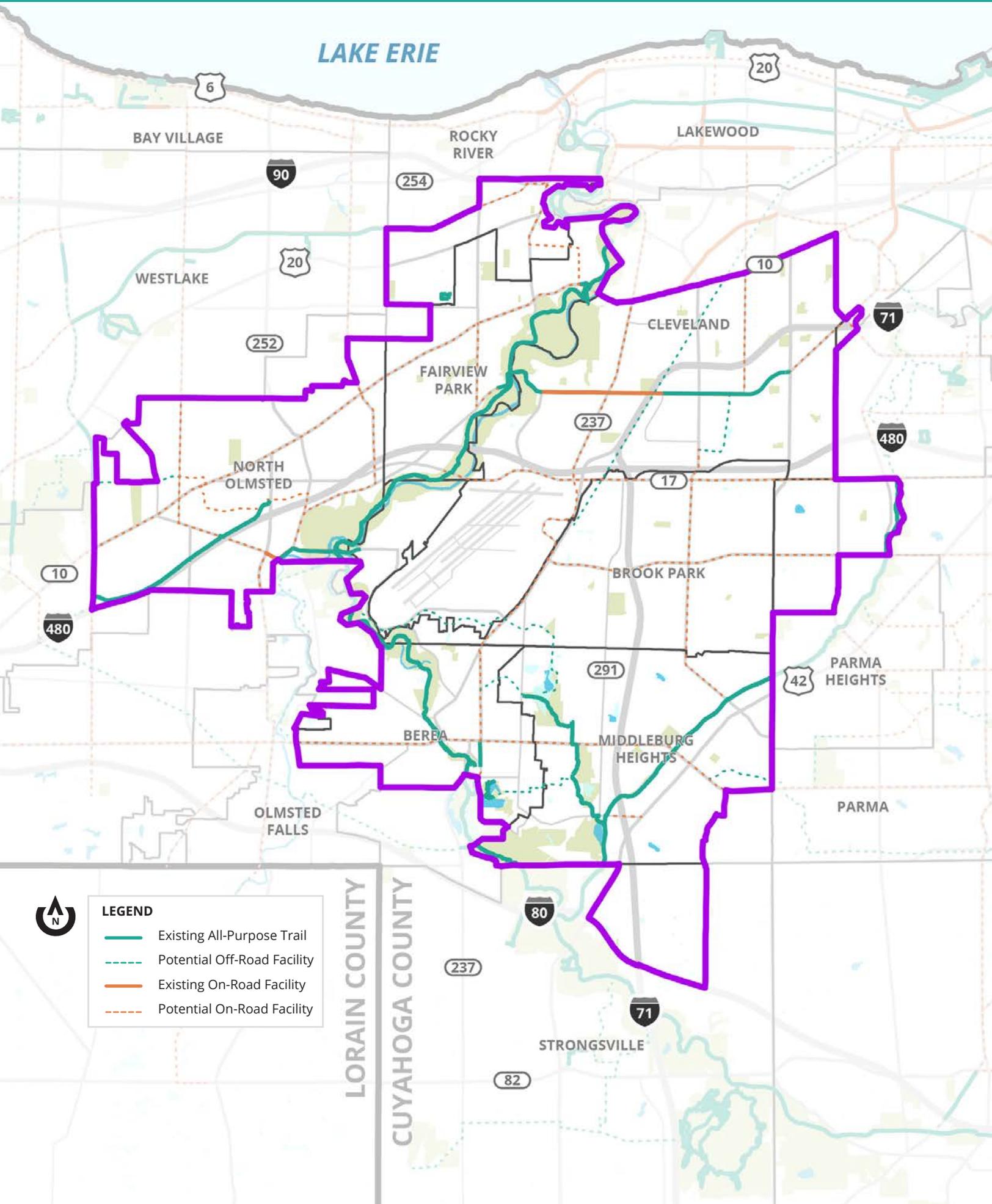
On-road facilities include bicycle infrastructure built into the roadway itself. This could include bike lanes, buffered bike lanes, sharrows, or other similar features.



**But currently has less than 3 miles of on-road facilities.**

Source: County Planning

# EXISTING & POTENTIAL BICYCLE NETWORK



LAKE ERIE

BAY VILLAGE

ROCKY RIVER

LAKEWOOD

WESTLAKE

CLEVELAND

FAIRVIEW PARK

NORTH OLMSTED

BROOK PARK

BERBA

MIDDLEBURG HEIGHTS

OLMSTED FALLS

PARMA HEIGHTS

PARMA

STRONGSVILLE

LORAIN COUNTY  
CUYAHOGA COUNTY



## LEGEND

- Existing All-Purpose Trail
- Potential Off-Road Facility
- Existing On-Road Facility
- Potential On-Road Facility

## 3.14 EXISTING GATEWAY SIGNS

Gateway signs are an important component for placemaking, marketing, and spatial awareness for visitors. They are often the first and last thing visitors see, and gateway signs also offer a unique opportunity for additional collaboration. The Aerozone contains portions of nine communities, each with their own identity, character, and signage style. While individual expression is a way to showcase community pride, consistency in design, signage placement, colors, or other similar elements can help the Aerozone feel more cohesive.

In addition to community gateways, Cleveland Hopkins International Airport and NASA Glenn Research Center also have their own gateway signs that integrate unique branding, messaging, and design—which offers another opportunity for further collaboration.

In general, gateway signs found throughout the Aerozone vary greatly in size, material, location, and design that make each entity stand out. This indicates an opportunity to integrate common elements into these signs in order to make the Aerozone more cohesive across all aspects of the district.

### EXAMPLES OF EXISTING AEROZONE GATEWAY SIGNS

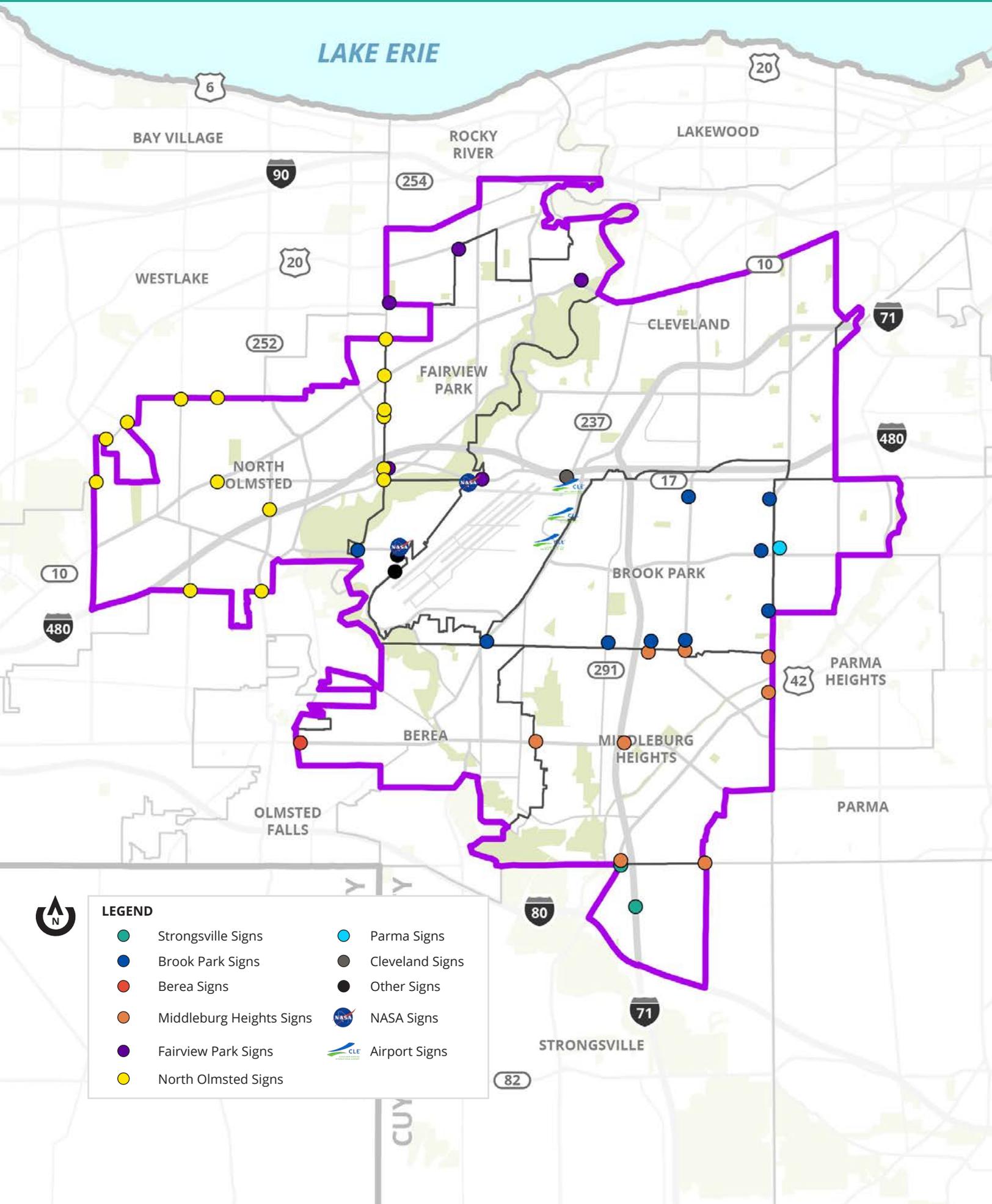


Existing gateway signage found throughout the Aerozone varies greatly in size, scale, location, material, and various other elements.



Source: County Planning; Google Earth; City of Berea; City of Brook Park; City of Cleveland; City of Fairview Park; City of Middleburg Heights; City of North Olmsted; City of Rocky River; City of Strongsville; West Park Kamm's CDC; NASA; Cleveland Hopkins International Airport

# EXISTING GATEWAY SIGNS



## LEGEND

- Strongsville Signs
- Brook Park Signs
- Berea Signs
- Middleburg Heights Signs
- Fairview Park Signs
- North Olmsted Signs
- Parma Signs
- Cleveland Signs
- Other Signs
- NASA Signs
- Airport Signs



# LAND USE & ZONING

Understanding existing land use and zoning is often the first step to planning and making large economic development decisions. The Aerozone is a composition of nine individual communities, each with their own ordinances, approval processes, and environmental constraints—all of which could potentially hinder future development if not carefully evaluated.

This section explores existing land use and zoning found throughout the Aerozone. This includes topics such as potential redevelopment sites, the age and height of commercial and industrial buildings, and environmental constraints.



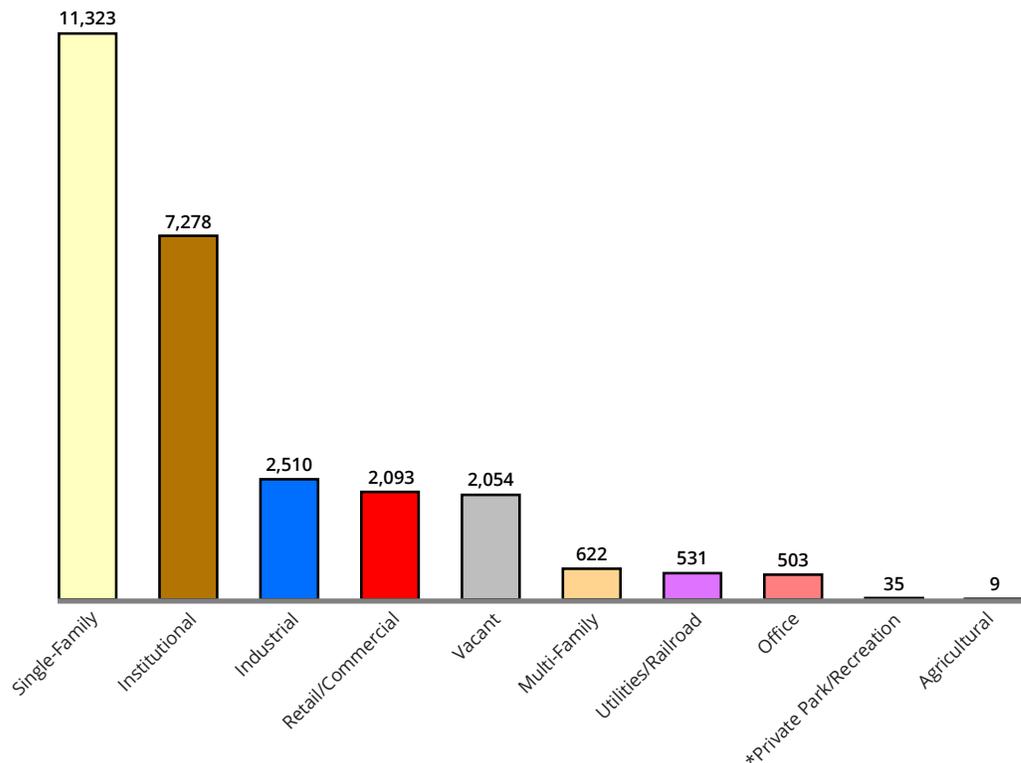
## 3.15 GENERALIZED LAND USE

Land use refers to the current utilization of an area and represents existing activities on that land. Types of uses typically include broad categories such as industrial, residential, commercial, and open space. The two largest land uses within the Aerozone are single-family residential and institutional uses, which also includes parks and open spaces; when combined they account for 69% or 18,601 acres of land. This is followed by industrial, commercial, and vacant land uses, which account for an additional 25% or 6,657 acres within the Aerozone. The remaining 6% of land falls under one of the six remaining land use categories: multi-family residential (2%); utilities/railroad (2%); office (2%); private or municipal parks (<1%); and agricultural (<1%).

Much of the vacant land found throughout the Aerozone is scattered among its nine representative communities. However, there are a number of larger parcels available for redevelopment east of the airport, including the former Ford plant and clusters of available sites in the adjacent communities of Middleburg Heights and Berea. This indicates an opportunity for redevelopment and collaboration across communities to support the economic development goals of the Aerozone.

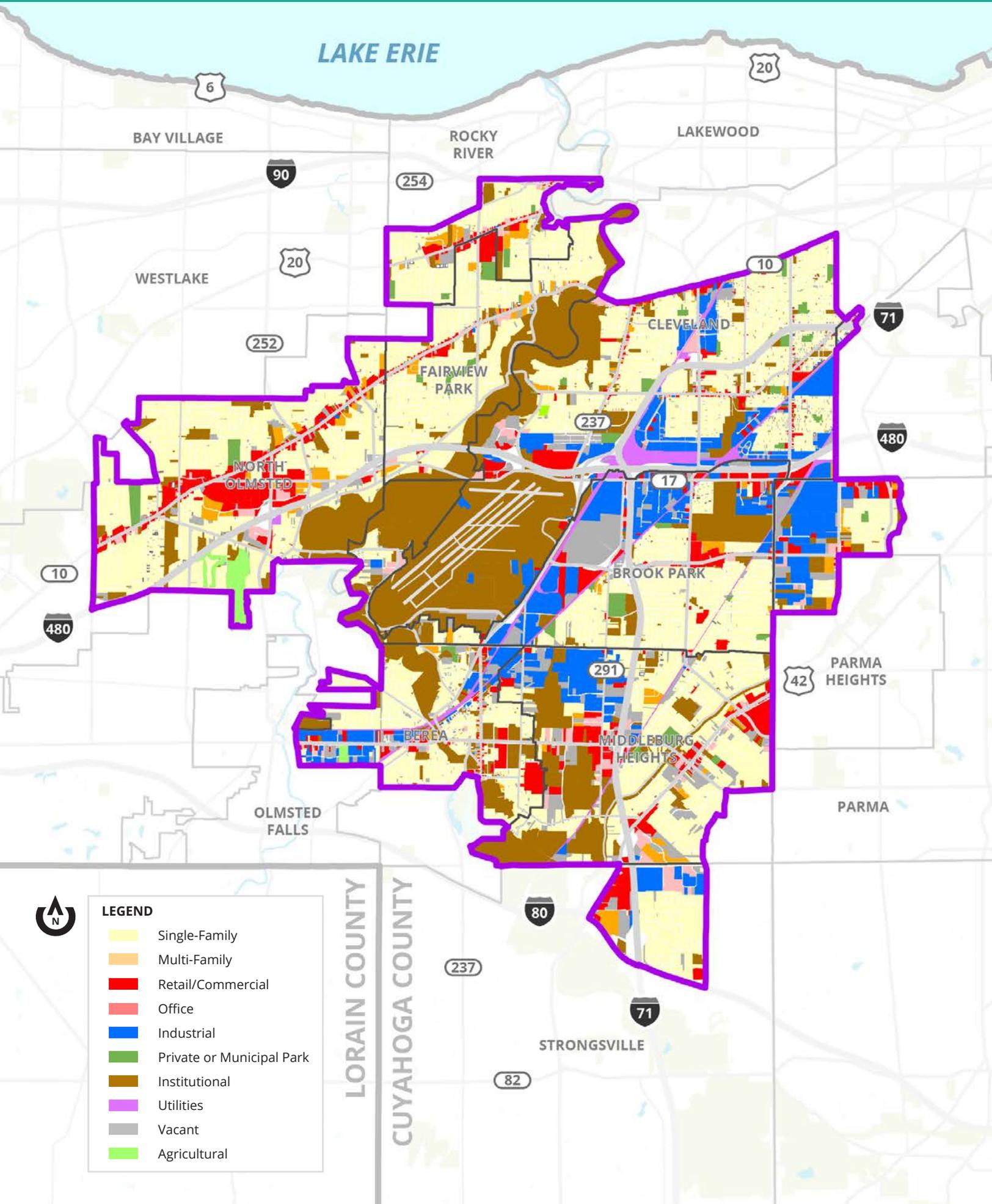
### AEROZONE LAND USES IN ACRES

\*Private or Municipal Park data does not include any Cleveland Metroparks owned recreation or open spaces within the Aerozone.



Source: County Planning; Cuyahoga County Fiscal Office, 2021

# GENERALIZED LAND USE



## 3.16 GENERALIZED ZONING

Zoning is an important regulatory tool that seeks to protect public health and quality of life by organizing land into well-defined districts with specific regulatory requirements. This generally includes such categories as building density, design, site layout, landscaping, and other factors that seek to support desired development patterns.

The predominant zoning classification within the Aerozone is single-family residential, which accounts for 55% of total land area.

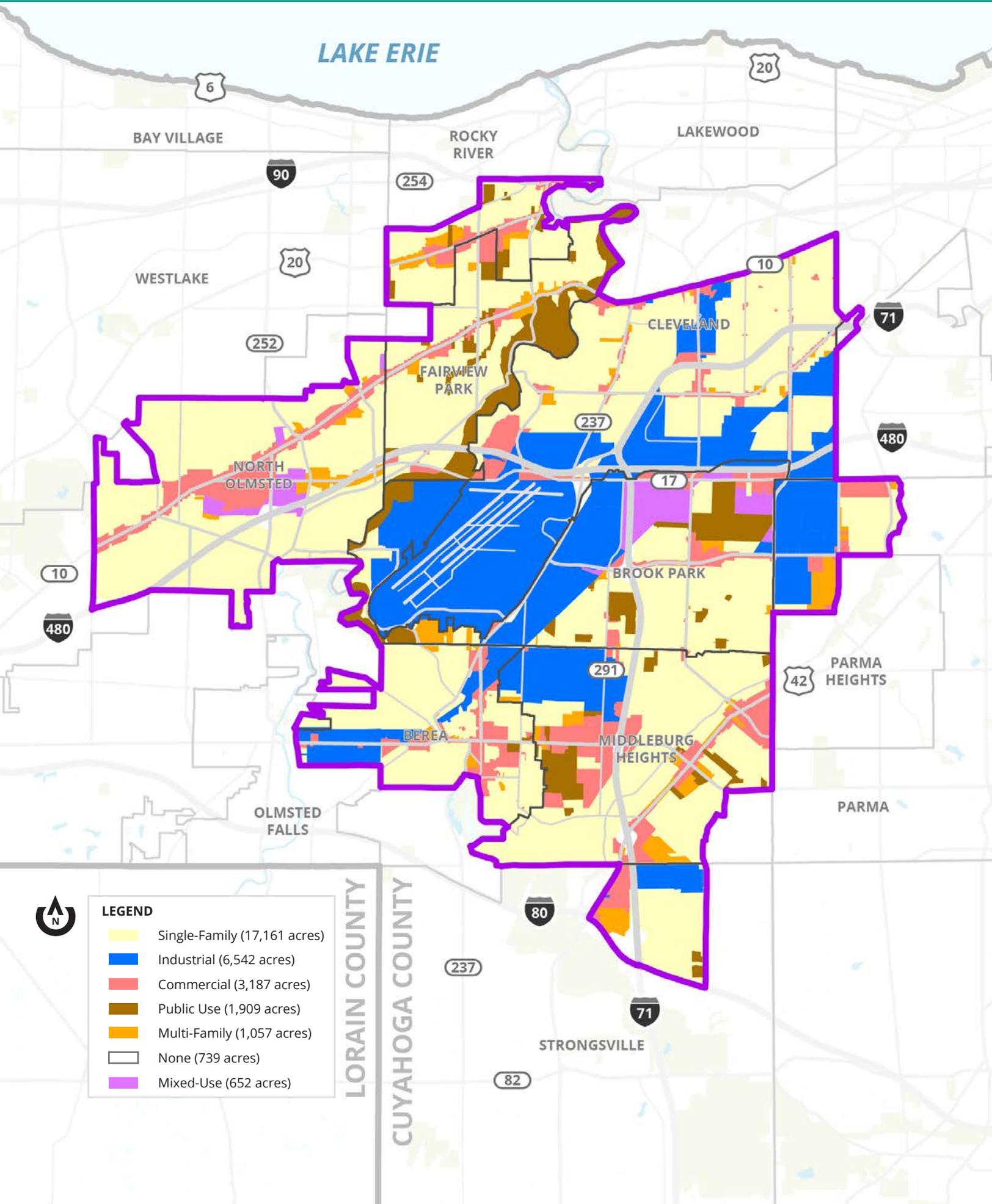
While much of the Aerozone's current zoning falls within industrial and commercial classifications, the most prevalent zoning classification is single-family residential, which accounts for over 55% of total land area or 17,161 acres—nearly three times more land area than the next largest zoning classification: industrial zoning. Industrial and commercial zoning are the next largest zoning classifications within the Aerozone—when combined, they account for 31% or 9,729 acres of land—which also contain some of the largest redevelopment opportunities. The remaining 14% or 4,357 acres of land within the Aerozone includes a combination of public, multi-family, and mixed-use zoning classifications.

Importantly, the Aerozone contains nine individual communities, each with their own supporting regulations and zoning districts as seen in the chart below. While the generalized zoning is displayed here shows similar categories, specific regulations within districts may vary. This indicates an opportunity for neighboring Aerozone communities to coordinate across their borders for mutual economic benefit.

EXISTING AEROZONE MUNICIPALITY ZONING DISTRICTS					
	Industrial	Commercial	Public Use	Mixed-Use	Residential
City of Berea	GI	TO, NC, CC, DT, UT, DD, BR-CD	CD, EI	PUD	R-SF-A, R-SF-B, R-SF-T, MFR
City of Brook Park	U-4, U-5A, U-5B, U-5C	U-3A, U-3D, U-3B, U-6, U-7, U-7AE, U-8	-----	-----	U-1, U-2
City of Cleveland	UI, GI, SI, RI	LRB, SC, UCR, GRB, CBD, EO, LR, PRO, P	CR, UG, IR, OSR	MMUD, LWO	L1F, 2F, RA, LMF, MF, DR, RO, MHP
City of Fairview Park	-----	GB-A, GB-B, OB-1, OB-2	CR	OB-3	R1F-75, R1F-60, R1F-50, R1F-40, R2F, RMF-G, RMF-HR, RMF-TH, PD, SH
City of Middleburg Heights	GI	GB, O	PI	PMU	R1-A, R1-C, R2-F, RMF, RSL
City of North Olmsted	LI	B-1, B-2, B-3, OB	-----	B-4, MU-A, MU-C, MU-D	R1-A, R1-B, R1-C, 2FR, RC, MR, SR, RO
City of Parma	I, RM, IP	AP, SC, OB, RB, CM-A, CM-B	OS-1	MU-A, MU-B, MU-C	SF-H, 2FH, SF-C, MF
City of Rocky River	SM	LB, GB, CBD, OB-1, OB-2	PF, FW	MX	R-1, R-2, R-3, R-4, R-5, R-6, R-7
City of Strongsville	RD, CS, GI, GI-A	LB, GB, SC, MS, R-RS, OB, PDA-1, PDA-2	PF, PRDA	-----	R1-75, R1-100, R1-125, R2F, OF-C, RT-C, RMF-1, SR-1, SR-2, ER

Source: County Planning; City of Berea; City of Brook Park; City of Cleveland; City of Fairview Park; City of Middleburg Heights; City of North Olmsted; City of Parma; City of Rocky River; City of Strongsville; Cuyahoga County Fiscal Office, 2015

# GENERALIZED ZONING CLASSIFICATIONS



LAKE ERIE

BAY VILLAGE

ROCKY RIVER

LAKEWOOD

WESTLAKE

CLEVELAND

FAIRVIEW PARK

NORTH OLMSTED

BROOK PARK

BEREA

MIDDLEBURG HEIGHTS

PARMA HEIGHTS

OLMSTED FALLS

PARMA

LORAIN COUNTY

CUYAHOGA COUNTY

STRONGSVILLE

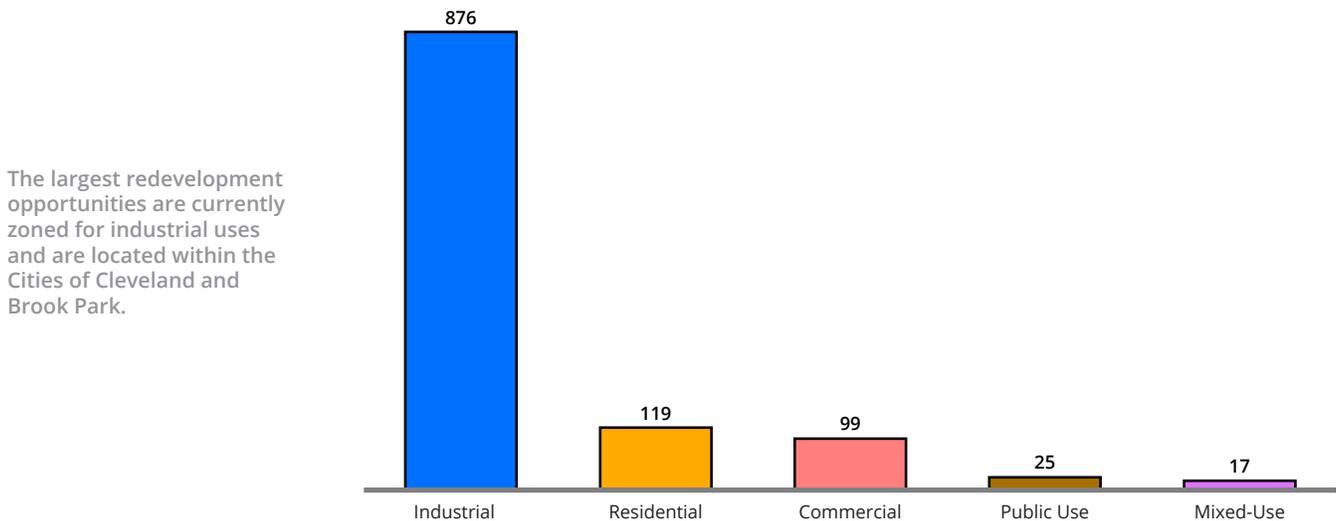
## 3.17 POTENTIAL REDEVELOPMENT SITES

As an airport area situated within existing communities, much of the Aerozone is largely built-out, and new economic development initiatives will need to focus on redevelopment opportunities. Currently, there are approximately 1,135 acres of land available that have been identified for potential redevelopment within the Aerozone. These redevelopment areas were identified through an extensive and collaborative process with Aerozone communities, partners, and agencies to help locate where the best redevelopment opportunities exist. The majority of this land is zoned for industrial uses (77% or 876 acres), however there are also sites that have been identified within residentially zoned areas (10% or 119 acres), commercially zoned land (9% or 99 acres), within publicly zoned land (2% or 25 acres), and mixed-use zoned areas (2% or 17 acres).

The priority sites identified on the map include vacant land as well as sites that have existing businesses and in-use properties, meaning redevelopment will require ongoing collaboration and coordination. The largest redevelopment opportunities are currently zoned for industrial uses and are located within the Cities of Cleveland and Brook Park. This includes land around the I-X Center and just south of I-X Center Drive, the former Ford plant east of the airport, land north of the airport and I-480, and land north of I-71 around W. 150<sup>th</sup> Street.

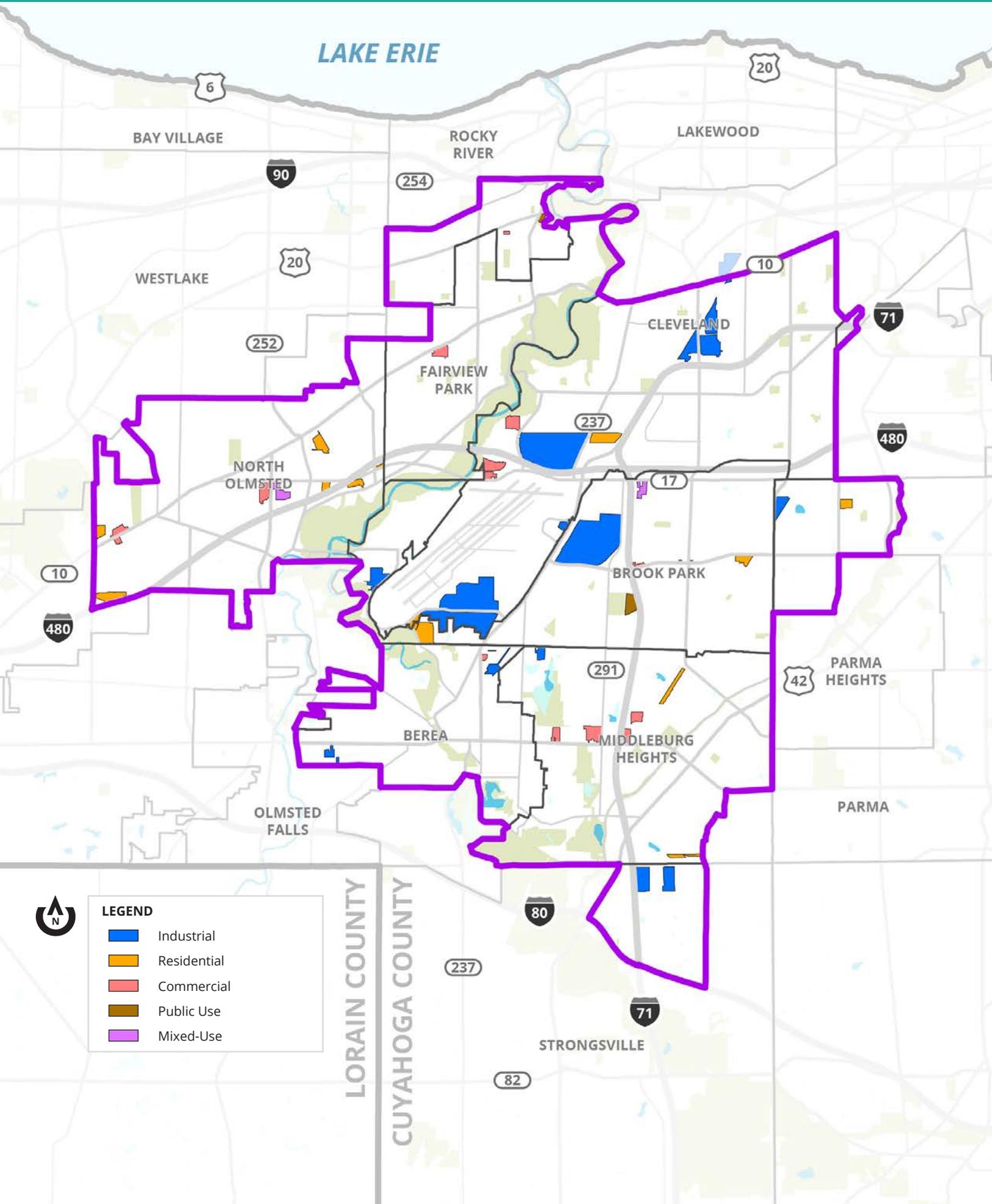
In general, these sites vary greatly in size, ownership, and redevelopment readiness, but all share an opportunity to support the economic development initiatives of the Aerozone.

### POTENTIAL REDEVELOPMENT SITES BY GENERALIZED ZONING CLASSIFICATIONS, IN ACRES



Source: County Planning; TeamNEO; Cuyahoga County Department of Development; City of Berea; City of Brook Park; City of Cleveland; City of Fairview Park; City of Middleburg Heights; City of North Olmsted; City of Rocky River; City of Strongsville; West Park Kamm's CDC

# POTENTIAL REDEVELOPMENT SITES BY GENERALIZED ZONING CLASSIFICATIONS



## 3.18 COMMERCIAL & INDUSTRIAL BUILDING AGE

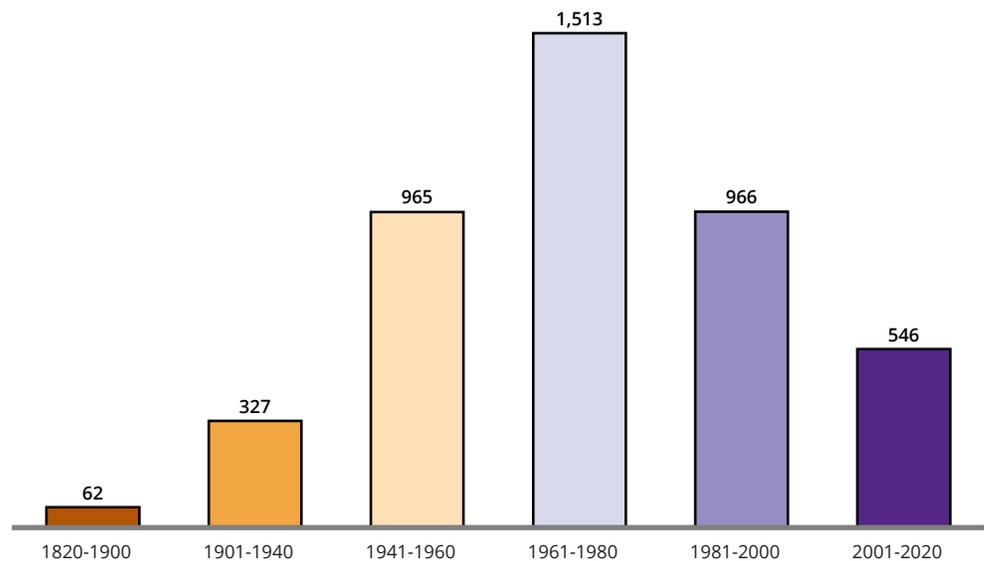
The Aerozone has approximately 4,379 commercial and industrial structures. Among these structures, 35% were constructed between 1961 to 1980 (1,513 buildings). The remaining 65% of structures were constructed either prior to 1961 (1,354 buildings) or after 1980 (1,512 buildings), with the earliest being built in 1820. At the end of 2021, the average U.S. commercial building was approximately 53 years old. However, in 2020 the average age for commercial buildings within the Aerozone was 50 years old; making Aerozone commercial structures slightly newer than similar structures nationwide.

In terms of the commercial building age within Aerozone communities, the youngest average age can be found in the City of Strongsville; which has an average age of 34 years old. This is followed by the Cities of Middleburg Heights and Parma, each with average commercial and industrial building ages at 38 years old. The oldest buildings can be found within the City of Fairview Park, which has an average commercial and industrial building age of 58 years old. This is followed closely by the Cities of Cleveland (56 years), Rocky River (53 years), and Berea (52 years), all with average ages older than the Aerozone's average of 50 years old.

In general, the Aerozone's commercial and industrial structures are slightly newer than national averages, but development has slowed since 1980—a 64% reduction in new buildings since peak Aerozone construction between 1961 and 1980. Though slow, this indicates continued investment throughout the Aerozone; however the lack of greenfield development opportunities will necessitate reinvestment and redevelopment to remain competitive.

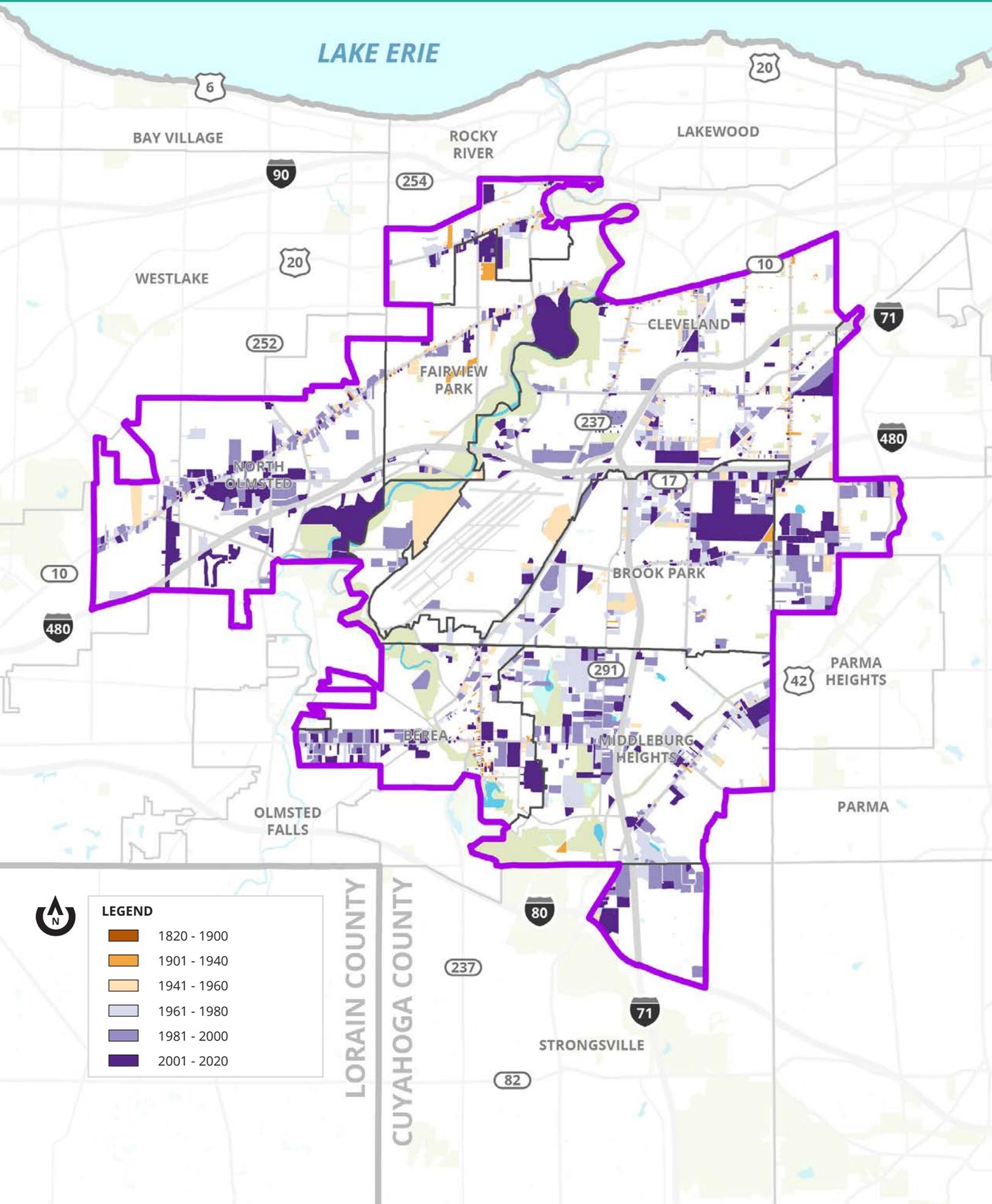
### NUMBER OF AEROZONE BUILDINGS BY AGE

Some of the newest commercial structures to be built within the Aerozone will be part of the Forward Innovation site redevelopment project in the City of Brookpark on 5 Points Road.



Source: Cuyahoga County Fiscal Office, 2021; Research Commentary, Age of U.S. Commercial Buildings, Stuart A. Feldstein

# COMMERCIAL & INDUSTRIAL BUILDING AGE BY PARCEL



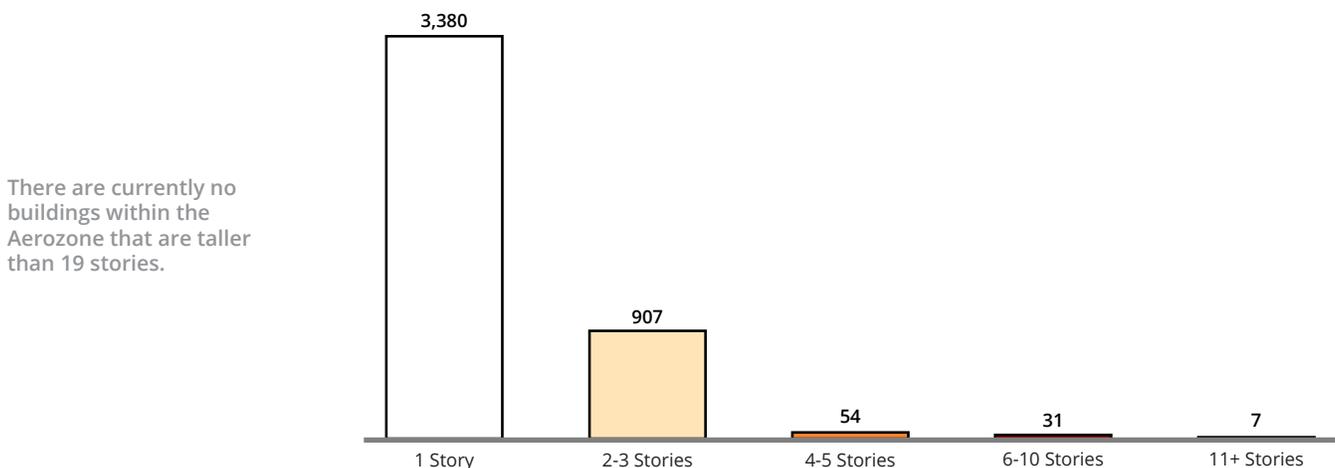
## 3.19 COMMERCIAL & INDUSTRIAL BUILDING HEIGHT

The Aerozone is located within an urbanized area in Cuyahoga County that has a wide spectrum of land uses and development types. An "urban area" is defined as a contiguous built-up area with a population of over 50,000 residents. These areas can include densely populated cores and adjacent suburban fringes, which in many cases share similar characteristics—higher density development, taller buildings, and more developed infrastructure. However, due to the Aerozone being comprised of nine separate jurisdictions with individual zoning and design regulations, buildings can vary greatly from one site to the next.

Overwhelmingly, the majority of commercial and industrial building within the Aerozone are only one story in height (77% or 3,380 buildings). Another 21% of buildings are between two and three stories tall (907 buildings), while just over 2% of buildings are over three stories in height (2.1% or 92 buildings). The tallest building within the Aerozone is the Victoria Plaza Apartment building in North Olmsted on Country Club Boulevard, which is 19 stories in height.

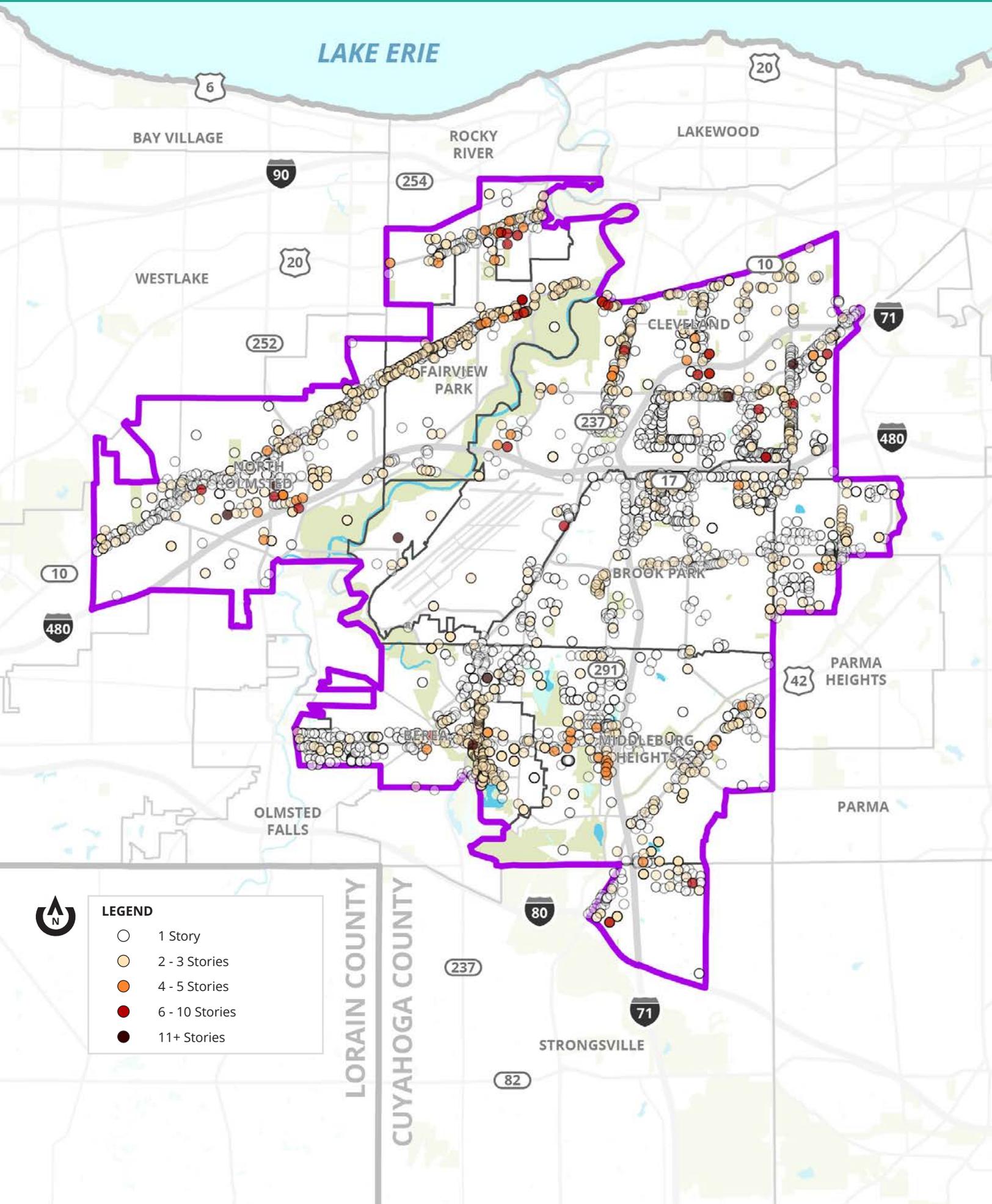
Buildings that are shorter in height with lower density are uncharacteristic of urbanized areas, but not necessarily unique to the Aerozone. This indicates an opportunity for building expansions that could help support economic growth throughout the Aerozone. However, this would be dependent upon individual community zoning regulations, development review processes, and proximity to the airport's landing field.

### COMMERCIAL & INDUSTRIAL AEROZONE BUILDINGS BY NUMBER OF STORIES



Source: Cuyahoga County Fiscal Office, 2021

# COMMERCIAL & INDUSTRIAL BUILDINGS BY NUMBER OF STORIES



LAKE ERIE

BAY VILLAGE

ROCKY RIVER

LAKEWOOD

WESTLAKE

CLEVELAND

FAIRVIEW PARK

NORTH OLMS TED

BROOK PARK

PARMA HEIGHTS

OLMSTED FALLS

MIDDLEBURG HEIGHTS

PARMA

STRONGSVILLE

LORAIN COUNTY

CUYAHOGA COUNTY

## LEGEND

- 1 Story
- 2 - 3 Stories
- 4 - 5 Stories
- 6 - 10 Stories
- 11+ Stories



## 3.20 URBAN FORM

Urban form corresponds to the physical characteristics that make up developed areas. This can include elements such as the shape, size, density, and configuration of buildings. Throughout the Aerozone there are numerous examples of both commercial and industrial urban forms unique to this area. Urban form is important because it establishes a sense of place. Incompatible urban forms can lead to disjointed development patterns, which can be confusing and potentially have unfavorable economic impacts. Identified below are examples of existing commercial and industrial urban forms found in the Aerozone.

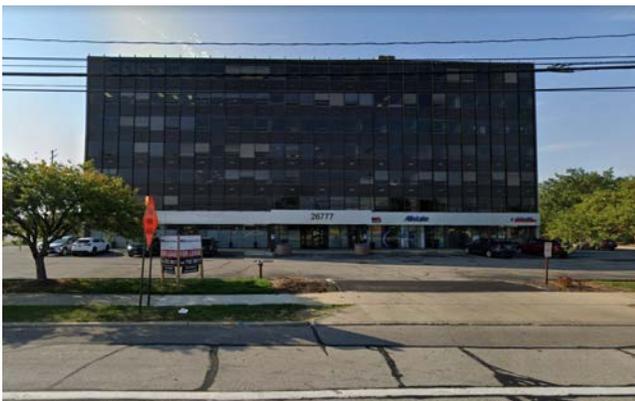
### COMMERCIAL AEROZONE URBAN FORM: LORAIN ROAD/COUNTRY CLUB BLVD



This section of Lorain Road in North Olmsted is predominantly auto-centric with building orientation and access focused on vehicular movements. The wide roads and expansive parking lots have created an urban form that is less compact and walkable; which have in-turn created gaps in the urban fabric that could be opportunities for other uses or new development.



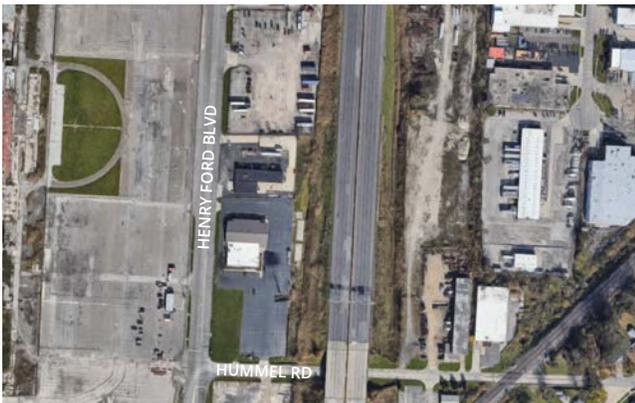
Looking north from this location on Lorain Road, parking lots are clearly delineated by a concrete barrier, eliminating the opportunity for shared parking. Additionally, these buildings are oriented for the quick and efficient flow of vehicles with limited landscaping and no clear pedestrian paths to safely access the front doors of businesses.



Looking south from this location on Lorain Road, a much taller structure begins to bring in a higher-density urban form. However, parking lots also dominate the front presence of this building and increases setbacks from the main road. Additionally, this is the only building of this scale present in this area.

Source: County Planning; Google Earth

## INDUSTRIAL AEROZONE URBAN FORM: HENRY FORD BOULEVARD/HUMMEL ROAD



This section of Henry Ford Boulevard in Brook Park is a combination of small commercial buildings, larger industrial operations and warehouses, and expansive vacant areas. Due to truck deliveries and the movement of heavy machinery, the roadway and drive lanes are wide with no pedestrian facilities. In general, buildings vary greatly in size and orientation to the street with very large parking lots—creating an urban form with a finite group of potential uses.



Looking west from this location on Henry Ford Boulevard, the streetscape is largely void of urban form, and is occupied by wide drive lanes and expansive parking lots. Under-productive sites can be an opportunity to require new buildings to be compatible with their context, meaning consistent urban form. These areas are an opportunity to define and set the standard for new urban form that can support continued reinvestment.



Looking east from this location on Henry Ford Boulevard, there are smaller commercial structures that are generally one to two stories in height. These structures tend to be setback over 40 feet from the road and have moderately sized front parking lots with additional parking located around multiple sides of the building. This urban form is disconnected and individual properties tend to serve a single purpose, potentially limiting the scope and scale of economic growth.

Source: County Planning; Google Earth

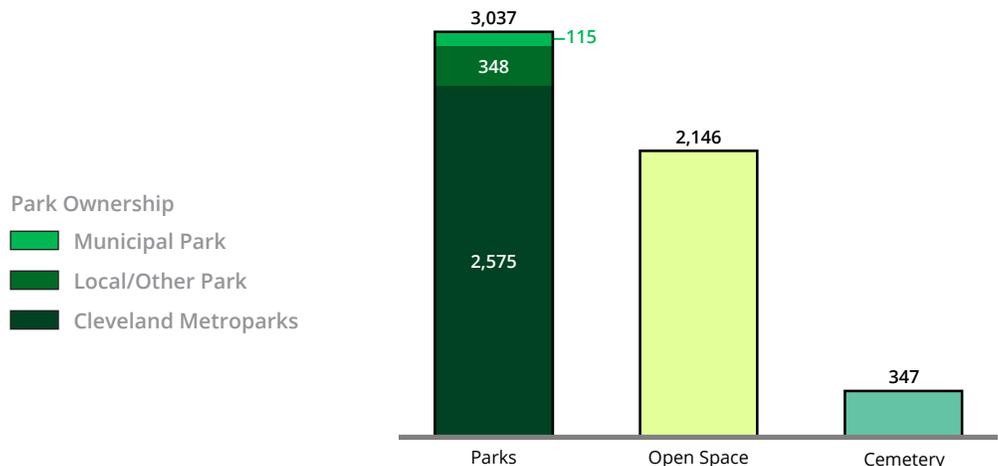
## 3.21 PARKS & OPEN SPACE

The Aerozone has tremendous recreational opportunities and expansive natural open spaces, including 3,037 acres of parks; with 85% of these areas being owned and operated by Cleveland Metroparks (2,575 acres). The Cleveland Metroparks Rocky River Reservation is almost fully contained within the Aerozone, in addition to portions of the Big Creek and Mill Stream Run Reservations. The Aerozone also has 2,146 acres of other open spaces, which includes both private and public recreation areas such as golf courses, schools, fairgrounds, municipal land, or other similar uses.

Additionally, there are several cemeteries found throughout the Aerozone, with the largest being Holy Cross Cemetery. Located in the City of Brook Park, Holy Cross Cemetery accounts for 66% of all cemetery land uses within the Aerozone and covers 230 acres with seven miles of private roadways.

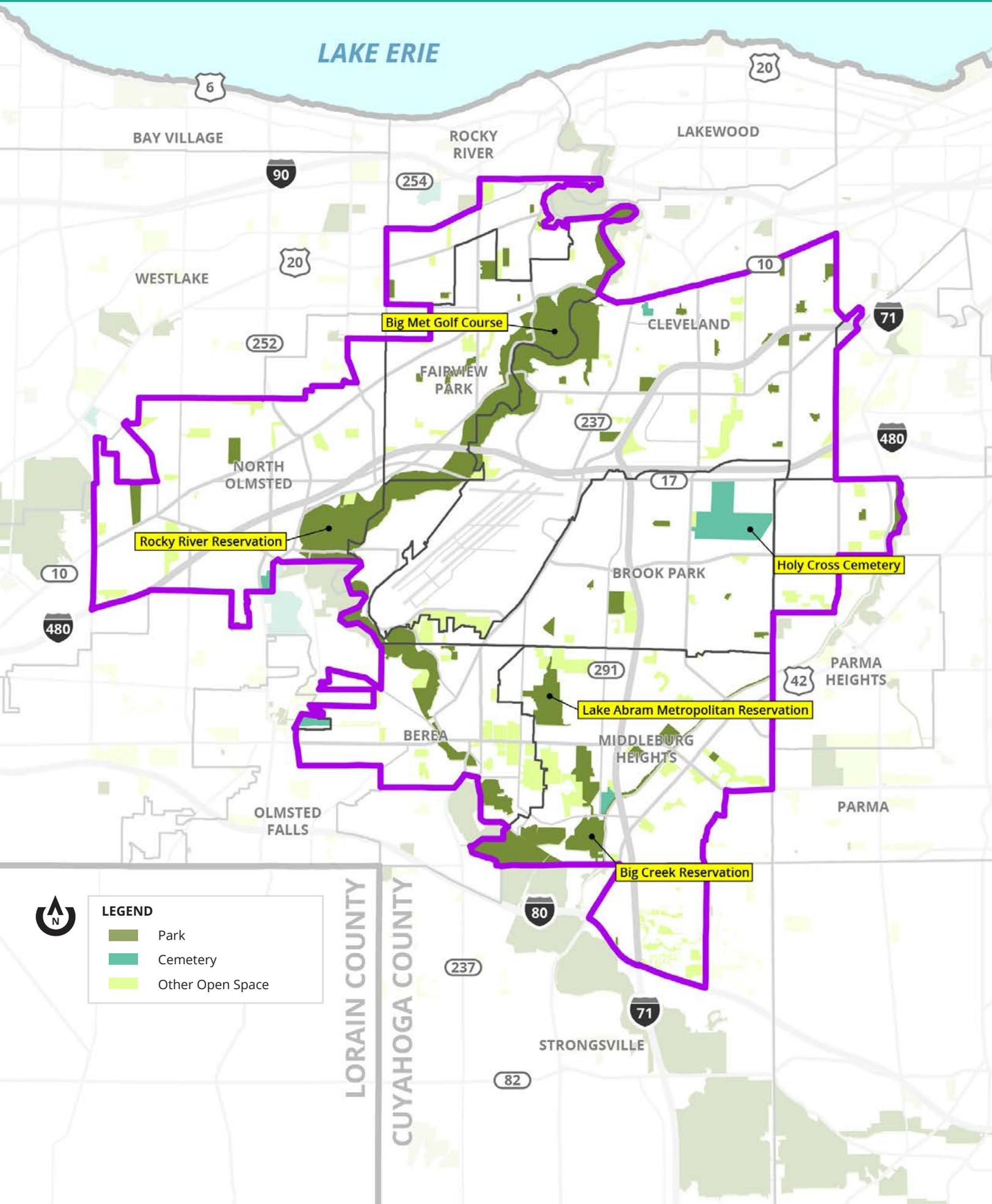
In general, the Aerozone has expansive park, recreation, and open space areas that are important assets for enriching the quality of life of residents and workers. However, while these tremendous natural amenities do provide a high quality of life for residents and workers, they also create a physical barrier that can be challenging to traverse for daily commuting trips, especially those traveling east and west. This indicates an opportunity to evaluate new connections through these amenities to better align with adjacent destinations and job hubs.

### AEROZONE PARKS & OPEN SPACE BY TYPE AND OWNERSHIP, IN ACRES



Source: County Planning, Open Space Inventory

# EXISTING PARKS & OPEN SPACE



## LEGEND

- Park
- Cemetery
- Other Open Space

LORAIN COUNTY  
CUYAHOGA COUNTY

## 3.22 URBAN TREE CANOPY

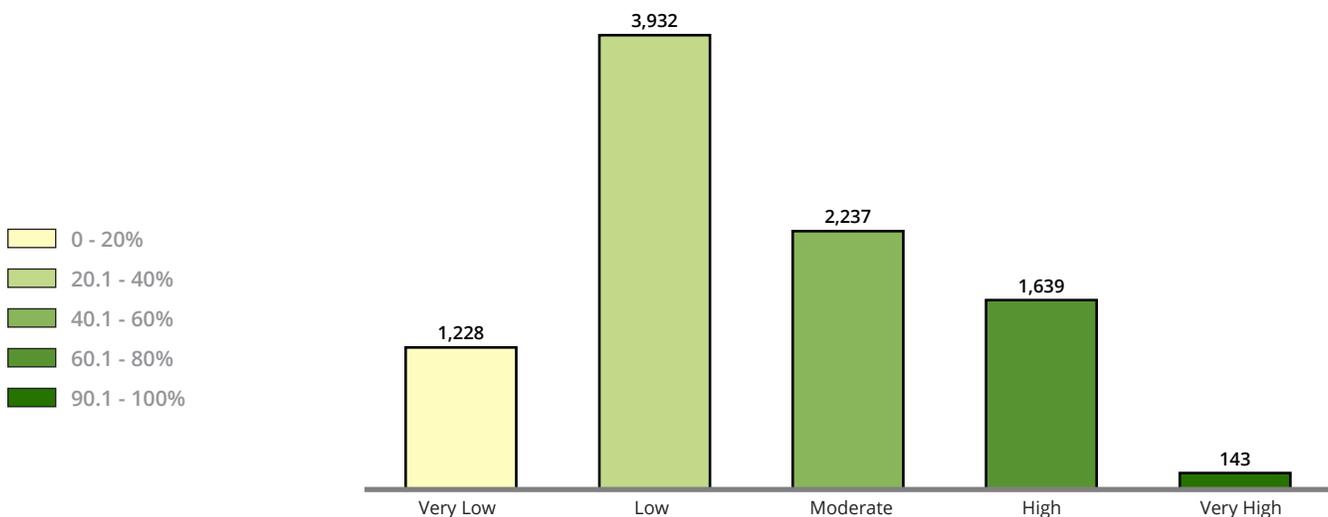
The highest concentrations of dense tree canopy can be found in areas generally west of the airport and within the Cleveland Metroparks Rocky River Reservation. However there are also pockets of higher tree canopy coverage within communities further to the south, such as Middleburg Heights.

The Aerozone is a highly developed area within the southwest portion of Cuyahoga County, which has historically seen development patterns that have impacted the tree canopy. As a result, large areas of industrial and commercial development found throughout the Aerozone have very limited tree canopy coverage. Tree canopy refers to the layers of leaves, branches, and stems of trees that cover the ground when viewed from above. These natural layers can help moderate climate, reduce building energy use and atmospheric carbon dioxide (CO<sub>2</sub>), improve air and water quality, mitigate rainfall runoff and flooding, enhance human health and social well-being, and lower noise impacts.

In 2017, nearly 60% of the Aerozone was considered to have low or very low tree canopy coverage (56% or 5,160 acres), which were mostly concentrated in the Cities of Brook Park and Cleveland. Additionally, there is another 42% of the area considered to have moderate to high tree canopy coverage (3,876 acres). The remaining 2% is considered to have very high coverage and among the most dense within the Aerozone (143 acres). These areas generally fall within Cleveland Metroparks Reservations, including the Rocky River and Mill Stream Run Reservations just west and south of the airport, and Big Creek Reservation in Middleburg Heights. In general, tree canopy coverage is much higher in areas west and south of the airport than in industrial, commercial, and dense residential areas east of the airport.

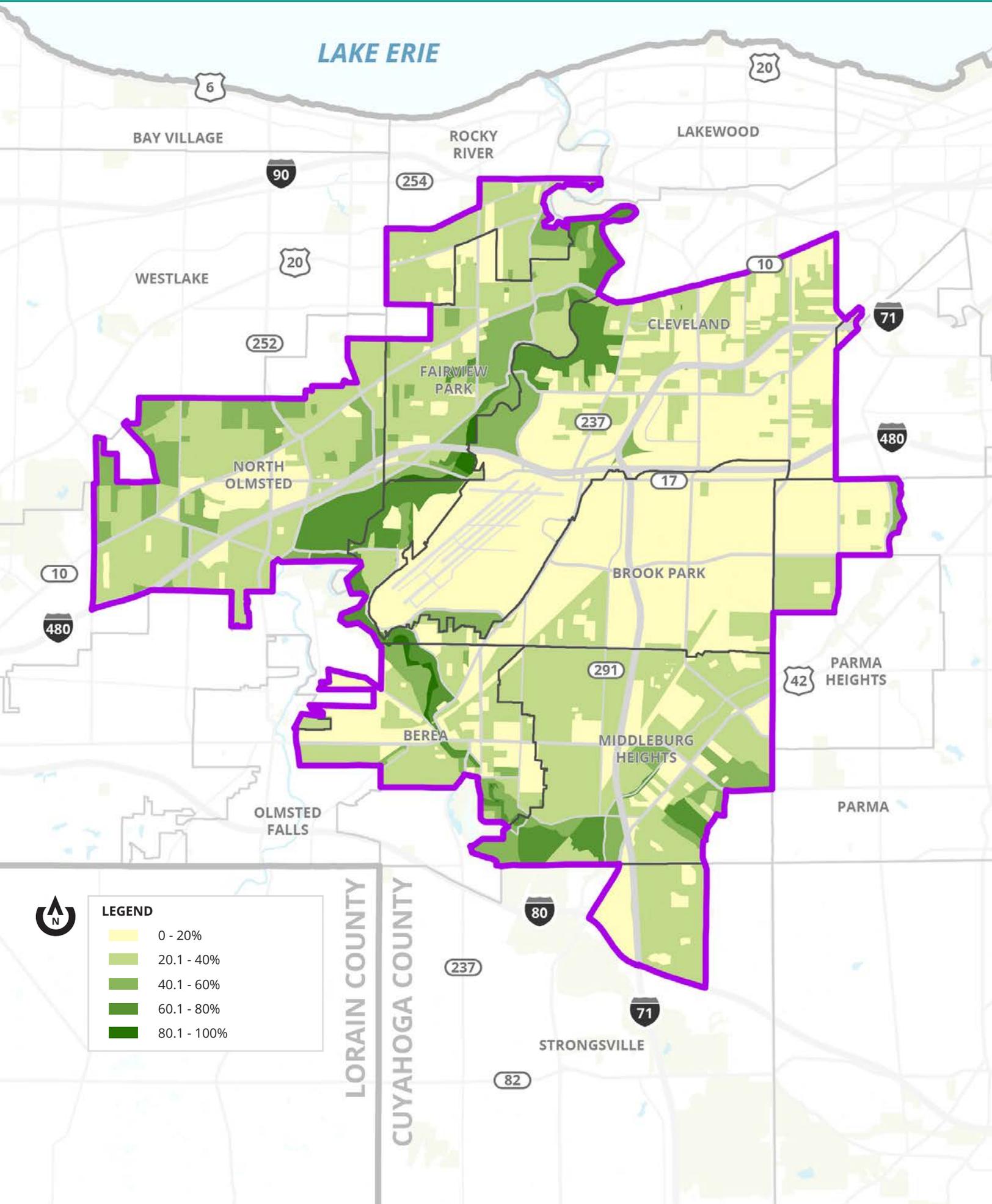
From 2011 to 2017 the majority of the Aerozone saw a 10-20% loss in tree canopy coverage, with very few areas gaining tree canopy during the same time frame. This indicates both a need and opportunity to preserve tree canopy where it currently exists and expand it where and when possible.

### AEROZONE TREE CANOPY COVERAGE RATING IN ACRES, 2017



Source: County Planning, Urban Tree Canopy (UTC) Assessment, 2019

# EXISTING TREE CANOPY COVERAGE BY CENSUS BLOCK GROUP



## 3.23 WATERWAYS, WETLANDS, & RIPARIAN AREAS

The Aerozone has complex environmental and water constraints—including numerous wetlands, riparian zones, and FEMA Special Flood Hazard Areas. The majority of these features are concentrated within the Cleveland Metroparks Rocky River, Mill Stream Run, and Big Creek Reservations. Should any development activities occur adjacent to Cleveland Metroparks property, additional requirements or conditions may need to be met prior to construction.

Wetlands: areas of land that are either covered by water or saturated with water, often located adjacent to streams.

Riparian Zones: are the transitional zone between fully dry land and waterways, and typically include wetlands and floodplains.

FEMA Special Flood Hazard Areas: areas where the National Flood Insurance Program's (NFIP's) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

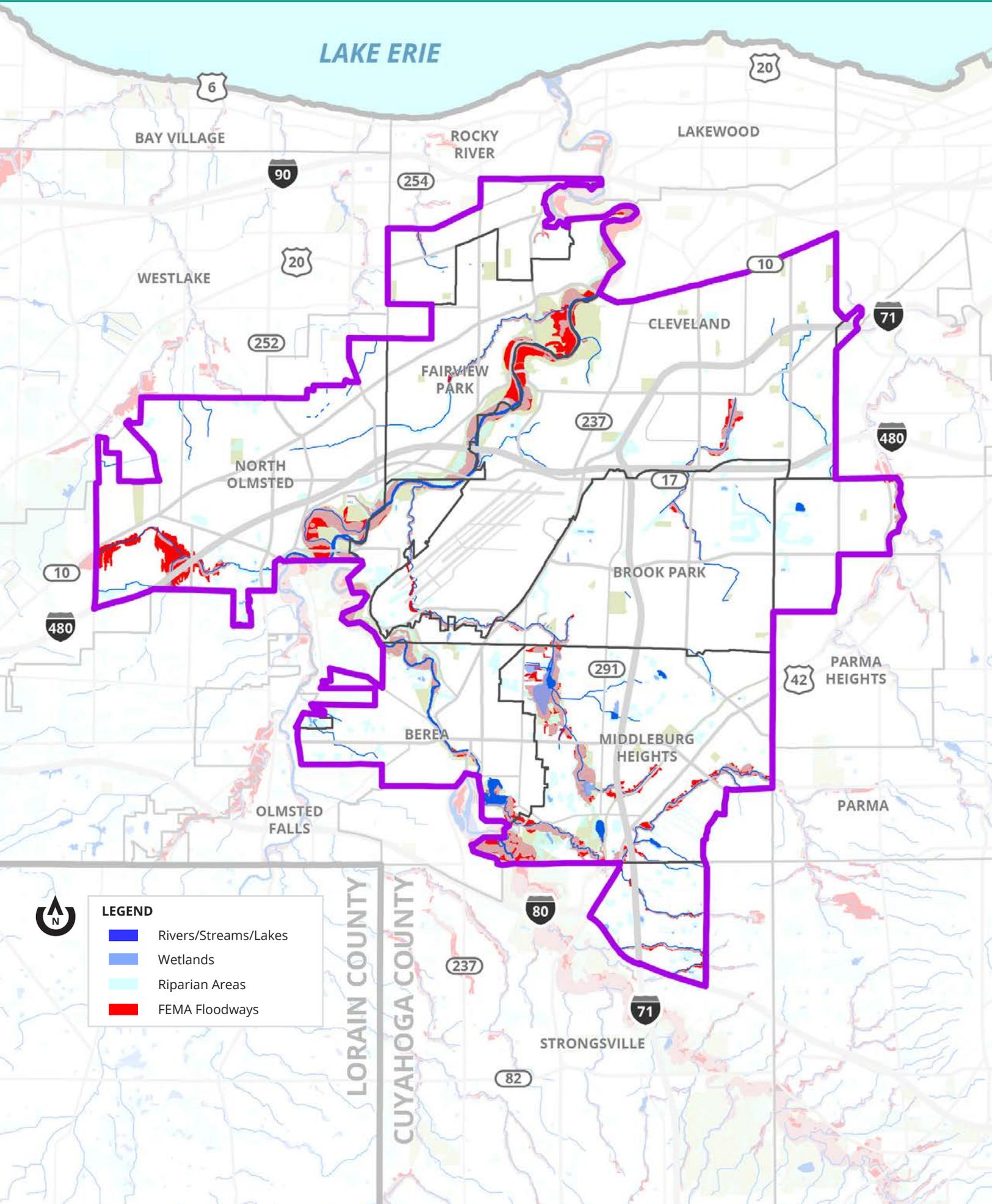
Additionally, the Aerozone has pockets of "Regulatory Floodways"—the channel of a watercourse and adjacent land that must be reserved in order to discharge a flood—where development must be regulated by communities so as to not increase upstream flood elevations. However, if a Regulatory Floodway is not designated, but FEMA has provided Base Flood Elevations for an area, communities are expected to review floodplain development on a case-by-case basis to ensure that increases in water surface elevations do not occur. By law all communities must have guidelines and review processes for development proposals occurring within FEMA designated areas. However, only the Cities of Fairview Park, Middleburg Heights, and Parma provide additional water protections and setbacks for riparian zones and wetlands.

In addition to localized planning efforts, the Aerozone falls within a number of regional watershed partnerships and waterway plans. In 2010, the Big Creek Balanced Growth Plan—a voluntary, community-based effort and incentive-based strategy to promote sustainable growth and conservation development—outlined a number of recommendations that focused on Priority Conservation Areas (PCAs). PCAs are locations where land use change is predicted to have a high impact on the watershed in terms of flooding, erosion, and water quality; some of which occur within the Aerozone in the Cities of Cleveland and Parma. These are important areas for heightened scrutiny in the development review process to ensure waterways and surrounding riparian zones are not negatively impacted.

In general, the Aerozone has complex natural systems with specific standards and processes for development. However, these regulations vary from community to community and could make development within the Aerozone more challenging. This indicates a need for a review of regulatory language and development processes across Aerozone communities to provide consistency for development proposals.

Source: Cuyahoga County; Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (NFHL); Big Creek Balanced Growth Plan, 2012

# WATERWAYS, WETLANDS, & RIPARIAN AREAS



## 3.24 STEEP SLOPE AREAS

In addition to waterway constraints, the Aerozone also has steep topographical challenges that could make development very costly or in some instances, impossible. Steep slopes are generally defined as hillsides that have a vertical rise over a defined threshold, or greater than a 12% grade for the purposes of this analysis. Slopes with this level of steep grade can pose many obstacles to the built environment. These areas also provide wildlife habitat, recreational opportunities, and scenic views that help preserve the valuable environmental qualities unique to the Aerozone.

**Steep Slopes:** hillsides that have a vertical rise over a defined threshold, or greater than a 12% grade for the purposes of this analysis.

The largest portion of steep slopes found within the Aerozone are concentrated within Cleveland Metroparks Rocky River, Mill Stream Run, and Big Creek Reservations. However, there are also steep grade changes found along man-made infrastructure features, including Norfolk Southern and CSX Transportation rail lines, that can also influence how development occurs within those areas.

The majority of Aerozone communities (7 out of 9 communities) have some form of development standards in place to regulate the movement of topsoil, excavating land, and pre- and post- development drainage. These regulations try to prevent any kind of reduction in land values as a result of soil disturbances from development. If proper precautions are not taken steep slopes can collapse and disrupt natural systems, which can potentially cause flooding or harm plant and animal life.

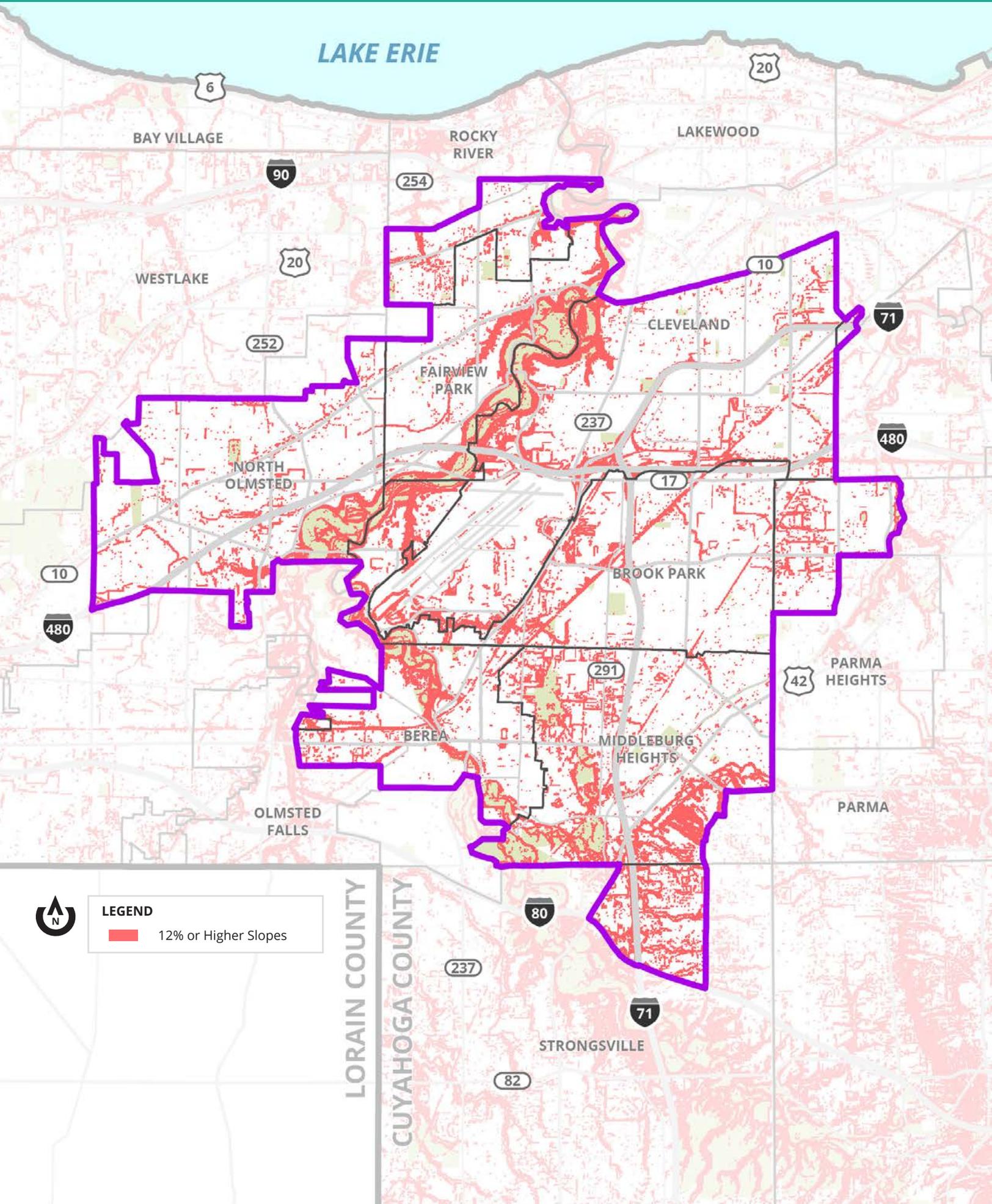
In general, the Aerozone has very complex land formations and steep slopes that can impact development efforts. This indicates a need for consistent regulations that monitor hillsides before, during, and after soil disturbances to ensure that the integrity of slopes found throughout the Aerozone are maintained.

### EXAMPLE OF STEEP SLOPES, ROCKY RIVER RESERVATION



Source: Cuyahoga County, Rocky River Reservation; County Planning, Greenprint Guidebook

# STEEP SLOPE AREAS





# ECONOMIC DEVELOPMENT

Understanding current economic and industry sectors, and how historic building activity and available sites could impact the creation of new jobs, are all important in attracting desired development and supporting employers. It is important to identify employment trends and concentrations to outline how, where, and when targeted strategies for continued economic growth should be implemented.

This section explores existing employment trends, major employers, and economic development initiatives. This includes topics such as total number of jobs, employment by industry sector, and employee access to transit lines by industry sector.



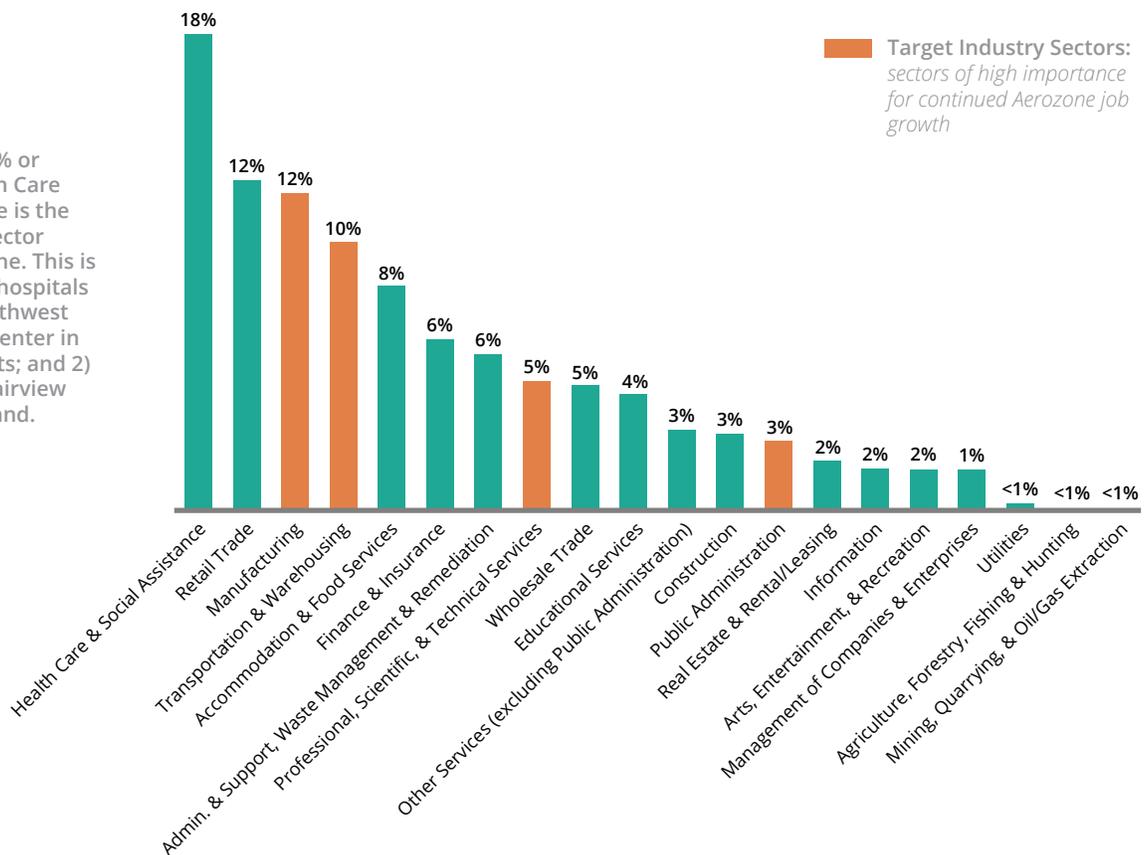
## 3.25 TOTAL AEROZONE JOBS

In 2019, the Aerozone had a total of 100,684 jobs. The largest employment sector within the Aerozone is Health Care & Social Assistance. This sector accounts for 18% of jobs and is primarily located around the Aerozone's two major hospitals: 1) Southwest General Medical Center in Middleburg Heights; and 2) Cleveland Clinic Fairview Hospital in Cleveland.

The next largest industry sectors within the Aerozone are Retail Trade (12%), Manufacturing (12%), Transportation & Warehousing (10%), and Accommodation & Food Services (8%). In addition to these largest sectors, certain industries are core to the economic development of the Aerozone. These target industries include Manufacturing (12%); Transportation & Warehousing (12%); Professional, Scientific, & Technical Services (5%); and Public Administration (3%). Together, these target industries account for 32% of total Aerozone jobs and are anchor industries for continued growth.

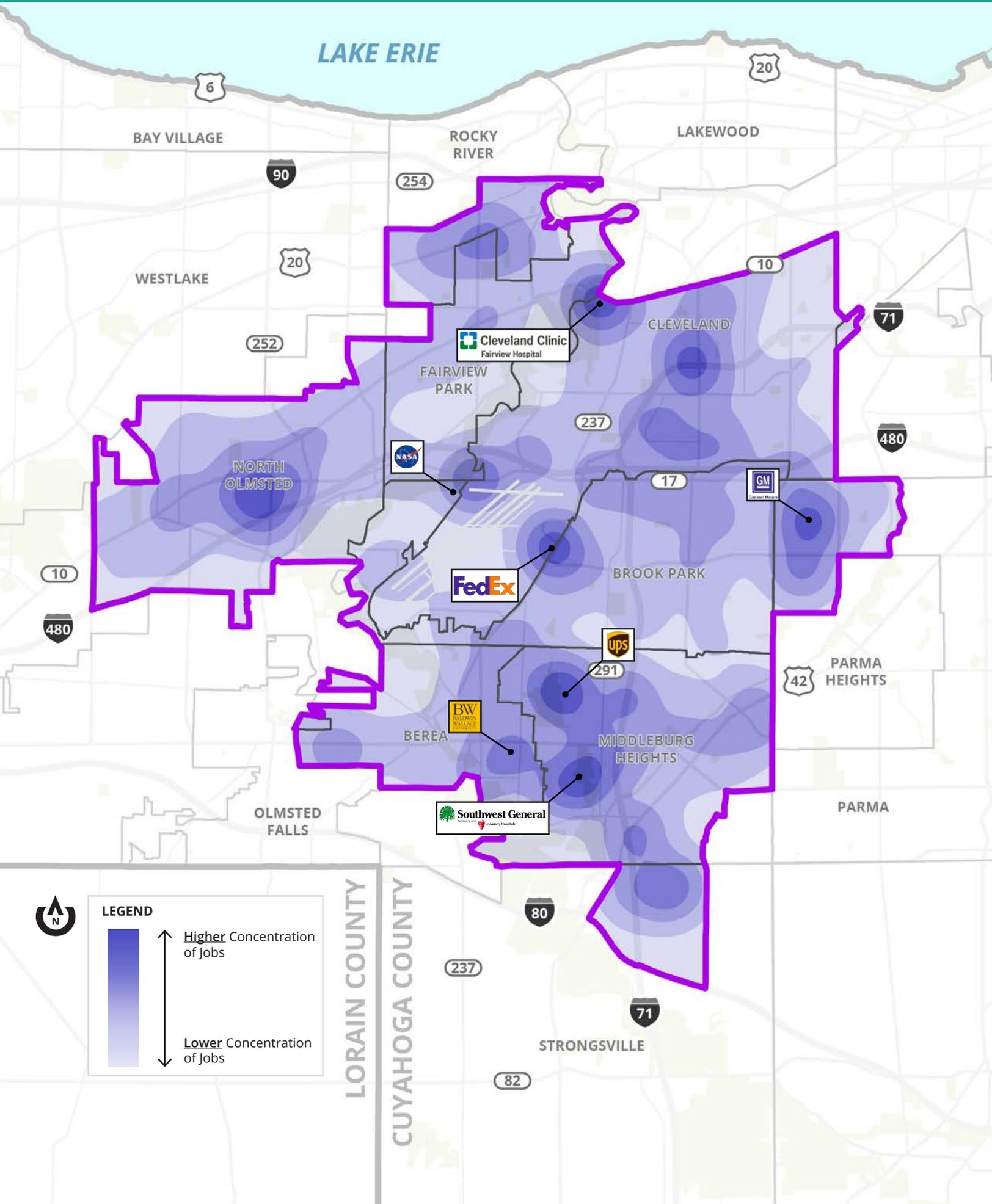
### TOTAL NUMBER OF AEROZONE JOBS BY INDUSTRY SECTOR, 2019

Accounting for 18% or 17,639 jobs, Health Care & Social Assistance is the largest industry sector within the Aerozone. This is due to two major hospitals in the area: 1) Southwest General Medical Center in Middleburg Heights; and 2) Cleveland Clinic Fairview Hospital in Cleveland.



Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019

# EMPLOYMENT CONCENTRATIONS



LAKE ERIE

BAY VILLAGE

ROCKY RIVER

LAKEWOOD

WESTLAKE

CLEVELAND

Cleveland Clinic  
Fairview Hospital

FAIRVIEW PARK

NORTH  
OLMSTED



FedEx

BROOK PARK



BEREA



MIDDLEBURG  
HEIGHTS

PARMA  
HEIGHTS

Southwest General  
Part of Case Western Reserve University Hospitals

OLMSTED  
FALLS

PARMA

LORAIN COUNTY

CUYAHOGA COUNTY

STRONGSVILLE



## LEGEND



Higher Concentration of Jobs

Lower Concentration of Jobs

## 3.26 AEROZONE JOB METRICS OVER TIME

From 2010 to 2019, the Aerozone saw relatively steady job growth, adding 10,275 new jobs—an 11% increase. The majority of that growth has been in high-paying jobs. During that time period, jobs paying more than \$3,333 per month increased by 39% equating to nearly 13,000 new, high-paying jobs. Conversely, there was minimal change in jobs paying between \$1,250 and \$3,333 per month (a gain of 91 jobs), and a 10% loss of jobs paying less than \$1,250 (a loss of nearly 3,000 jobs).

This increase in salaries also corresponds to upward trends in educational attainment among employees, with significant increases in workers with a college degree. From 2010 to 2019, there was a 14% increase in workers with a Bachelor's degree or another advanced degree (2,743 workers), and a 12% increase in workers with some college or an Associate degree (2,837 workers). Additionally, there was also a 26% increase in workers without a high school diploma, however this was by far the smallest number of jobs (1,506 workers).

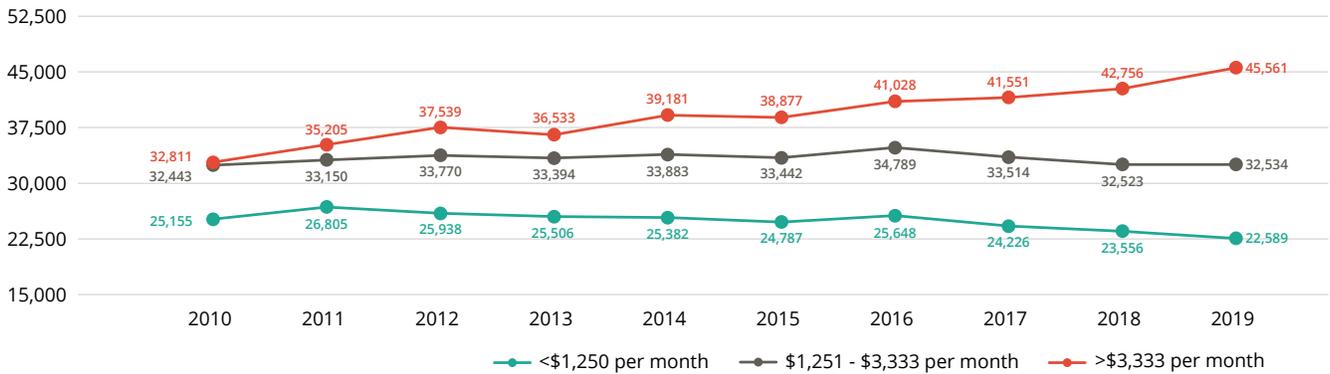
Additionally, Aerozone workers are trending towards older age groups. From 2010 to 2019, workers over the age of 55 have increased 48% (gain of 8,850 workers). Additionally, workers under the age of 29 also saw an increase of 10% (gain of 1,976 workers), while workers between the ages of 30 and 54 saw a 1% decrease (loss of 551 workers). In general, the current Aerozone workforce is becoming older, holding more advanced degrees, and salaries are increasing to reflect these changes. This indicates an opportunity to prepare for a potentially large outgoing workforce in the next decade by training new employees to undertake their roles. This will be important to ensure continued economic and job growth throughout the Aerozone.

### TOTAL NUMBER OF AEROZONE JOBS, 2010-2019



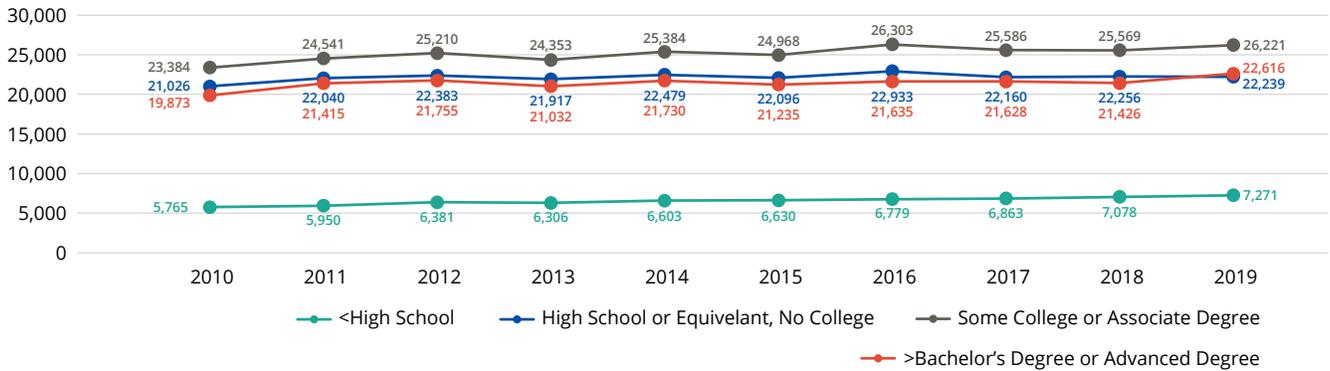
Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2010-2019

## NUMBER OF JOBS BY EMPLOYEE SALARIES, 2010-2019

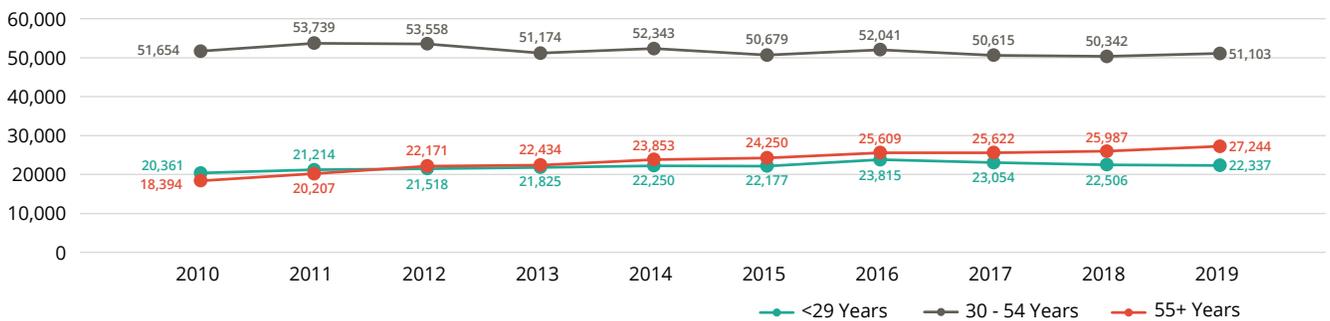


## NUMBER OF JOBS BY EMPLOYEE EDUCATION, 2010-2019

\*Educational attainment data is only available for workers over the age of 29.



## NUMBER OF JOBS BY EMPLOYEE AGE, 2010-2019



Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2010-2019

## 3.27 INDUSTRY SECTOR FLUCTUATIONS & LOCATION QUOTIENT

From 2010 to 2019, industry sectors within the Aerozone and Cuyahoga County as a whole each saw numerous fluctuations in terms of total number of jobs. The Aerozone's largest increase in jobs came from the industry sectors of Finance and Insurance (31% increase, gain of 1,483 jobs), Health Care & Social assistance (24% increase, gain of 3,400 jobs), and Manufacturing (13% increase, gain of 1,331 jobs). While its largest net losses in terms of job numbers were within the industry sectors of Public Administration (22% decrease, loss of 739 jobs), Transportation and Warehousing (5% decrease, loss of 564 jobs), and Retail Trade (3% decrease, loss of 351 jobs).

The Aerozone has seen some decline in certain industries that have been growing in the seven county region (Cuyahoga, Lorain, Medina, Summit, Portage, Geauga, and Lake Counties). For example, the Aerozone saw a 3% loss (351 jobs) in Retail Trade, while the seven county region saw a 1% gain (1,175 jobs). Additionally, the Aerozone saw a 5% loss (564 jobs) in Transportation and Warehousing, while the seven county region saw a 16% gain (6,307 jobs). At the same time, there are multiple industries in which the Aerozone is growing at a faster rate than the seven county region, such as Manufacturing, Wholesale Trade, Finance & Insurance, and Health Care & Social Assistance

In general, the Aerozone is seeing job growth within two of its four key target industries critical to supporting the advancement of its economic goals. Manufacturing saw an increase of 13% (1,331 jobs), and Professional, Scientific, & Technical Services saw an increase of 17% (689 jobs). However, both Transportation and Warehousing (5% decrease, loss of 564 jobs), and Public Administration (22% decrease, loss of 739 jobs) saw decreases. These industries should continued to be monitored to ensure they are not negatively impacted in the future.

In addition to evaluating change over time to understand employment trends, a location quotient (LQ) analysis compares the concentration of employment in a smaller area to that of a much larger area to show the extent to which certain industries are clustered within that smaller area. This type of clustering can indicate unique locational advantages or the extent to which an area excels in certain industries. To calculate a location quotient, NAICS data was used to divide the percent of an industry within the Aerozone by that same percent of industry employment in the seven county region. The resulting ratio is the location quotient. Those industries with a LQ greater than the number one indicate a greater concentration of employment within the Aerozone, while those industries with a LQ less than one indicate a lower concentration.

Within the Aerozone, there are four industry sectors that have a location quotient greater than one—Retail Trade (1.22); Real Estate, Rental, & Leasing (1.30); Finance & Insurance (1.47); and Transportation & Warehousing (2.94). This indicates that these industries in particular are more highly concentrated within the Aerozone than throughout the seven county region.

*Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2010-2019*

AEROZONE LOCATION QUOTIENT							Location Quotient, 2019
Industry Sector (NAICS Category)	Aerozone			**Seven County Region			
	Total Jobs, 2019	% Total Jobs, 2019	% Change 2010-2019	Total Jobs, 2019	% Total Jobs, 2019	% Change 2010-2019	
Agriculture, Forestry, Fishing, & Hunting	6	0.0%	-76.9% (-20)	2,668	0.2%	-18.0% (-587)	0.03
Mining, Quarrying, and Oil & Gas Extraction	1	0.0%	-87.5% (-7)	1,140	0.1%	+28.5% (+253)	0.01
Utilities	256	0.3%	+16.4% (+36)	6,789	0.5%	-14.5% (-1,155)	0.51
Construction	2,828	2.8%	+35.8% (+746)	52,726	3.9%	+32.5% (+12,922)	0.73
*Manufacturing	11,750	11.7%	+12.8% (+1,331)	165,541	12.1%	+6.9% (+10,717)	0.96
Wholesale Trade	4,624	4.6%	+13.4% (+546)	70,934	5.2%	+6.4% (+4,269)	0.89
Retail Trade	1,2235	12.2%	-2.8% (-351)	135,940	9.9%	+0.9% (+1,175)	1.22
*Transportation & Warehousing	9,942	9.9%	-5.4% (-564)	45,934	3.4%	+15.9% (+6,307)	2.94
Information	1,532	1.5%	-5.4% (-87)	22,708	1.7%	-10.4% (-2,647)	0.92
Finance & Insurance	6,337	6.3%	+30.5% (+1,483)***	58,626	4.3%	+14.8% (+7,552)	1.47
Real Estate, Rental, & Leasing	1,819	1.8%	+8.9% (+149)	18,999	1.4%	+2.3% (+421)	1.30
*Professional, Scientific, & Technical Services	4,795	4.8%	+16.8% (+689)	78,452	5.7%	+10.8% (+7,552)	0.83
+NASA Glenn Research Center	6,382 (1,587 NASA)	6.3%	+17.9% (+1,490)	80,039 (1,587 NASA)	5.9%	+9.8% (+7,649)	1.08
Management of Companies & Enterprises	1,509	1.5%	-5.2% (-83)	47,016	3.4%	+32.7% (+11,572)	0.44
Administration & Support, Waste Management, & Remediation	5,767	5.7%	+13.6% (+688)	87,505	6.4%	+25.5% (+17,803)	0.90
Educational Services	4,285	4.3%	-3.1% (-138)	104,286	7.6%	-6.8% (-7,638)	0.56
Health Care & Social Assistance	17,639	17.5%	+23.9% (+3,400)	240,862	17.6%	+7.6% (+17,099)	0.99
Arts, Entertainment, & Recreation	1,512	1.5%	+39.7% (+430)	24,573	1.8%	+36.6% (+6,581)	0.84
Accommodation & Food Services	8,298	8.2%	+4.5% (+357)	116,289	8.5%	+17.5% (+17,333)	0.97
Other Services (excluding Public Administration)	2,983	3.0%	-2.0% (-60)	41,684	3.1%	+5.8% (+2,283)	0.97
*Public Administration	2,566	2.6%	-22.4% (-739)	45,097	3.3%	-9.3% (-4,645)	0.77
<b>TOTAL</b>	<b>100,684</b>	<b>100.0%</b>	<b>+11.4%</b> <b>(+10,275)</b>	<b>1.37 M</b>	<b>100.0%</b>	<b>+8.5%</b> <b>(+107,264)</b>	<b>-----</b>

Largest Location Quotients (LQ): LQs larger than 1 are more concentrated within the Aerozone than the seven county region.

NASA Glenn Research Center jobs are classified as Public Administration in LEHD Data. This row reclassifies and combines NASA Glenn Research Center jobs with existing Professional, Scientific, and Technical Services jobs to show the results of complementary industries.

\*Indicates Target Industry Sector

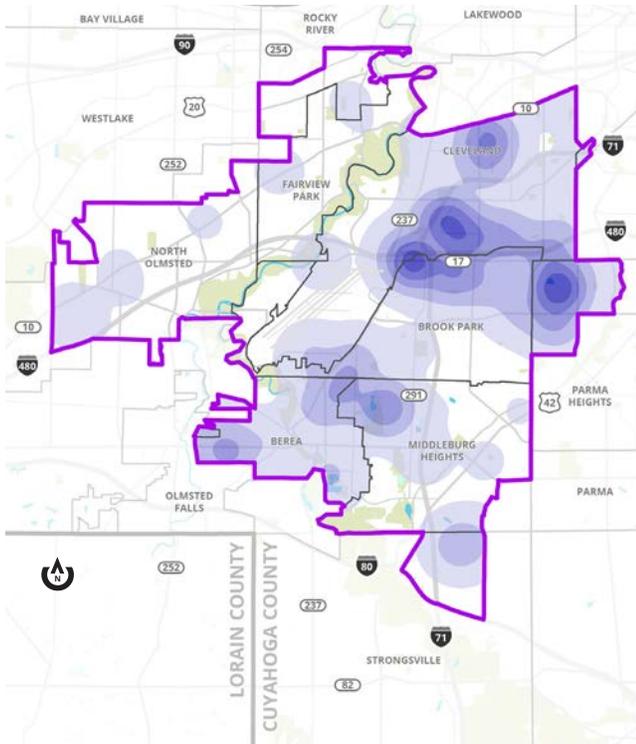
\*\*Seven County Region includes: Cuyahoga, Lorain, Medina, Summit, Portage, Geauga, and Lake Counties

\*\*\* Finance and Insurance job numbers for 2010 were estimated due to data limitations for that year within the Aerozone

Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2009-2019; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by Finance & Insurance Industry Sector, 2009 and 2011-2019; NASA Glenn Economic Impact Study, FY 2010, FY 2019

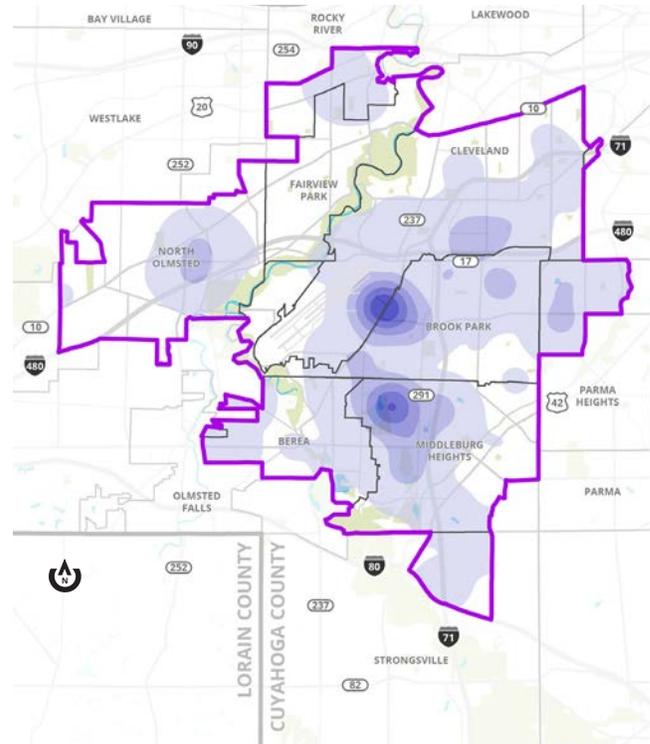
## 3.28 LARGEST & TARGET INDUSTRIES

This series of maps showcases overall employment density based on industry sector. Four overall sectors have been selected as target industries based on existing concentrations, conversations with stakeholders and partner communities, and current plans for future economic growth. These are industry sectors that are of high importance and can further support the goals of the Aerozone, and they include Manufacturing; Transportation & Warehousing; Professional, Scientific & Technical Services; and Public Administration.



### MANUFACTURING

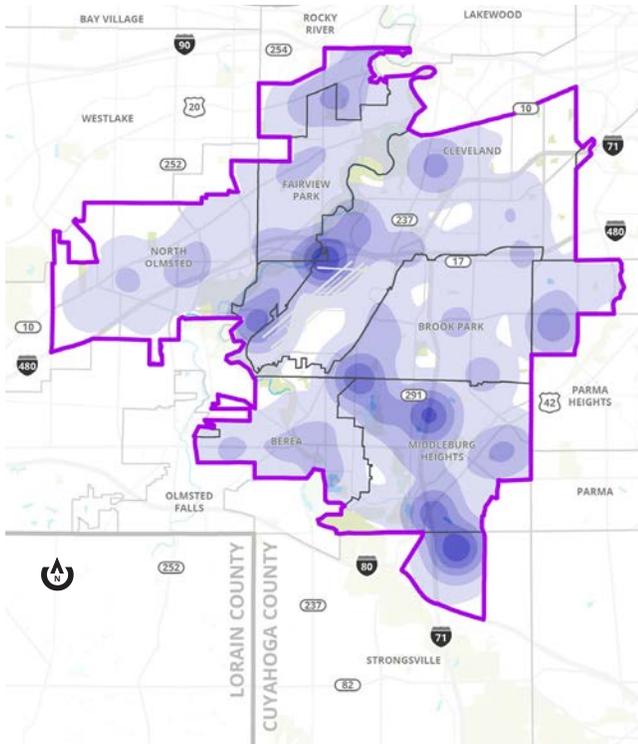
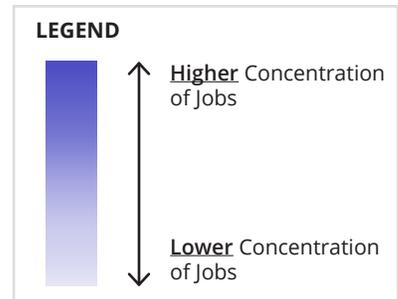
This industry sector has a very large group of 86 sub-sectors—including such related fields as printing activities; chemical manufacturing; pharmaceutical and medicine manufacturing; plastic products manufacturing; steel products manufacturing; industrial machinery manufacturing; engine, turbine, and power transmission equipment manufacturing; and aerospace product and parts manufacturing. These types of sub-sectors are already embedded into the Aerozone fabric and represent opportunities for economic transformation to better meet the future needs of the area.



### TRANSPORTATION & WAREHOUSING

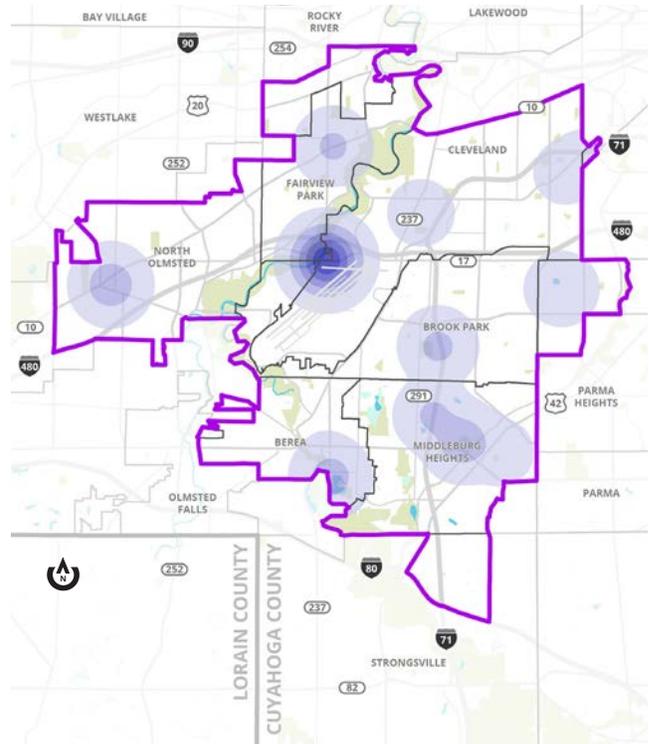
This industry sector has a diverse group of 29 sub-sectors—including such related fields as air transportation; rail transportation; freight trucking; urban transit systems; courier and express delivery services; and warehousing and storage. These types of sub-sectors are imperative to the movement of goods, services, and people. The Aerozone has an existing infrastructure framework that is robust and is multifaceted. Highway, rail, and air networks are all present, making the Aerozone an essential place to conduct business.

Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019; SICCODE.com, Structure of NAICS Codes



## PROFESSIONAL, SCIENTIFIC, & TECHNICAL SERVICES

This industry sector has a small group of 9 sub-sectors—including such related fields as legal services; architectural, engineering, and related services; computer system design; scientific research and development; and advertising, public relations, and related services. These sub-sectors are good examples of the types of businesses that could be a good fit for the Aerzone, and also potentially help support the work and make use of the facilities at one of the largest employers found within the Aerzone—NASA Glenn Research Center.



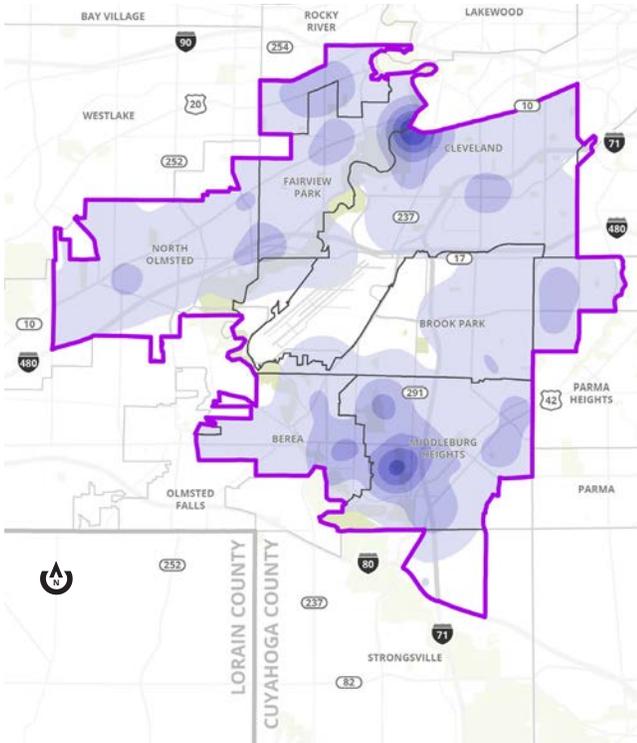
## PUBLIC ADMINISTRATION

This industry sector has a small group of 8 sub-sectors—including such related fields as executive, legislative, and other general government support; space research and technology; and national security and international affairs. These types of sub-sectors represent some of the largest employment concentrations and overall employers within the Aerzone; which is primarily due to the presence of the NASA Glenn Research Center. Not only is this industry sector critical to overall governance and safety, it is also a critical component to what help defines the Aerzone.

Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019; SICCODE.com, Structure of NAICS Codes

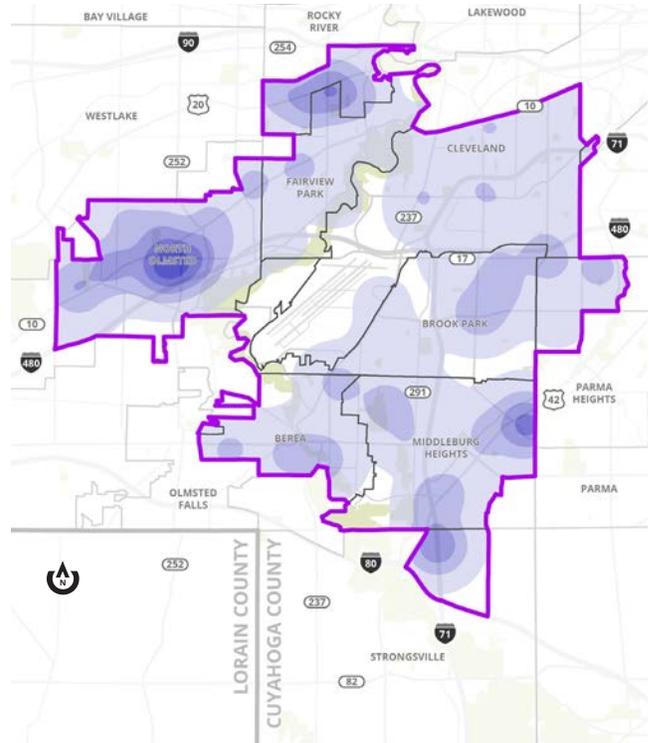
## 3.28 LARGEST & TARGET INDUSTRIES (CONTINUED)

In addition to target industries, the following industries also represent the largest industry sectors within the Aerozone: Health Care & Social Assistance, Retail Trade, Accommodation & Food Services, and Finance & Insurance.



### HEALTH CARE & SOCIAL ASSISTANCE

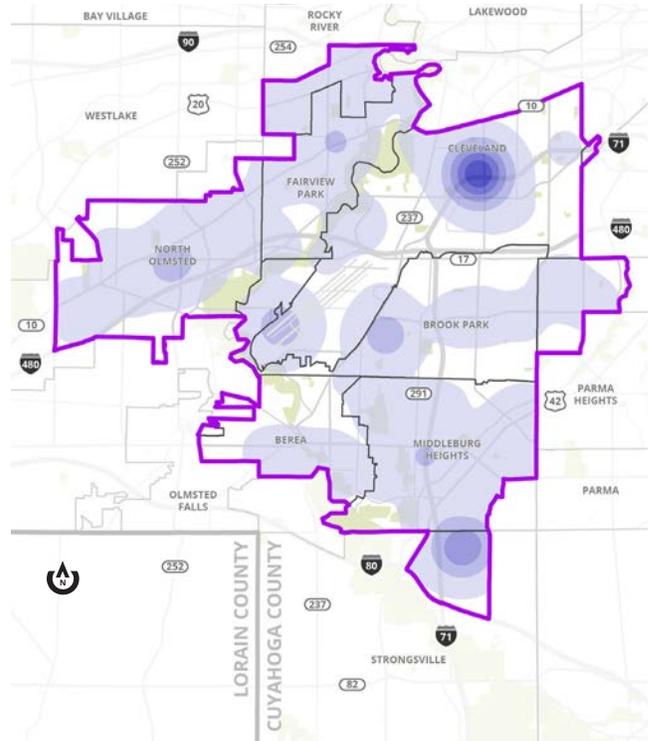
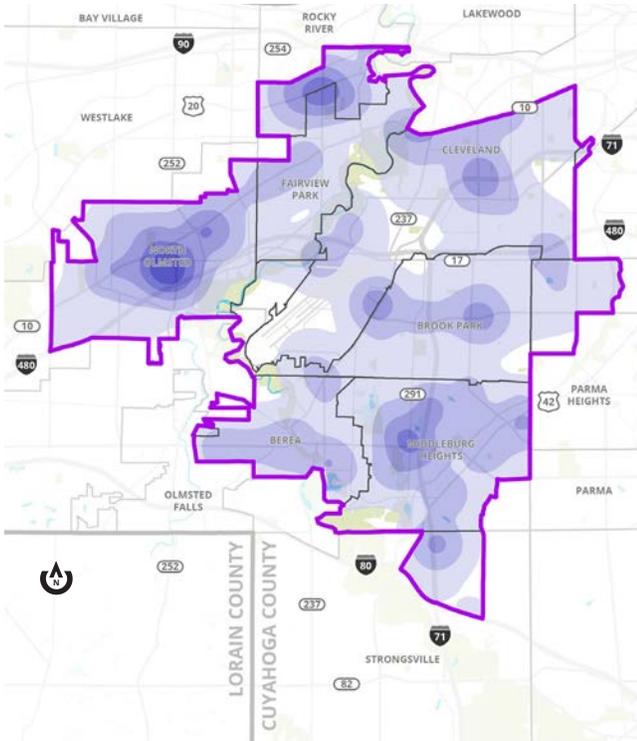
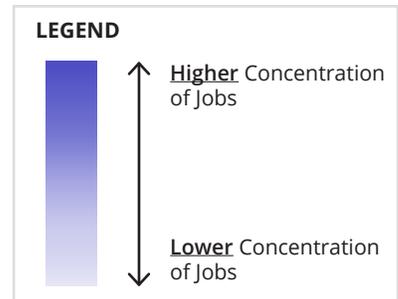
This industry sector has a moderate group of 18 sub-sectors—including such related fields as physician offices; dentist offices; outpatient care centers; medical and diagnostic laboratories; home care services; ambulatory services; general hospitals; specialty hospitals; nursing care facilities; mental health care facilities; and child care services. These types of sub-sectors represent the highest total number of jobs found within the Aerozone.



### RETAIL TRADE

This industry sector has a diverse group of 24 sub-sectors—including such related fields as automobile dealers; automotive parts retailers; building materials dealers; lawn and garden retailers; grocery dealers; alcohol retailers; furniture retailers; electronics and appliance retailers; department stores and supercenters; gasoline stations; clothing, shoes, and jewelry dealers; sporting goods retailers; book and news retailers; florists; and office supply retailers. These sub-sectors are good examples of the types of businesses found throughout the Aerozone. They provide the necessary products for businesses and residents, and also attract visitors on a daily basis.

Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019; SICCODE.com, Structure of NAICS Codes



## ACCOMMODATION & FOOD SERVICES

This industry sector has a small group of 6 sub-sectors—including such related fields as hotels and motels; RV campgrounds; rooming and boarding camps; food services; and restaurants and other related eateries. Similar to the Retail Trade industry sector, these sub-sectors are important because they provide places for workers and travelers to rest, dine, and enjoy the area. Having memorable experiences is important for transient destinations—such as the Aerozone—to increase the likelihood of repeat visitors in the future.

## FINANCE & INSURANCE

This industry sector has a relatively small group of 11 sub-sectors—including such related fields as central banks; depository and nondepository credit intermediation (credit unions, sales financing, real estate credit, etc.); brokerage; securities and commodity exchanges; and insurance carriers. These sub-sectors are important because they offer valuable and necessary services to businesses and the general public. From small businesses and startups to large corporations, having these types of services available locally within the Aerozone is a tremendous benefit and asset for employers that are in need of financial review or assistance.

Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019; SICCODE.com, Structure of NAICS Codes

## 3.29 PUBLIC ADMINISTRATION

The Aerozone has a wealth of knowledge, manufacturing, service, and administrative-based industries that make it a highly competitive employment hub. Public Administrative positions may only account for 2.5% of all jobs within the Aerozone—with a large portion being employed at NASA—however this industry sector also includes imperative municipal functions that help coordinate critical services and projects. These concentrations can include city halls or civic centers, police departments, fire departments, recreation facilities, and other public institutions, such as branches of the Cuyahoga County Public Library system—of which, five are located directly within the Aerozone, including Middleburg Heights, Berea, North Olmsted, Brook Park, and Fairview Park.

Municipal facilities are key community assets that offer an opportunity for business collaboration and expanded benefits. For example, if someone's place of employment is located within the City of Berea, recreation memberships are available to these employees at a reduced rate—even if they do not live in the community. This is a tremendous amenity for employers looking to locate within Berea or as a unique incentive to attract and retain employees.

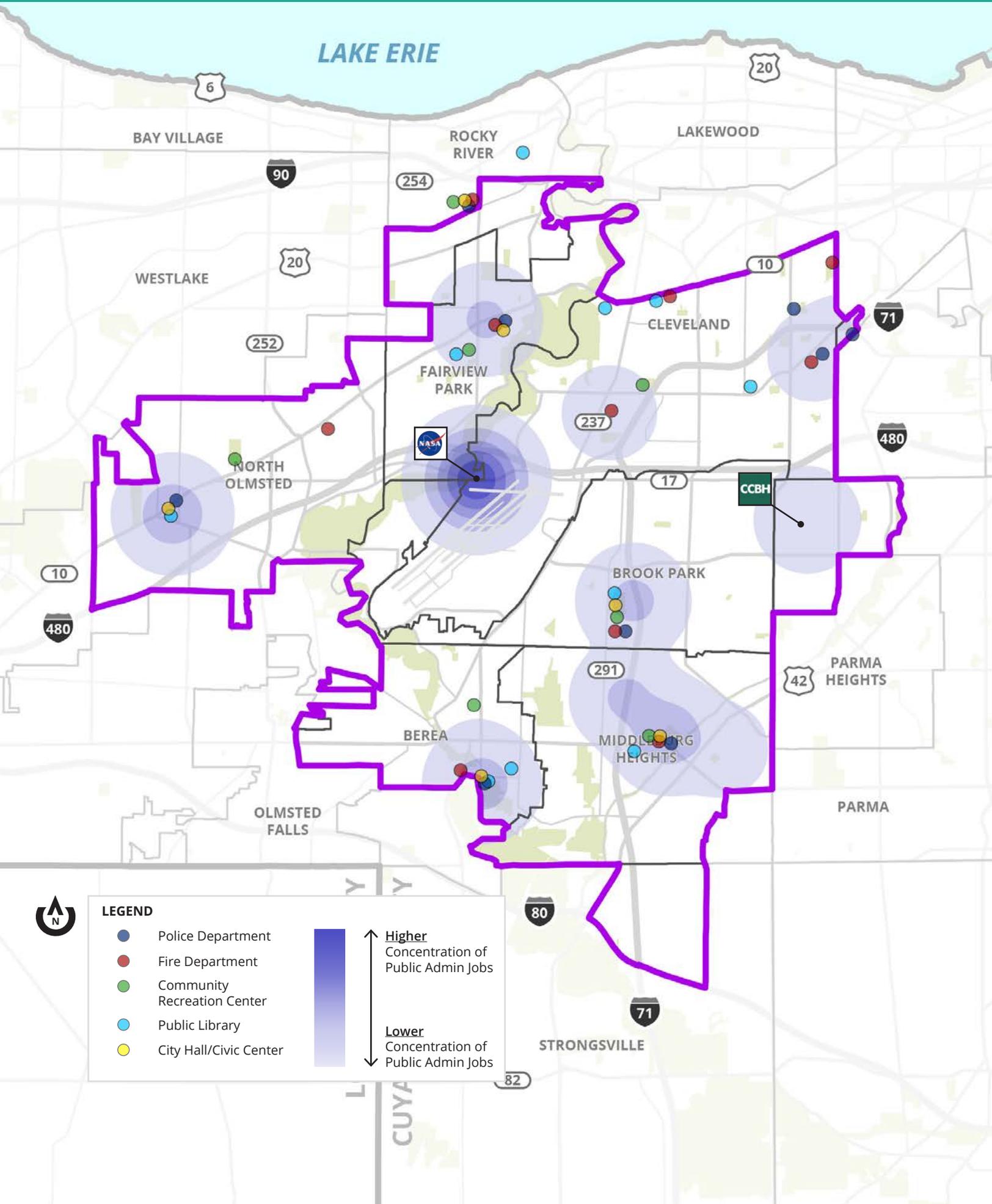
In general, the Aerozone has a strong public administrative presence with excellent municipal service coverage. This indicates a potential opportunity to collaborate with partner communities to evaluate cost sharing, coordinated services, and other similar municipal functions.

The City of Berea offers reduced recreation membership rates for workers employed within the community, which is less expensive than both neighbor and non-resident fees established by the Berea Recreation Department.



*Source: Cuyahoga County; County Planning; City of Berea; Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by Public Administration Services, 2019*

# EXISTING CIVIC CENTERS & PUBLIC ADMINISTRATION SERVICES



LAKE ERIE

BAY VILLAGE

ROCKY RIVER

LAKEWOOD

WESTLAKE

CLEVELAND

FAIRVIEW PARK

NORTH OLMSTED

BROOK PARK

BEREA

MIDDLEBURG HEIGHTS

PARMA HEIGHTS

OLMSTED FALLS

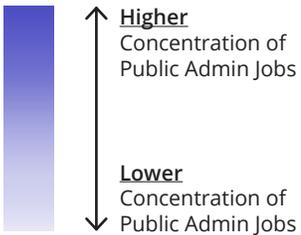
PARMA

STRONGSVILLE



**LEGEND**

- Police Department
- Fire Department
- Community Recreation Center
- Public Library
- City Hall/Civic Center



## 3.30 MAJOR EMPLOYERS & INDUSTRIES

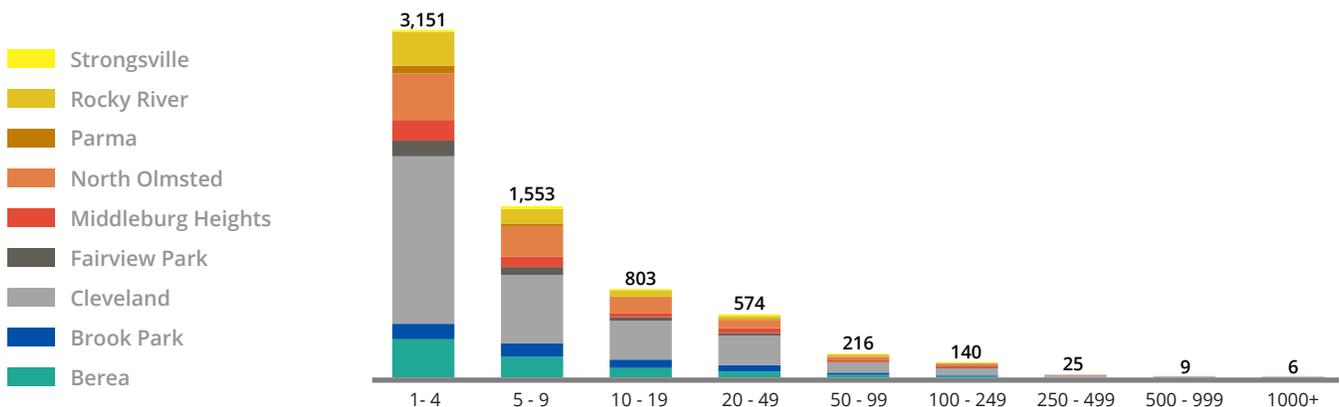
The Aerozone's largest employers also correspond with many of the area's largest industry sectors, such as Health Care & Social Assistance, Manufacturing, and Transportation & Warehousing. Health Care & Social Assistance is the largest industry sector within the Aerozone, and this is due to both University Hospitals and the Cleveland Clinic having major hospitals located within the Aerozone—Southwest General Main Campus in Middleburg Heights (358 bed facility with 93 employees), the Southwest General Health Center in Cleveland (2,234 employees), and the Cleveland Clinic Fairview Hospital in Cleveland (517 bed facility with 1,997 employees).

Manufacturing is the third largest sector within the Aerozone, with the majority of its largest employers being located east of the airport. The largest manufacturer within the Aerozone is the General Motor Metal Fabrication Division located in Parma, which has 4,000 employees.

Transportation & Warehousing is the fourth largest industry sector within the Aerozone, with many of these businesses being located at the airport itself and along Engle Road in Middleburg Heights. The largest employers include FedEx (100 employees) and UPS (60 employees), which also have a large logistical footprint throughout the entire Aerozone. This generally includes customer support centers, service centers, and shipping centers.

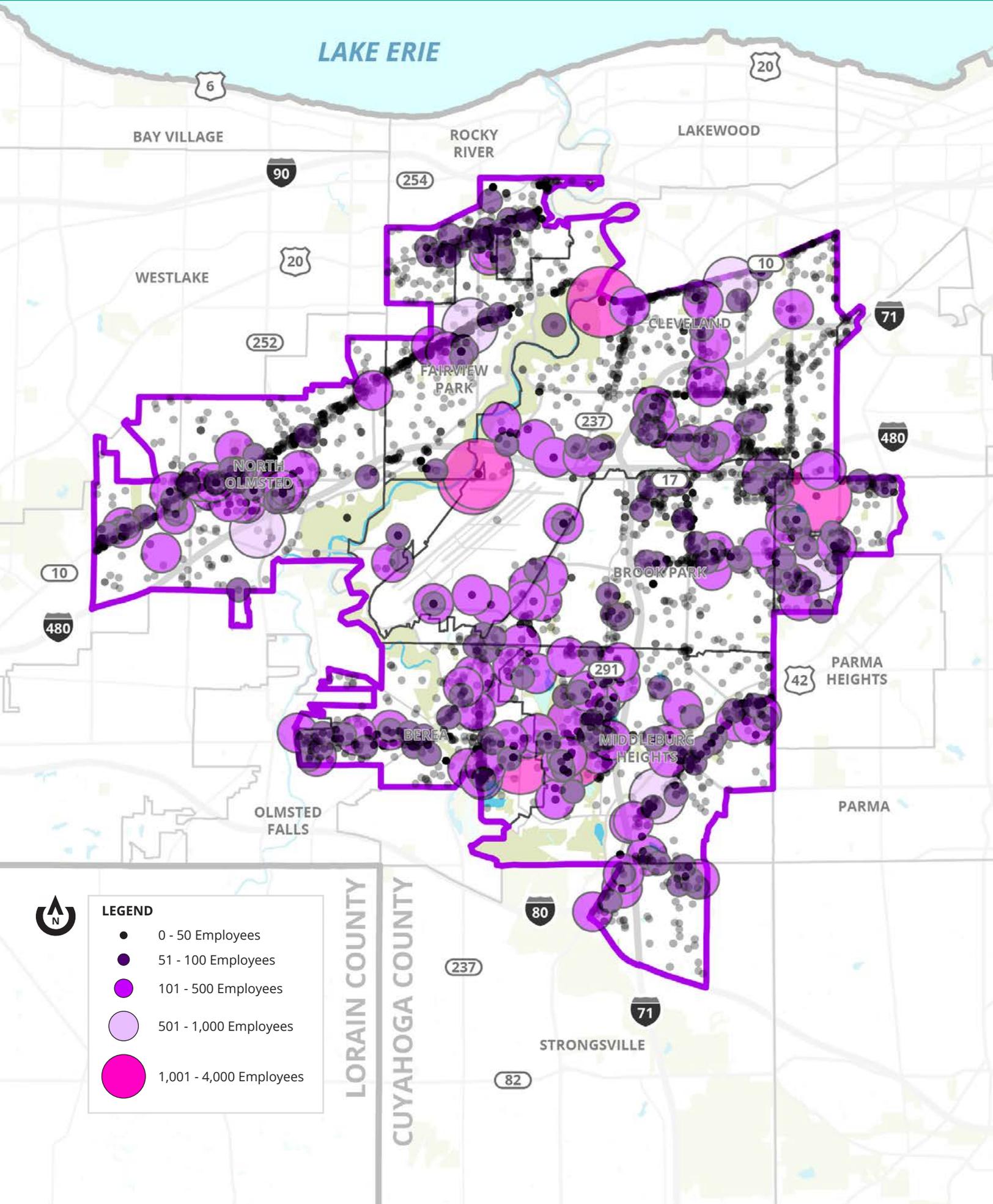
Though not one of the highest industry sector concentrations found within the Aerozone, Public Administration (13<sup>th</sup> highest concentration) has one of the largest employers—NASA Glenn Research Center. The facility and its research centers employ more than 7,000 workers and is one of only ten NASA Centers in the country. In general, this indicates an opportunity for expansion within both the Public Administration industry sector and sectors that could potentially support its activities in the future for continued economic growth.

### NUMBER OF BUSINESSES BY TOTAL NUMBER OF EMPLOYEES PER AEROZONE COMMUNITY



Source: Reference USA, May 2022; TeamNEO; U.S. Bureau of Labor Statistics, National Business Employment Dynamics Data by Firm Size Class

# MAJOR EMPLOYERS BY NUMBER OF EMPLOYEES



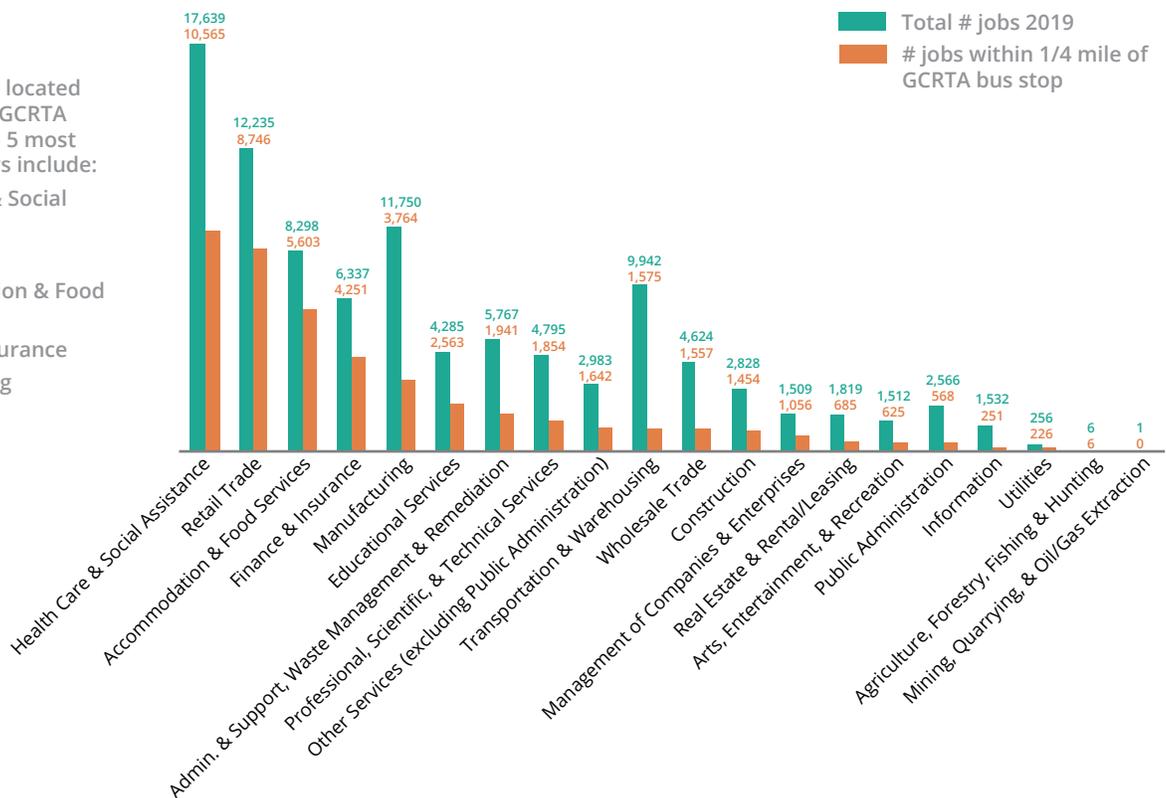
# 3.31 JOB PROXIMITY TO GCRTA TRANSIT STOPS

Of the Aerozone's 100,684 jobs in 2019, 48,932 are located within one quarter mile of a GCRTA bus stop; which equates to just under 50% of total jobs being accessible via public transportation (48.6%). Comparatively, target industries or sectors of high importance for continued Aerozone job growth, consistently have less access to public transportation than non-target industry sectors. This indicates that target sectors, such as Professional, Scientific, & Technical Services, tend to locate further from arterial roadways and thus have less direct access to public transportation for its employees. Additionally, the target sectors of Manufacturing and Transportation & Warehousing are disproportionately under-served based on overall employment numbers, indicating more employees working within those sectors tend to have fewer commuting options.

## AEROZONE JOBS WITHIN 1/4 MILE OF GCRTA BUS STOP BY INDUSTRY SECTOR

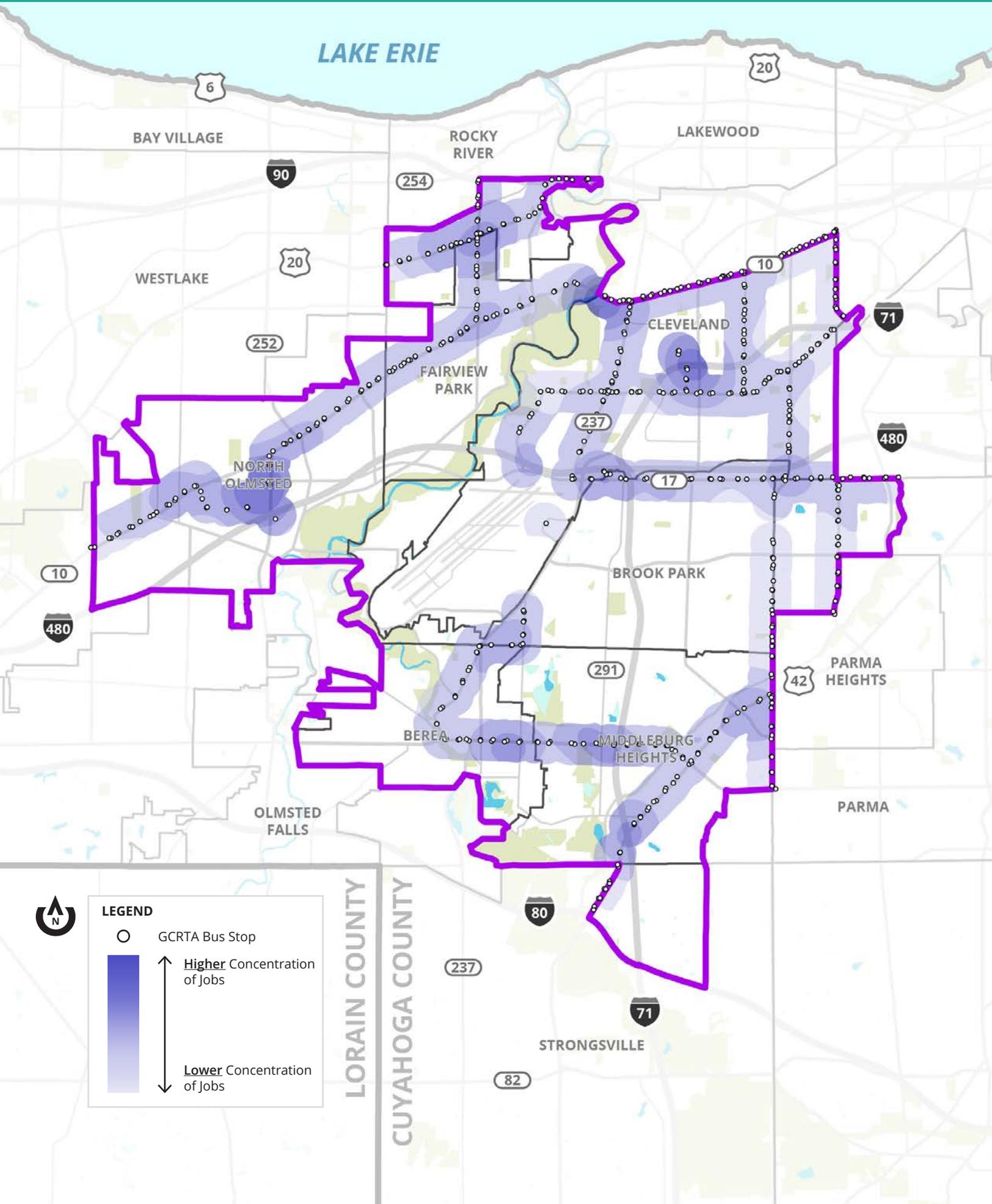
Of the industries located within a 1/4 of a GCRTA bus stop, the top 5 most accessible sectors include:

- 1) Health Care & Social Assistance
- 2) Retail Trade
- 3) Accommodation & Food Services
- 4) Finance & Insurance
- 5) Manufacturing



Source: Longitudinal Employer-Household Dynamics (LEHD), Area Profile Analysis by All Jobs, 2019

# JOB PROXIMITY TO GCRTA TRANSIT STOPS



## 3.32 RECENT MAJOR DEVELOPMENT

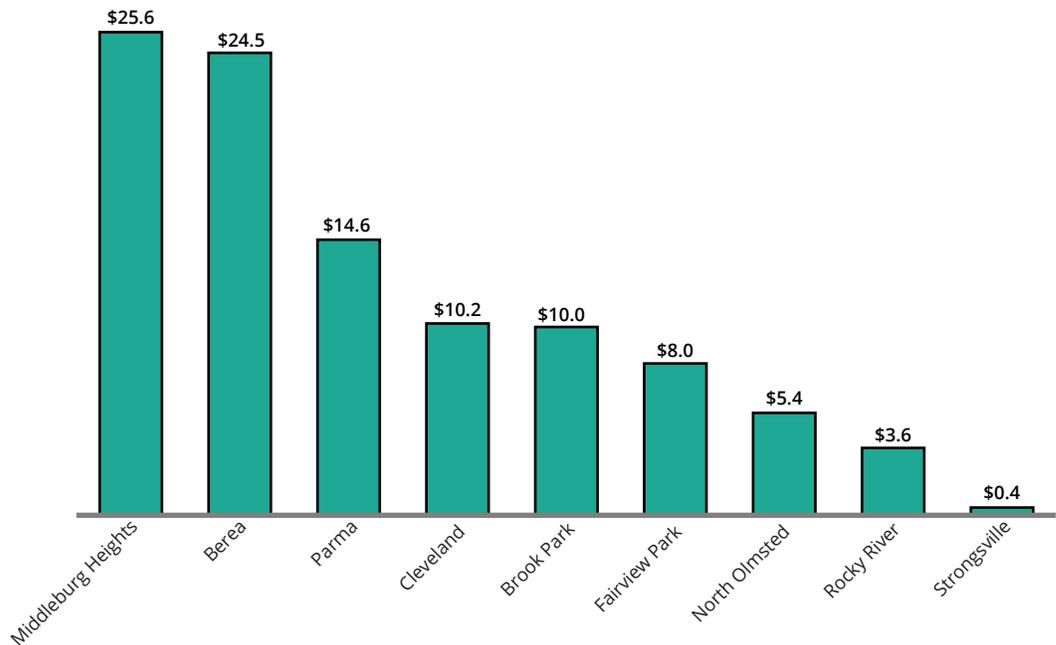
From 2019 to 2021, the Aerozone saw over \$102 million in added taxable building value—impacting 324 parcels—each increasing by at least \$10,000 in overall value from the previous year. The City's of Middleburg Heights and Berea had the greatest increased value, each adding approximately \$25 million in value or nearly 50% of the Aerozone's total added value during the same time. However, the single largest investment within the Aerozone was in the City of Parma, which included a \$11,715,400 investment from PITT Ohio.

Although the City's of Middleburg Heights and Berea had the highest overall added value from 2019 to 2021, the City of Parma had the greatest average investment, at just over \$2 million, for each of its seven parcels—Middleburg Heights' average was \$581,348 for 44 parcels, while Berea's average was \$271,966 for 90 parcels. This indicates that building and property investments are potentially approached differently within each community and not necessarily collaboratively. Coordinating development initiatives across municipal boundaries could help create new reinvestment opportunities that might not otherwise exist without a collaborative partnership with adjacent communities. This is an important consideration as vacant land becomes more scarce in the future, making new development more challenging with existing land assets.

### ADDED VALUE FROM COMPLETED DEVELOPMENT PROJECTS BY AEROZONE COMMUNITY, IN MILLIONS FROM 2019-2021

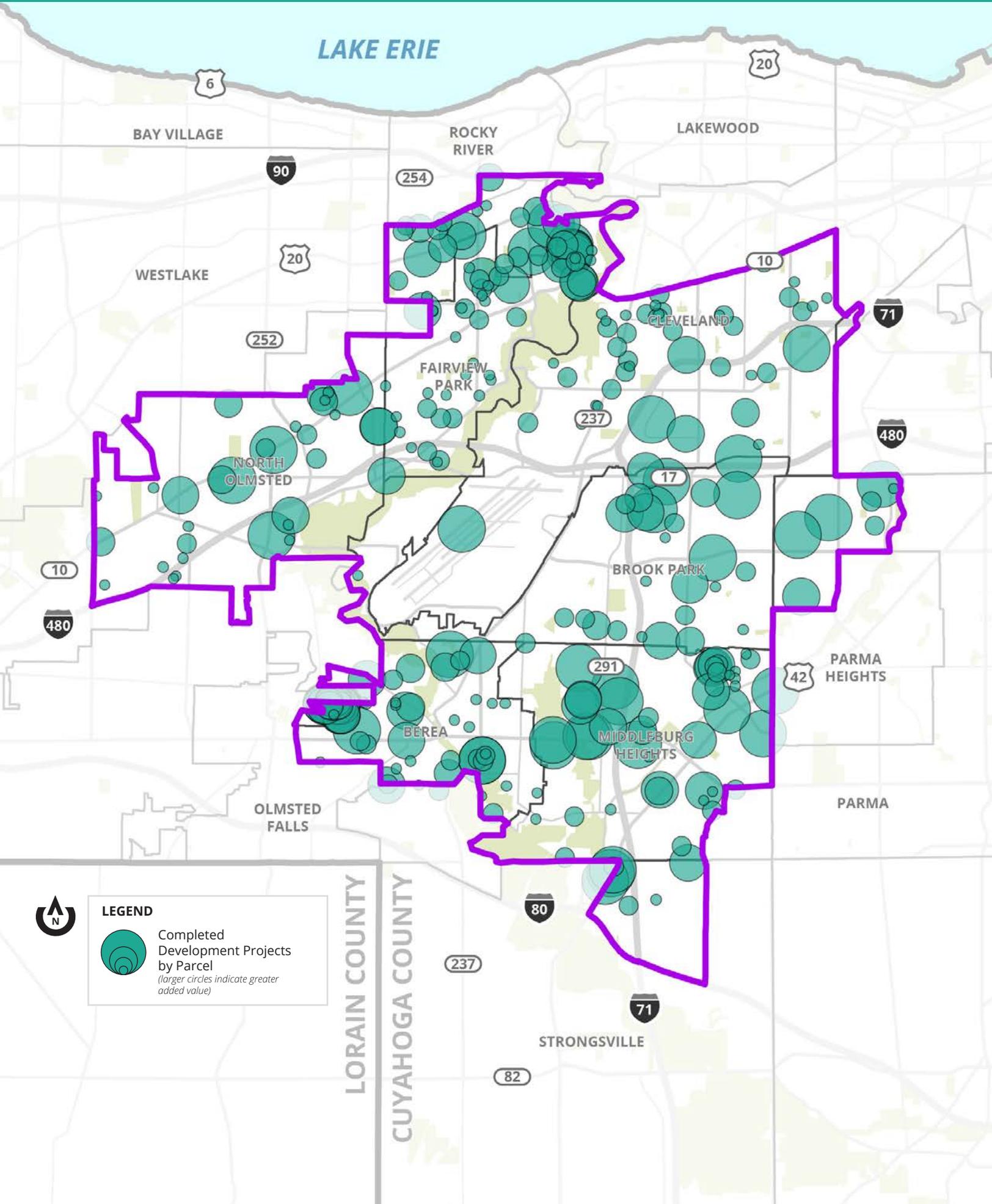
The top five highest single property investments within the Aerozone between 2019 and 2021 include:

- 1) PITT Ohio in Parma, \$11,715,400
- 2) Cleveland Hopkins International Airport in Cleveland, \$5,954,300
- 3) Amazon Distribution Center, Middleburg Heights, \$5,200,000
- 4) Multi-tenant building in Middleburg Heights, \$4,571,500
- 5) Multi-tenant building in Berea, \$4,377,700



Source: Cuyahoga County Fiscal Office, Delta Track Data, 2019-2021

# ADDED VALUE FROM COMPLETED DEVELOPMENT PROJECTS BY PARCEL



## 3.33 HOSPITALITY ACCOMMODATIONS

Hotels and motels are an important economic driver and valuable asset that can generate significant tax revenues for communities and create many local jobs. They fill a unique and targeted market that focuses on business, tourism, and leisure travelers, which is even more of a necessity near major travel hubs and airports. These locations are further enhanced by transportation options, including car rental facilities, which the Aerozone has 10, to give travelers the flexibility to enjoy their trips at their own pace.

In total, there are 26 hotels and motels within the Aerozone that offer nearly 3,200 guest rooms (3,172 total rooms), with the highest concentration being located in Cleveland. There are also clusters of hotels and motels within Middleburg Heights, North Olmsted, and Brook Park that offer various experiences and price points for travelers seeking accommodations. However, while there are numerous accommodation options within the Aerozone, many are outdated and potentially cannot provide the types of experiences and amenities new travelers are seeking.

As a result of the COVID-19 pandemic, between 2020 and 2021 the national hotel industry lost a collective \$111.8 billion in room revenue alone, and in 2021 Cuyahoga County saw a 30% decrease in visits, an overall economic impact of over \$7.1 billion (27% loss). However, while full recovery is still projected several years away, continued shifts in travel preferences and patterns, hotels can begin to adapt to the needs of a new kind of traveler—one that mixes leisure with business, or "bleisure." The bleisure traveler is one that organizes business trips in order to experience local destinations. These new types of travelers expect more from their accommodations, and also provide Aerozone hotels and motels an opportunity to meet those demands and attract new visitors.

In addition to the COVID-19 pandemic, the de-hubbing of United from the Cleveland Hopkins International Airport also shifted overall travel patterns for the region. Instead of being a hub for flight connections, the airport is now primarily comprised of origin and destination trips, which now comprises over 95% of travel compared to 65% from previous years. This is an important shift for the Aerozone because as more travelers make Cleveland a destination of choice, hotels and motels will need to keep pace with the increase in demand of high quality accommodations and amenities.

The highest concentrations of Aerozone hotel and motels rooms are within three communities: Cleveland, Middleburg Heights, and North Olmsted—accounting for 84% of all available rooms.

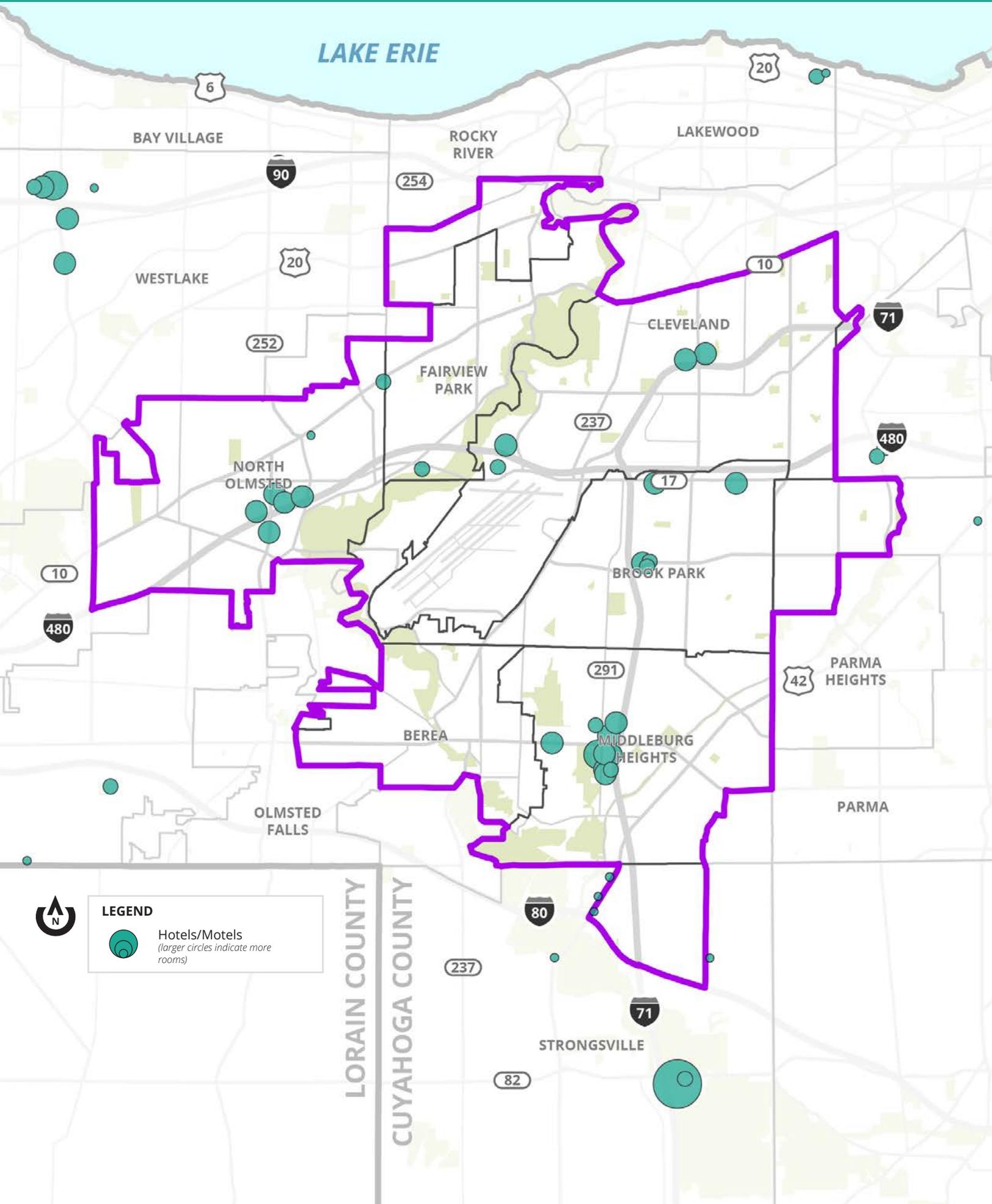
### AVAILABLE AEROZONE HOTEL & MOTEL ROOMS BY COMMUNITY

City of Cleveland	City of Middleburg Heights	City of North Olmsted	City of Brook Park	City of Fairview Park	City of Strongsville
1,209	738	724	385	70	46

\* Within this Current Conditions Analysis and study boundary there are presently no hotel or motel rooms in the cities of Parma, Berea, or Rocky River.

Source: Cuyahoga County; Bill Ryan, Downtown Market Analysis Toolbox, Lodging; Destination Cleveland; Ohio Department of Commerce, State Fire Marshal, Hotels & Motels

# LOCATIONS OF HOTELS & MOTELS



## 3.34 AIRPORT ECONOMIC INITIATIVES

In 2022 Cleveland Hopkins International Airport (CLE) provided a preliminary draft update to its Master Plan—which generally provides guidance for future development of the airport to meet continued passenger, cargo, and operations growth. The Master Plan is an essential element in assessing major facility improvements and long-term capital investment, such as parking options, roadway infrastructure, and compatible land uses. Additionally, the Airport Master Plan emphasizes the importance for CLE being a hub for regional economic development initiatives, especially as it relates to business and workforce talent attraction and retention.

The Aerozone Innovation Hub is an area located just south and west of the airport, and is the only federally funded opportunity zone on Cleveland's west side—potentially a catalytic area for future economic development initiatives. As part of the 2022 Airport Master Plan, the roughly 1.5 square mile Aerozone Innovation Hub is identified as a key location to both create and attract new airport and aerospace-oriented jobs. The Master Plan also identified 13 market sectors and land use types that could potentially drive new development:

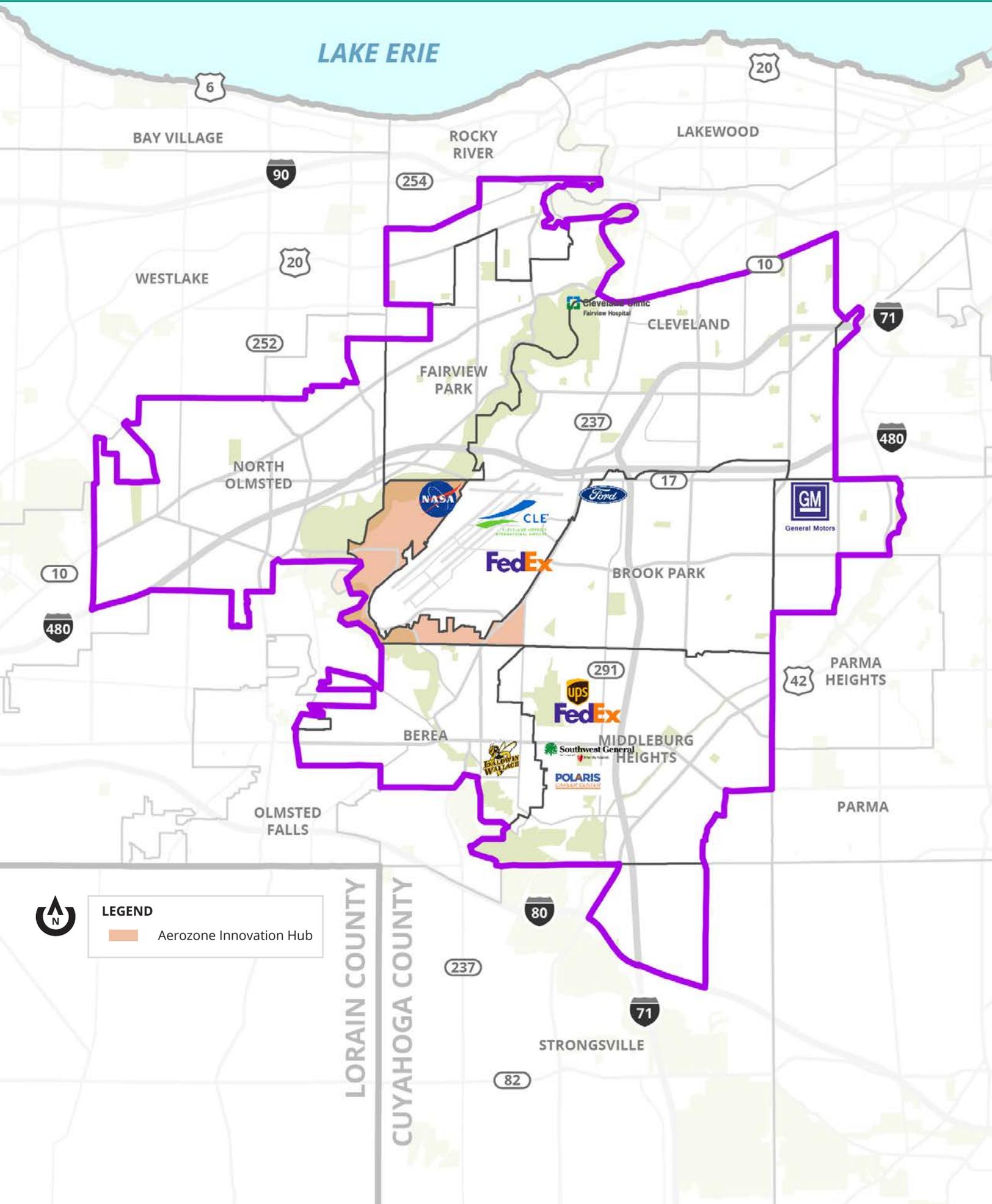
- 1) Airframe Construction & Maintenance
- 2) Avionic (Aerospace Electronics)
- 3) Aerospace
- 4) Advanced (Smart) Manufacturing
- 5) Information Technology
- 6) Light Industrial
- 7) Commercial/Office
- 8) Warehousing/Distribution
- 9) Logistics/Supply Chain
- 10) Life Sciences
- 11) Targeted Government/Public Sector
- 12) Hotel/Conference Center (Hospitality & Lodging)
- 13) Solar Power

While air cargo demand is projected to remain relatively flat at CLE through 2035, facility enhancements could help capture new/available markets—FedEx currently accounts for nearly 75% of total cargo aircraft operations in CLE.

These sectors are well represented throughout the Aerozone with much of the existing infrastructure already in place to support these types of operations. These sectors also indicate an opportunity to strategically target these types of industries and create economic incentives that will attract new businesses into the Aerozone that can also support other key district anchors, such as NASA, the Cleveland Clinic, and Baldwin Wallace University. Cooperation, collaboration, and coordination with partner agencies, communities, and stakeholders will be critical to the success of the Aerozone and its economic growth.

*Source: Cuyahoga County; Google Earth; Master Plan for the Cleveland Hopkins International Airport, 2022*

# KEY AEROZONE ANCHORS





# WORKFORCE

Evaluating the location and composition of an area's available workforce is an important exercise for understanding where potential misalignments could exist between current jobs and workers. By recognizing and identifying these trends, the Aerozone can assist businesses with strategic workforce attraction and retention initiatives to remain competitive in a robust region.

This section covers information about the people who provide labor for Aerozone businesses. This information includes demographic details, educational attainment, and income. Unlike other sections in this Current Conditions Assessment, the Workforce Section provides information for a larger geographic area than just the Aerozone because employees commute from different parts of the region to work here.



## 3.35 WORKFORCE & COMMUTE TIMES

The workforce is comprised of all the people engaged in employment in the Aerozone. This pool of human talent works in Aerozone industries but may live throughout our region. A strong workforce is one that includes highly skilled and trained workers needed for the jobs located in the Aerozone. The following workforce system analysis addresses these employment needs by identifying gaps in available positions and providing attraction, training, and retention programs that support workers and industries.

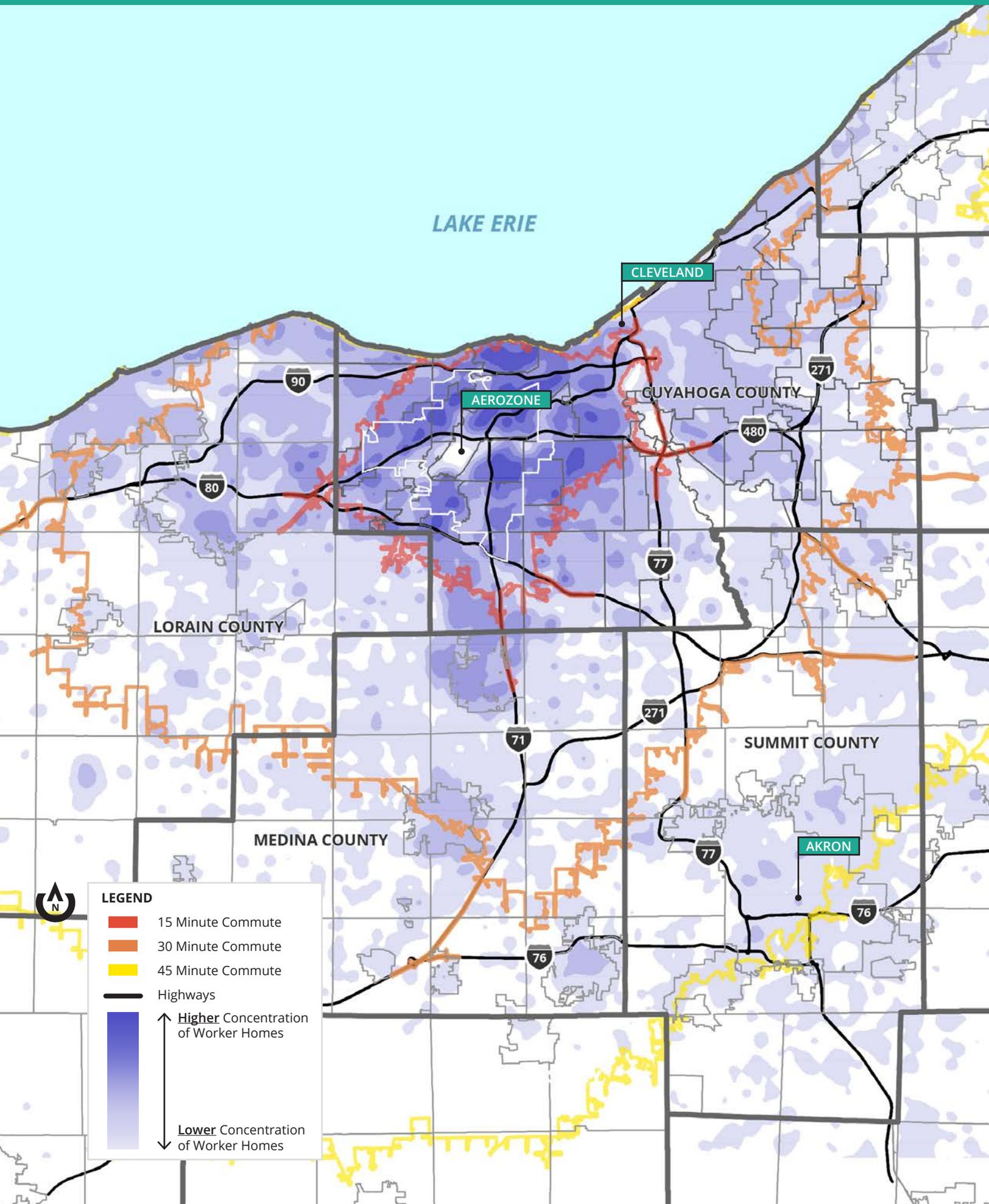
There are a number of jobs and industries within the Aerozone that have specific needs. This Current Conditions Assessment highlights the demographics of the area in order to best prepare for the ever changing needs of the district.

The map on the following page displays two data sets: travel sheds and workers homes. To better understand the workforce of the Aerozone, the analysis calculated 15 minute, 30 minute, and 45 minute commuter travel sheds. The point of origin for the travel sheds is Cleveland Hopkins International Airport (CLE). As displayed in red, orange, and yellow lines on the map, these travel sheds cover large portions of Cuyahoga County and surrounding counties. These travel sheds will be used throughout this workforce analysis.

Also shown on the map is data on where current Aerozone workers live. Darker areas indicate higher concentrations of worker home locations and where they are commuting from. The darker areas to the northeast of the Aerozone show that a concentration of workers resides with the 15 minute travel shed, while lighter areas indicate less heavily concentrated areas of worker homes within the 30 and 45 minute travel sheds.

*Source: County Planning, Travel Sheds, 2022; U.S. Census Bureau, Longitudinal Employer-Household Dynamics (LEHD), 2019-2021*

# AEROZONE WORKFORCE TRAVEL SHEDS



LAKE ERIE

CLEVELAND

AEROZONE

CUYAHOGA COUNTY

LORAIN COUNTY

SUMMIT COUNTY

MEDINA COUNTY

AKRON

## LEGEND

- 15 Minute Commute
- 30 Minute Commute
- 45 Minute Commute
- Highways
- Higher Concentration of Worker Homes
- Lower Concentration of Worker Homes

## 3.36 WORKFORCE PROFILES

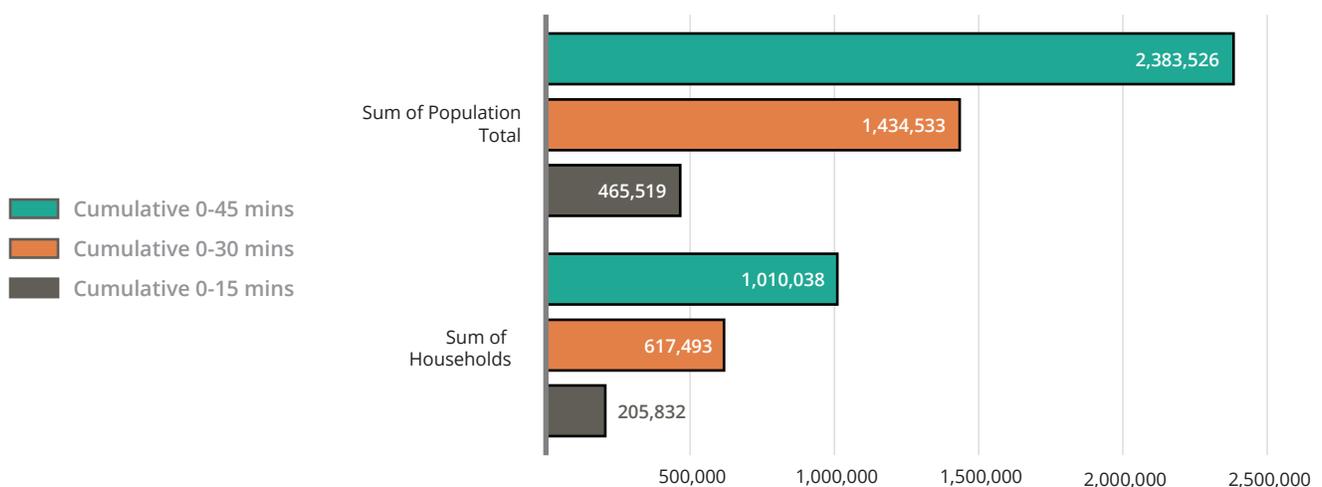
### TOTAL POPULATION

Population size and growth trends are key factors that can influence economic development and industry growth. The Aerozone is comprised of parts of many neighboring communities such as the Cities of Berea, Brook Park, Cleveland, Fairview Park, Middleburg Heights, and North Olmsted, Rocky River, Strongsville, and Parma. The population that supports the Aerozone also live within drive sheds that extend into other communities and counties as well.

The total population within a 15 minute drive of the Aerozone is approximately 465,000 people and expands to approximately 2.38 million residents within a 45 minute drive of the Aerozone. This comprises 205,832 households in the 15-minute cumulative commuter travel shed, 617,493 households within 30-minute commuter travel shed, and 1.01 million households in a 45-minute commuter travel shed.

The data shows that the Aerozone has a large population living within a short drive of the businesses and industries located there. With more than 1.4 million people living within 30 minutes of Cleveland Hopkins airport, the Aerozone has a robust population from which to draw potential employees.

### POPULATION & HOUSEHOLDS BY TRAVEL SHED



Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

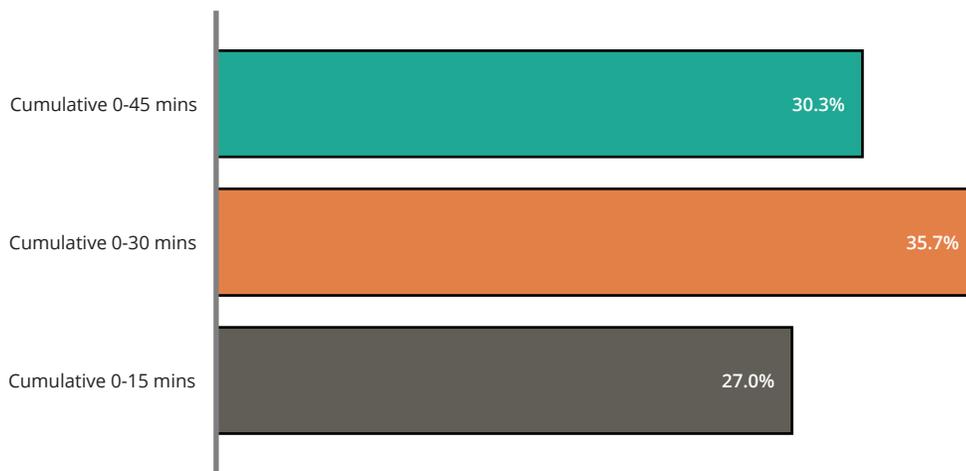
## MINORITY POPULATION

The racial and ethnic background of an area can help to inform policy and programming, and hiring decisions. For this analysis, all workers that identified as Asian, Black, Hispanic, Two or More Races, and Other were included as minority, while those that identified as white alone and non-Hispanic were excluded.

To better understand the minority workforce within the Aerozone, the analysis looked at the minority population within 15-minute, 30-minute, and 45-minute travel sheds from Cleveland Hopkins Airport and found that 27.0% of people living within a 15 minute travel shed were identified as minority residents. Within a 30 minute travel time, 35.7% identified as minority, and within a 45-minute travel shed, 30.3% identified as minority.

SUM OF TOTAL MINORITY POPULATION BY TRAVEL SHED			
	0-15 MINUTES	0-30 MINUTES	0-45 MINUTES
Sum of Total Minority Population in Aerozone	125,758	511,527	721,619

## MINORITY POPULATION BY TRAVEL SHED



Minority population includes those that identify as Asian, Black, Hispanic, Two or More Races, or Other.

Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

## 3.36 WORKFORCE PROFILES (CONTINUED)

### HOUSEHOLD INCOME

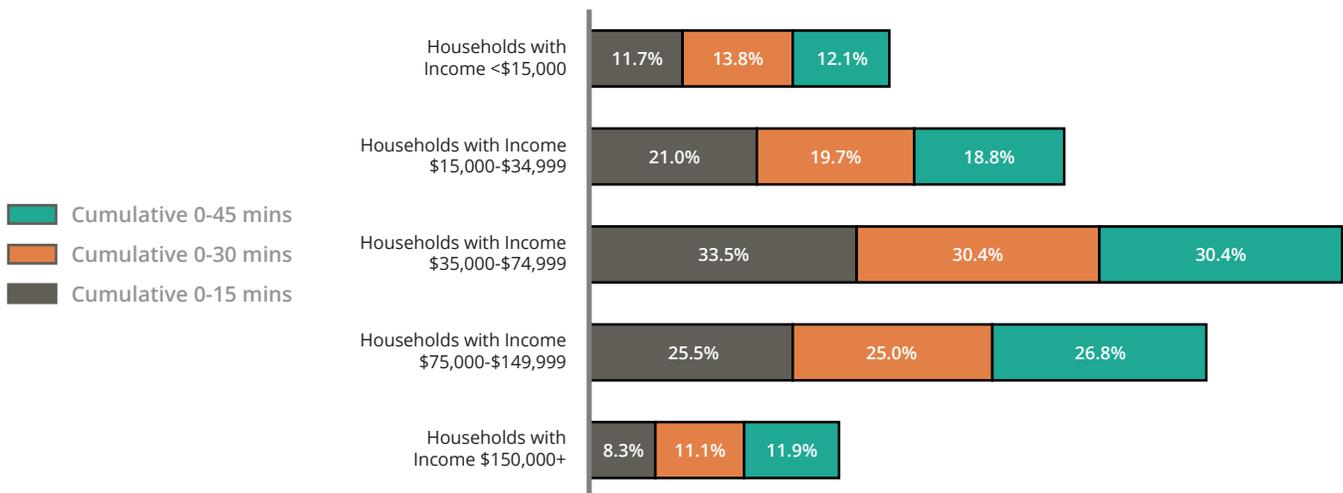
Household income is an important indicator in gauging purchasing power, the ability for residents to maintain their homes, and future income tax revenues.

To better understand income within drive sheds around the Aerozone, the analysis is showing the number of households within certain income bands. Within the 15 minute, 30 minute, and 45 minute travel sheds, household incomes between \$35,000 and \$74,999 were the most common, with between 30% and 34% of households earning this income within each drive shed. The next most common income band was \$75,000 to \$149,999, with more than a quarter of households in each travel shed earning this income.

**HOUSEHOLDS INCOME BY TRAVEL SHED**

	0-15 MINUTES	0-30 MINUTES	0-45 MINUTES
Households with Income less than \$15,000	24,069	85,107	122,589
Households with Income \$15,000-\$34,999	43,237	121,798	190,067
Households with Income \$35,000-\$74,999	69,054	187,471	306,572
Households with Income \$75,000-\$149,999	52,432	154,405	270,602
Households with Income \$150,000+	17,040	68,712	120,208

### HOUSEHOLD INCOME BY TRAVEL SHED



Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

## LABOR FORCE & UNEMPLOYMENT (AGE 16+)

Labor force refers to all members of the population who are able to work and are actively looking for employment. Persons not in the labor force include retired persons, students, those taking care of children or other family members, and those who are neither working nor seeking work.

The labor force participation rate refers to the proportion of the population that is in the labor force—including those who are employed and unemployed—compared to the population as a whole. Labor force participation rates can be important to planning because they indicate what percent of the population can be employed by local industries.

The unemployment rate represents the percentage of the civilian labor force that does not presently have a job and is actively looking for work. Full employment is generally around 5%, which indicates the most people seeking a job can find one and that most employers needing workers have a pool of candidates from which to choose.

The labor force participation rate for workers age 16+ in the Aerozone for workers within a 30-minute travel shed is 63.2%. Conversely, the unemployment rate for workers age 16+ within the same 30-minute travel shed is 6.8%. Additionally, the labor force participation rates and unemployment rates, respectively, for workers age 16+ within the 15-minute travel shed (66.2%; 6.6%) and 45-minute travel shed (63.7%; 6.1%) were similar to workers within the 30-minute travel shed.

LABOR FORCE & UNEMPLOYMENT BY TRAVEL SHED			
	0-15 MINUTES	0-30 MINUTES	0-45 MINUTES
Labor Force Age 16+	252,752	738,607	1,238,340
Labor Force Participation Rate	66.2%	63.2%	63.7%
Unemployed Labor Force Age 16+	16,567	50,239	75,246
Unemployment Rate	6.6%	6.8%	6.1%

## 3.37 EDUCATION & WORKFORCE TRAINING CENTERS

Building a workforce of highly trained and skilled workers is essential to fostering a thriving and competitive economy. Training and development programs ensure that workers have a background of knowledge that can enhance economic growth and quality of life in the district.

In addition to the numerous local K-12 grade schools in the Aerozone communities, there are approximately 14 higher education and workforce training centers that offer specialized and advanced training and education that include industry-recognized certifications, pre-employment training, and apprentice, internship, and externship opportunities that include a mixture of instruction and on-the-job training. Some of the 14 higher educational institutions and workforce training centers in the area include: Stanford Brown College, Bryant & Stratton College, Quest Career College, The North Coast College Adult and Continuing Education - Cleveland Extension, The Finishing Trades Institute of the Ohio Region. Remington College which has a number of campuses in Northeast Ohio is now listed as 'Permanently Closed,' including the West Campus in North Olmsted.

The three largest institutions in and near the Aerozone are Baldwin Wallace University, Polaris Career Center, and Cuyahoga Community College's Western Campus. Information from the institutions and data from the Integrated Postsecondary Education Data System at the National Center for Education Statistics provides insights into the courses of study and enrollment at these schools.

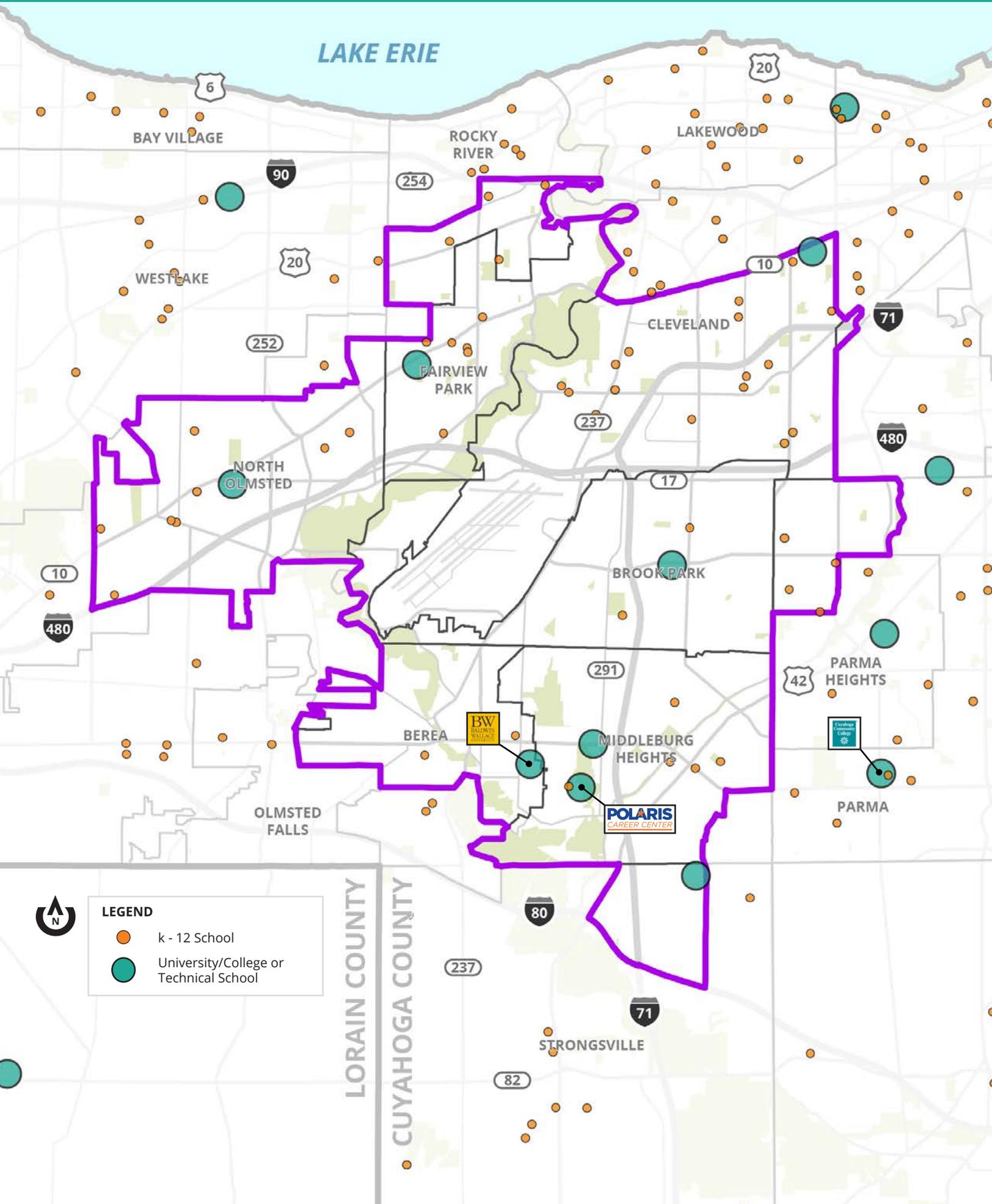
### KEY AEROZONE EDUCATION & WORKFORCE TRAINING CENTERS

	ENROLLMENT					COST	GRAD. RATE
	TOTAL	ASIAN	BLACK	HISPANIC	WHITE		
Baldwin Wallace University	3,230	2.0%	6.0%	8.0%	58.0%	\$25,361	65%
Cuyahoga Community College <i>(all campuses)</i>	41,000	3.0%	24.0%	8.0%	60.0%	\$4,909	28%
Polaris Career Center	8,400	2.7%	16.2%	5.4%	63.5%	\$13,495	85%

Cuyahoga Community College has the lowest tuition in the state.

Source: Baldwin Wallace University, Cuyahoga Community College, Polaris Career Center, 2022; Integrated Postsecondary Education Data System at the National Center for Education Statistics, 2022, & Data USA, <https://datausa.io/>, 2022

# EDUCATION & WORKFORCE TRAINING CENTERS



## 3.37 EDUCATION & WORKFORCE TRAINING CENTERS (CONTINUED)

Baldwin Wallace University is a liberal arts and sciences higher education institution that offers over 85 undergraduate and graduate programs of study, professional development, and certificate programs. Baldwin Wallace has approximately 3,200 enrollees, 42% of which are from minority populations that include students of color, Hispanic/Latino, Black/African-American, Multi-racial, and Asian students. The majority of all students are enrolled in a four-year undergraduate program with over 500 students enrolled in online or in-person Graduate degree programs.

Polaris Career Center has over 3,900 high school and satellite program enrollees and serves 11<sup>th</sup> and 12<sup>th</sup> graders from the surrounding communities such as Berea-Midpark, Brooklyn, Fairview, North Olmsted, Olmsted Falls, and Strongsville High Schools. Polaris also has a satellite program for students grades 7 through 12. The adult education programs have approximately 4,500 enrollees in 14 adult job and career training programs that offer externship and apprenticeship opportunities.

Cuyahoga Community College (Tri-C) is a two-year post-secondary institution that offers flexibility in class scheduling across three regional campuses: Eastern, Western, and Metropolitan, for full-time, part-time, and commuter students at a fraction of the cost of four-year institutions in the region.

Located within the Aerozone district, the Western Campus offers direct-to-jobs and transfer programs, as well as a number of health career programs. Students also benefit from industry-standard laboratories and learning environment such as that offered through the advanced Automotive Technology Center and the Visual Communication center. The Western Campus also offers a regional Public Safety facility that features both credit and non-credit classes and training first responders. In total, there are 41,000 students enrolled with approximately 61% of enrollees in technical job training courses. More than 5,400 student apprentices participate annually in cooperation with 17 Northeast Ohio joint apprenticeship training councils and over 17,000 workforce certificates were awarded in the 2019-2020 academic year. Each year more than 12,000 credit and non-credit students take courses at the Western Campus.

Approximately 40% of Tri-C students were from minority groups, including those that identified as multiracial and Native American and approximately 60% of students identified as White.

Comparatively, more White students are enrolled in traditional higher education institutions and programs than workforce training programs within the Aerozone. The large number of non-White students graduating from area colleges indicates an opportunity to grow a diverse workforce for the sectors and industries within the Aerozone.

Source: Baldwin Wallace University, Cuyahoga Community College, Polaris Career Center, 2022; Integrated Postsecondary Education Data System at the National Center for Education Statistics, 2022, & Data USA, <https://datausa.io/>, 2022

### BALDWIN WALLACE UNIVERSITY PROGRAMS

Liberal arts core curriculum

85 programs of study (graduate, undergraduate)

Professional development

Baldwin Wallace has been ranked at #146 among the best online MBA programs in the nation, 5th best in the State of Ohio, and #162 on the national list of "Best Online Graduate Education Programs."

### TRI-C WORKFORCE TRAINING & EDUCATION PROGRAMS

Advanced Manufacturing and Engineering

Public Safety

Cisco Technical Training Institute

State of Ohio Motorcycle Program

Health Care Training

Steelworkers for the Future

Job Preparation and Placement

Truck Driving Academy

Online Training

Welding

Cuyahoga Community College has been recognized as one the "Best Community Colleges," and ranked 5th on a list of the Top 2-Year Schools and 1st for the Northeast Region, based on Quality of Curriculum, Graduation Rate, Reputation, and Post Graduate Employment.

### POLARIS CAREER CENTER PROGRAMS

High School and Satellite Programs Grades 7-12 with 18 career-technical programs

Adult Education with 14 Job & Career Training programs

Polaris Career Center has been providing middle and high school students and adult learners with training and credentials in 14 in-demand career fields that include, but not limited to Automotive Service Technician, Building Maintenance, Heating, Ventilating, Air Conditioning and Refrigeration (HVAC/R), and, Welding.

## 3.38 EDUCATIONAL ATTAINMENT

### EDUCATIONAL ATTAINMENT

Higher educational attainment is an important indicator for communities because it often indicates higher incomes and an innovative workforce. A more educated population can also attract higher quality jobs and employers, which can strengthen a community's economy and tax base.

Workers in drive times around the Aerozone are very similar in educational attainment. Focusing on a 30 minute travel shed, workers with a High School Diploma (290,208) or its equivalent make up the biggest contingent of the area at 28.6%. Additionally, 14.5% of workers have some college courses but no degree, 27.4% hold an Associate's or Bachelor's degree, and (12.6%) hold a Master's degree or higher. Workers in the Aerozone, when comparing workers by travel shed, are very similar in educational attainment.

Those workers with a High School Diploma (481,130) or its equivalent make up the biggest contingency of workers within the Aerozone. When looking at educational attainment by travel shed, workers in the Aerozone that commute no more than 30-minutes to their places of employment, 28.6% have a High School Diploma or GED, while 14.5% of workers have some college or one more year no degree and 18.9% of workers within the same 30-minute commute had a Bachelor's degree. Of all workers in the 0-30 minute cumulative commuter travel shed, more than a quarter (27.4%) of the workers hold an Associate's degree or Bachelor's degree and fewer than a tenth (8.7%) hold a Master's degree or higher.

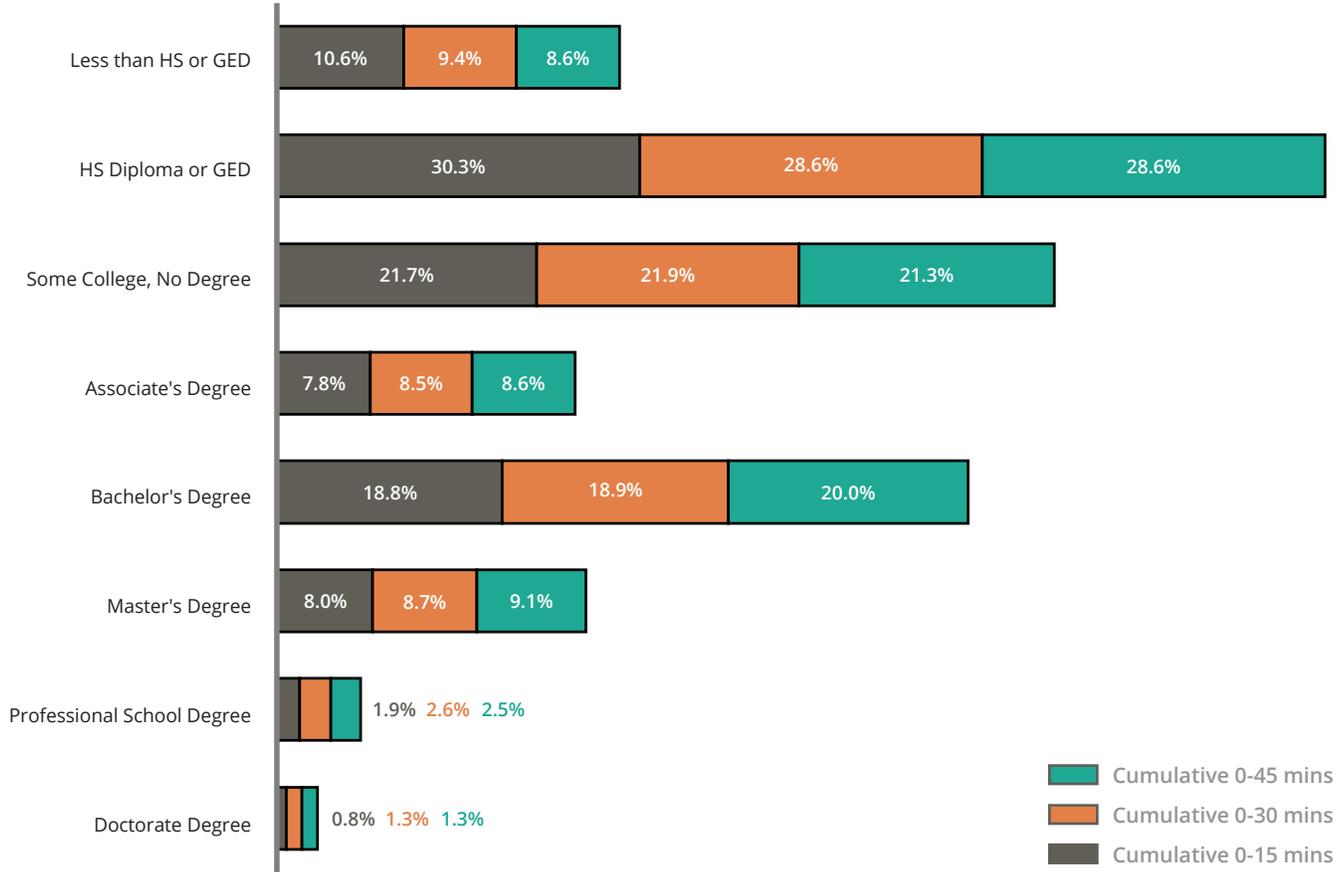
While those with a High School Diploma or its equivalent comprise the largest individual category at 28.6% of the population, those with any college degree comprise 40.0% of the 30 minute drive time around the Aerozone.

Workers continue to pursue higher levels of educational attainment. As technologies advance, the need to fill positions in the Aerozone with workers that have high educational attainment will likely also increase.

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2019), 2016-2020 American Community Survey 5-Year Estimates

SUM TOTAL OF EDUCATIONAL ATTAINMENT IN AEROZONE BY TRAVEL SHED			
	0-15 MINUTES	0-30 MINUTES	0-45 MINUTES
Less than HS or GED	34,873	95,669	143,362
HS Diploma or GED	100,134	290,208	481,130
Some College, No Degree	71,727	222,251	358,513
Associate's degree	25,713	86,311	144,022
Bachelor's degree	62,189	191,544	335,967
Master's degree	26,485	88,386	153,528
Professional school degree	6,113	26,094	41,583
Doctorate degree	2,697	12,878	21,906

### EDUCATIONAL ATTAINMENT BY TRAVEL SHED



Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

# 3.39 MEANS OF TRANSPORTATION TO WORK

The transportation method by which workers get to work is one way of understanding how workers travel daily. Because the Aerozone is comprised of many neighboring communities, it is better to understand the means of transportation in terms of people living within 15-minute and 45-minute cumulative travel sheds. Importantly, the information presented here represents workers living with these drive sheds, but does not necessarily mean these workers are employed within the Aerozone.

Driving to work is the predominant method of transportation for most people. The majority of workers living within a 0-15 minute (86.7%), 0-30 minute (86.4%), and 0-45 minute (87.7%) travel sheds commute to work by car, truck, or van. Conversely, fewer workers living within a 0-15 minute (6.3%), 0-30 minute (6.6%), and 0-45 minute (6.7%) travel sheds work from home.

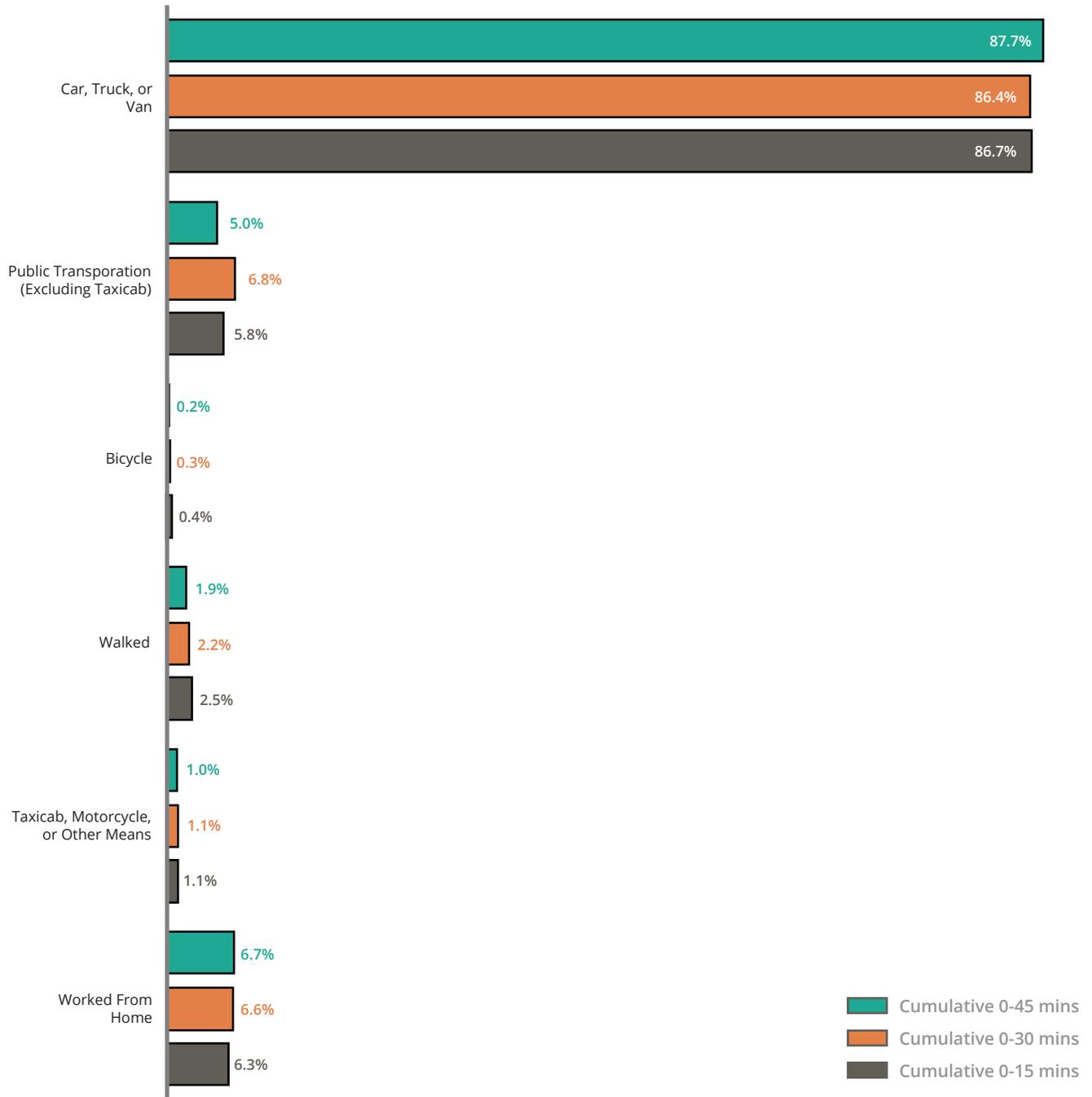
Additionally, a small but significant portion of workers living within a 0-15 minute (2.5%), 0-30 minute (2.2%), or 0-45 minute (1.9%) cumulative travel sheds walked, while workers within a 0-15 minute (5.8%), 0-30 minute (6.8%), or 0-45 minute (5.0%) travel sheds took public transportation. This indicates that workers utilized the Greater Cleveland Regional Transit Authority and may even walk to complete the first or last half mile from public transportation.

While the transportation mode workers take to get to work may be overwhelmingly by car, truck, or van, that does not mean residents do not use sidewalks and bikeways for recreation, to visit nearby amenities, or for errands; however, the automobile is the primary means for workers to access their place of employment.

SUM TOTAL OF MEANS OF TRANSPORTATION TO WORK IN THE AEROZONE BY TRAVEL SHED			
	0-15 MINUTES	0-30 MINUTES	0-45 MINUTES
Car, Truck, or Van	196,927	587,483	1,003,128
Public Transportation (excluding taxicab)	6,657	23,233	29,009
Bicycle	901	2,118	2,767
Walked	5,651	15,146	22,218
Taxicab, Motorcycle, or Other Means	2,483	7,201	10,964
Worked from Home	14,400	45,106	76,222

Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

## MEANS OF TRANSPORTATION TO WORK BY TRAVEL SHED



Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

## 3.40 VEHICLE OWNERSHIP

Vehicle ownership is quantified as the number of vehicles available per household. There are a total of 1,010,038 households located within the 0-45 minute travel shed of the Aerozone. Based on the mode of transportation to work and vehicle ownership, that community is predominantly car-oriented.

The vast majority of households in every drive shed have access to a vehicle. Almost 90% of households in a 0-15 minute, 0-30 minute, and 0-45 minute travel sheds have at least one vehicle available at home.

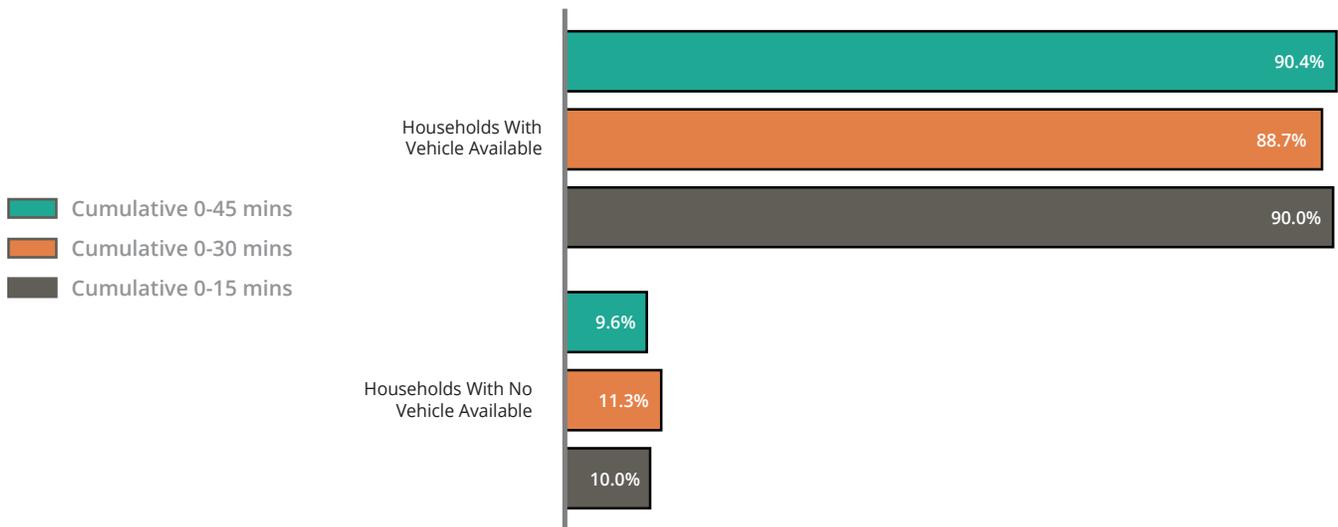
While the majority of households have access to a vehicle, a significant number of households in every drive shed do not. Moreover, this analysis does not capture low-vehicle households in which a single vehicle is shared by multiple workers. This indicates the ongoing need for alternative forms of transportation to provide access to employment.

There are 69,930 households in a 30-minute travel shed that do not have access to a vehicle, that is 11.3% of households in the 30-minute travel shed.

### HOUSEHOLDS WITH NO VEHICLE AVAILABLE BY TRAVEL SHED

	0-15 MINUTES	0-30 MINUTES	0-45 MINUTES
Sum of Total Households for Vehicles	205,832	617,493	1,010,038
Sum of Households With No Vehicles Available	20,601	69,930	97,397
Percent of Households With No Vehicles Available	10.0%	11.3%	9.6%

### HOUSEHOLDS WITH NO VEHICLE AVAILABLE BY TRAVEL SHED



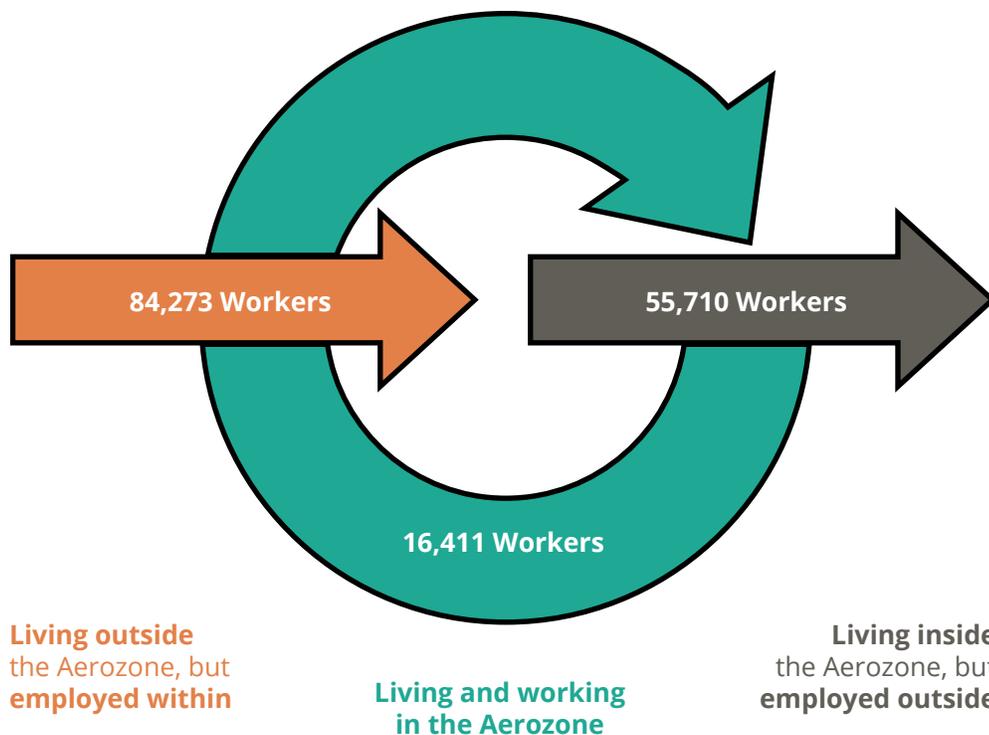
Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

## 3.41 WORKFORCE MOVEMENT

There are 100,684 people employed in the Aerozone. The Aerozone has 84,273 workers who do not live within the Aerozone that enter the area for employment and 16,411 workers who both live and work within the Aerozone. There are also 55,710 workers who live in the Aerozone, but leave the community daily to work elsewhere.

With 83.7% of those who work in the Aerozone commuting from elsewhere, complete transportation networks are essential for connecting the workforce to these jobs.

### WORKFORCE COMMUTING DIRECTION



Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2019)



# County Planning

FOR OUR COMMUNITY  
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