

TREND SCENARIO

WHERE ARE WE GOING TOGETHER?

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To plan ahead, we need to understand where we are currently headed. The Trend Scenario was developed to help us understand the current trajectory of Northeast Ohio. This scenario shows us what the region could be like in 2040 if current trends continue. (See the Scenario Planning section in the Introduction for more information about the logic of the Vibrant NEO 2040 scenarios.)

SUMMARY OF SCENARIO MODELING PROCESS

1. Quantitative Projections: If current trends continue, how many people, jobs, and acres of conservation will the region have in 2040?
2. Development mix and land uses: How many homes, businesses, and other structures will be needed to accommodate the new people and jobs? What style of development will these new buildings have? Will they be suburban subdivisions or more compact neighborhoods? How many more homes will be abandoned if current trends continue?
3. Geographic allocation of new development: Where in the region will this new construction occur? What areas are likely to lose population?
4. Analysis: What are the fiscal, environmental, and quality-of-life impacts of these changes?

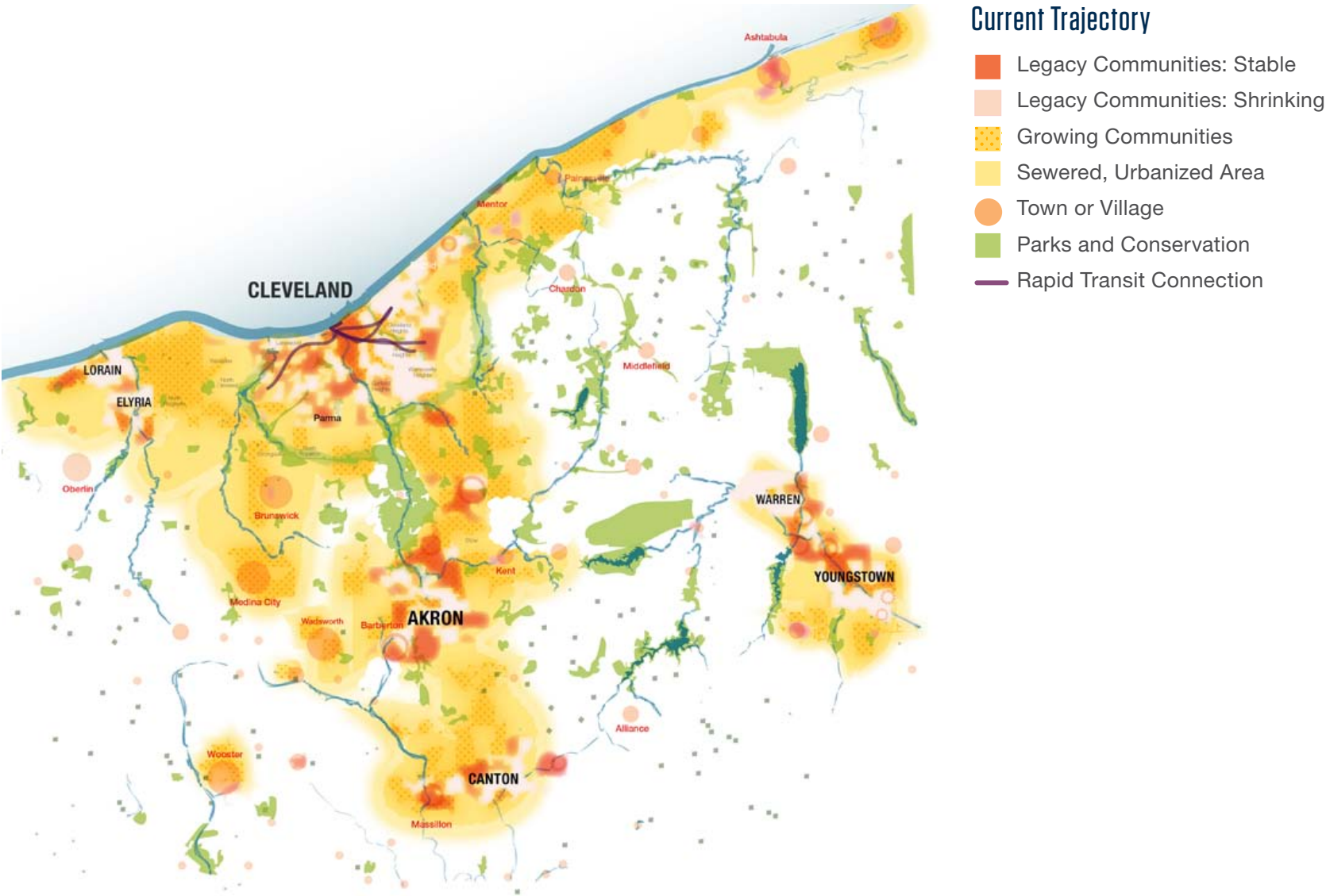
CURRENT TRAJECTORY

Northeast Ohio is changing. Central cities that were historically the centers of the region are experiencing abandonment. Once dense urban neighborhoods now struggle with high rates of vacancy. Outside of the cities, working farmland and undeveloped landscapes are being converted to new subdivisions, office parks, and shopping centers as people and jobs move to the suburbs. The distances between jobs, schools, homes, stores, and parks are increasing, and transportation options are increasingly limited to personal vehicles. **What will the region be like in 2040 if these trends continue?**

What does Sewered Urbanized Area mean?

The yellow region on the map is labeled as the “Sewered Urbanized Area.” It is “sewered” because the area within this boundary is served by sewer lines. It is “urban” because it is defined as such by the US Census. The Census definition does not mean that places within the boundary are urban in the sense that they have tall buildings, feel like cities, or even that they are heavily developed; it is a technical definition meaning places with a minimum of 2,500 residents and their surrounding territories.¹

¹ The full definition can be found at <http://www.census.gov/geo/reference/usa/urban-rural-2010.html>



SUMMARY OF QUANTITATIVE TRENDS: POPULATION, EMPLOYMENT, AND CONSERVATION

The foundation of the Trend Scenario is a series of projections that estimate how many people, jobs, households, housing units, and acres of conservation will be in the region by 2040 if current rates of growth continue. The 2040 projections are based on county-level trends over the past two decades. This time period was selected as the best representation of the region as ‘stabilized yet challenged’ and was long enough to capture several market cycles, a critical factor for long-range estimates. For each county, annual rates of change from 1990-2010 were extrapolated through 2040. For a more detailed discussion about the process of calculating these numbers, please refer to the Technical Appendix. It is important to emphasize that the numbers used for the Trend Scenario are empirically derived: they are not guess-work or based on the opinions of the Project Team—they are mathematical extrapolations of the past.

TREND SCENARIO SUMMARY OF PROJECTIONS		
	CURRENT	2040
Population	3,821,300 residents	3,914,600 residents
Employment	1,710,800 jobs	1,839,800 jobs
Parks and Conservation Land	276,000 acres	389,000 acres

PEOPLE AND JOBS

Region-wide, population and employment growth has been virtually flat. Population is on track to increase by slightly less than 100,000 across the region, from 3.82 million in 2010 to 3.91 million in 2040. Employment is also on track to increase by about 100,000 region-wide, from 1.56 million in 2010 to 1.65 million in 2040. These increases translate to annual growth rates of 0.08% for population and 0.25% for employment.

At first, these flat region-wide totals may suggest that the region will not see much change over the next few decades. However, a closer look at the county-wide numbers provides a more complete story. Some counties are growing rapidly while others are shrinking.

For instance, Cuyahoga² and Mahoning counties are losing about 0.5% of their population per year, while Medina County, the fastest growing county in the region, is adding population at an annual rate of 2.2%. As the next section will show, these changes will result in significant impacts to open space, public sector fiscal health, transportation options, and more.

The contrast between county-level changes and regional changes is significant. Even though individual counties may be increasing in population and jobs, their increases are predominately a result of movement within the region. Medina, Portage, Wayne, and Geauga counties together are projected to increase by 194,000 residents, even though we’ve seen that the region as a whole is only projected to grow by 93,400. Where are the additional new residents in these four counties coming from? The new residents are largely moving from Cuyahoga, Mahoning, and Trumbull counties.³ The growth of some counties in the region is linked to, and a result of, decline in others, as people and jobs are moving away from legacy cities.

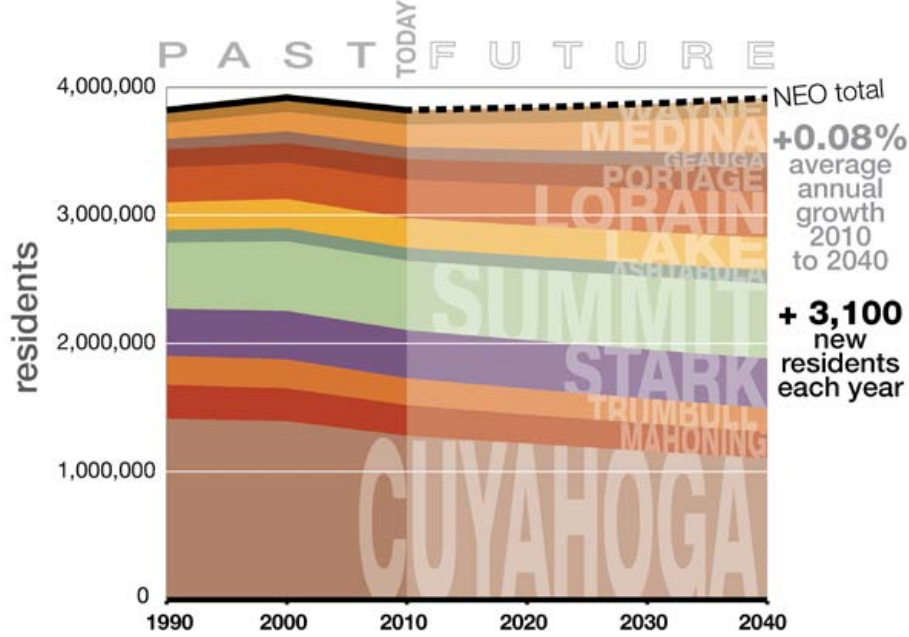
² Although it will continue to lose population and employment if current trends continue, Cuyahoga County in 2040 will still account for 28% of all residents and 34% of jobs in the region, more than any other county. The changes in the scenarios will produce significant environmental, fiscal, and community impacts, but the overall picture of population distribution in the region will not be radically different.

³ In net, Cuyahoga, Mahoning, and Trumbull counties are projected to experience declines and Medina, Portage, Wayne, and Geauga are projected to grow. Of course, in reality, not everyone who moves away from the first set of counties moves to one in the second set.

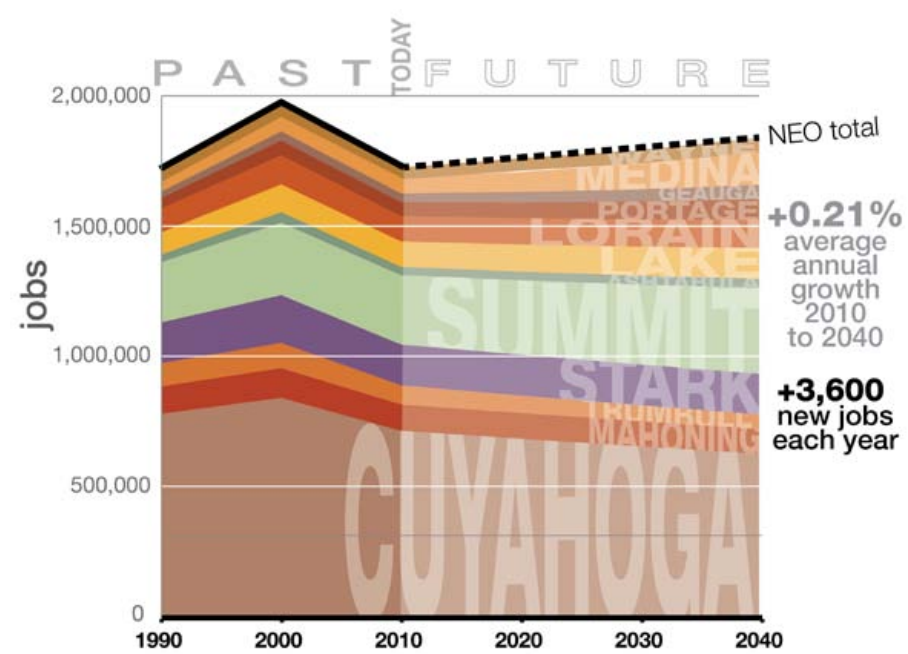
PARKS AND CONSERVATION LAND

Approximately 7% of Northeast Ohio is currently conserved, and the trend has been to conserve an additional 1% each decade.⁴ At the current rate of conservation, approximately 10% of the region will be conserved by 2040. While this trend is positive, many local conservation partners surveyed for the Western Reserve Land Conservancy’s “Common Ground” report believe it should be higher. 92% of the surveyed partners felt 10% was appropriate as a minimum conservation goal, but more than two-thirds felt 15% was a better standard for regional conservation.⁵

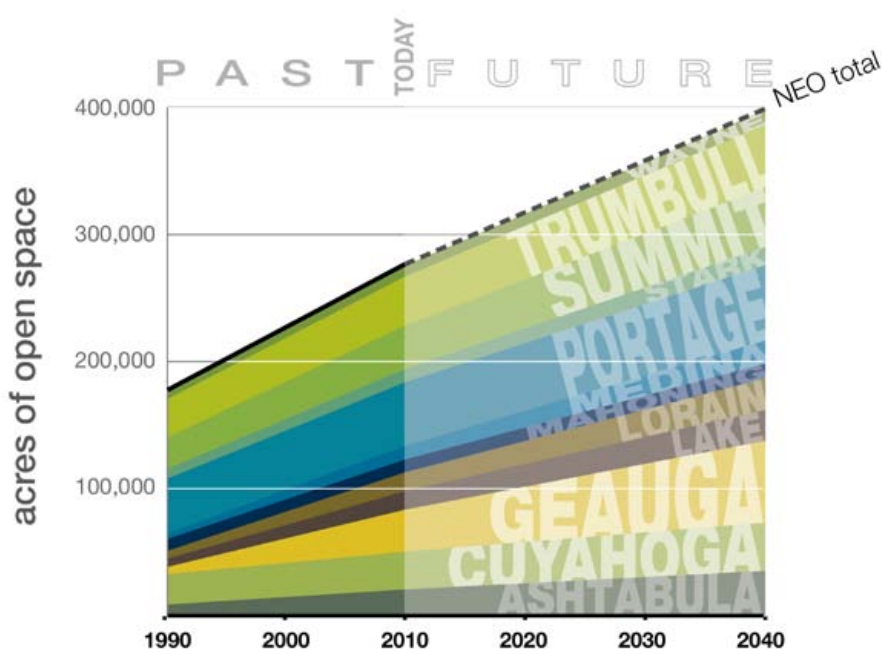
Population Trends by County



Employment Trends by County



Conservation Trends by County



4 “Common Ground: The land protection report for northern Ohio” (WRLC, Dec. 2012)

5 “Common Ground: The land protection report for northern Ohio” (WRLC, Dec. 2012)

WHAT KINDS OF PLACES ARE INCLUDED IN THE SCENARIO MAPS? LAND USES IN NEO

Mixed-use



City Architecture

Commercial (Stores, restaurants, and offices)



Valeria Everett (Flickr.com)

Industrial



Sharon M Leon (Flickr.com)

Other Built (Public buildings, hospitals, parking lots, roads, schools, and airports)



Doug Kerr (Flickr.com)

Residential: Urban or Multifamily



City Architecture

Residential: Suburban



City Architecture

Residential: Rural



Steve Wall (Flickr.com)

Abandoned (Vacant structures and abandoned lots)



Ed Kohler (Flickr.com),

Parks and Conservation



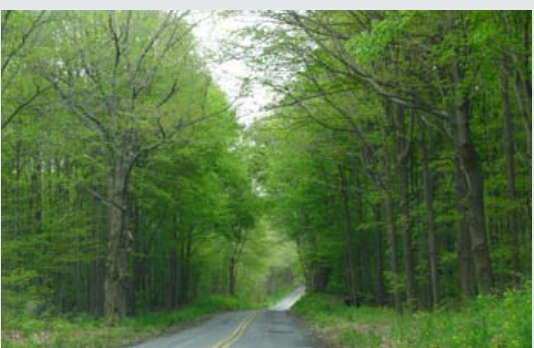
Davey Nin (Flickr.com)

Agriculture



Michael Meiser (Flickr.com)

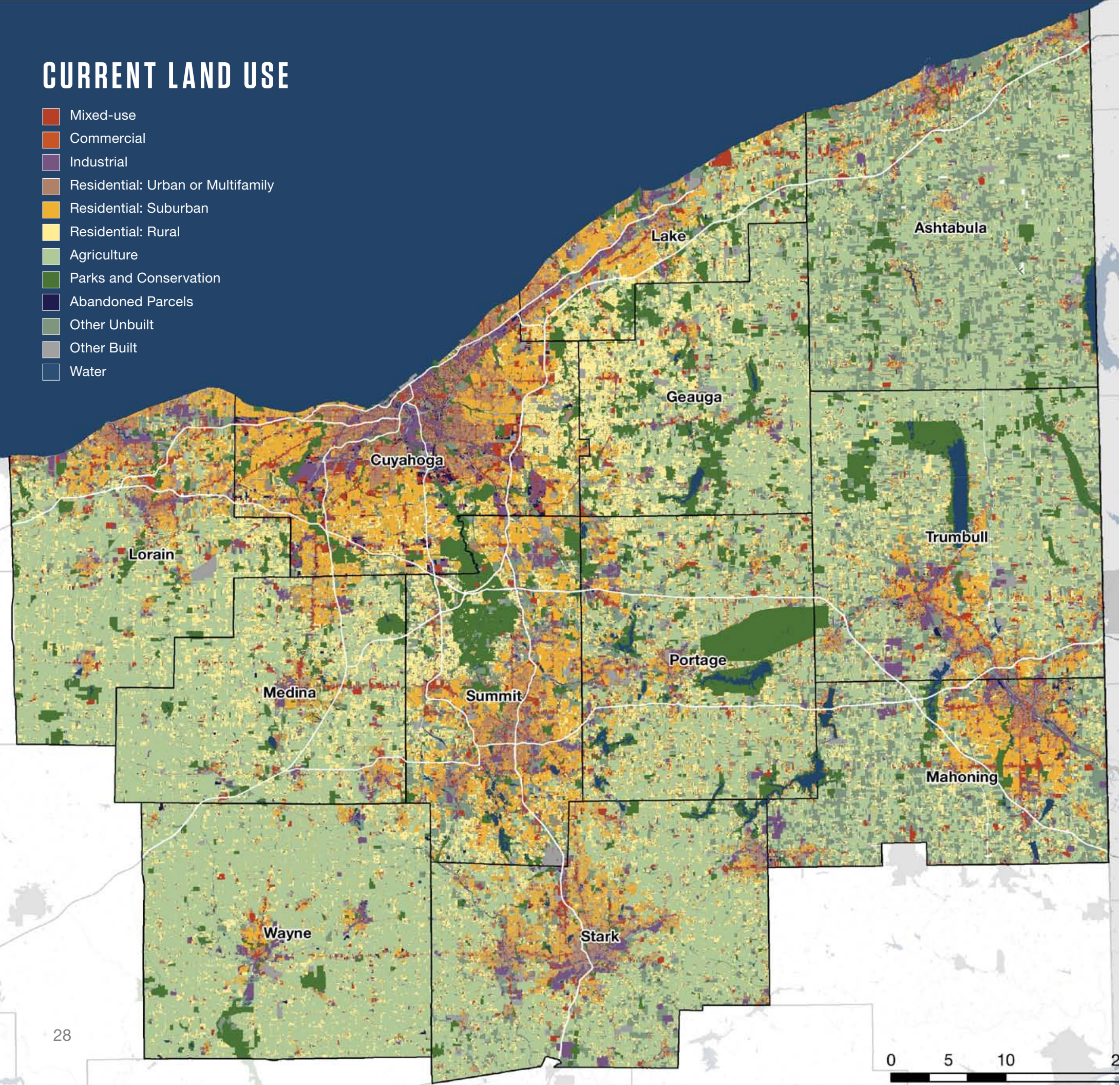
Other Unbuilt (Undeveloped land that is not conserved, cemeteries, and utility easements)



Garden Beth (Flickr.com)

CURRENT LAND USE

- Mixed-use
- Commercial
- Industrial
- Residential: Urban or Multifamily
- Residential: Suburban
- Residential: Rural
- Agriculture
- Parks and Conservation
- Abandoned Parcels
- Other Unbuilt
- Other Built
- Water

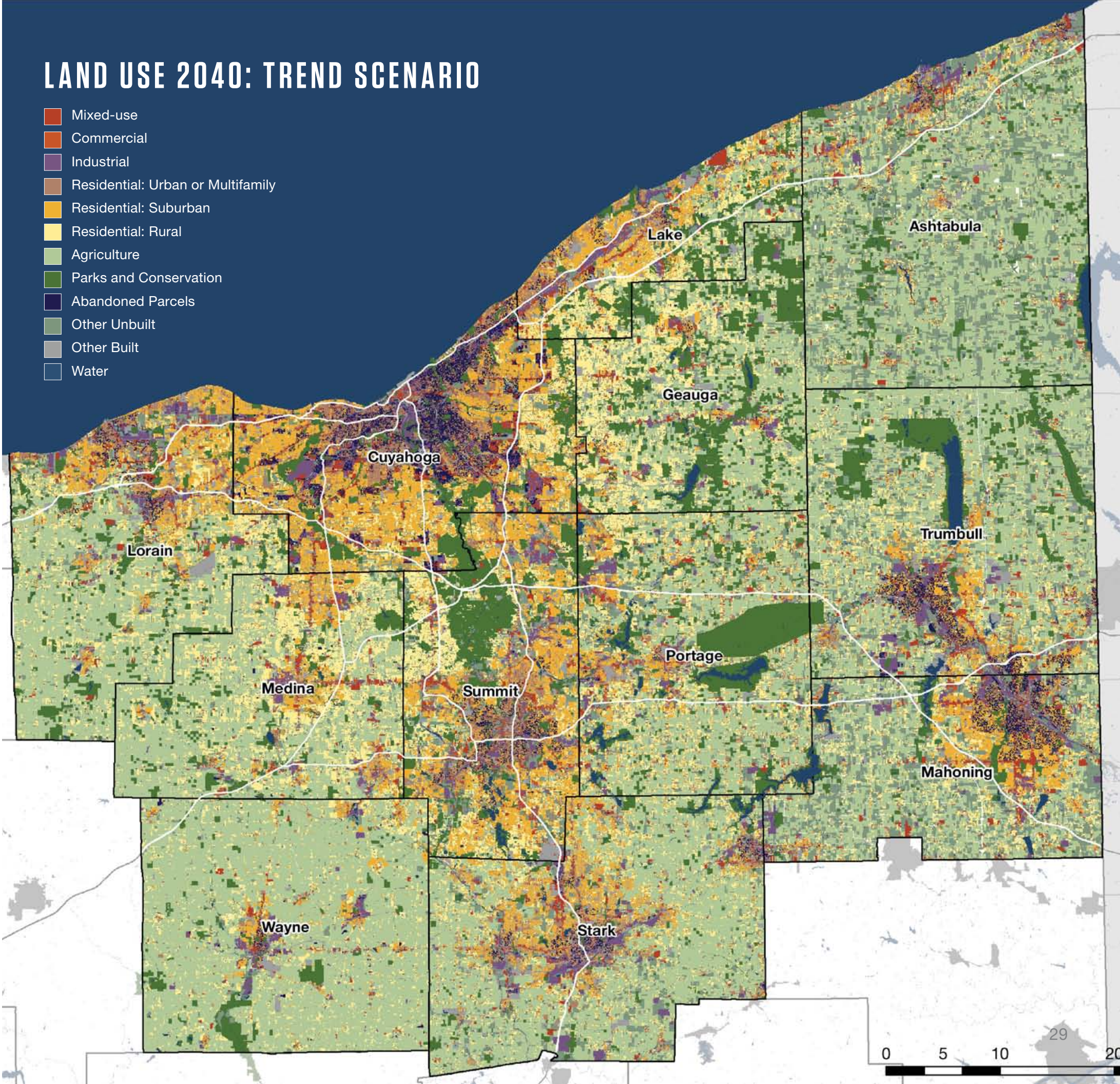


Having trouble spotting the differences?

The differences between these maps may be hard to see, but even small changes have big impacts. Each pixel of color represents an area slightly larger than 2 football fields. Add up all the small changes, and the impacts to quality of life, local budgets, and the environment are quite significant. The next two pages highlight the changes in more detail.

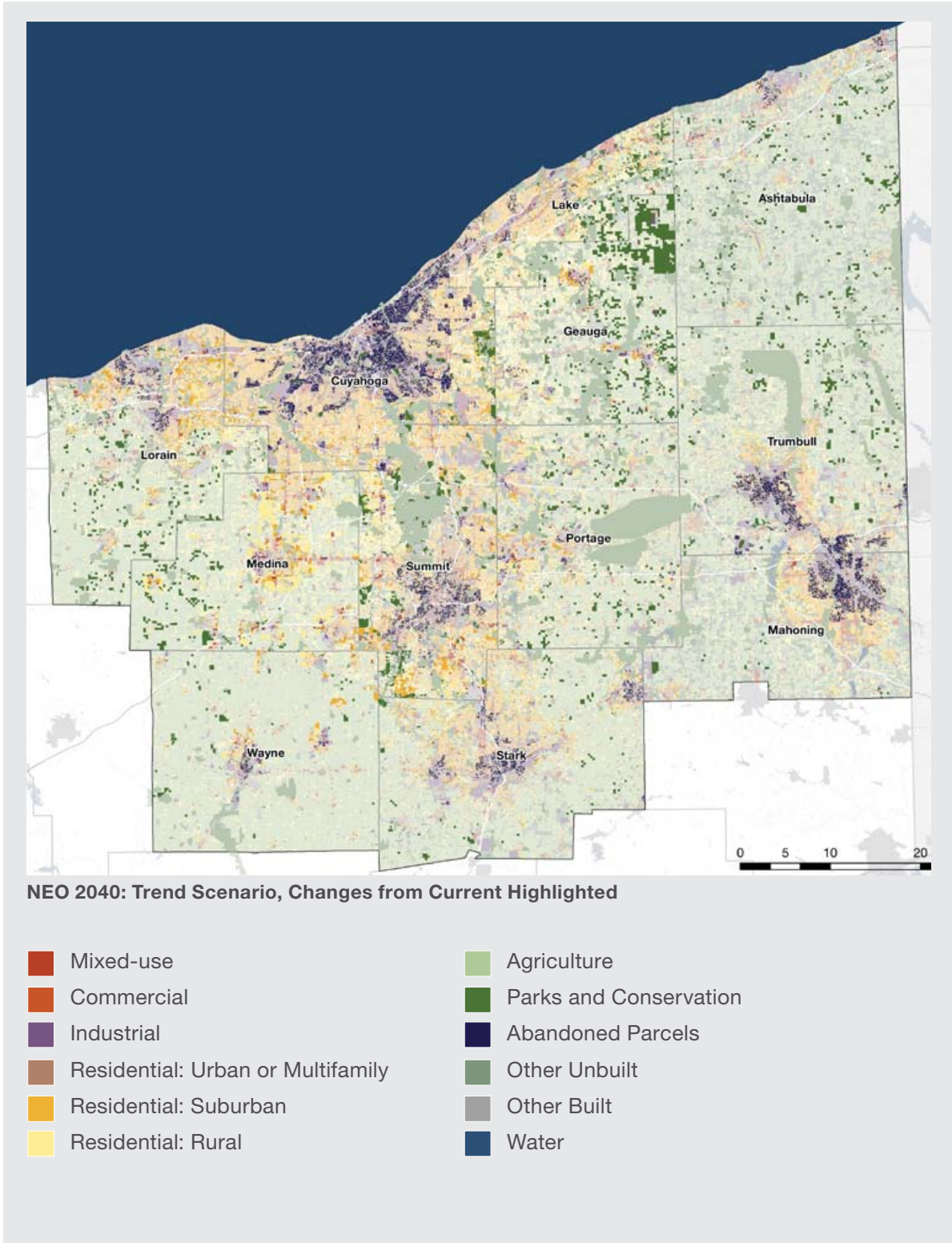
LAND USE 2040: TREND SCENARIO

- Mixed-use
- Commercial
- Industrial
- Residential: Urban or Multifamily
- Residential: Suburban
- Residential: Rural
- Agriculture
- Parks and Conservation
- Abandoned Parcels
- Other Unbuilt
- Other Built
- Water



NEO 2040: TREND SCENARIO

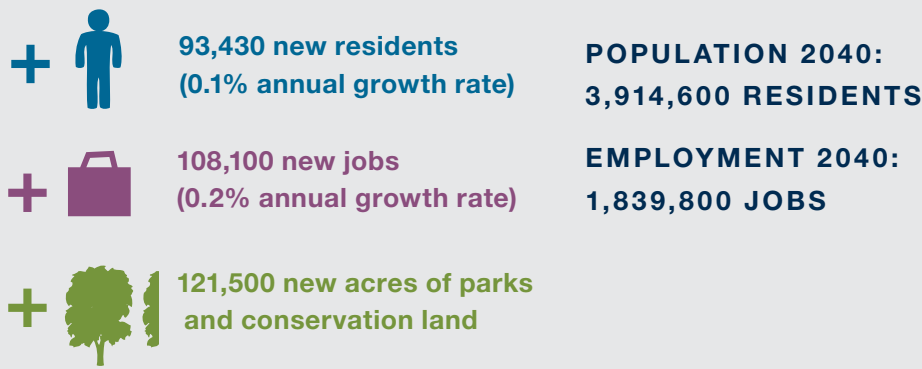
WHAT MIGHT THE REGION BE LIKE IN 2040 IF CURRENT DEVELOPMENT RATES, PATTERNS, AND POLICIES CONTINUE?



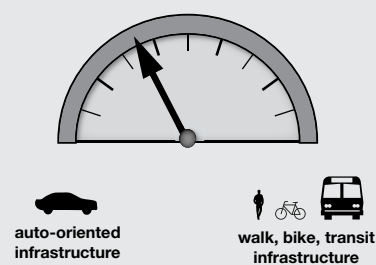
Outcomes:

- Abandonment increases the most in legacy cities, but also significantly impacts several smaller towns like Ashtabula, Alliance, and Massillon
- Urban and multifamily homes are the predominant home types abandoned (-20% between 2010 and 2040)
- New development is primarily suburban and rural residential, and it occurs at or beyond the edges of existing communities
- Conservation increases sizably

Inputs Summary:



Transportation Investment



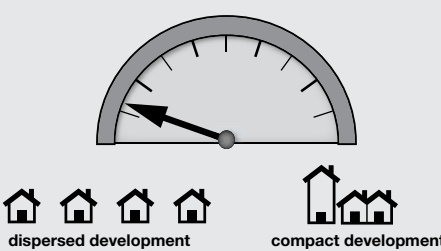
Investment in Communities



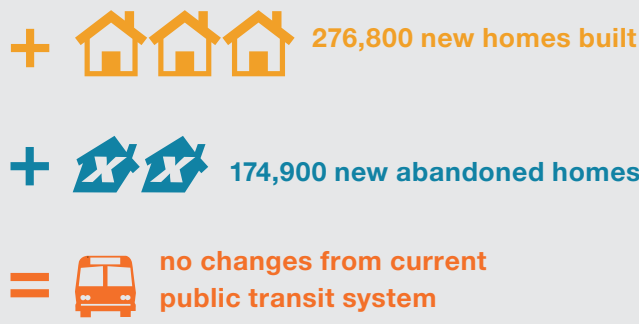
Land Development



Community Character



Outputs Summary:



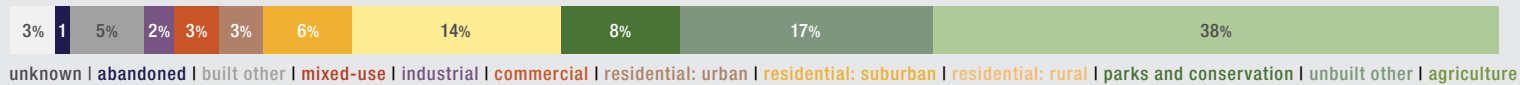
Abandonment doubles

More than 85% of new development is rural or suburban residential

New development replaces agriculture and undeveloped land

Land Use (overall for region)

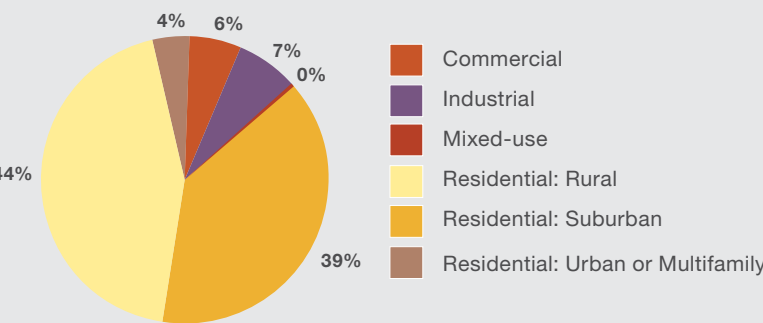
Current



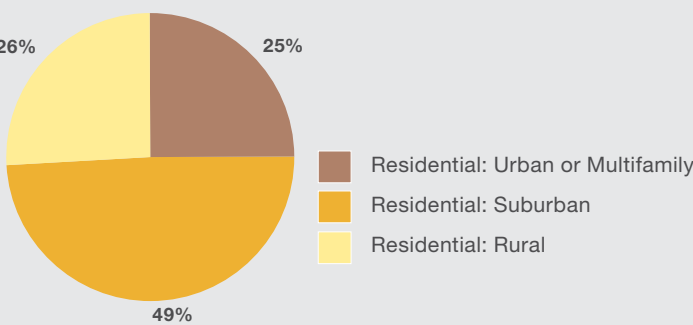
Trend



New Development Mix (acres)
91,900 acres developed total



New Housing Units



The “Trend” Scenario tests what the region might look like in 2040 if current development rates, patterns, and policies continue. On its current course, the region faces a future with intense outward migration away from its legacy cities, high rates of abandonment, and new development that is expensive for tax payers to build and maintain.

Neighborhoods and rural areas that have grown over the past two decades will continue to grow, while neighborhoods that have lost households over the past two decades will continue to see additional homes abandoned. The style of development in the scenario continues the current development trends in outlying areas. New development is predominately dispersed and auto-oriented: new homes are built on large, suburban lots; offices are located in separate office parks; and shopping is dispersed in strip mall style developments and big box stores. Because the new construction is not accompanied with matching regional population growth, it results in increased abandonment in legacy cities and some 1st ring suburbs and established towns. Public transit remains at current levels. Natural area conservation increases across the region.

3 THEMES

The Trend Scenario maps are more than a graphical sketch of the future. Each colored area includes data about the people, buildings, jobs, open space, tax revenues, infrastructure, transportation network, and other elements associated with it. With this data we can estimate resulting impacts on local budgets, environmental health, quality of life, and other factors. This section describes three major themes that emerge from the scenario analysis; a full list of scenario model outputs and calculation methodologies is available in the Technical Appendix.

- THEME 1—OUTWARD MIGRATION
- THEME 2—ABANDONMENT
- THEME 3—FISCAL IMPACTS

THEME 1—OUTWARD MIGRATION

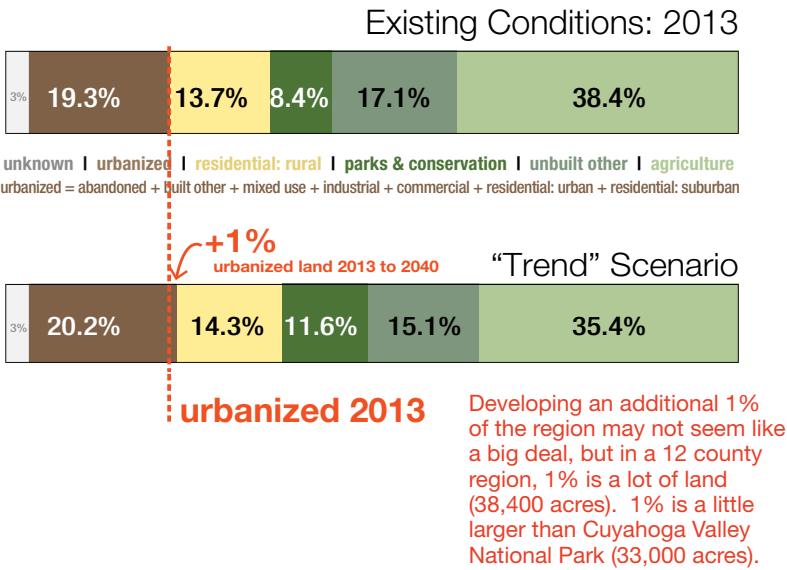
As we have seen, “growth” in some parts of the region is largely a result of movement from elsewhere in the region. The movement tends to be away from legacy cities and some 1st ring suburbs and towards developing communities on the fringes of existing urbanized areas. This trend of “outward migration” has significant impacts on the region.

New development outside of already-established communities requires new infrastructure, including roads, sewers, and other utilities. Building and maintaining this infrastructure creates significant additional costs for local and county governments, who must then maintain more infrastructure to support the same population.

In the Trend Scenario, getting around the region increasingly requires a car. Destinations are farther away from one another and from existing job centers, and new development densities are too low to make additional public transit viable. Residents are likely to spend more time in their cars in the future; commute times lengthen and household transportation costs increase.

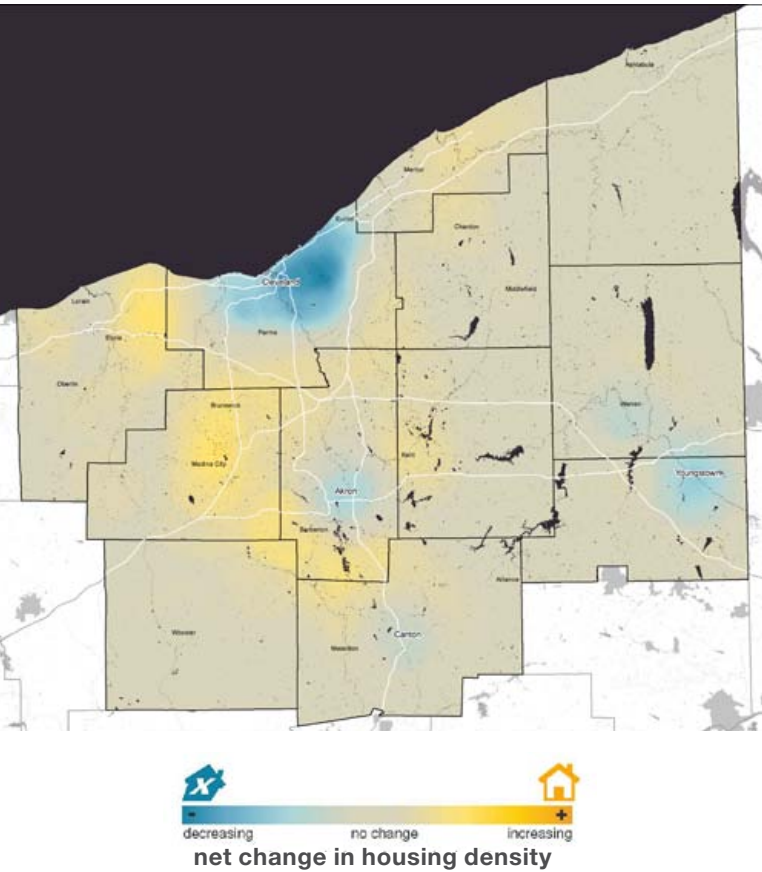
New construction in the Trend Scenario typically occurs on land that is currently undeveloped or used for agriculture. This new development alters the natural and agricultural character of the region’s rural landscapes. Outward migration also puts increased development pressures on agricultural land and environmentally sensitive areas, raising land prices and making land conservation more costly.

Urbanized Land Today vs. Trend



The environmental impacts of dispersed development on formerly undeveloped sites are multifold. The conversion of pervious landscapes like meadows and forests (which absorb stormwater) to impervious surfaces like driveways and roads (which do not) increases stormwater runoff. Increased stormwater runoff can cause erosion, increase the risk of flooding, and lower water quality. An additional 28,300 acres of impervious surface is constructed in the Trend Scenario. Land development also reduces the amount of habitat available to local and migrating wildlife. Dispersed development tends to decrease the total acreage of wildlife habitat and increase its fragmentation (suitable areas are farther apart and smaller).

Outward Migration of Residents



THEME 2—ABANDONMENT

Abandonment is one of the most significant effects of outward migration. Outward migration coupled with low regional population and employment growth results in abandonment. If current residents and jobs move away from established communities to new homes, shopping centers, office buildings, hospitals, and churches, and if no one moves in to occupy the houses, stores, and businesses they leave behind, abandonment occurs. Abandonment tends to be highest in older neighborhoods¹ in legacy cities and some 1st ring suburbs and established towns. Small-lot single-family and multifamily structures are the most common types of housing abandoned.

Abandonment is an issue that many of the region's oldest communities have been facing for several decades. If current trends persist, abandonment will continue to be a major issue for these communities and increasingly will have measurable negative impacts on each of the region's 12 counties. Currently, there are approximately 86,000 abandoned housing units in the region;² the number of new abandoned units in the Trend Scenario is 175,000, slightly more than twice the current number. Abandonment in the Trend Scenario occurs at a rate equivalent to 18 units abandoned each day for the next 30 years.

The negative impacts of abandonment are well known and acutely felt by the region's legacy cities, 1st ring suburbs, established towns and, increasingly, by their home counties. Each abandoned structure creates a hole in the physical fabric of a neighborhood, a loss of homeowner equity and real estate tax revenue, visual blight, safety concerns, declining rent levels, and the eventual cost of demolition if disinvestment cannot be reversed. Once abandoned structures are demolished, additional costs are incurred to maintain the vacant land and prepare it for eventual reuse. Even if only 30% of the 175,000 abandoned homes are demolished, demolition costs alone could add up to \$525 million dollars.³

¹ Predominately pre-1960 housing stock

² 2007-2011 American Community Survey 5-Year Estimates; "Abandoned" units = "Other vacant" units (Table B25004: VACANCY STATUS—Universe: Vacant housing units)

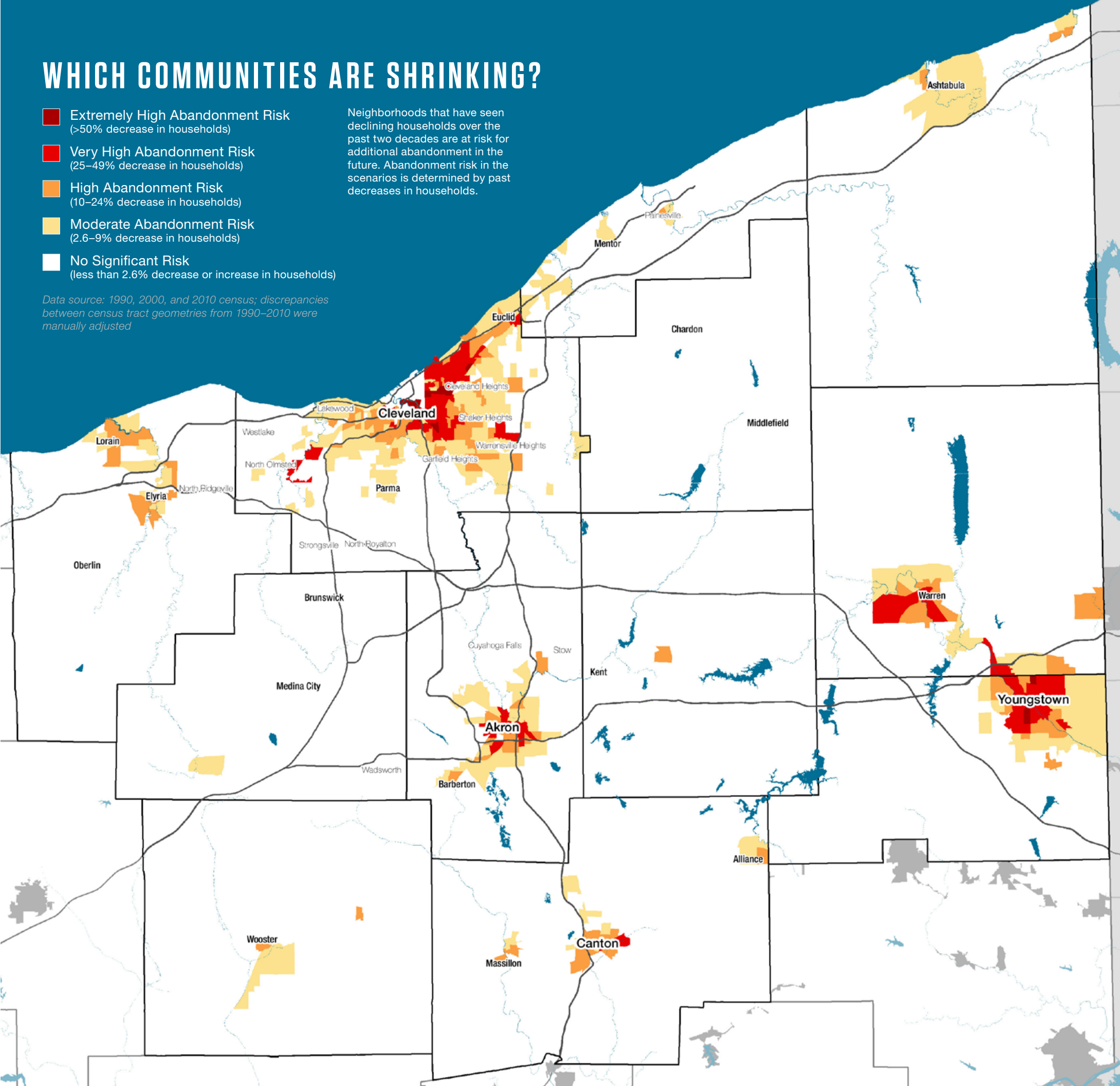
³ Assuming 30% of the 175,000 abandoned units are demolished at a cost of \$10,000 per unit.

WHICH COMMUNITIES ARE SHRINKING?

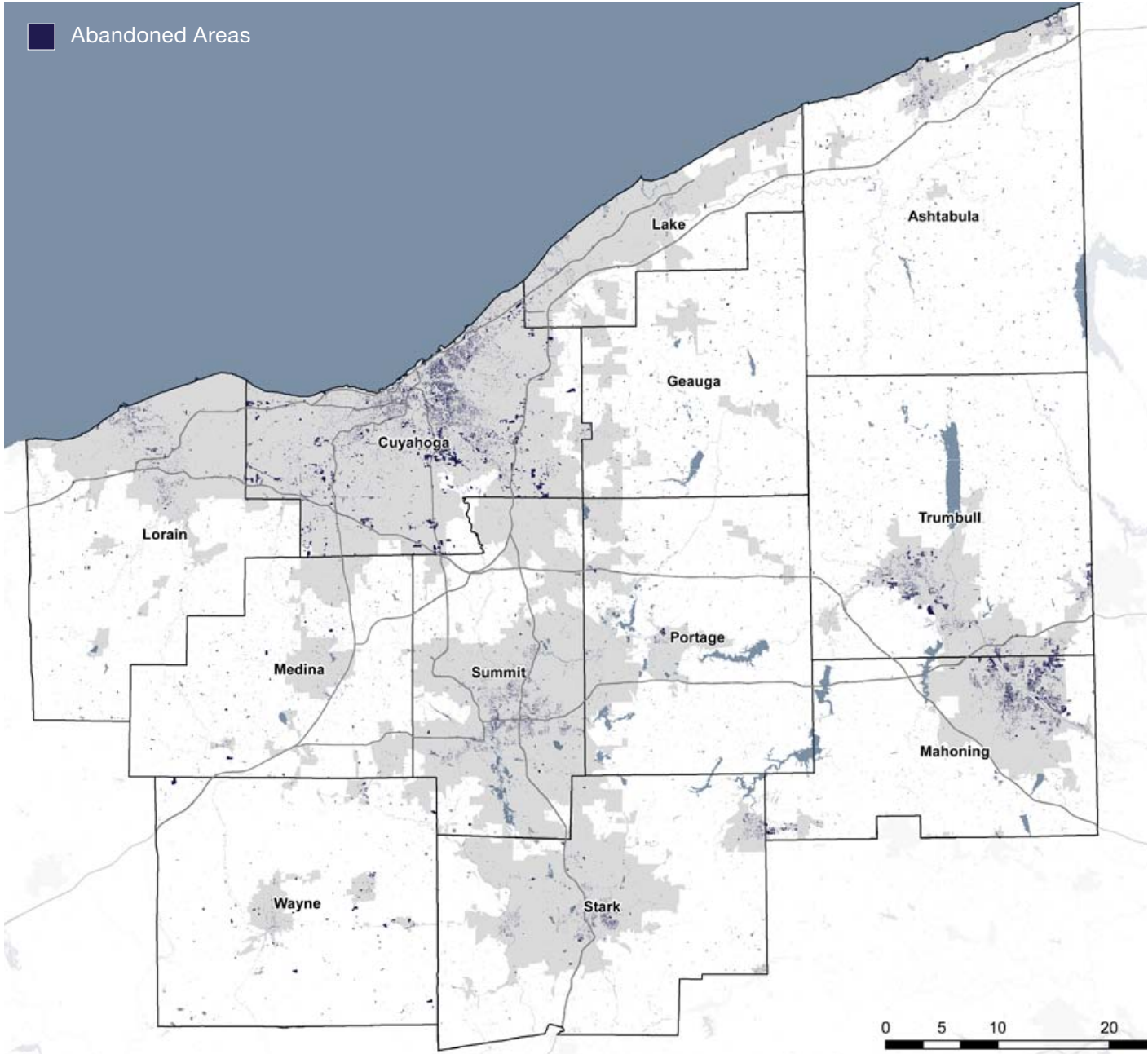
- Extremely High Abandonment Risk (>50% decrease in households)
- Very High Abandonment Risk (25–49% decrease in households)
- High Abandonment Risk (10–24% decrease in households)
- Moderate Abandonment Risk (2.6–9% decrease in households)
- No Significant Risk (less than 2.6% decrease or increase in households)

Data source: 1990, 2000, and 2010 census; discrepancies between census tract geometries from 1990–2010 were manually adjusted

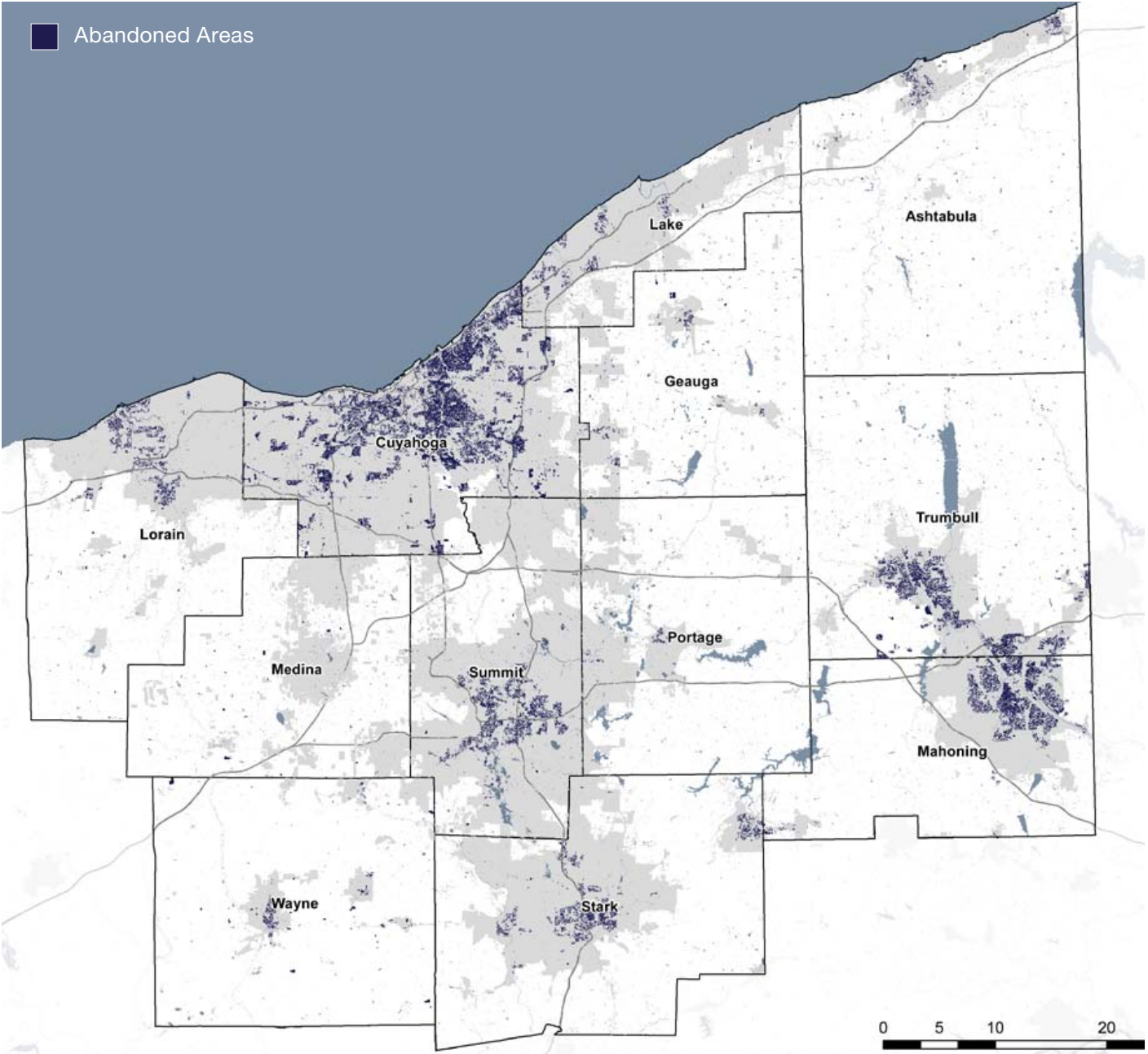
Neighborhoods that have seen declining households over the past two decades are at risk for additional abandonment in the future. Abandonment risk in the scenarios is determined by past decreases in households.



Abandonment 2013



Abandonment 2040: Trend Scenario



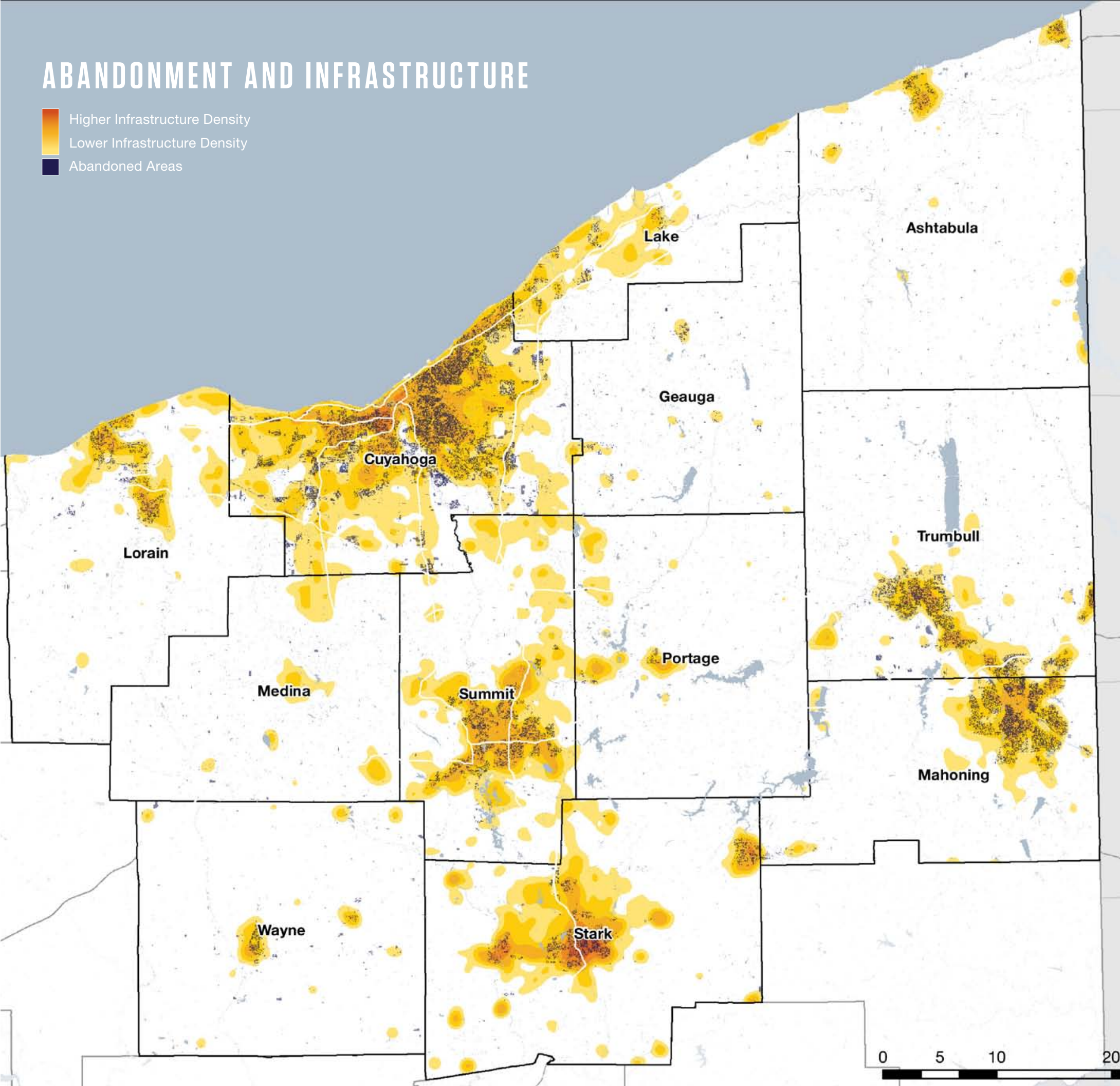
Abandonment in the Trend Scenario occurs at a rate equivalent to 18 units abandoned each day for the next 30 years.

LOST OPPORTUNITIES

Abandonment is occurring in places with significant infrastructure investments. This leaves behind not only homes and other buildings but also roads, sewers, and utilities that could still provide valuable service and that tax payers must pay to maintain, whether or not they are being used to capacity.



City Architecture



THEME 3—FISCAL IMPACTS

The Fiscal Impact Tool⁴ measures the fiscal outcomes of the scenarios and helps us understand the impacts of today’s development on the long-term fiscal health of our communities. Development affects local budgets by generating both new costs and new revenues. On the cost side, supporting development in communities requires constructing new infrastructure (roads, water and sewage pipes, and other utilities) if it does not already exist. In addition to these one-time capital outlays, communities must pay to maintain infrastructure and provide services. The on-going operating and maintenance costs tracked in the scenarios include education, hospitals, police, fire, parks, roads, sewerage, solid waste, and other utilities. On the revenue side, new development generates income from property, income, and sales taxes, as well as utility fees.

These local fiscal costs and revenues are gathered for each city, village, township, and special district in the 12-county region⁵ and aggregated with county fiscal impacts to provide an overall fiscal snapshot at the county and region levels in 2040. Data for the model came from publicly available sources; see the Technical Appendix for a full list of data sources.

The revenue-to-spending ratio summarizes these trends into a single number:

- **Revenue-to-spending ratios greater than zero** mean that the government is bringing in more revenue than it is spending. These budget surpluses indicate more money is available to finance new infrastructure projects, fund school systems, and maintain existing infrastructure.
- **Revenue-to-spending ratios less than zero** mean that the government is spending more money than it is bringing in. These budget deficits could mean higher taxes or decreased levels of service.

⁴ The Vibrant NEO Fiscal Impact Tool is customized from the existing Federal Reserve Bank Fiscal Impact Tool. It provides a county-level analysis that aggregates all sub-county jurisdictions. It allows for a standardized method for conducting planning-based fiscal assessments. For more information about the Fiscal Impact Model, including data sources, see the Technical Appendix.

⁵ Special districts include, for example, school, airport, and sewer and water districts which have independent authority to tax in order to provide a specific service.

Fiscal Costs and Revenue From New Construction



Fregonese Associates

FACTORS CONSIDERED:

- number of residents and housing units
- the mix of Building Types and uses
- the number and density of jobs per sector
- real estate value
- linear feet of roads, water, sewer, and utility lines
- tax rates
- construction costs
- cost-share between public and private entities
- regional levels of service and costs for education, hospitals, police, community facilities, and parks

Currently, counties have revenue-to-spending ratios that range from -6.6% (budget deficit) to 6.1% (budget surplus). The net balance in the region is -0.3, reflecting that the region is not quite balancing spending and revenue.

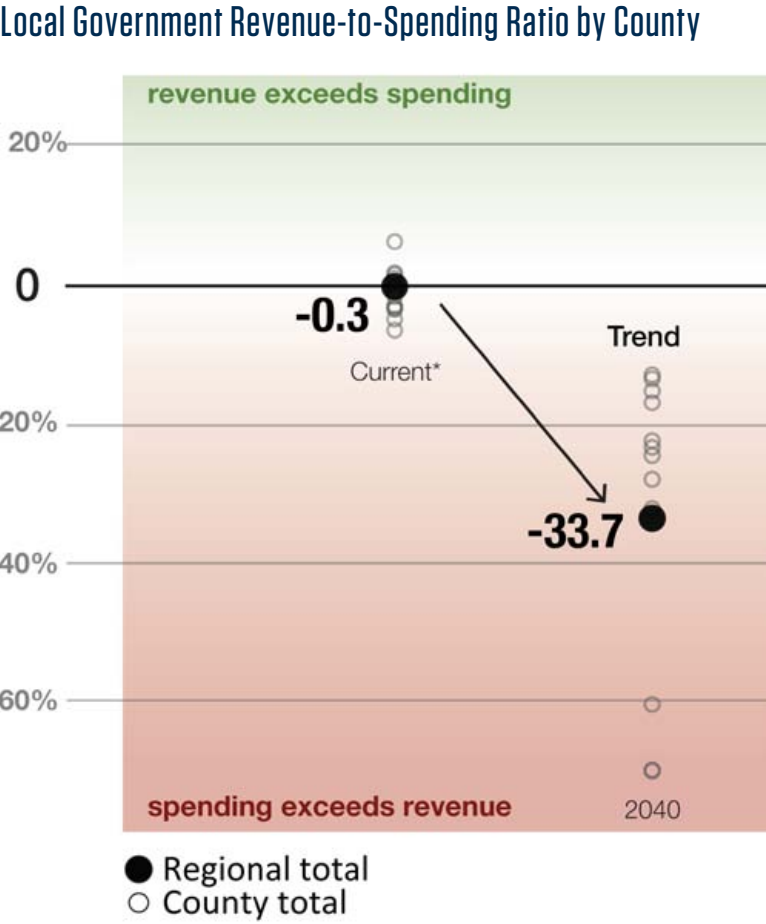
In the Trend Scenario, development exceeds regional demand; outlying communities grow, while legacy communities shrink. The fiscal impacts of this trend are significant. Region-wide, the revenue-to-cost ratio falls to -33.7% in 2040, reflecting high levels of spending with insufficient revenue to support it.⁶ Furthermore, it's not just a few counties performing poorly over the next three decades that pull down the regional balance sheet; all counties experience declining revenues compared to costs. The weakest county from a fiscal perspective in 2010 is still performing better than the most fiscally strong county in 2040 in the Trend Scenario (fiscally weakest in 2010 = -6.6%; fiscally strongest in 2040 = -13.1%).

Multiple factors are driving this trend towards higher operating deficits. In communities with declining populations, abandonment is the driving factor that is weakening fiscal health. There are fewer residents contributing to the local tax base, while the costs associated with maintenance and demolition of abandoned properties increase. Infrastructure costs also have an impact. Communities must still pay to maintain current infrastructure networks, even though there are fewer people to support them. Furthermore, infrastructure systems in these established communities are likely to be nearing the end of their planned life-cycle, resulting in increasing maintenance, repair, and replacement costs.

⁶ This scenario model output is useful to compare between future scenarios, assuming nothing changes, but in reality, cities and townships would adjust their practices, so it is unlikely that actual budgets in 2040 would be either as high or as low as projected through the future scenarios. Compensatory action would be taken to stabilize budgets, like tax increases and/or service cuts. The challenges indicated by these numbers, however, are still very real and would be absorbed by taxpayers in one way or another.

Infrastructure costs are the driving factor in growing communities, too, but in a different way. Faster growing communities face significant capital, operating, and maintenance costs that are required to support their new growth. Development in these areas is typically beyond existing infrastructure, so most new development requires extending roads, water, sewer, and other utility connections. After construction, the public sector must pay for on-going maintenance.

Region-wide, a third factor negatively impacting budgets is virtually stagnant employment. Low employment growth means no significant new income tax revenues for municipalities. In Northeast Ohio, this issue is especially noteworthy because income taxes make up a significant portion of local budgets.



TREND SUMMARY

Where will NEO be in 2040 if we stay “On Trend”?

1. We will have minimal growth in population and jobs.
2. We will continue to spread out, abandoning our established communities for new development.
3. We will experience widespread abandonment of homes in our legacy cities and some of our first ring suburbs and established towns; an estimated 175,000 homes will be abandoned by 2040.
4. We will continue to put our natural resources at risk through our land use choices.
5. Every county in the region will face significant financial risks because of the choices we make about how to use our land and allocate our resources: on average, our costs will be a third greater than our revenues.

PUBLIC FEEDBACK ON THE TREND SCENARIO

The first series of scenario planning public engagement sessions was a set of workshops framed around exploration of regional trends. Six Trend Scenario Workshops were held throughout the region, attended by 589 people. Workshops started with an introduction in which multiple choice questions were posed intermittently to gauge participants’ opinions about topics like outward migration, abandonment, and desirable neighborhood amenities. The presentation showed that in the Trend Scenario:

- Abandonment continues to impact legacy cities and some 1st ring suburbs and existing towns
- The majority of new construction is happening away from existing communities
- Investment is higher in newly developed communities than in long-established ones


How did the participants react to the scenario findings?⁷ Abandonment was viewed as a significant concern, though some felt that it was unlikely to continue at current levels. Many expressed the opinion that outward migration is a negative trend and that reinvestment in existing communities is important.





Polling Questions *Fregonese Associates*


Following the presentation, the attendees worked in groups to create maps of their desired futures. Each table was provided with a set of game pieces representing new development that matched current trends, but were given the option of trading for alternative kinds of development and land uses. Attendees placed their desired mix of development on the maps and drew where open space or transportation connections or improvements were desired. Most groups also wrote down notes to explain the ideas behind their maps.

TREND WORKSHOP GAME PIECES

- 

Dispersed Development: low density mix of single-family homes on larger lots, shopping centers, and office parks. Uses are typically separate from one another and require a car to travel between destinations.
- 

Compact Development: development of moderate density including a mix of housing types and job locations.
- 

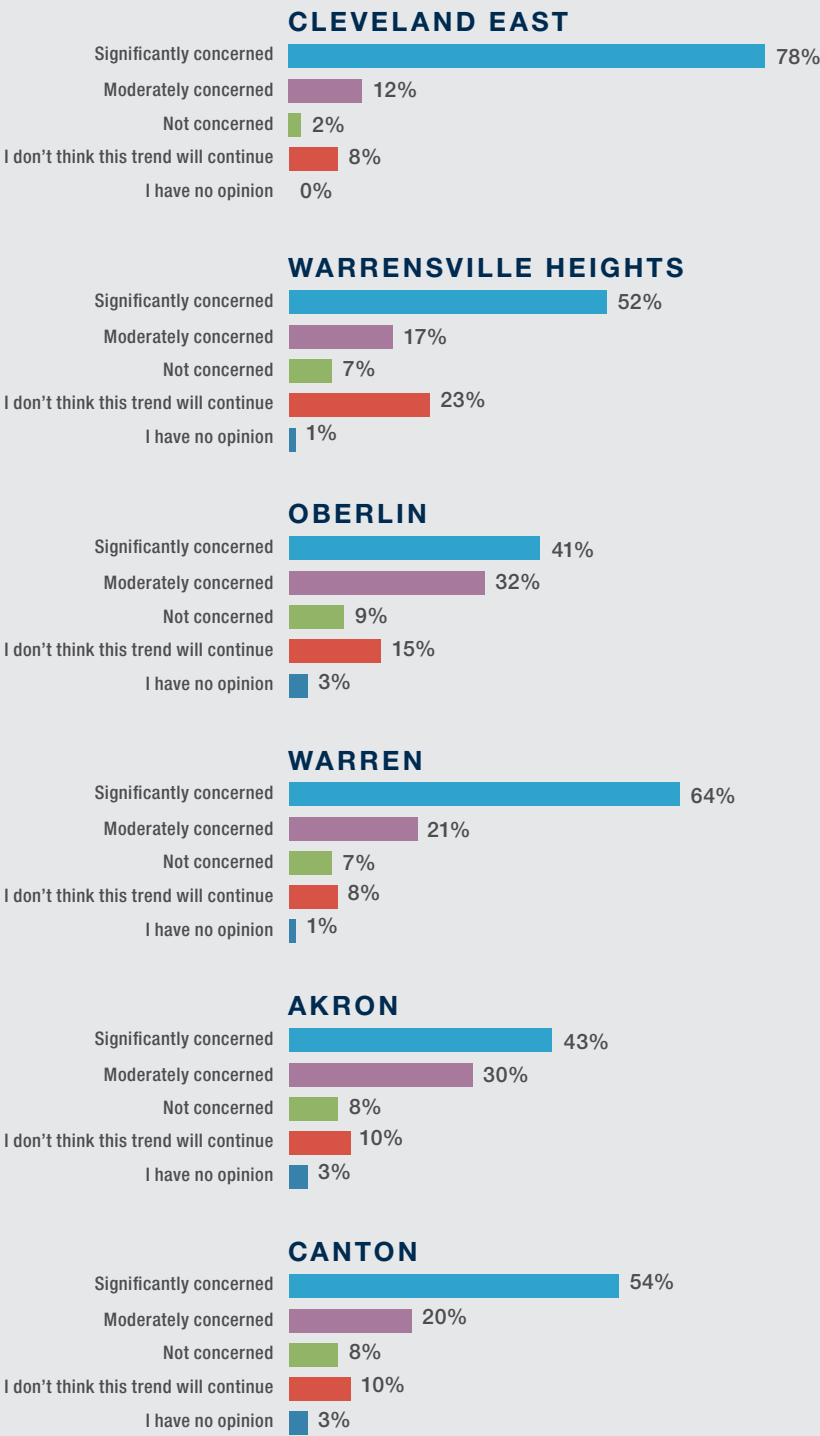
Reinvestment: investing in areas with existing high vacancy rates; moderate density; the mix of housing types and jobs is similar to compact growth pieces.
- 

Reinforcement: investment in areas threatened with increasing vacancy; moderate density; the mix of housing types and jobs is similar to compact growth pieces.

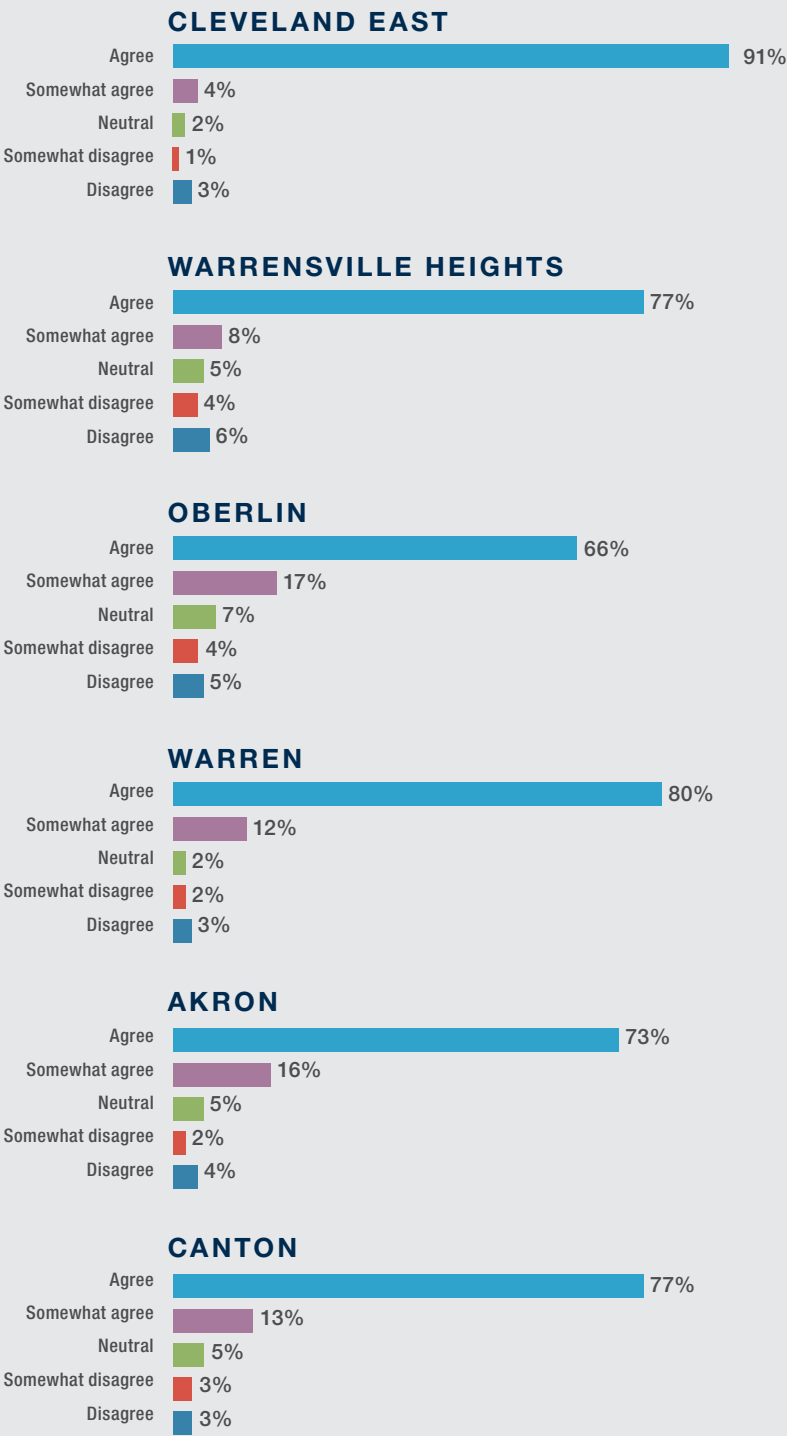
⁷ A complete compilation of all polling question results at all workshop locations is available online at <http://vibrantneo.org/>.

POLLING
QUESTIONS⁸

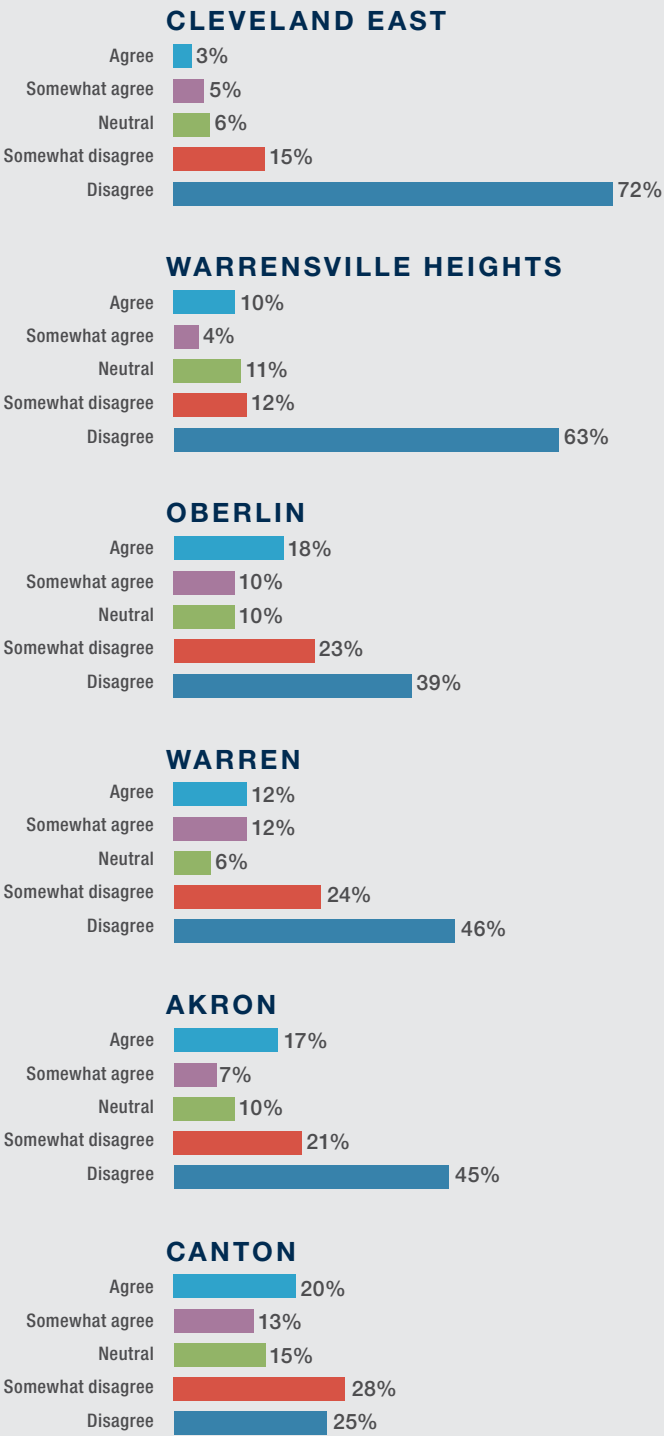
How concerned are you about the level of abandonment seen in the Trend Scenario?



How much do you agree or disagree?
We should reinvest in existing communities to create new jobs and housing.



How much do you agree or disagree?
We should continue to grow outward to create new jobs and housing.



8 Cities listed were the locations of the Trend Scenario Workshops.



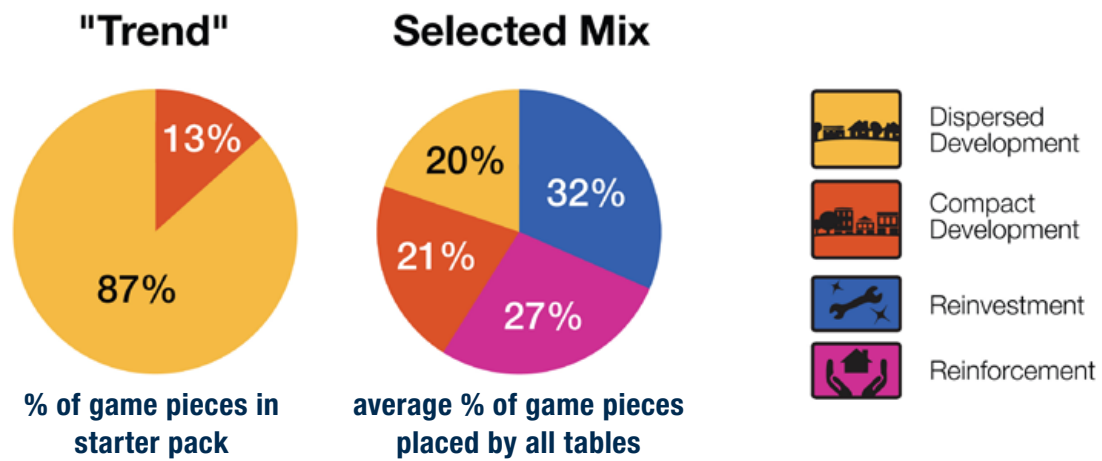
Map Activity Fregonese Associates



Map Activity Fregonese Associates

In total, participants at the six Trend Scenario Workshops created seventy-three maps.⁹ Out of these, several common themes emerged. Many tables were unsatisfied with the increasing dispersed development in outlying areas and significant new abandonment in urban areas. Tables frequently chose to trade the dispersed development trend game pieces for additional compact development, reinvestment, and reinforcement pieces. These trades reflect dissatisfaction with the trend development mix and a desire for reinvestment in, and adjacent to, legacy communities. The majority of tables did not trade all their dispersed development pieces, however, reflecting the importance of a diverse range of housing options and balancing auto-oriented development with communities with densities that support walking, biking, and public transportation. Many tables sketched additional public transit and greenway connections between communities or to link communities with parks, natural resources, and Lake Erie. Protecting agriculture and natural resources was also important to the majority of tables. Most tables distinguished between areas that should be protected as farmland versus areas that should be protected for other conservation purposes.











Game Piece Selection: Trend Versus Average Selected Development Mix



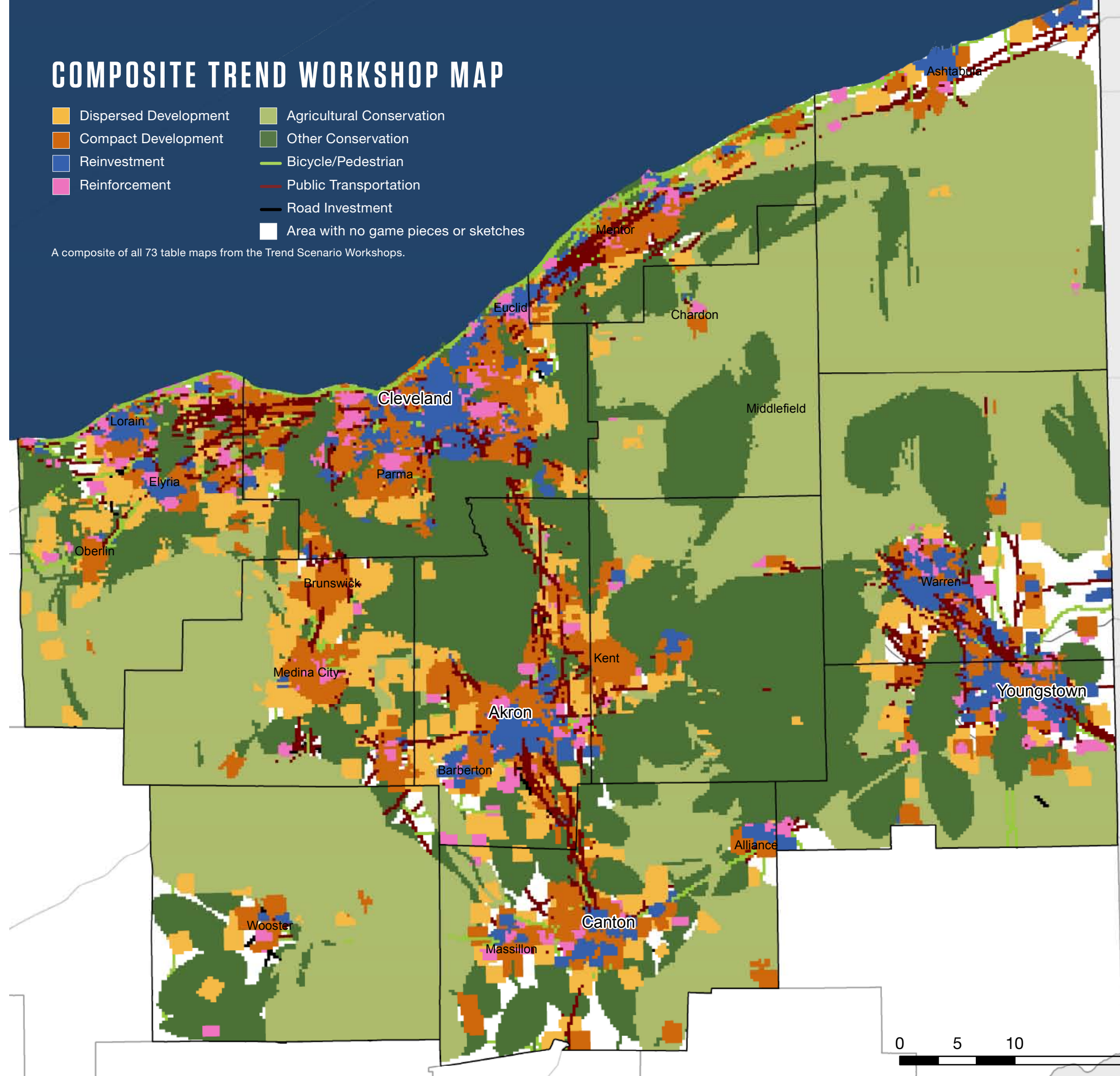
The majority of participants was unsatisfied with the default, trend-based game pieces and traded them in for more compact, reinvestment, and reinforcement pieces.

⁹ Map images are available online at <http://vibrantneo.org/>.

COMPOSITE TREND WORKSHOP MAP

- | | |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|  Dispersed Development |  Agricultural Conservation |
|  Compact Development |  Other Conservation |
|  Reinvestment |  Bicycle/Pedestrian |
|  Reinforcement |  Public Transportation |
| |  Road Investment |
| |  Area with no game pieces or sketches |

A composite of all 73 table maps from the Trend Scenario Workshops.



0 5 10