

## Vice President's Conversation on the Future

### Trend Research: Land Use and Geographic Population Distribution

#### Descriptor Definition

This white paper discusses the effects that land use and geographic population distribution may have on and within the population of the State of Ohio. It addresses the population density changes in and around the state's large urban centers, which creates a significant impact on surrounding rural and agricultural areas; as such, it emphasizes land use and land use planning. The paper includes information on the trends seen in the changing geographic population distribution of Ohio, as well as the overall population metrics and trends. It examines how a majority of impacts in land use and geographic population distribution stem from population growth trends, attitudes, and practices as well as changes in industry.

#### Authors' Insights<sup>1</sup>: Descriptor Relevance

The state of Ohio has long been a center for both agriculture and advanced manufacturing in the United States, and part of ensuring its continued stable quality of life involves understanding how growth can continue to occur in these and other industries as well as in residential development without negatively impacting the other, and at the same time ensuring efficient land use. Land use is a wide-ranging practice of models and methods mostly governed by state and local legislation. Education on the subject for a diverse audience is important to maintain prosperous growth and sustainability within Ohio. It is even more imperative to understand the growth trends in Ohio's overall population, its future projections, and how Ohioans' characteristics of where they locate has changed over recent decades. Looking at these trends over the last few decades will offer the greatest insight in forecasting how they will change over the next few decades.

#### Trend Information and Interpretation

##### Population Overview

Ohio is the 7<sup>th</sup> most populous state in the U.S. Its total population has steadily grown over the past 40 years, and very slowly in the previous decade. Since the year 2000, the U.S. population increased by 12.3%, while Ohio's population only saw an increase of 1.9% (Ohio Development Services Agency, 2014). Even recently, concern has been voiced as the state had one of the slowest population growth rates in the country since the 2010 census (Exner, 2014). According to models of the Ohio Development Services Agency, the pace of total population growth in Ohio is not projected to increase within the next 30 years (see Figure 1).

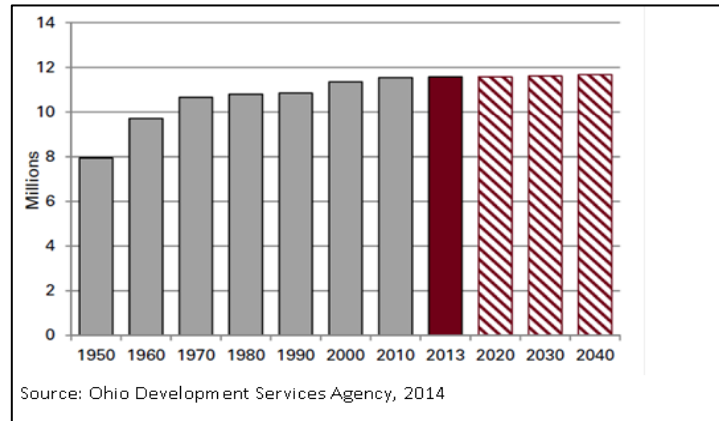
The median age of Ohio's population is increasing, and has increased 3.1 years since 2000. The state's average household size is decreasing, and 30% of its households consist of one person living alone (Ohio Development Services Agency, 2014).



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**Figure 1**

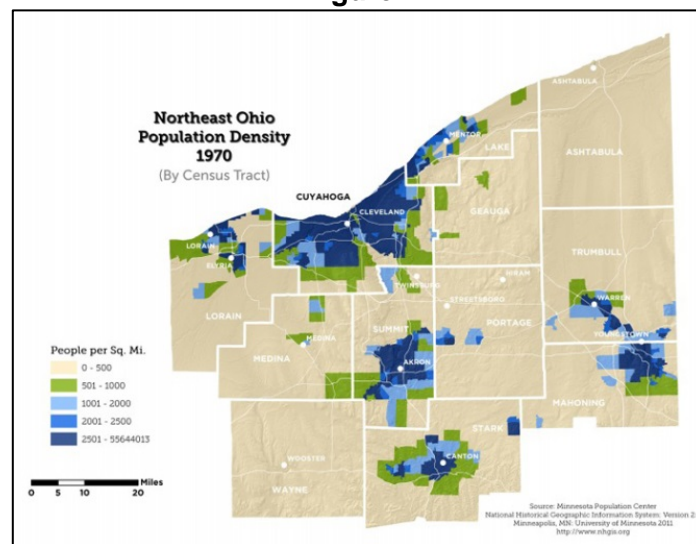


## Population Movement

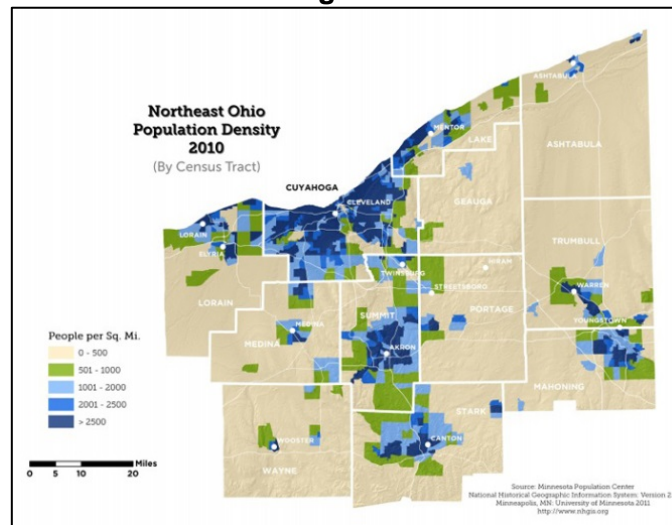
In general, population in Ohio is slowly moving from low density, rural areas to more urban and suburban settings. This is not only the situation in Ohio, but in many primarily agricultural states. In Minnesota, for example, the growth of large farms requiring fewer workers is contributing to the slow decline of population in the nonmetropolitan areas (Hart & Lindberg, 2014).

Historical population data for Ohio also show that populations within central city districts and close to large urban and metropolitan areas are somewhat decreasing in density. These populations spread from the urban epicenters and consumed a larger geographic footprint. This can be seen by examining Ohio's largest population region, roughly 31% of its total population, grouped into the four metropolitan areas of: Cleveland, Akron, Youngstown, and Canton (Ohio Development Services Agency, 2014). The maps below represent population density by Census tract in the four metropolitan areas both in the year 1970 (Figure 2) and 2010 (Figure 3).

**Figure 2**



**Figure 3**



The changes in population density within the region over a forty-year span confirm that what once were strictly rural areas have experienced drastic increases in population. Even many of the cities that were somewhat populated saw a large increase in population and density over the four decades as can be seen in cities such as Wooster and Ashtabula.

### **Land Use**

Although population density has increased in areas near metropolitan areas, the actual population within Ohio's major city geographic limits has decreased. Seven (Cleveland, Cincinnati, Toledo, Akron, Dayton, Canton and Youngstown) of the eight major Ohio cities have experienced population loss over recent decades ranging from 20 percent in Toledo to over 50 percent in Cleveland and Youngstown. Even more recently between 2000 and 2007 the trend accelerated with most of the major cities showing greater loss when compared to the preceding decade (Mallach & Brachman, 2010).

As discussed previously, trend data show that the decreasing metropolitan population has moved to more remote and rural areas in Ohio. In 2000, Ohio unincorporated townships' population grew at a faster rate than populations in incorporated areas, and there were more people residing in townships than cities or villages (Clark & Hall, 2007). One of the primary issues surrounding this expanding footprint of metropolitan areas is that an ever increasing amount of green space will be consumed and predicting how that will happen is not an exact science. There are examples of how both trend based and survey based models have been used to predict land use change. Social, economic, and ecological systems are substantially affected by land use practices and have created conflict and changes over land management practices (Pocewicz et al., 2008).

### **Governing Legislation**

In the State of Ohio, local rural and small governments have the authority to govern land use. This can be seen at the county, township, and municipal levels through the functions of planning and zoning

commissions. Regional planning, a responsibility mandated to county government by the state, consists primarily of the use of commissions, or bodies, responsible for the administration of local subdivision regulations, which for the most part govern minimum standards of new land parcels within their jurisdiction. The Ohio Revised Code gave regional planning commissions local authority to establish standards for new parcels up to 5-acres in size; until in 2005 the state legislature made it possible for counties to adopt further regulations allowing for the review of new parcels up to 20-acres in size.

Local zoning ordinances provide land use planning powers and authority beyond the minimum standards provided by regional planning. Townships have the authority to implement regulations covering the location, size, and use of buildings and land in unincorporated territory among other things. Municipal zoning and planning commissions also have similar authority in Ohio. It is easy to see how local governments can implement practices to battle the direct and indirect effects that urbanization has on agricultural lands. Clark & Hall (2007) explained that zoning has been enacted in a number of cases to protect land values, encourage orderly growth, or prevent an unwanted use. Agricultural zoning specifically was developed in the 1970s. Studies have shown that it is more common for local governments to enact a zoning ordinance when there is higher population growth and a higher average economic status of community residents (Clark & Hall, 2007). An unpublished study from 2003 found that roughly 26% of Ohio's zoned townships had a form of agricultural zoning meant to preserve agricultural land (Clark & Hall, 2007).

The geographic population distribution trends in Ohio display the importance of logical land use practices in rural areas; specifically those bordering metropolitan areas. The need for planning education among the local governments is essential to prepare for the potential shifts in population distribution.

### **Summary of Trend Information**

In general, the total population in Ohio is projected to remain fairly constant over the next 20 to 30 years, and Ohio has trailed the majority of the nation in population growth since the 2010 census. Over recent decades there has been an outmigration of population from Ohio's city centers to less densely populated areas, which spread the footprint of many metropolitan areas into historically rural areas. The spread of the metropolitan footprint has created concern as land used historically for agricultural production is developed, and agricultural use is lost.

Local governments (county, township, and municipal) are granted the authority by the State of Ohio to govern their own land use practices, which make it difficult to ensure efficient land use measures are employed in areas experiencing development. If geographic population movement continues to trend as it has in recent decades, it is imperative that those responsible for planning and land use oversight in rural areas of Ohio effectively manage successful practices to ensure efficient development.

### **Author Insights – Possible Trends for the Future**

There are two possible trends for the future most likely trends that will take place with relation to geographic population distribution and land use looking forward to the year 2035. The following trends

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are each assigned *a priori* probabilities of occurrence. They are the author's best estimations for future trends based upon the past trend and current data available. They are ordered from the greatest *a priori* probability of occurrence to the least, and as follows: (1) population distribution and land use trends will follow overall trend data from the past 40+ years indicating the current population distribution and land use structure in Ohio will remain stagnant; or (2) trends will go opposite of the overall direction seen over recent decades.

- A. Ohio will continue to see agricultural land use change to accommodate growing industry, new residential development, and associated infrastructure. Although due to a number of factors the spread of more urbanized infrastructure and related land uses will occur at a much slower pace than was experienced over recent decades. Based on the recent trends, this scenario is given the highest *a priori* probability of occurrence of 0.55. Supporting this probability is the fact that Ohio's overall population growth has been very slow in recent years and is not expected to increase significantly in the next three decades.
- B. Populations of suburban and of other densely populated areas surrounding large urban centers will begin moving back into the central city districts. With the decentralization of central city districts over recent decades, there is now an increasing awareness of the potential assets these areas still hold and many Ohio cities have begun revitalization efforts focused on attracting residential use in downtown areas; as has been seen in the capital city of Columbus where from 2000 – 2008 the central city population increased by 5.5 percent (Greater Ohio Policy Center, 2008). In a 2012 article, multiple central Ohio developers stated the new urban apartments in central Ohio were meant to attract 20 or 30 year olds, are smaller in size, high in style, and in the greatest demand they had seen in the past 20 - 30 years (Weiker, 2012). Due to the this trend and scenario has in relation to the overall available trend data from recent decades, this outcome has an *a priori* probability of occurrence of 0.45.

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<sup>1</sup> Along with the research-based data and statistics included in this document, is information provided by the research paper author(s). Although these author insights are not directly cited with research references, they reflect research, observation, logic, intuition, and well-considered expectations compiled by the author(s). The Author Insights sections of this paper are offered for discussion and to help provide a wider perspective for incorporating the descriptor data into the possible future trends. These conclusions are drawn by the author(s) using their knowledge of the scholarly references and their years of professional experience related to the descriptor, and are provided to help the reader more effectively envision the future impact and effects of the descriptor.

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