Louisville Metro
Demographic and Economic Projections
2010 - 2040

Executive Summary
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List of Figures and Tables

Data and Methodology

Geographic Areas

The boundaries for Louisville Metro and Jefferson County are coterminous at the writing of this report. Therefore these names are used interchangeably throughout the report, regardless of the time frame presented.

A census tract is a statistical unit delineated by the U.S. Census Bureau to present data within individual counties. Census tracts are created using identifiable features such as roads, rivers and railroad tracks, and encompass approximately 2,500 – 8,000 people. Census tracts are meant to be relatively homogenous units, representing populations with similar characteristics. Census tracts do not cross county boundaries, and data for all census tracts in a county will sum to that county's total. As of 2010, Jefferson County contains 191 census tracts. Groups of census tracts were aggregated to form the market areas used in this report.

Because the geographic area that census tracts represent changes with each Decennial Census, the boundaries for census tracts in previous decades were adjusted to match the 2010 census tract boundaries using the Longitudinal Tract Data Base (LTDB). The LTDB is an open-source code to crosswalk tract-level census data from earlier decades (1970-2000) with 2010 tract boundaries (Logan et al. 2014). The LTDB relies on a combination of population and areal weighting in 2000 and uses only areal weighting for earlier decades (1970-1990). Data on the location of waterways, and therefore no land area, were also integrated to remove areas that contain no population. The areal weighting method assumes that population density, and characteristics of population, are constant across census geographies (e.g. tracts and blocks). While census units are meant to represent relatively homogeneous populations, this assumption creates a potential source of error when dissimilar populations are present within a geographic unit.

The U.S. Office of Management and Budget creates delineations of metropolitan statistical areas (MSA) that are composed of one or more counties. The general concept of an MSA is meant to represent a substantial urban center of at least 50,000 people and any adjacent counties that have a high degree of integration with the urban area as measured by commuting flows. The most recent definition of the Louisville/Jefferson County, KY-IN MSA, revised in 2013, includes twelve counties – seven in Kentucky and five in Indiana. This current MSA delineation is used throughout the report, regardless of the time frame presented.

Demographic Data

Data on the total population, population in households, and population in group quarters by age group and gender for the counties that comprise the Louisville MSA and the census tracts that comprise Jefferson County were collected from the 2000 and 2010 Census. The data were downloaded from the National Historic Geographic Information System (Minnesota Population Center). Tract-level data was standardized to 2010 boundaries using the code provided by the LTDB (US2010 Project).

Population in group quarters refers to special population groups that do not live in housing units, but in group living arrangements that are owned or managed by another entity that provides housing and/or services for the residents. People living in group quarters are usually not related to each other. Group quarters facilities include college dormitories, nursing facilities, correctional facilities, military barracks and homeless shelters.

Population in households refers to the population living in housing units, such as a house, apartment, or mobile home. A household includes all the people who occupy a housing unit. Households are classified as either family households or non-family households. A family household includes a householder living with one or more individuals related to him/her by birth, marriage, or adoption. A non-family household is a householder living alone or living with non-relatives only.

Economic Data

Employment data by sector for Jefferson County and the Louisville MSA were collected from the Bureau of Economic Analysis and the Bureau of Labor Statistic's Quarterly Census of Employment and Wages. Data on tract-level employment by sector were collected from the Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) from the U.S. Census Bureau.

These sources for employment data only reflect covered workers, that is, workers who are covered by state or federal unemployment insurance. This universe typically excludes the self-employed, proprietors, and unpaid family workers. Data on nonemployers were collected for Jefferson County in an effort to capture the economic activity associated with the self-employed. A nonemployer business is one that has no paid employees, has annual business receipts of $1,000 or more, and is subject to federal income taxes. Most nonemployers are self-employed individuals operating unincorporated businesses, which may or may not be the owner's principal source of income. Nonemployer data for Jefferson County were collected from the U.S. Census Bureau's Nonemployer Statistics data series.

Data on employment are presented in groupings of sectors based on the North American Industry Classification System (NAICS). Table 1 lists the sector groupings used in this report and the NAICS industry codes that comprise them.

Sector grouping	NAICS Industry Name	NAICS Codes
Construction	Construction	23
Manufacturing	Manufacturing	31-33
Trade	Wholesale trade; Retail trade	42, 44-45
Transportation and warehousing	Transportation and warehousing	48-49
Professional	Information; Finance and insurance; Real estate and rental and leasing; Professional, scientific and technical services; Management of Companies and Enterprises; Administrative and support and waste management and remediation services	51, 52, 53, 54, 55, 56
Educational services	Educational services	61
Health care and social assistance	Health care and social assistance	62
Hospitality	Arts, entertainment, and recreation; Accommodation and food services	71, 72
Other private sector services	Other services (except public administration); Agriculture, forestry, fishing and hunting; Mining, quarrying and extraction; Utilities	81, 11, 21, 22
Public Sector	Public administration	92

Table 1. NAICS-based sector groupings used to present employment by sector.

Population Projection Methodology

Population projections often begin with a demographic model that integrates data and mathematical processes to estimate how future population will be distributed based on historic patterns. The most common population projection model used by demographers – the cohort-component model – was used to generate the projections in this report (Preston et al. 2001). This model captures the impact of the primary components of population change – births, deaths, and net migration – in order to forecast changes in future population (see Formula 1). Population counts by gender and 5-year age groups from the 2010 Census served as the base population, and the most currently available fertility, mortality and migration rates were used to predict the change in each age cohort moving forward. To begin, age-specific fertility and mortality rates were calculated with use-restricted data provided by the Kentucky Cabinet for Health and Family Services. This accounts for the population that has recently been born as well as the population that will survive into the next time period. Then age-specific migration

rates were calculated using a residual method, determining the difference between population change in the last decade and the natural increase in the last decade (Winkler et al. 2013). Combining these age-specific rates into a single model allowed for the prediction for the population by age group and gender based on the demographic patterns that occurred in the recent past. The Kentucky State Data Center is responsible for producing county-level forecasts for all counties in Kentucky following each Decennial Census. The projections for the counties in southern Indiana were obtained from the Indiana Business Research Center at Indiana University. Because there is such consensus on the use of the cohort-component model for population projections amongst social scientists, the methodology used for the Indiana counties mirrors the methodology used in Kentucky (Kinghorn 2012). Indeed it is nearly the only method used for population projections (Preston et al. 2001). The cohort-component model is based on the balancing equation of population growth:

$$P_{1} = P_{0} + (B - D) + (IM - OM) \quad (1)$$

where P_0 is the total population at time 0 (the start of the forecast period), B is the number of births between time 0 and time 1, D is the number of deaths between time 0 and time 1, and IM and OM are the numbers of in-migrants and out-migrants between time 0 and time 1. P_1 thus represents the total population forecast for the future time period. B, D, and ($IM - OM$) are derived by applying historical fertililty, mortality, and migration rates to the population by age group at time 0.

Once the county-level forecasts were in place, forecasts of population by age group and gender were made for each component census tract in Jefferson County. While fertility, mortality and migration data are typically available for counties, the confidential nature of vital statistics records limits the availability of such data for small areas (Swanson et al. 2010). Moreover, developing reliable rates for small areas with few cases tends to be problematic, as random errors associated with a small numerator produces questionable results (Buescher 1997). Yet the variation of population distribution within a county is not fully described by the larger geography, as much of the population change can be concealed within the larger scale. For sub-county projections, the Hamilton-Perry model has been established as a reliable forecast model that requires minimal data inputs (Hamilton and Perry 1962; Smith et al. 2001; Swanson et al. 2010). The only data required are the age distribution of the population at two points in time, lending itself well to utilizing data from the Decennial Census (Swanson et al. 2010). Despite its less intensive data requirements, the Hamilton-Perry model satisfies the fundamental demographic equation by incorporating the effects of fertility, mortality, and net migration through cohort change ratios (Swanson and Tayman 2013).

The preliminary tract level projections were created using cohort change ratios, the historic rates of change for each gender/age group within households within a consistent geographic

area (see Formula 2). The 2000 to 2010 cohort change ratios were applied to the population in households in 2010 to project the population in households in each subsequent time period. Because the census tract boundaries changed between 2000 and 2010, the boundaries for the 2000 census tracts were standardized to match the 2010 census tract boundaries using the Longitudinal Tract Data Base (Logan et al. 2014).

$$ {}_nCCR_x = \frac{{}_nP_{x+y,1}}{{}_nP_{x,b}} \quad (2) $$

where ${}_nP_{x+y,1}$ is the population aged $x + y$ to $x + y + n$ in the most recent census, ${}_nP_{x,b}$ is the population aged x to $x + n$ in the second most recent census, and y is the number of years between the two most recent censuses.

The youngest age group that can be forecast using cohort change ratios is the 10 to 14 year old group, as younger groups were born during the 2000-2010 period. To predict the youngest age groups (0-4 and 5-9) by census tract, the child woman ratio was used. The child woman ratio is defined as the ratio of 0-4 year olds to women aged 15-44. Similarly, the child woman ratio for 5-9 year olds is the ratio of that age group to women aged 20-49.

A common issue present in census tract level data is spatial autocorrelation, in which tracts that are nearest each other tend to experience similar socioeconomic and demographic conditions (Duncan and Duncan 1955; Hogan and Tchernis 2004; Vasan et al. 2014). It is therefore recommended that a measure of spatial dependency be included in the model to smooth the population change across census tracts (Baker et al. 2014). After preliminary projections were developed using only cohort change ratios, the population change in each tract was averaged with the change experienced by each of its neighboring tracts.

An established limitation of the Hamilton-Perry model is that it can produce unreasonably high or low projections in areas that have experienced rapid population change in the last decade (Smith et al. 2001). To address this issue, it is recommended that an annual growth (or decline) limit be integrated into the projection model (Swanson et al. 2010). Following the spatial smoothing, a 5% annual population growth limit (or 3% annual population loss limit) was applied to each census tract. Tracts that exceeded this established growth ceiling (or floor) were adjusted to stay within this threshold.

Another limitation of the cohort change ratio method is that it does not recognize the density in which growth has occurred in the recent past. Tracts which have historically small but fast-growing populations will become unjustifiably dense over the period covered by the projection model. This is particularly relevant in suburban areas, which tend to have lower overall population densities. To prevent tracts in suburban areas from becoming untenably dense,

additional limits on the amount of growth that could occur in areas outside of the Core were applied using data from the Jefferson County Property Valuation Administrator (PVA) and the Metropolitan Sewer District (MSD) available from the Louisville/Jefferson County Information Consortium (LOJIC). Using parcel data from the PVA, the area of each tract that was currently residential development was determined. This residential land was used to calculate a current population density within the tract. Vacant parcels classified as residential, agricultural and commercial were identified as potentially developable land. These vacant parcels were subdivided into two categories: those that were within 50 meters of an existing sewer line and those that were not. The vacant parcels within the 50 meter sewer buffer were permitted to experience growth up to the current population density within the tract, while those outside the 50 meter sewer buffer were limited to population growth of up to one housing unit per five acres. Throughout the projection period, the sewer line buffer was extended – to 400 meters in 2030 and to 800 meters in 2040 – to account for potential future sewer expansion. The population density within the sewered land was held at its current rate in 2020 and was permitted to increase by 10% in each successive decade; this allows for modest future increases in suburban population density. Based on these density calculations, a maximum future population in each tract was determined and population change over the projection period was limited to this threshold.

Finally, the census tract projections were controlled to the county level projections of population in households (Swanson et al. 2010). Since census tracts nest completely within a county, the sum of the county's tracts should equal the county forecast. The results from this last constraint served as the final forecasts for population in households.

To determine total population, the population in group quarters in each tract was added to the forecasted population in households (Smith et al. 2001). The tract populations in group quarters were held constant at 2010 levels, with the exception of four census tracts around the University of Louisville. Data provided by the University of Louisville indicated that the student population was not appropriately captured by the 2010 Census, as shown in Figure 1. In addition, new developments built between 2010 and 2017 will nearly double the capacity of student housing around the University's campus. Population in group quarters was added to four census tracts (35, 37, 53, and 71) based on the current or future locations of student housing facilities, based on the assumptions that these developments would be filled at 90% capacity.

To determine the total number of households, the headship rate method was used (United Nations 1973). Using data from the 2010 Decennial Census, the proportion of the household population within each 10-year age group that was classified as the "head of household" was calculated. This proportion was then applied to the corresponding age group in the projected

household populations. The projected mean household size was calculated as the projected population in households divided by the projected number of households.

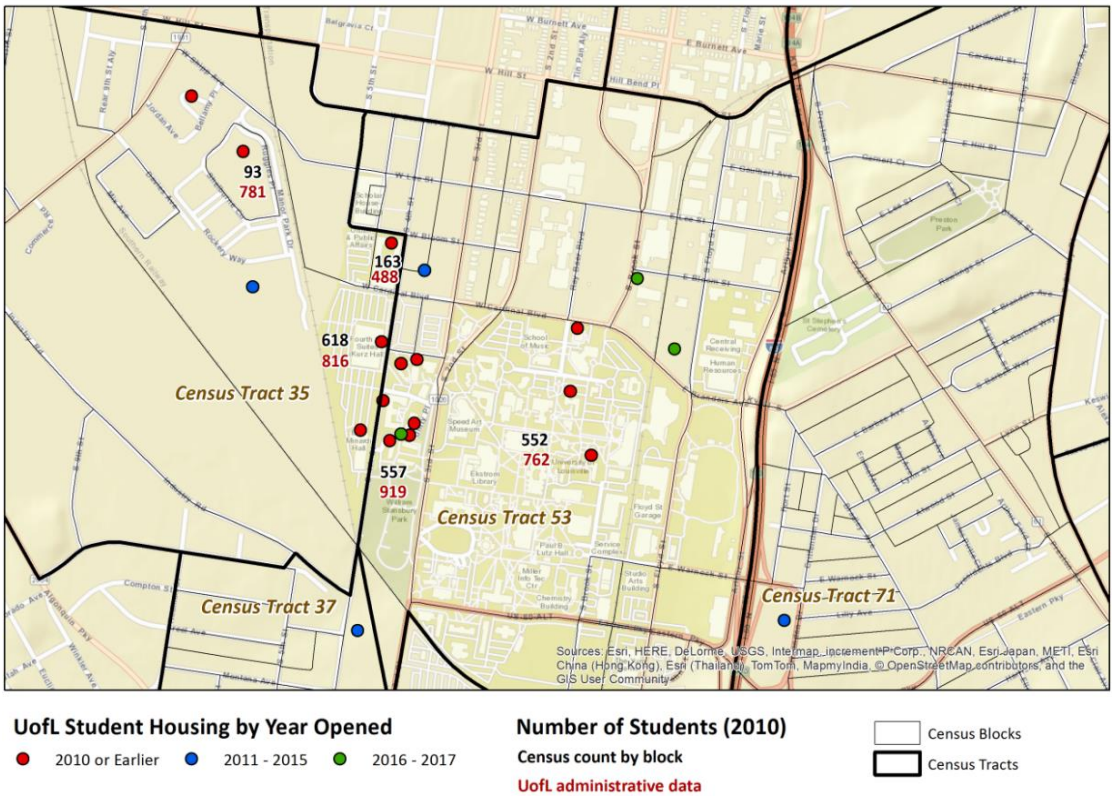

Figure 1. Number of students living in University of Louisville student housing in 2010 as presented by the 2010 Census by census block and administrative data provided by the University of Louisville by housing facility. Current and future locations of student housing facilities are also shown.

Employment Projection Methodology

Most economic forecasting is based on the assumption that historical trends in employment are the best predictor of future employment. There are a number of techniques that can be used to forecast but the most common is linear regression (Silvia et. al, 2014).

Ordinary least squares (OLS) linear regression predicts future trends based on past patterns. The method assumes that the dependent variable (future employment) will be influenced by the same set of factors and in the same way that produced the independent variables (past employment), see Formula 3.

OLS fits a line through the data points using the least squares formula, a technique that minimizes the total distance between the line and each of the historical data points (Kremelberg, 2011). When the fitted line matches the data points well, the error introduced in

the model is minimized. When the fitted line does not match the data points well, the error term will be higher and the predicted values – the forecast – will be less certain.

The OLS regression formula is

$$Y = a + bX + e \quad (3)$$

where *Y* is the employment outcome, *X* is the time period in which employment is measured, *a* is the intercept (e.g., employment at time 0), and *b* is the slope of the line (e.g., employment change over time). The *e* term represents residual variance or error.

OLS regression produces a coefficient of determination (denoted by R^2) that indicates what proportion of the variance in the dependent variable was predictable from the independent variable. This often is referred to as "goodness of fit" because it suggests how well the predicted line would have matched the observed values of the independent variable. Each forecast was evaluated on exactly this basis. When the goodness of fit was within acceptable limits – which, due to differences in the volume of employment within sectors and geographies, varied somewhat – the regression line became the forecast. When the goodness of fit was not within acceptable limits, a judgmental adjustment was made, as described below.

When an equation does not predict historical employment well, it is usually because of volatility in employment over time. The recent recession introduced volatility into manufacturing, construction, retail trade and some professional services. Examination of the trend line before and after the recession can help the forecaster determine how much the estimated trend line was influenced by the recession and the accompanying "jobless" recovery.

Judgmental adjustments are appropriate when extraordinary factors begin to affect the dependent variable in ways not seen in previous years (Ammons, 2009). Most adjustments are made based on specific information about changes in the national, state, regional and local economy and changes in the industry. National trends may suggest future employment increases (or decreases) in a sector. Also, the local and regional economy may have a greater proportion of employment in some industries than the national economy and may be more (or less) sensitive to those trends. Location quotients are used to identify sectors in which the percentage of local employment exceeds the percentage of national employment. When the location quotient is greater than 1, the sector is considered an exporting industry in which the region has as economic advantage. Forecasters use a variety of resources for sector adjustments. The one used most often for sector adjustment in this forecast was the Bureau of Labor Statistics Employment Projections.

More appropriate (e.g., probable) forecasts can also be made by selecting a different time period for the regression. For example, historical local employment data are available for some

industries (manufacturing, construction) back to 1969. As the United States transitioned to a service economy during the 1980s and 1990s historical observations of local manufacturing employment became less useful for predicting future manufacturing employment. For this forecast, the regression for manufacturing was performed using six different time period combinations, and adjusted based on these findings.

The Jefferson County employment forecast by sector was adjusted judgmentally for both the manufacturing and construction sectors. A "floor" of 20,000 manufacturing employees was imposed for the years 2030-2040. The construction regression was modified by smoothing to mute the impact of the rapid suburbanization of the 1970s and 1980s and to mute the impact of the great recession from 2007-2010. Other sectors in the county forecast were not adjusted.

Data limitations can introduce volatility into a forecast. Prior to 2000, detailed service sector employment was unavailable. Effective in 2001, new sector groupings provided the needed detail for the services sector. However, the limited number of observations for service sector employment decreased the reliability of the model. Rather than produce multiple sector forecasts of limited reliability, a judgment was made to combine similar service sectors into a new grouping called "professional." This decreased the volatility of individual sector employment forecasts and enhanced reliability as indicated by an improved coefficient of determination.

In addition to data availability and data relevance, sometimes new sources of data emerge that are relevant to the forecast. That was the case with nonemployer data, which became widely available after 2002. Nonemployers are defined by the US Census Bureau as firms or establishments that do not have paid employees but have annual receipts in excess of $1,000 and pay federal taxes. Nonemployers include sole proprietors and contract employees, and have shown steady growth since the data began to be reported. Decreases in some sector employment may be offset by the increase of nonemployers; that is, a worker who might previously have been an employee of the firm now works for that same firm on a contract basis. He/she would be dropped from the sector employment totals and reflected in the nonemployer totals.

The market area employment forecasts were limited to total employment rather than employment by sector. Sector forecasts were initially performed for each market area; however, these results were largely unsatisfactory, as small changes in low employment sectors produced large gains or losses in the sector forecast. When a market area had sufficient stable employment in any sector to support a forecast, the sector was mentioned in the text after the total employment forecast was presented. That is, when total employment in a market area was predicted to rise, the sectors expected to contribute to the rise are indicated. Similarly, the sectors expected to contribute to the loss are also identified. Only one market area – Southwest

Core – was adjusted based on loss of one major employment sector. Like the Metro forecast, manufacturing job losses were likely to drive the employment forecast too low. While the manufacturing employment trend is not expected to reverse, the decline in future periods will likely be less steep than was the decline in previous periods.

The market area total employment forecasts will not sum to the Jefferson County forecast because the adjustments to the manufacturing and construction sectors described in the county forecast were not apportioned to the market areas. That is, county manufacturing employment was essentially "frozen" at 20,000 after 2030, but this adjustment was not apportioned geographically to the market areas. There was no basis for predicting which specific manufacturers would reach a plateau and which would not. Additionally, nonemployers were added to the county forecast, but were not added to the market area forecasts, as nonemployer data is only available at the county level.

Employment forecasts by sector were performed for the MSA, but not for the individual counties comprising the MSA (with the exception of Jefferson County). The reason is the same as for the market areas - some component counties had very little employment in some sectors, making a sector forecasts unreliable for planning purposes. Total employment for the counties was forecast in the usual way with no judgmental adjustments. Nonemployers were not forecast for the counties other than Jefferson.

Projection Results

Population and Households

The Louisville MSA is projected to grow by 315,834 people, a 26% increase, between 2010 and 2040 (see Table 2). By 2035 the Louisville MSA is projected to top 1.5 million people. Jefferson County is forecast to experience the largest numeric gain over the projection period (see Figure 3), accounting for 42% of the predicted growth in the MSA. The 2nd and 3rd largest numeric gainers – Oldham County and Bullitt County – will account for an additional 25% of the MSA's projected growth. The largest percentage change is forecast in Spencer County, which is expected to more than double its population between 2010 and 2040. The other Kentucky counties bordering Jefferson County (Oldham, Shelby and Bullitt) are each expected to grow by more than 50% (see Figure 4). Clark County, Indiana is also forecast to have sizeable population gains, in both numeric and percentage terms.

Although average household size is stabilizing after decades of modest decline, household growth in the MSA is nevertheless projected to outpace population growth through 2040. The Louisville MSA is projected to gain 154,253 households between 2010 and 2040, bringing the

total number of households to 650,567 in 2040 (see Table 3). Jefferson County is expected to account for 42% of the MSA's household growth, and will experience the largest numeric gain in households in the MSA. The four Kentucky counties surrounding Jefferson are projected to have the largest percentage increase in the number of households. Bullitt, Oldham, Shelby and Spencer counties are each expected to experience more than a 70% increase in the number of households by 2040. These four counties – along with Jefferson County – account for 81% of the expected household growth in the region over the next few decades. Of the Indiana counties, Clark County is forecast to experience the largest numeric and percentage gain of households.

Jefferson County is projected to grow by 131,135 people – an 18% increase – between 2010 and 2040 (see Table 4). Population growth outside of the Core market areas is projected to continue at a faster pace than growth inside the Core. As shown in Figure 5, the largest numeric growth is expected to be in areas outside the Watterson Expressway and inside the Gene Snyder Freeway, in the East Metro and Central Bardstown market areas. Other large numeric gains (over 10,000) are forecast in the North Floyd's Fork, McNeely Lake, Central Taylorsville, South-Central Dixie, and Central Preston market areas. The largest population decline is projected in the Northwest Core market area. The Southeast Core market area is also forecast to experience a small population decline.

The largest percentage growth is expected outside of the Gene Snyder in the Parkland's of Floyd's Fork market area, as shown in Figure 6. All other market areas in eastern Jefferson County outside of the Gene Snyder are also projected to see sizeable percentage gains in population. North Floyd's Fork, McNeely Lake, and Northeast Metro are each projected to gain more than 25% of their current populations by 2040. With the exception of the East Core, market areas in the Core are forecast to see smaller percentage gains (less than 10%) or minor declines in population.

Jefferson County is projected to gain 65,425 households, a 21% increase, between 2010 and 2040 (see Table 5). Since market areas within the Core are generally projected to have decreasing household sizes, several market areas within the Core are projected to experience a larger percentage change in households than in total population. Regardless, the largest numeric gain of households will be outside of the Core, in the East Metro market area. Other large numeric gains of households (over 5,000) are projected in the Central Bardstown, North Floyd's Fork, Central Taylorsville, McNeely Lake, South-Central Dixie and Central Preston market areas, all of which are outside of the Core (see Figure 7).

The largest percentage growth in households is expected in the Parklands of Floyd's Fork and North Floyd's Fork, both of which are projected to experience a larger than 50% increase in households between 2010 and 2040 (see Figure 8). The Southeast Core, University and

Northwest Core market areas are projected to experience minor declines in the number of households between 2010 and 2040. Although the University market area is projected to gain population over the coming decades, students living in University housing are classified as residing in group quarters rather than households, and are therefore not reflected in household change.

The cohort-component model results in projections of the population by 5-year age group, allowing a comparison of changes in the age distribution within Jefferson County. The population pyramids in Figure 2 display the distribution of the County's population within each age and gender group. Between 2010 and 2040, the population age 65+ is expected to increase substantially, particularly among females. The population in the middle age groups – approximately age 35 to 65 – decreases moderately, as the Baby Boomers age out of this group. The young adult and child populations remain fairly consistent. The group quarters population, denoted by the gray extensions within the individual bars, increases in the 15-24 age groups. This is the result of the U of L student housing expansion detailed above.

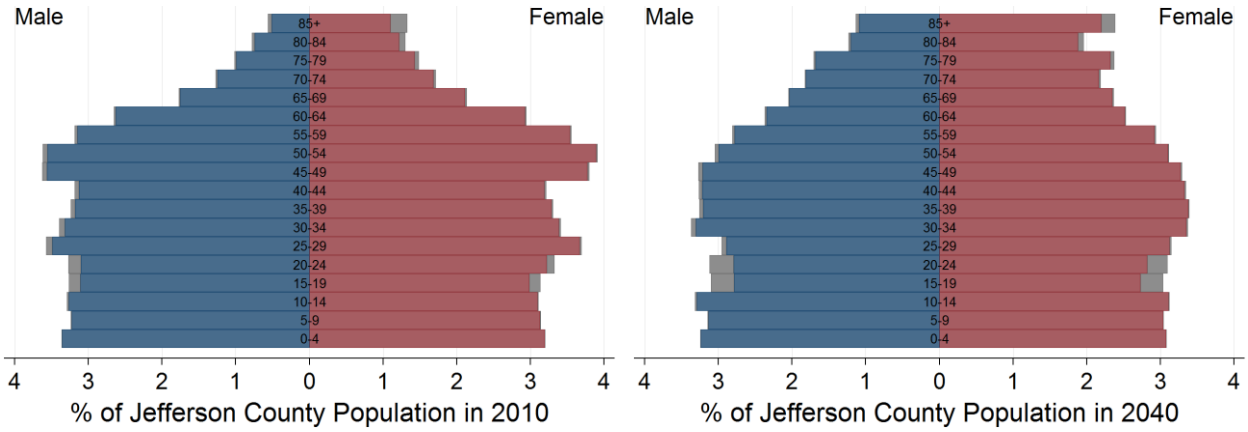

Figure 2. Jefferson County population pyramid in 2010 (left); projected population pyramid in 2040 (right).

Projected Population Change (2010 – 2040)
Louisville/Jefferson County Metropolitan Statistical Area

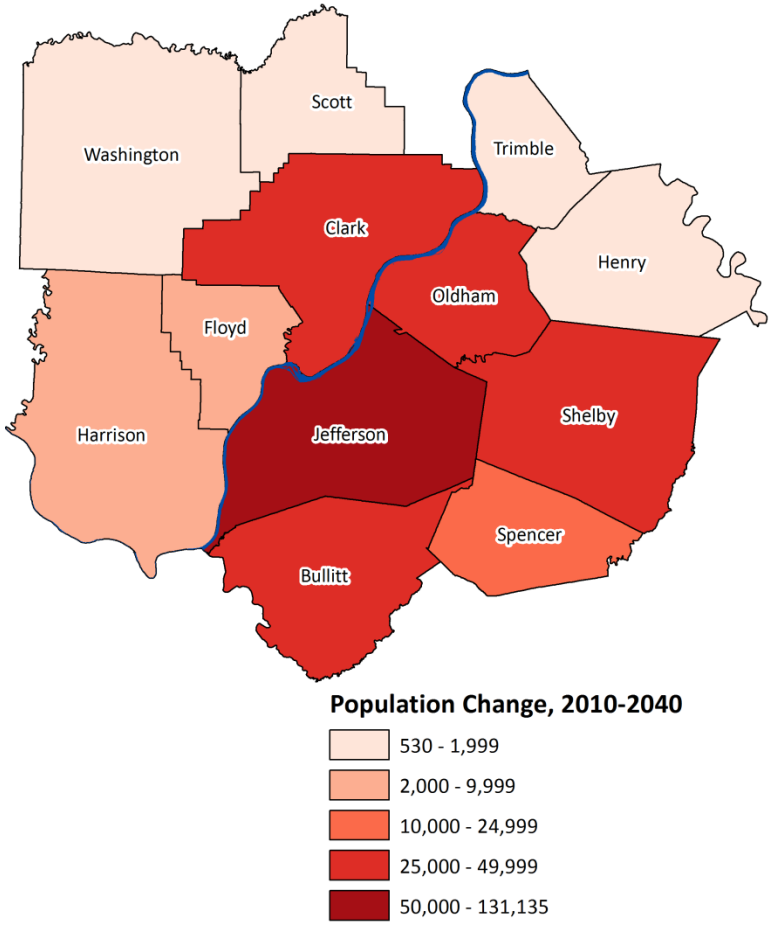

Figure 3. Projected population change in the Louisville MSA between 2010 and 2040 by county.

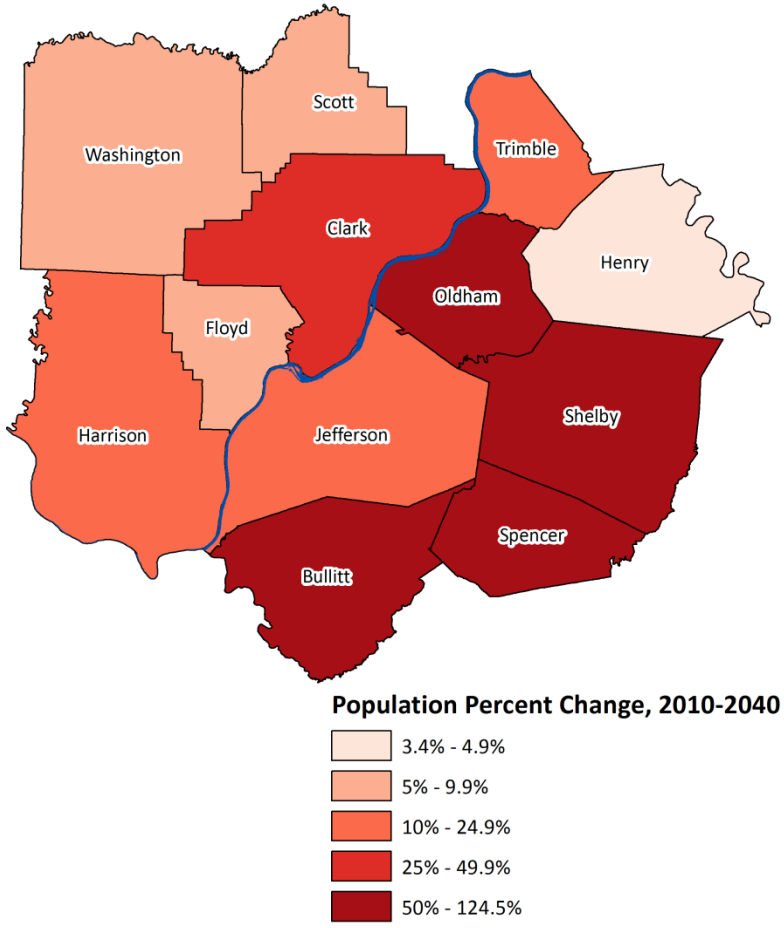

Figure 4. Projected percent change in total population in the Louisville MSA between 2010 and 2040 by county.

Projections of Total Population, 2010 - 2040 Louisville/Jefferson County Metropolitan Statistical Area									
								Change 2010 - 2040	
	2010	2015	2020	2025	2030	2035	2040	numeric	percent
Clark, IN	110,232	117,001	123,060	128,509	133,253	137,476	141,408	31,176	28.3%
Floyd, IN	74,578	76,267	77,763	79,005	79,851	80,261	80,367	5,789	7.8%
Harrison, IN	39,364	41,466	43,254	44,785	45,988	46,872	47,499	8,135	20.7%
Scott, IN	24,181	24,745	25,210	25,574	25,785	25,866	25,889	1,708	7.1%
Washington, IN	28,262	28,751	29,104	29,415	29,652	29,747	29,751	1,489	5.3%
Bullitt, KY	74,319	81,358	88,508	95,623	102,461	108,891	114,952	40,633	54.7%
Henry, KY	15,416	15,706	15,915	16,037	16,110	16,062	15,946	530	3.4%
Jefferson, KY	741,096	768,000	793,817	817,427	838,053	855,909	872,231	131,135	17.7%
Oldham, KY	60,316	67,412	74,990	82,306	89,639	96,668	103,223	42,907	71.1%
Shelby, KY	42,074	46,838	51,944	56,950	61,939	66,835	71,703	29,629	70.4%
Spencer, KY	17,061	20,157	23,655	27,189	30,861	34,587	38,301	21,240	124.5%
Trimble, KY	8,809	9,172	9,514	9,807	10,022	10,171	10,272	1,463	16.6%
Louisville MSA	1,235,708	1,296,873	1,356,734	1,412,627	1,463,614	1,509,345	1,551,542	315,834	25.6%

Table 2. Projections of total population in the Louisville MSA by county and year.

Projections of Total Households, 2010 - 2040 Louisville/Jefferson County Metropolitan Statistical Area									
								Change 2010 - 2040	
	2010	2015	2020	2025	2030	2035	2040	numeric	percent
Clark, IN	44,248	47,515	50,539	53,280	55,658	57,723	59,564	15,316	34.6%
Floyd, IN	29,479	30,584	31,675	32,587	33,277	33,671	33,853	4,374	14.8%
Harrison, IN	15,192	16,391	17,507	18,475	19,277	19,818	20,190	4,998	32.9%
Scott, IN	9,397	9,821	10,137	10,399	10,543	10,606	10,622	1,225	13.0%
Washington, IN	10,850	11,252	11,554	11,802	12,001	12,069	12,092	1,242	11.4%
Bullitt, KY	27,673	31,302	34,970	38,569	41,902	44,940	47,720	20,047	72.4%
Henry, KY	5,963	6,202	6,405	6,530	6,608	6,577	6,517	554	9.3%
Jefferson, KY	309,175	323,189	336,744	349,090	359,312	367,590	374,600	65,425	21.2%
Oldham, KY	19,431	22,796	26,354	29,654	32,805	35,680	38,336	18,905	97.3%
Shelby, KY	15,321	17,404	19,663	21,796	23,847	25,738	27,581	12,260	80.0%
Spencer, KY	6,165	7,486	9,025	10,568	12,162	13,698	15,197	9,032	146.5%
Trimble, KY	3,420	3,647	3,855	4,037	4,164	4,248	4,295	875	25.6%
Louisville MSA	496,314	527,589	558,429	586,787	611,555	632,358	650,567	154,253	31.1%

Table 3. Projections of total households in the Louisville MSA by county and year.

Projected Population Change (2010 – 2040)
Louisville Metro

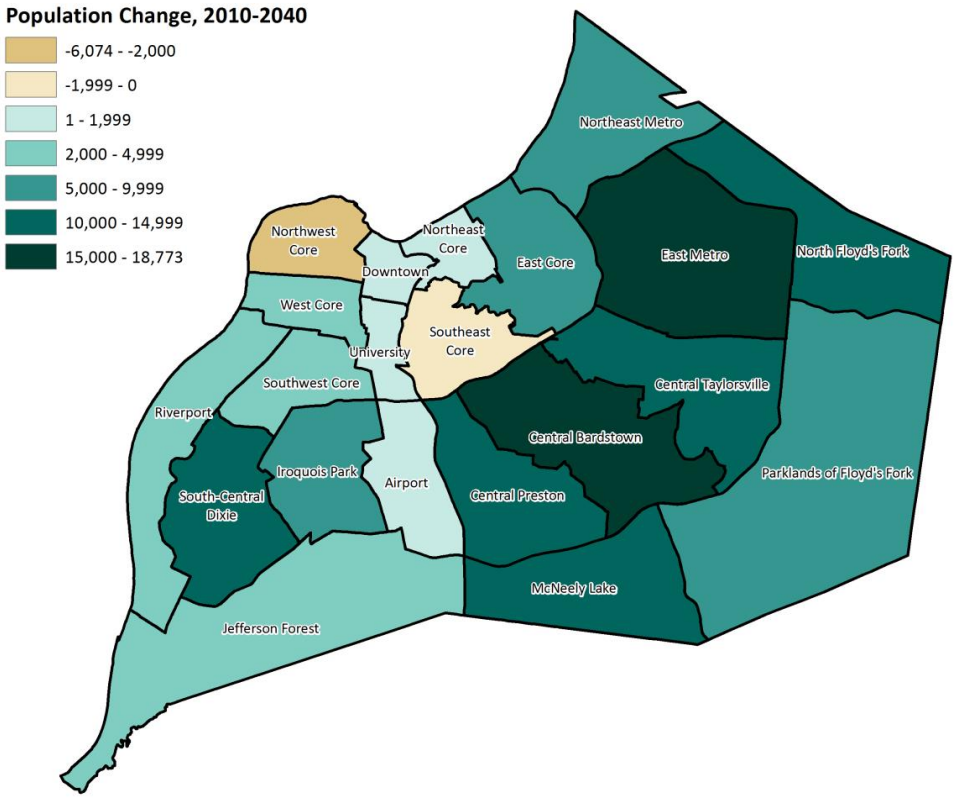

Figure 5. Projected population change in Jefferson County between 2010 and 2040 by market area.

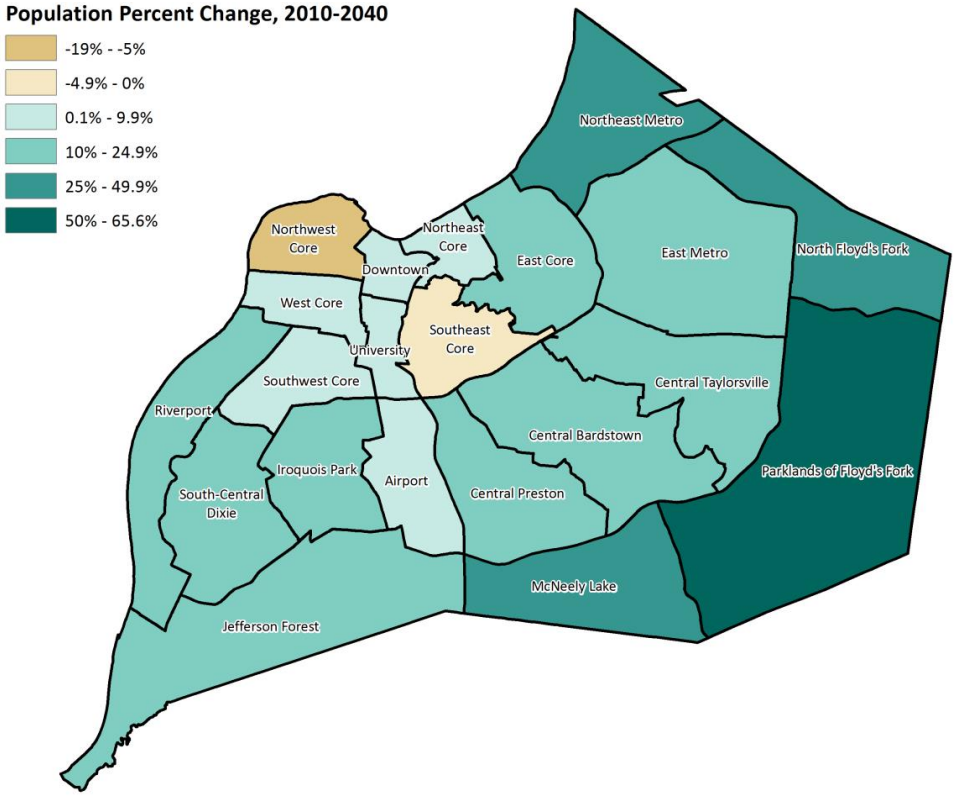

Figure 6. Projected percent change in total population in Jefferson County between 2010 and 2040 by market area.

Projected Household Change (2010 – 2040)
Louisville Metro

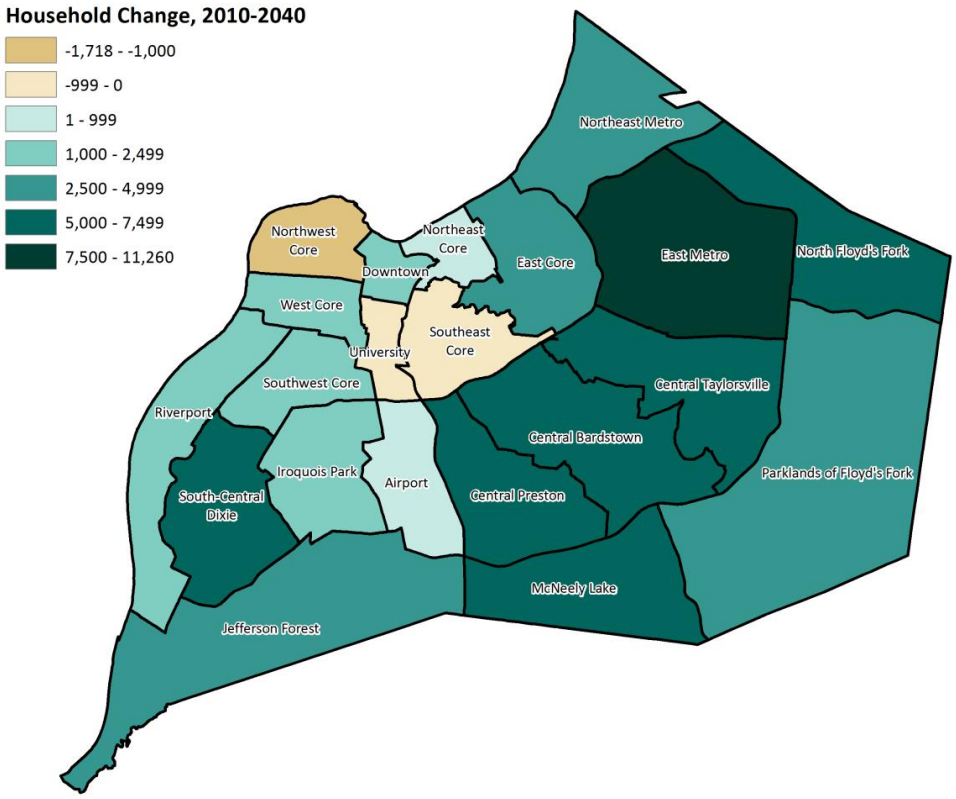

Figure 7. Projected household change in Jefferson County between 2010 and 2040 by market area.

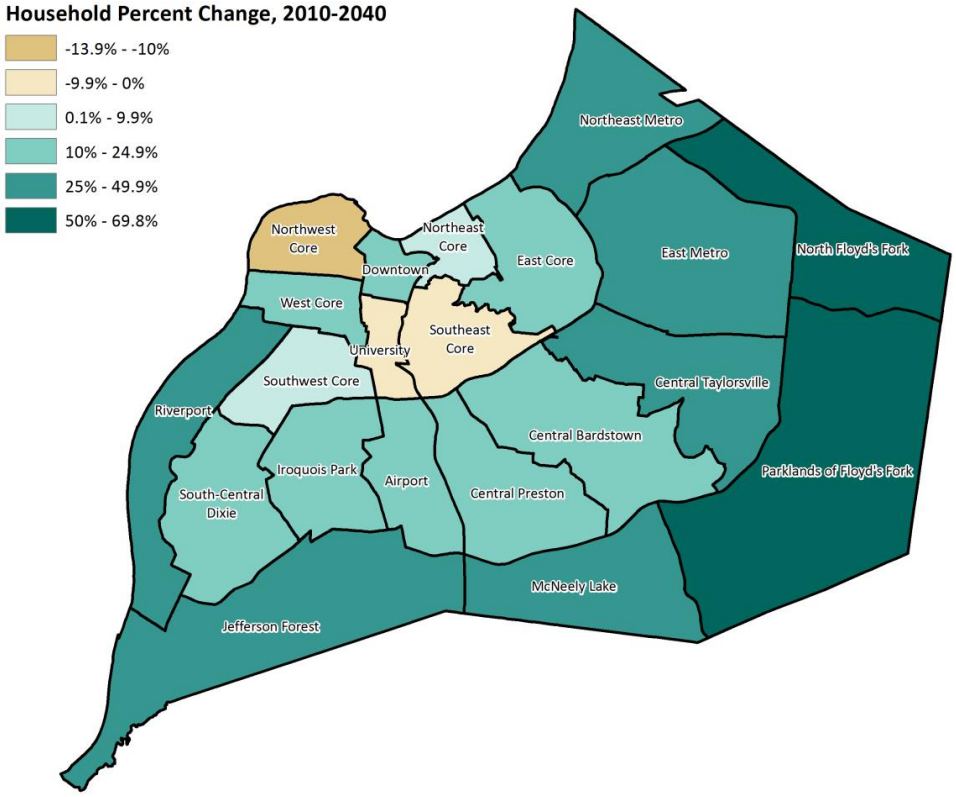

Figure 8. Projected percent change in households in Jefferson County between 2010 and 2040 by market area.

Projections of Total Population, 2010 - 2040 Louisville Metro and Market Areas									
								Change 2010 - 2040	
	2010	2015	2020	2025	2030	2035	2040	numeric	percent
Airport	2,536	2,521	2,503	2,533	2,553	2,608	2,658	122	4.8%
Central Bardstown	78,975	82,536	85,980	89,187	92,069	93,777	95,316	16,341	20.7%
Central Preston	54,027	56,243	58,379	60,202	61,805	63,399	64,880	10,853	20.1%
Central Taylorsville	52,977	55,536	58,016	60,456	62,675	63,839	64,888	11,911	22.5%
Downtown	13,291	13,405	13,501	13,716	13,880	14,120	14,335	1,044	7.9%
East Core	36,092	36,523	36,902	37,925	38,810	40,011	41,142	5,050	14.0%
East Metro	76,833	80,293	83,640	87,250	90,543	93,158	95,606	18,773	24.4%
Iroquois Park	51,891	52,113	52,261	53,412	54,367	55,836	57,204	5,313	10.2%
Jefferson Forest	22,522	23,058	23,560	24,438	25,226	26,162	27,051	4,529	20.1%
McNeely Lake	30,057	33,249	36,394	38,418	40,302	41,545	42,715	12,658	42.1%
North Floyd's Fork	33,806	37,895	41,930	44,078	46,064	47,265	48,382	14,576	43.1%
Northeast Core	15,054	14,955	14,834	14,914	14,938	15,068	15,172	118	0.8%
Northeast Metro	16,305	17,714	19,098	20,119	21,066	21,720	22,335	6,030	37.0%
Northwest Core	32,005	30,725	29,402	28,551	27,596	26,787	25,931	-6,074	-19.0%
Parklands of Floyd's Fork	13,040	15,524	17,985	19,149	20,244	20,940	21,598	8,558	65.6%
Riverport	14,902	15,412	15,899	16,602	17,243	17,855	18,434	3,532	23.7%
South-Central Dixie	54,600	56,643	58,607	60,855	62,882	64,751	66,504	11,904	21.8%
Southeast Core	49,229	48,637	47,976	47,807	47,464	47,457	47,366	-1,863	-3.8%
Southwest Core	44,210	44,333	44,394	45,298	46,036	47,335	48,549	4,339	9.8%
University	20,000	21,218	22,407	22,148	21,809	21,524	21,201	1,201	6.0%
West Core	28,744	29,466	30,147	30,370	30,482	30,751	30,966	2,222	7.7%
Jefferson County	741,096	768,000	793,817	817,427	838,053	855,909	872,231	131,135	17.7%

Table 4. Projections of total population in Jefferson County by market area and year.

Projections of Total Households, 2010 - 2040 Louisville Metro and Market Areas									
								Change 2010 - 2040	
	2010	2015	2020	2025	2030	2035	2040	numeric	percent
Airport	960	967	973	990	1,001	1,031	1,058	98	10.2%
Central Bardstown	32,655	34,421	36,139	37,579	38,791	39,534	40,140	7,485	22.9%
Central Preston	22,124	23,218	24,280	25,169	25,905	26,623	27,249	5,125	23.2%
Central Taylorsville	22,069	23,440	24,778	26,062	27,187	27,749	28,215	6,146	27.8%
Downtown	5,785	6,023	6,252	6,515	6,739	6,994	7,224	1,439	24.9%
East Core	16,666	17,060	17,430	18,065	18,590	19,212	19,767	3,101	18.6%
East Metro	33,790	35,993	38,145	40,272	42,154	43,677	45,050	11,260	33.3%
Iroquois Park	21,031	21,241	21,422	21,940	22,326	22,948	23,490	2,459	11.7%
Jefferson Forest	8,530	8,948	9,353	9,861	10,308	10,774	11,204	2,674	31.3%
McNeely Lake	11,321	12,713	14,088	14,970	15,760	16,321	16,825	5,504	48.6%
North Floyd's Fork	12,996	14,896	16,775	17,815	18,746	19,208	19,604	6,608	50.8%
Northeast Core	7,904	7,929	7,943	8,011	8,029	8,121	8,185	281	3.6%
Northeast Metro	6,364	7,123	7,871	8,385	8,848	9,104	9,328	2,964	46.6%
Northwest Core	12,358	12,153	11,930	11,667	11,332	11,005	10,640	-1,718	-13.9%
Parklands of Floyd's Fork	4,951	6,016	7,072	7,566	8,013	8,224	8,407	3,456	69.8%
Riverport	5,797	6,061	6,316	6,662	6,968	7,209	7,426	1,629	28.1%
South-Central Dixie	21,684	22,705	23,694	24,714	25,583	26,288	26,903	5,219	24.1%
Southeast Core	23,215	23,167	23,086	23,106	22,986	22,988	22,910	-305	-1.3%
Southwest Core	18,132	18,262	18,366	18,758	19,036	19,485	19,867	1,735	9.6%
University	9,884	9,733	9,568	9,474	9,322	9,194	9,035	-849	-8.6%
West Core	10,959	11,119	11,264	11,510	11,686	11,900	12,072	1,113	10.2%
Jefferson County	309,175	323,189	336,744	349,090	359,312	367,590	374,600	65,425	21.2%

Table 5. Projections of households in Jefferson County by market area and year.

Employment

Jefferson County should continue to experience growth in the professional sector grouping, the health care and social assistance sector, transportation and warehousing, and hospitality/tourism, as shown in Table 6. Manufacturing remains a question. Most analysts believe that manufacturing employment will reach some "floor" and remain relatively constant around that floor for the future. Unfortunately, we don't know where the floor is, how quickly we will realize it, or how it may incorporate nontraditional work arrangements. For the purpose of the forecast, we have elected to identify 2030 as the floor year and hold manufacturing constant around 20,000 in future forecast years.

Jefferson County Employment Forecast 2020-2040					
	2020	**2025**	**2030**	**2035**	**2040**
Manufacturing	31,767	26,139	20,510	20,000	20,000
Construction	22,178	19,521	16,863	14,206	11,548
Trade	67,621	64,464	61,307	58,150	54,992
Transportation and Warehousing	35,303	35,912	36,521	37,129	37,738
Professional	163,087	172,308	181,530	190,751	199,973
Education	13,909	14,997	16,086	17,174	18,262
Health Care and Social Assistance	75,688	81,813	87,938	94,063	100,188
Hospitality and Tourism	54,835	57,488	60,140	62,793	65,445
Other Private Sector	27,423	26,844	26,266	25,687	25,109
Public Administration	52,078	52,551	53,024	53,497	53,969
Subtotal	***543,889***	***552,037***	***560,185***	***573,450***	***587,224***
Nonemployers	57,654	62,129	66,604	71,079	75,553
Total	**601,543**	**614,166**	**626,789**	**644,529**	**662,777**

Table 6. Projections of total employment by sector grouping in Jefferson County by year.

Three of the 21 market areas are expected to gain more than 10,000 jobs over the forecast period 2020-2040 (see Figure 9). Six are expected to make modest gains. Another six are essentially static, expected to see very modest gains/losses over the period. Employment is shrinking in another six market areas. In the case of the shrinking employment market areas, the forecasted loss is driven by structural changes to the economy or to the area, such as increasing residential development changing the type of businesses present.

Total MSA employment (full and part time) is forecast to exceed 900,000 by 2040, growing by a little under 1% per year (see Table 7). Growth is forecast to come from the health care industry, the professional sector, and transportation and warehousing. Trade is forecast to be stagnant and manufacturing is forecast to decline over the period.

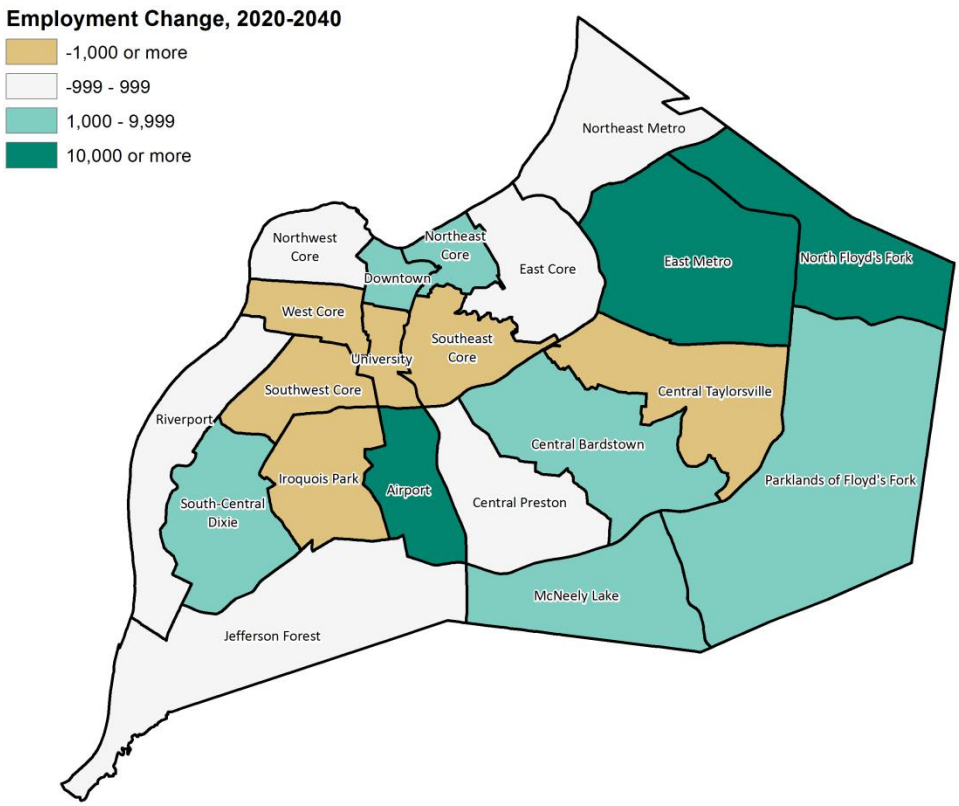

Figure 9. Projected employment change in Jefferson County between 2020 and 2040 by market area.

MSA Forecast by County

	2020	2025	2030	2035	2040
Clark County, IN	68,570	72,457	76,345	80,233	84,121
Floyd County, IN	46,625	49,716	52,807	55,897	58,988
Harrison County, IN	18,842	20,282	21,722	23,161	24,601
Scott County, IN	10,282	10,827	11,373	11,919	12,464
Washington County, IN	10,247	10,697	11,146	11,596	12,045
Bullitt County, KY	31,117	34,137	37,158	40,179	43,200
Henry County, KY	6,254	6,666	7,077	7,489	7,900
Jefferson County, KY	543,890	552,038	560,184	573,450	587,225
Oldham County, KY	25,575	27,885	30,195	32,505	34,815
Shelby County, KY	22,880	24,700	26,520	28,340	30,160
Spencer County, KY	3,515	3,817	4,118	4,419	4,721
Trimble County, KY	2,495	2,693	2,890	3,088	3,285
Total	**790,292**	**815,915**	**841,535**	**872,276**	**903,525**

Table 7. Projections of total employment in the Louisville MSA by county and year.

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