

II. CURRENT TRENDS AND PROJECTIONS OF THE FUTURE

A. Trends

We must have a good understanding of our community before we can determine what needs to be improved in the future. It's essential that we know where homes and businesses are currently located and trips people make between where they live, work and play determine where we need to maintain and improve our transportation system.

Next we need to develop a picture of how our community will grow. We need to know how much we will grow and where that growth will occur. *The Comprehensive Land Use Plan* continues to guide where utilities are located and where future residential, commercial and industrial growth will occur, as it has since 1978.

Table 2 provides a historical perspective of our community. Over the last forty years Tippecanoe County has experienced growth in both population and housing. While the overall trend in employment has been upward, there was a slight decline due to the recession that began in 2008.

Table 2, Historical Socioeconomic Data

Component	1970	1980	1990	2000	2010
Total Population	109,37	121,702	130,598	148,955	172,780
Household Population	96,901	105,271	114,138	133,829	158,317
Group Quarter Population	12,477	16,031	16,460	15,126	14,463
Total Housing Units	34,197	43,130	48,134	58,343	71,096
Occupied Housing Units	32,320	40,681	45,618	55,226	65,532
Person per Household	3.00	2.59	2.50	2.42	2.42
Vacant Housing Units	1,877	2,449	2,516	3,117	5,564
Percent of Housing Units Vacant	5.5%	5.7%	5.2%	5.3%	7.8%
Total Employment	52,016	64,824	79,949	98,426	94,911

Source: U.S. Department of Commerce: Bureau of the Census, Census of Population and Housing, and Bureau of Economic Analysis, Regional Economic Information Systems.

1. Population

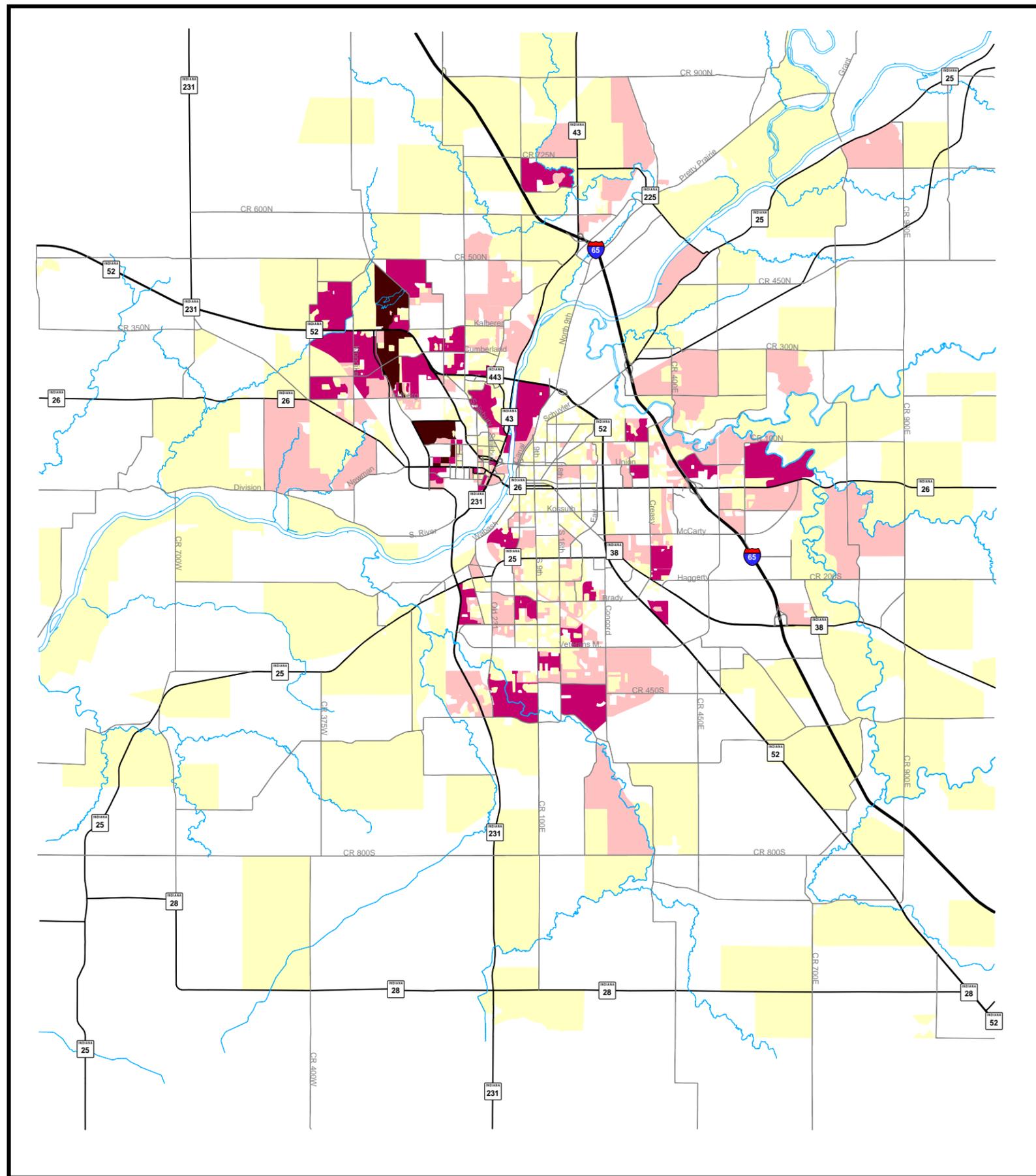
The 2010 Census counted 172,780 persons in Tippecanoe County. This is a significant increase when compared to previous census data. Our County grew by 23,825 persons over the last ten years (16%). The general location, density and change in our population are shown in **Figure 1, 2 and 3**.

158,317 persons lived in households which are single-family homes, apartments, duplexes, and condominiums. They accounts for 92% of our county's population. The other 8% (14,463) resided in group quarters. The majority of those (12,162) were students in dormitories, with 1,065 persons living in nursing homes and the remaining population primarily in jails.

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Figure 1

Population Distribution 2010 Census



Population Distribution

- 0 to 50 Persons
- 51 to 170 Persons
- 171 to 439 Persons
- 440 to 1299 Persons
- 1,300 or more Persons

0 1.5 3 4.5
Miles

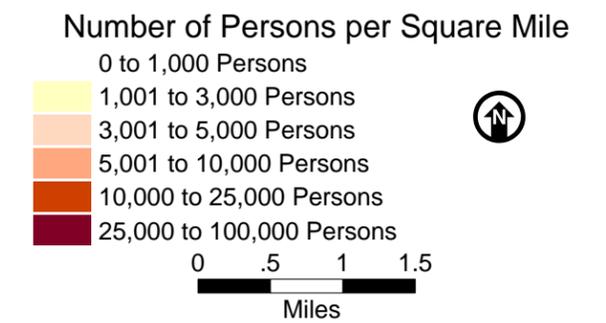
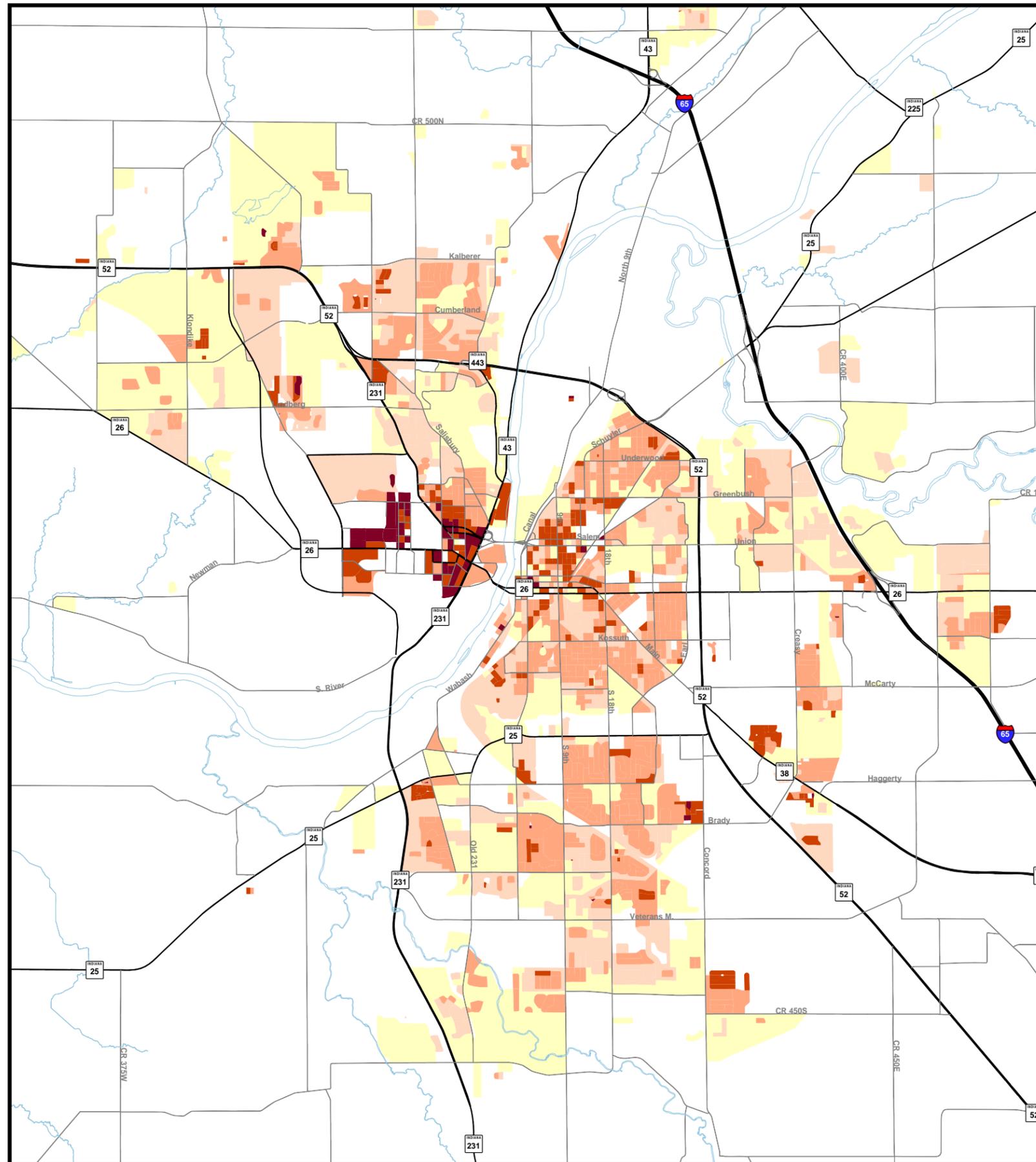
Prepared by the Area Plan Commission
of Tippecanoe County, May 25, 2012

Source: US Bureau of the Census

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Figure 2
 Population Density
 2010



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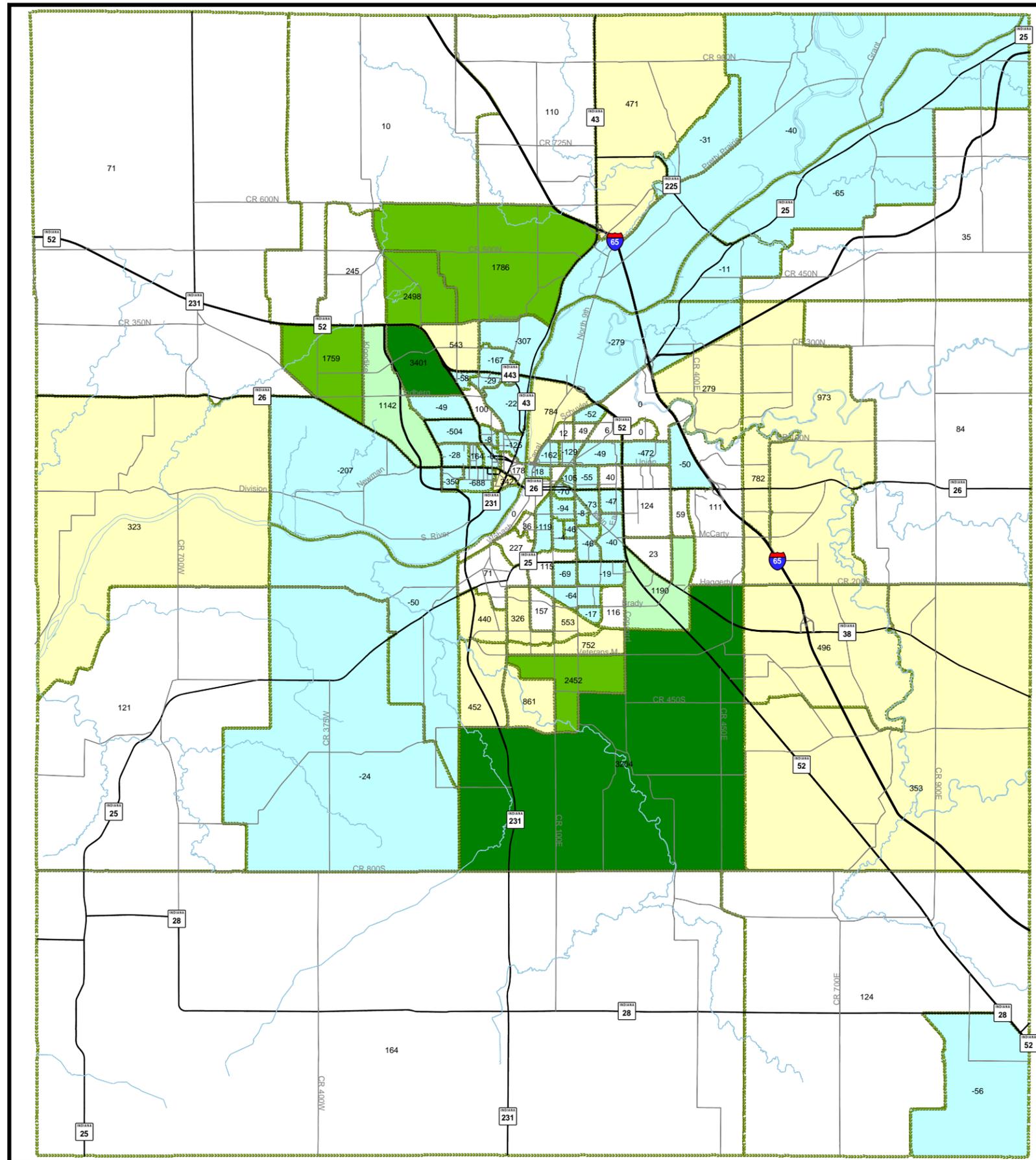
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Figure 3

Population Change 2000 to 2010



Population Change

- Decrease in Population
- 0 to 249 Persons Increase
- 250 to 999 Persons Increase
- 1,000 to 1,499 Persons Increase
- 1,500 to 2,999 Persons Increase
- 3,000 to 10,000 Persons Increase

0 1.5 3 4.5
Miles



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2. Housing

A key variable used in developing the 2040MTP is the location and number of housing units. The Census 2010 counted 71,096 housing units in Tippecanoe County. This was an 18% increase from the 2000 Census and a gain of over 10,000 new units. The Census provides this data at the block level so we have a very good idea where all of the housing units are located.

Not all of the housing units were occupied. There are always vacancies due to new units not yet occupied, sold or abandoned. Vacancy rates have risen from previous censuses that showed relatively stable vacancy rates of 5.2% to 5.7% to the current 7.8%. Projections in the 2040MTP account for the need to absorb the current extra vacant housing units.

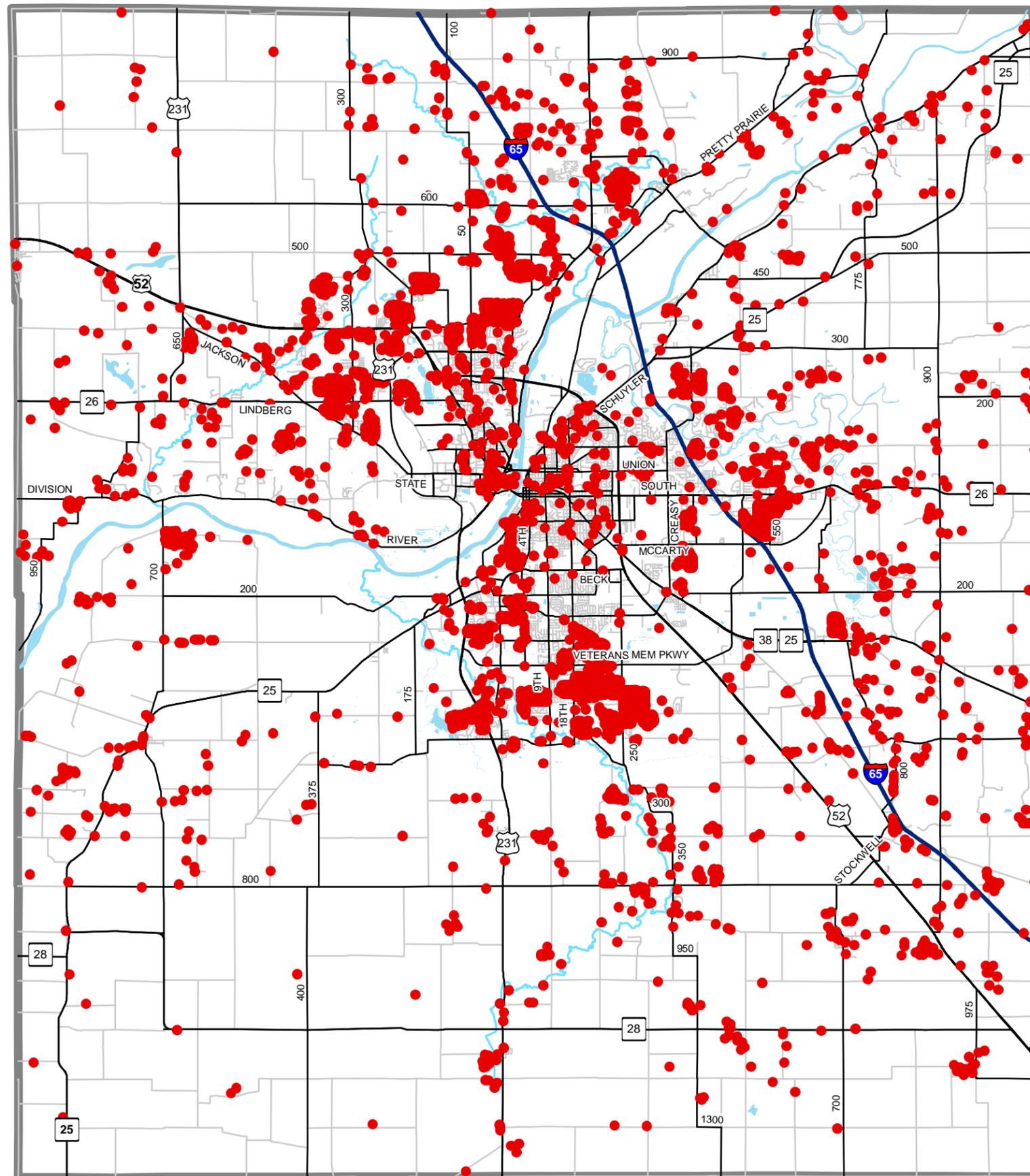
The housing growth experienced over the previous ten years is primarily concentrated to the north and west of West Lafayette and to the east and south of Lafayette. This distribution confirms that our county Land Use Plan is still guiding development. **Figure 4** shows the distribution of residential building permits over the last ten years.

Another important component affecting the number of trips is the average number of persons living in households. The 2010 Census reported approximately 2.42 persons per household. While the average has steadily decreased from 3.00 in 1970, it has remained the same for the last ten years.

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Figure 4

Residential Building Permits 2000-2010



● Issued Permit
2000-2010

0 2 4 6
Miles

The Area Plan Commission
of Tippecanoe County

Date: June 2012



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3. Employment

Employment data utilized in the 2040MTP came from a new source. The Indiana University School of Business purchased employment data from InfoGroup (a private data vendor) for urban areas in Indiana. The information included not only the number of non-farm jobs for each business but also location, allowing us to map the location of jobs in Tippecanoe County. The data as of November of 2010 indicated there were 94,111 non-farm jobs in the county.

To estimate farm employment, we evaluated historical employment data from the U.S. Department of Commerce Bureau of Economic Analysis. Over the past seven years, farm employment has been stable, averaging 800 farm employees. That figure was added to the employment estimate and distributed throughout the County with the assistance of the County Commissioners and their knowledge of the farming community.

We estimate there were a total of 94,911 jobs in Tippecanoe County in 2010.

B. Distributing Forecasts to Traffic Zones

Area wide socioeconomic forecasts for the year 2040 were developed. They were based on historical data, existing development plans and current trends (Table 3). The main guide used to distribute the forecasted data throughout County was the Comprehensive Land Use Plan.

1. Population Forecast

Population forecasts are comprised of two components: household population and group quarters. The household population forecasts are fairly straight forward and based on dwelling units and the average number of persons per household. We expect the number of persons living in households to grow from 158,317 persons in 2010 to 234,658 persons in 2040 (33% increase).

For the 2040MTP, we looked very closely at trends in group quarter population. Factors that will affect the number of people in group quarters in the future are students in dormitories at Purdue, retirees, and disabled veterans.

Two issues pertaining to veterans were discussed with local social service agencies as well as the County’s Veterans Service Office. The number of veterans currently living from previous wars is decreasing while the number of veterans from the most recent wars is increasing. The net effect is that the number of veterans living in group quarters (nursing homes and rehabilitation centers) will remain the same in the future.

Dormitory projections obtained from Purdue University anticipate new dorm rooms but only in the near future. After that the number of dorm rooms will remain constant through 2040.

Table 3, Socioeconomic Forecasts

	2010	2020	2030	2040
Total Population	172,780	203,928	227,268	250,851
Household Population	158,317	188,630	211,744	234,658
Group Quarter Population	14,463	15,298	15,524	16,193
Total Housing Units	71,096	78,596	88,596	98,596
Occupied Housing Units	65,532	74,273	83,723	93,173
Person per Household	2.42	2.40	2.39	2.38
Vacant Housing Units	5,564	4,323	4,873	5,423
Percent of Housing Units Vacant	7.8%	5.5%	5.5%	5.5%
Total Employment	94,911	107,697	125,585	144,418

The National Nursing Home Survey from the Centers for Disease Control shows that the majority of residents in nursing homes are 85 and older. Relevant Census data show that the nursing home population

in Tippecanoe County for 2010 was 1,056 persons, and that the population of those 85 and older in 2010 was 2,506 persons.

The future nursing home population is calculated by the ratio of persons living in nursing homes to the number of persons who are 85 and older (42.5%) applied to the population projections from the Indiana Business Research Center for persons who are 85 and older.

Combining these three groups provides a group quarter population estimate, one that will increase from 14,463 persons in 2010 to 16,193 persons by 2040.

The population in Tippecanoe County surpassed 100,000 just before the 1970 Census. Over next thirty years, the county grew by another 50,000 (about 1% per year). The 2040MTP forecasts a similar trend; in the next 30 years (by 2040) our population will grow by 78,000 (1% per year) and will surpass a quarter million people (250,851).

2. Housing Forecast

Housing forecasts are based on new building starts, vacancies and persons per household estimates. Construction of new dwelling units in the last several years is down due to the 2008 recession. In contrast, recent building permit data show that the number of new dwelling units is slowly returning to a more typical rate. We determined based on this observation that approximately 500 new units will be constructed annually through 2015. We felt after that date we would fully recover from the recession and our annual growth rate would increase to 1,000 new dwellings per year. This rate would then remain constant to 2040.

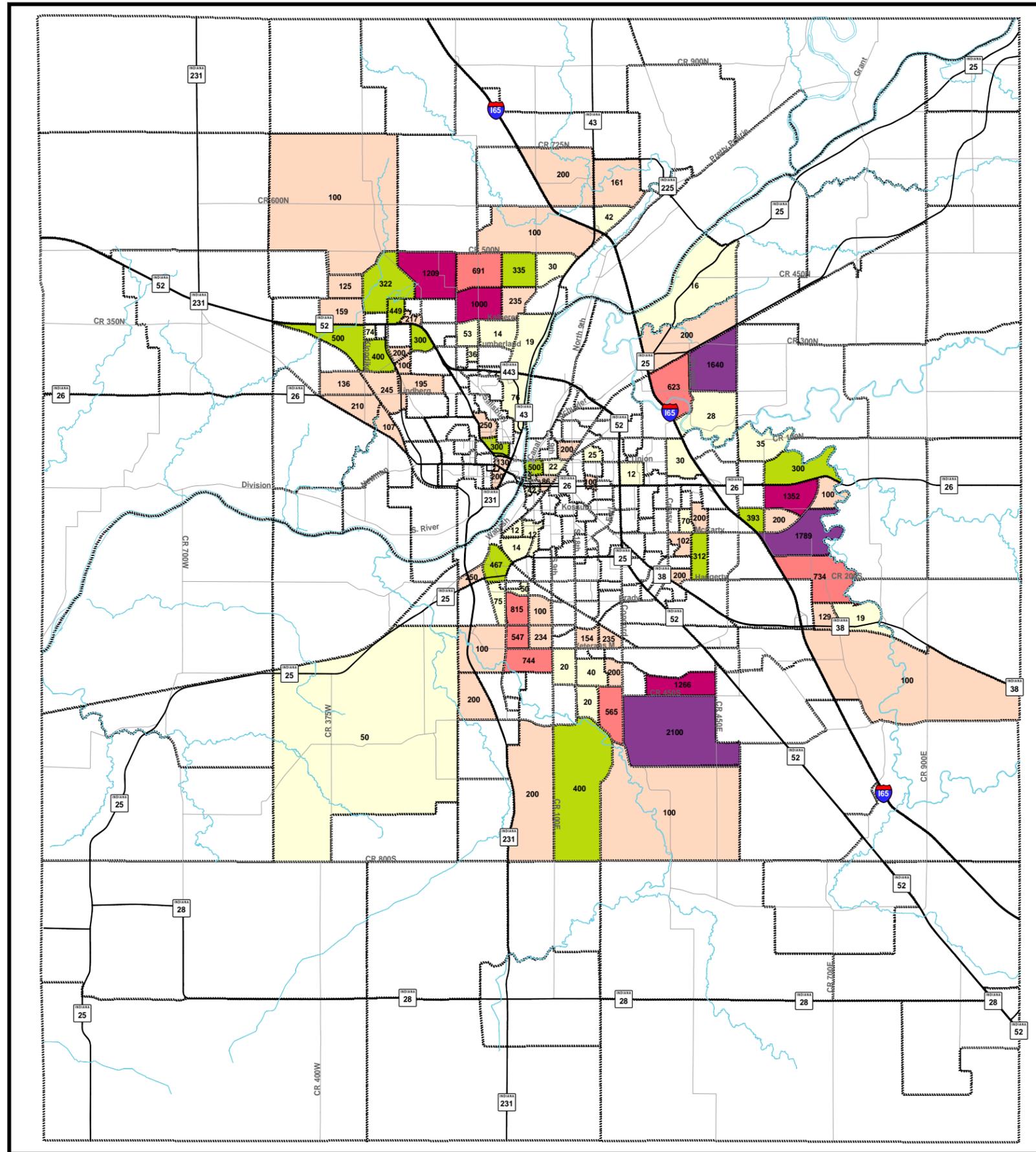
The vacancy rates used in these forecasts were based on historical data, which have averaged 5.5% over the last forty years. Due to the recession, our current rate is higher. We estimate that with economic recovery the vacancy rate will decrease by ½ % per year until it reaches 5.5% in 2015. After that it will remaining constant to 2040.

Analysis by Arthur C. Nelson, Director of Metropolitan Research Center at the University of Utah, indicates national level trends are now reversing and our average household size is increasing. Locally, over the last several decades there has been a strong local trend to fewer persons per household. We forecast that the local trends will continue, albeit at a slower pace. For 2020, the average household size will decrease to 2.40 and by 2040 household size will decrease to 2.38.

When forecasting the location of future housing the adopted Land Use Plan was used as a guide. The Land Use Plan has long showed the major growth areas to the north and west of West Lafayette and to the east and south of Lafayette. These growth areas are on the edge of both cities and contiguous to existing development (**Figure 5**).

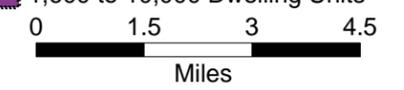
Figure 5

2040 Housing Growth Distribution



Number of New Dwelling Units

- No new Dwelling Units
- 1 to 79 Dwelling Units
- 80 to 299 Dwelling Units
- 300 to 539 Dwelling Units
- 540 to 999 Dwelling Units
- 1,000 to 1,599 Dwelling Units
- 1,600 to 10,000 Dwelling Units



Prepared by the Area Plan Commission
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3. Employment Forecast

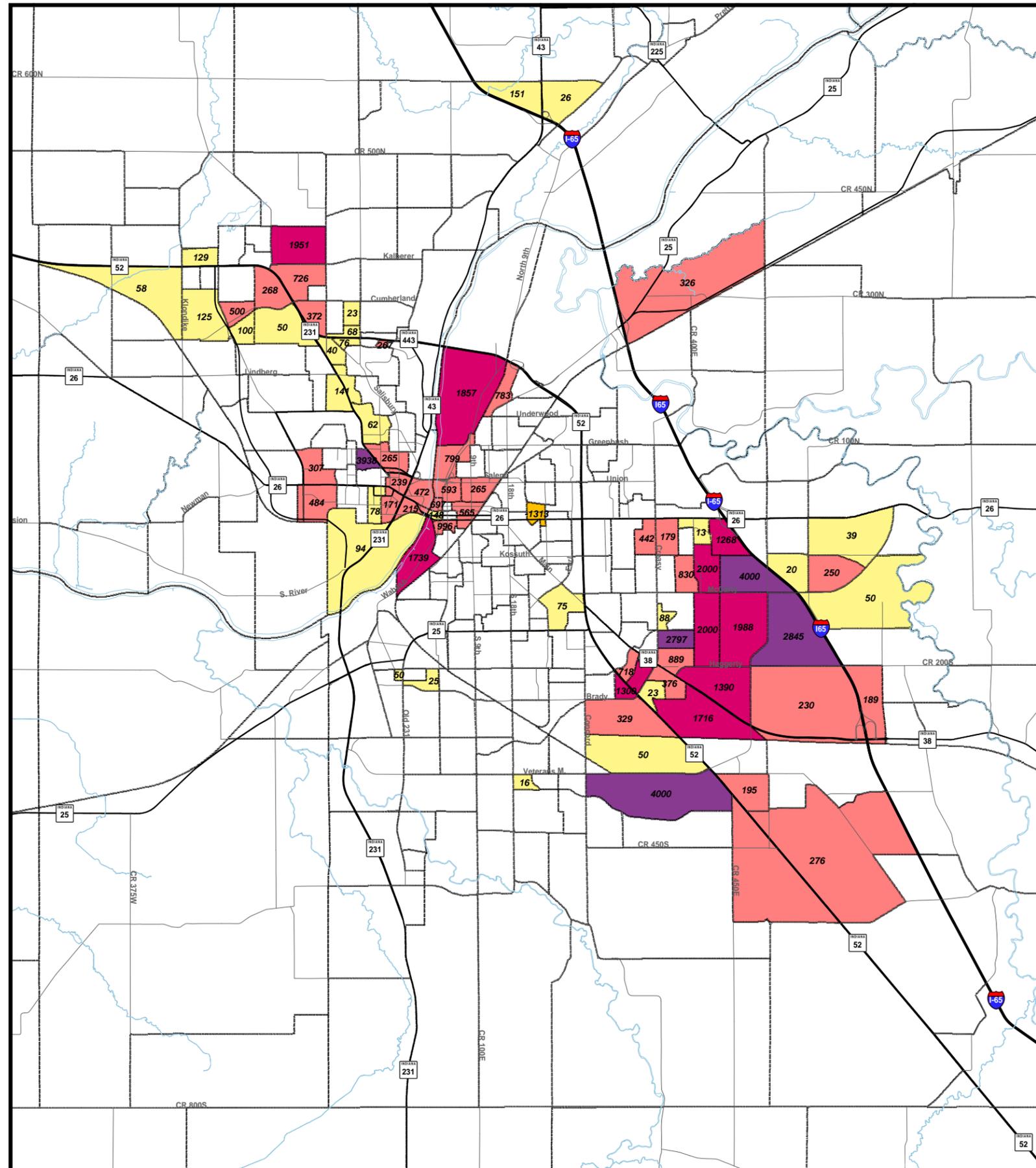
Historically the number of jobs per housing unit has increased over time. In the Seventies and Eighties, the ratio was around 1.50 jobs per housing unit. In the 1990s and 2000s the ratio increased to 1.66 and 1.69. Unfortunately, the effects of the 2008 recession significantly reduced the number of jobs and the ratio for 2010 dropped to 1.33 jobs per housing unit.

Like many other forecasters we see the economy recovering at a slower steady pace with new jobs being added each year. We forecast that the ratio of jobs per housing unit will return to its 1980 level by 2030. The ratio will then continue to increase slowly to 1.55 by 2040. By 2040, our total employment for the county will be 144,418 jobs.

Job distribution throughout the county was again guided by the Land Use Plan. We expect significant growth in the area west of I-65 along the McCarty/Haggerty Road corridors. We also anticipate employment growth in the downtowns and in West Lafayette adjacent to and in the Purdue Research Park (**Figure 6**). These growth areas correspond to those identified in the *Comprehensive Land Use Plan*.

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Figure 6
 2040
 Employment Growth
 Distribution



Number of New Jobs

- Reduction of Jobs
- No New Jobs
- 1 to 169 New Jobs
- 170 to 999 New Jobs
- 1,000 to 2,699 New Jobs
- 2,700 to 5,000 New Jobs

0 .5 1 1.5
 Miles

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4. Comparison to Previous Plans

The socioeconomic projections in the *2040MTP* are similar to those of the 2030 Plan. There is only a slight change in the location of people, housing and employment. In the *2040MTP* we have forecasted there will be 227,268 persons living in Tippecanoe County by 2030. The 2030 Plan forecasted 216,832 persons; the difference is only a slight increase (<5%). Because of anticipated changes in the average persons per household, the number of housing units forecasted in the *2040MTP* for 2030 are less than the 2030 Plan (83,723 and 89,647 respectively), but exceed the 2030 Plan level by the year 2040. Finally, the forecasted number of jobs is nearly identical. There were no new traffic forecasts developed for the *2040MTP* because the highway needs are well documented, have not changed and progress is being made to address the needs. The adopted *Comprehensive Land Use Plan* has guided growth patterns over the last 30 years and road needs to service that growth are well documented in the past five transportation plans. Each transportation plan has consistently identified a very similar set of needs and the community has been very successful in implementing the projects identified in the plan.

As was shown in the Transportation Plan for 2030, the *Comprehensive Land Use Plan* can accommodate all growth forecasted by the *2040MTP*.

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