02

Regional Profile

02

The MACOG Region is comprised of four (4) counties located North Central Indiana: Elkhart, Kosciusko, Marshall, and St. Joseph Counties. Two of the four counties (St. Joseph and Elkhart Counties) border the Michigan state line. There are 35 cities and towns in the Michiana Area. Figure 2.1 shows populations estimates for the largest communities in each of the four (4) counties.

As shown in Figure 2.2, the regional is centrally located to several major cities in the Midwest. The largest city in the region, South Bend, is located 95 miles (2 ½ hrs drive time) east of downtown Chicago, 155 miles (3 hrs drive time) north of downtown Indianapolis, and 215 miles (3 ½ hrs drive time) southwest of Detroit. Additionally, Lake Michigan is located approximately 35 miles (45 mins drive time) northwest of the Region.

The MACOG region is home to several attractive water resources. The region is unique in that its water resources drain into three major water body networks: the Great Lakes, the Mississippi River, and the Ohio River. A large portion of the region's water flows into the St. Joseph River via the Elkhart River and other tributaries, and further drains into Lake Michigan. Over 130 natural lakes occur in the region, more than half being located within Kosciusko County. Many of these lakes are hot spots for recreation, such as Lake Wawasee, the largest lake wholly contained in Indiana. Below the surface, the only sole source aquifer in Indiana is located within Elkhart, Kosciusko, and St. Joseph Counties. This portion of the region is designated as a Wellhead Protection Area, meaning that it receives a special level of protection from groundwater contamination.
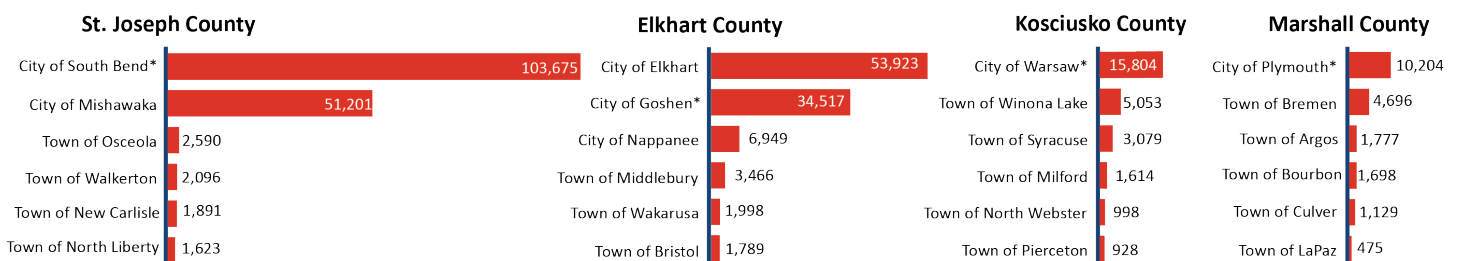
Figure 2-2: MACOG Regional Location

Population Trends

Population Growth

According to 2022 U.S. Census Bureau population estimates, Indiana's 6,833,037 residents make it the 17th most populous state. The population change from the 2020 decennial census to the 2022 population estimates was 44,238 individuals at a rate of 0.65%, placing Indiana 23rd in the nation for percent growth between 2020 and 2022. The overall national change in population was approximately 1,776,045 individuals, bringing the overall growth rate between 2020 and 2022 to approximately .53%, meaning that Indiana has a growth rate slightly higher than the average among the rest of the states. Indiana also has a slightly higher growth rate than its bordering states Illinois (-1.61%), Michigan (-0.35%), Ohio (-0.35%), and Kentucky (0.11%).

The MACOG region experienced modest growth over the past few decades from a region of just over 450,000 residents in 1970 to a region of

Figure 2-1: Population Estimates

St. Joseph County

City of South Bend*	103,675
City of Mishawaka	51,201
Town of Osceola	2,590
Town of Walkerton	2,096
Town of New Carlisle	1,891
Town of North Liberty	1,623

Elkhart County

City of Elkhart	53,923
City of Goshen*	34,517
City of Nappanee	6,949
Town of Middlebury	3,466
Town of Wakarusa	1,998
Town of Bristol	1,789

Kosciusko County

City of Warsaw*	15,804
Town of Winona Lake	5,053
Town of Syracuse	3,079
Town of Milford	1,614
Town of North Webster	998
Town of Pierceton	928

Marshall County

City of Plymouth*	10,204
Town of Bremen	4,696
Town of Argos	1,777
Town of Bourbon	1,698
Town of Culver	1,129
Town of LaPaz	475

Source: 2020 U.S. Census Bureau

*Indicates the county seat

Figure 2-3: Estimated Regional Population Growth to 2050
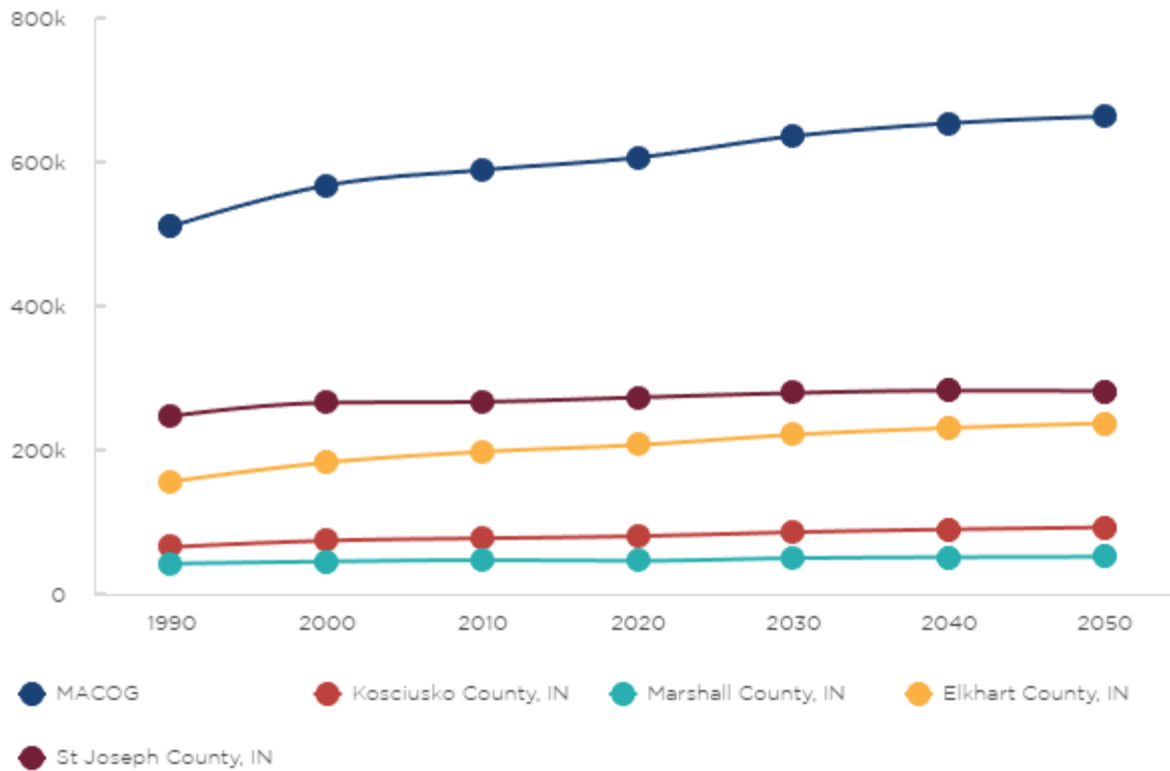
Source: US Census Bureua & Woods and Poole

just over 600,000 in 2020. The MACOG region experienced its highest growth rate in recent decades between 1990 and 2000 where the MACOG region as a whole saw an 11% population increase. While this growth rate has slowed down in recent years, as a whole the MACOG region is still growing. Between 2010 and 2020, the MACOG region grew by approximately 2.9%. During this same time period, Elkhart County experienced a 4.7% change in population, Kosciusko County experienced a 3.7% change in population, St. Joseph County experienced a 2.2% change in population, and Marshall County experienced a -2.1% change in population.

Using Woods and Poole Economic Data to project the regional population out to 2050, it is estimated that the population of the region may increase to 663,286 persons, which is a substantial 9.4% increase in population in the region as a whole as seen in Figure 2-3.

Age Distribution and Gender

The median age of an area can be a key indicator of possible economic productivity. Typically, communities and regions with a large working age population have more economic productivity. The median age in the MACOG region increased from 27.7 years in the 1970s to 38.2 years in 2021. This 10.5-year increase in median age in the region aligns with several decades of a fast growth rate in the past. Future forecasts project that the increase in median age will slow down, increasing by only 0.2 years by 2050 to 38.4 years.

In 2021, approximately a third of the MACOG region population were younger than 25 years old (211,062 persons), approximately half of the population aged 25 to 64 years (294,777 persons), and just under a sixth of the population were aged 65 and older (99,575 persons). Within the MACOG region, the 10 to 14 years cohort had the largest population (44,777 persons).

Figure 2-4 showcases a breakdown of generations in the MACOG region.

Figure 2-4: Generations
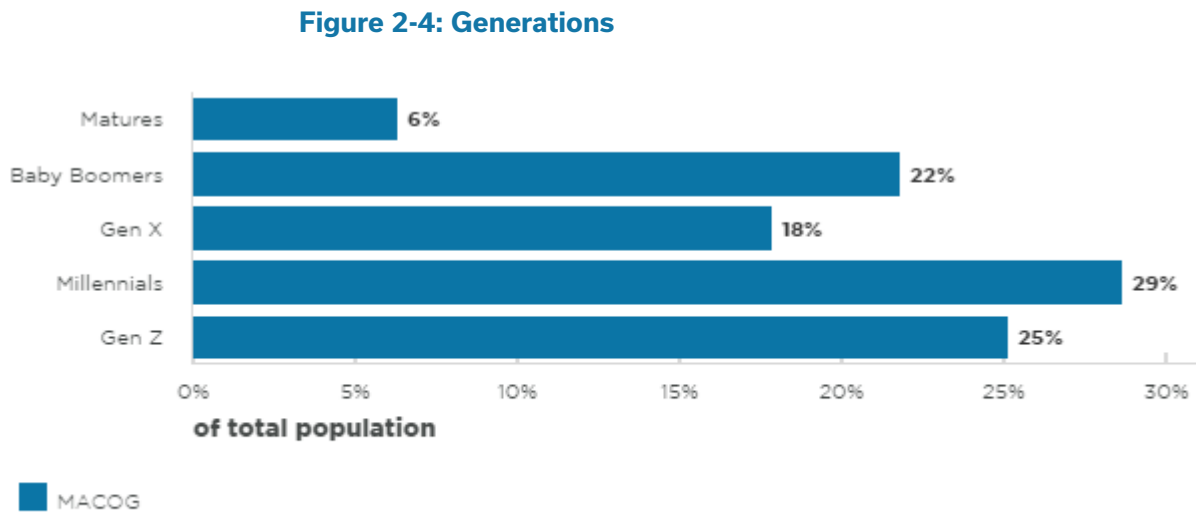
Sources: US Census Bureau ACS 5-year 2017-2021

The age distribution of the MACOG region in 2050 is expected to exhibit some consistency, with roughly one-third of the population (227,945 individuals) being younger than 25 years old. Additionally, approximately half of the population (317,384 persons) is projected to fall within the 25 to 64 years age group, while just under a sixth (117,960 individuals) are anticipated to be 65 years and older. Nevertheless, it is crucial to note that the composition of these age groups within their respective subdivisions will undergo substantial changes. Notably, the 80 to 84 years age cohort is forecasted to experience a remarkable 193% increase, rising from 9,721 persons in 2021 to 18,798 in 2050. Similarly, the 85 years and older age cohort is projected to grow by approximately 190%, going from 12,348 individuals in 2021 to 23,503 in 2050.

The data comparing the population distribution by age between 2021 and the projected figures for 2050 in the MACOG region reveals several notable trends. Firstly, there is a consistent decline in the younger age groups, with significant negative differences, indicating a decrease in the population of individuals under 40 years old. Conversely, the older age groups, particularly those aged 60 and above, show substantial positive differences, suggesting a significant increase in the senior population. This demographic shift reflects an aging population with a declining proportion of young individuals, indicating potential challenges and changes in healthcare, workforce dynamics, and social services as the region's population continues to age over the coming decades.

Race, Ethnicity, and Language

2021 ACS estimates indicate that approximately 24% of the MACOG region identifies with a minority ethnic or racial community, shown in Figure 2-5. 7.5% of the population identifies as Black/African American, 0.3% identifies as American Indian/Native American, 1.6% identifies as Asian, >0.1% identifies as Native Hawaiian/ Pacific Islander, 4.8% identifies with Some Other Race Alone, and 9.3% identifies with Two or More Races. Additionally, in the MACOG region 12.3% of the population (regardless of race) identifies as Hispanic or Latino.

St. Joseph County is the most racially and ethnically diverse county in the region with a minority population made up of 28.4% of the county's population, up from approximately 20.5% in 2015. Elkhart County's minority population encompasses 25.2% of the county's population,

Figure 2-5: Race and Ethnicity
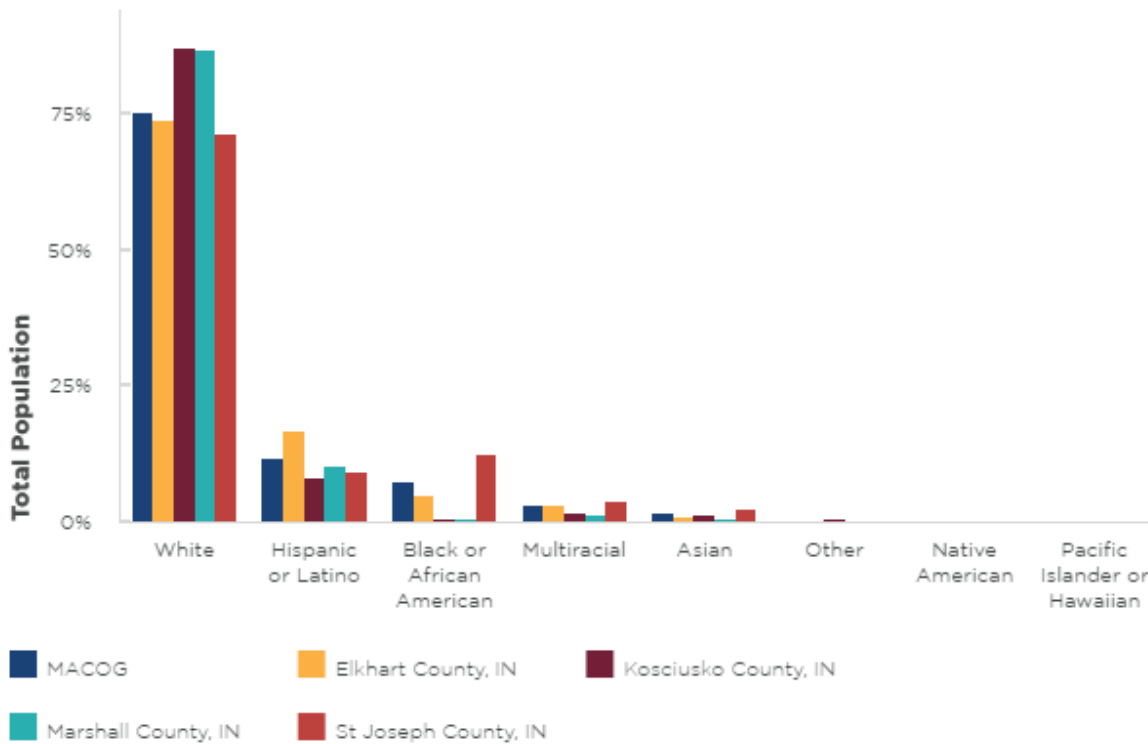
Sources: US Census Bureau ACS 5-year 2017-2021

which is a sizable increase from Elkhart County's 12.3% minority population in 2015. Kosciusko County's minority population increased from 7.1% of the population in 2015 to 12% in 2021. Finally, Marshall County's minority population actually saw a small decline in its share of Marshall County's population from 6.7% in 2015 to 6.4% in 2021.

Overall, the region as a whole seems to be following a trend of increasing diversification. This is in line with Woods & Poole Economics population projections for the region as a whole. By this estimation, St. Joseph County's racial and ethnic minority populations may grow to approximately 44% of the county population by 2050, Elkhart County's racial and ethnic minority populations may also grow to approximately 44% of the county population by 2050, Kosciusko County's racial and ethnic minority populations may grow to approximately 26% of the county population by 2050, and Marshall County's racial

and ethnic minority populations may grow to approximately 29% of the county population by 2050.

English remains the most widely spoken language in the region with 86.6% of the population speaking only English. 8.1% of the population of the region speaks Spanish, a 168% increase from the state as a whole which has a 4.8% concentration of Spanish speaking persons. An additional 5.2% of the MACOG region population speaks neither Spanish nor English, only slightly more than the state as a whole where 4.5% of the population speaks neither Spanish nor English. This is likely due to the number of people who speak German or Other West Germanic Languages. This include Pennsylvania Dutch, which is commonly spoken in portions of the region with a higher proportion of Amish.

Household Trends

The term household population describes the number of people in a type of housing unit, and it can include groups of related or unrelated people or a single occupant. According to the 2020 census, the region's number of households was 230,614 where most households consist of families. The average regional household size is 2.67. Elkhart County retains the largest average household size, at 2.84 persons, and St. Joseph County has the smallest average, at 2.44 persons.

Number of Households vs Population

The data comparing the number of households to the population in the MACOG region reveals interesting patterns from 2010 to 2020. Over this period, the region witnessed a 4.5% increase in households, slightly outpacing the 3% growth in population. This trend can be attributed to a rise in the average household size. However, a closer look at each county shows distinct variations in population and household growth rates. Notably, Elkhart County experienced a 4.8% population growth accompanied by a 6.2% growth in households, while Kosciusko County witnessed a remarkable 6.9% surge in households alongside a 3.7% population growth. Conversely, Marshall County's households increased modestly by 0.4%, while its population declined by 2%. St. Joseph County, on the other hand, exhibited balanced growth in both population and households at 4.1% and 2.2% respectively.

These divergent population and household changes also led to shifts in average household size across the region. Elkhart County maintained the highest number of people per household, growing from 2.76 in 2010 to 2.84 in 2019. Marshall County followed closely with an average household size of 2.69, up from 2.65 in 2010. Conversely, Kosciusko County experienced a slight decrease in average household size to 2.54. Notably, St. Joseph County had the smallest number of people per household, with an average of 2.44 in 2019, showcasing a consistent decline over the past decade. These trends collectively reflect the evolving dynamics of household composition and population distribution across the MACOG region and its counties.

Income

The provided data on per capita income within the MACOG region illuminates income dynamics and disparities across the counties. While the region's average per capita income stands at $30,884 (2021), it falls below both the national average of $37,638 (2021) and Indiana's average of $32,537 (2021). Among the counties, Kosciusko County and St. Joseph County show higher per capita incomes at $32,250 and $31,983 respectively, potentially influenced by factors such as diversified industries, or educational institutions. In contrast, Elkhart County and Marshall County

Figure 2-6: Average Household Size Over Time

Legend: MACOG, Elkhart County, IN, Kosciusko County, IN, Marshall County, IN, St Joseph County, IN
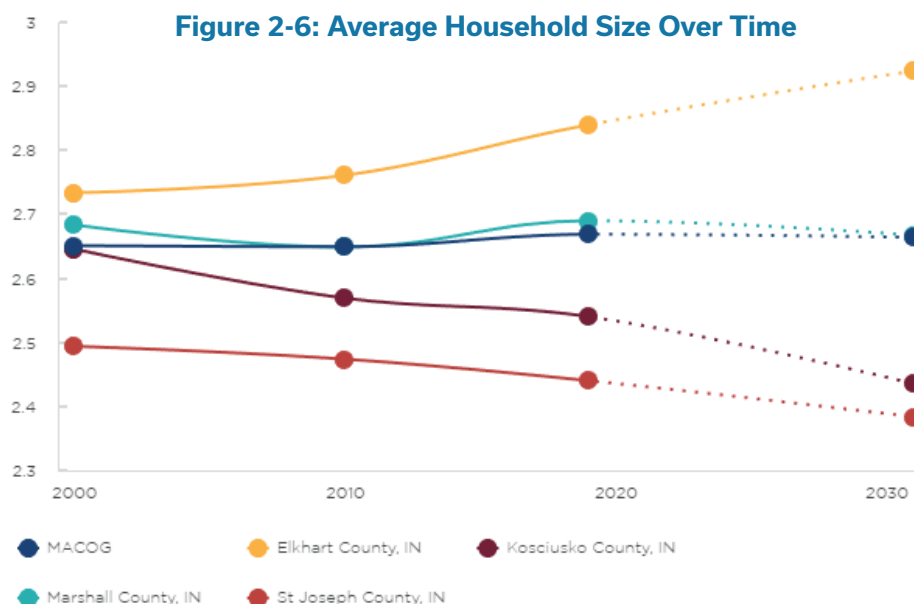
have lower per capita incomes, standing at $28,194 and $28,746 respectively. This divergence might reflect variations in economic structures, job opportunities, and cost of living across the counties. Overall, the data underscores the economic diversity within the region and provides valuable insights into income dynamics relative to national and state averages.
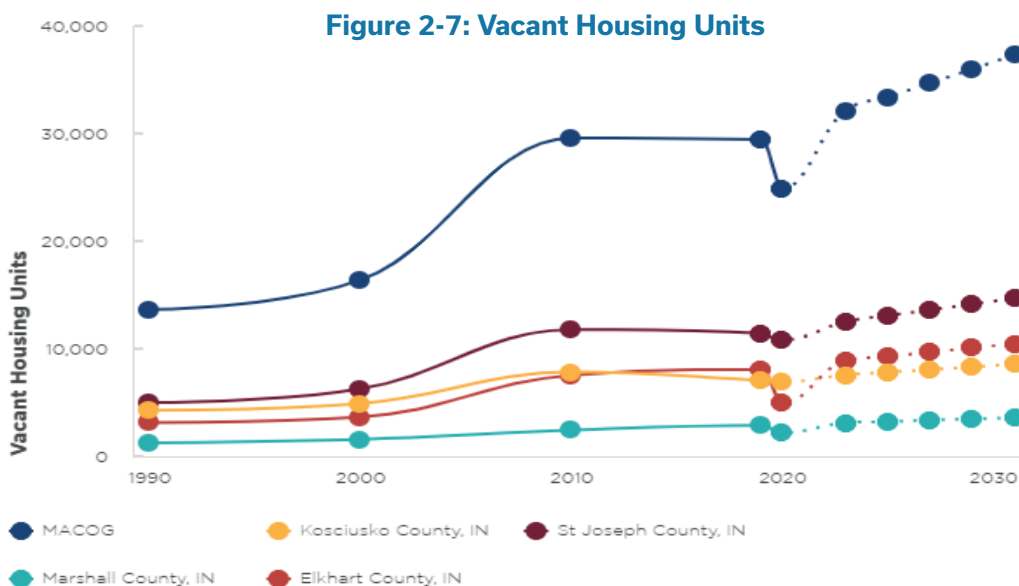
Poverty

The U.S Census determines the poverty status of families by assigning each family to an income threshold based on family size and ages of the members. If a family's income falls below that threshold, the family is considered to be in poverty. The poverty guideline for a household of four is $26,500. For a household of two, it is $17,420 and for a household of three, $21,960. St. Joseph has the highest percentage of poverty at 14.3%, followed by Elkhart County (11.8%), Marshall County (11.4%), and Kosciusko County (9.7%).

Employment and Economic Trends

Housing Supply and Vacancies

The data on household vacancies provides insights into housing trends across the MACOG region and its respective counties. Over the years,

fluctuations in the number of vacancies can offer indications of changing population dynamics and housing demand. Examining this data reveals varying patterns among the counties. From 1990 to 2020, Marshall County consistently maintained the lowest number of household vacancies, while Elkhart County had the highest. Between 2010 and 2020, the region experienced a decrease in household vacancies, suggesting a potential increase in housing demand or improvements in housing conditions. When reviewing Figure 2-7, the projection shows a general upward trend in household vacancies across the region, reflecting anticipated changes in the housing landscape. This data underscores the importance of monitoring housing vacancy rates to inform housing policies and address potential housing shortages or oversupplies, ensuring a balanced and sustainable housing market in the MACOG region and its counties.

Figure 2-7: Vacant Housing Units

Sources: US Census Bureau; US Census Bureau ACS 5-year

Housing and Transportation

The data provided in Table 2-1 reveals the dynamics between household income, transportation habits, and vehicle ownership across the MACOG region and its counties. Despite slight variations in median household income, the region maintains a relatively consistent average of around 5 household trips. Elkhart County stands out with a higher prevalence of households owning three or more vehicles, potentially linked to its manufacturing influence. St. Joseph County, being more urban, exhibits a higher number of households with a single vehicle. Notably, Marshall County's rural makeup corresponds to a lower count of households with no vehicles. These insights emphasize the interplay between income, transportation needs, and vehicle availability, offering valuable cues for tailored regional transportation strategies and infrastructure development.

The Housing and Transportation Affordability Index (H+T Index) provides insights into the combined financial burden of housing and transportation costs for residents in different counties within the MACOG region. This index sets a benchmark at no more than 45% of household income for affordability. In this context, Marshall County stands out with the highest affordability challenge, as 52% of the typical household income is spent on housing and transportation combined, with transportation costs accounting for a significant portion (30%). St. Joseph County fares slightly better, with a lower transportation cost burden, while Elkhart County falls in the middle. Kosciusko County exhibits the most favorable affordability at 48%, with housing costs relatively lower at 20%, but transportation costs still represent a notable share of household income (26%). These affordability variations underscore the need for regional policymakers to consider comprehensive strategies that address both housing and transportation affordability.

Labor Force

The data offers a compelling insight into the labor force dynamics and economic health of the MACOG region and its counties. The average labor force participation rate for the region stands at 65.17%, with Kosciusko County leading at 66.27% and Marshall County lagging at 62.40%. These variations likely stem from factors like industry concentration and local economic initiatives.

Unemployment rates, as observed across multiple years, provide insights into the region's economic resilience. The pandemic-induced downturn in 2020 resulted in elevated unemployment rates across all counties, but subsequent years showed recovery. For instance, Kosciusko County's unemployment rate spiked to 6.30% in 2020 but retreated to 2.50% in 2022. A similar trend is visible in St. Joseph County, where unemployment surged to 8.60% in 2020 but recovered to 3.40% in 2022.

Comparing job numbers and employment figures provides deeper insights. St. Joseph County consistently holds a higher number of jobs than Kosciusko County, yet Kosciusko County maintains relatively steady employment. Elkhart County's remarkable job growth is linked to its resilient manufacturing sector, while fluctuations in St. Joseph County's employment figures could be attributed to its industry composition. These trends collectively highlight the intricate interplay of local economies, industries, and broader events, underscoring the region's adaptability in the face of challenges and its potential for sustained growth.

Table 2-1: Household Income, Trips, and Vehicles

Geography	Median Household Income	Total Household Vehicle Trips	Vehicles Available: No Vehicles	Vehicles Available: One Vehicle	Vehicles Available: Two Vehicles	Vehicles Available: Three or More Vehicles
MACOG	$65,264	5.2	15,683	72,653	87,961	49,253
Elkhart County, IN	$61,182	5.4	5,932	21,451	27,835	16,125
Kosciusko County, IN	$66,764	5.4	1,590	8,738	12,235	8,449
Marshall County, IN	$58,296	5.2	1,033	4,725	6,403	4,704
St Joseph County, IN	$58,599	5	7,128	37,739	41,488	19,975

Major Employment Clusters

Major employers of the region are in the manufacturing, health, and education sectors. Large employers include Thor Industries, Inc., Forest River, Inc., Lippert Components, Inc., and the Beacon Health System in Elkhart County; Zimmer Biomet Holdings, Inc., DePuy Synthes, and KCH/Lutheran Health in Kosciusko County; Culver Academies, Nishikawa Standard, and Plymouth Community School Corporation in Marshall County; and University of Notre Dame, Msm Holdco, LLC, and Saint Joseph Regional Medical Center, Inc in St. Joseph County.

There have been several significant announcements of new employers in the region, including Amazon which will create an additional 1,000 jobs in Elkhart County and General Motors and Samsung Electric Vehicle Battery Plant, slated to create 1,600 new jobs in St. Joseph County.

In the MACOG region, two major industry sectors stand out: Manufacturing and Education & Health Care(as seen in Figure 2-8). Combined, these sectors employ over 50% of the regional workforce. Looking closely at each county, a diverse sector breakdown emerges, illustrating the region's vibrant economy. Analyzing employment by occupation data provides valuable insights into the economic resilience of both the region and its counties. Notably, the manufacturing industry plays a significant role in Kosciusko (21.4%),

Marshall (18.7%), and Elkhart (18.5%) Counties, indicating consistent employment patterns. Conversely, St. Joseph County's employment by occupation breakdown offers a more balanced perspective, hinting at varied employment opportunities possibly influenced by its urban context.

Commuting Characteristics

The commuting data sheds light on transportation preferences within the MACOG region and its counties (Figure 2-9). Notably, driving alone remains the dominant choice, particularly in urban areas like Elkhart County and St. Joseph County. Work-from-home arrangements have gained prominence, reflecting evolving work trends. Walkability emerges as a notable trend, with St. Joseph County leading in this category. Bicycling also sees adoption, especially in Elkhart County and Marshall County. Public transit sees varied utilization, most notably in St. Joseph County. Carpooling shows participation, particularly in Elkhart County and Kosciusko County. Overall, the data highlights the importance of diverse transportation options and offers insights for promoting sustainable mobility strategies across the region.
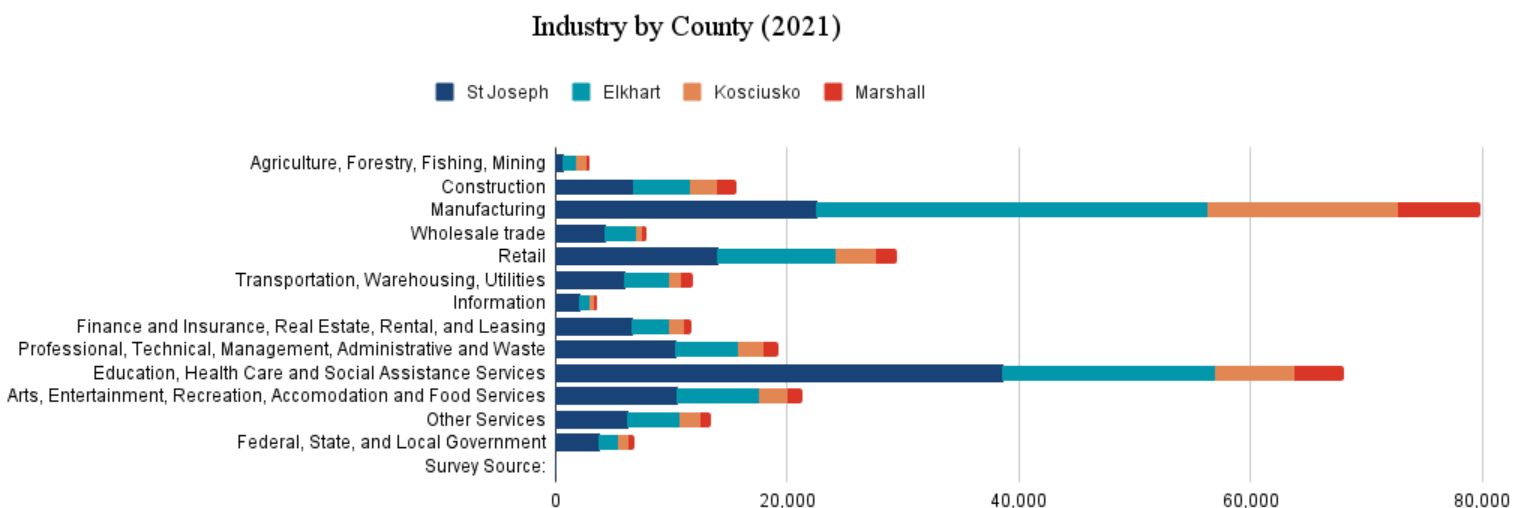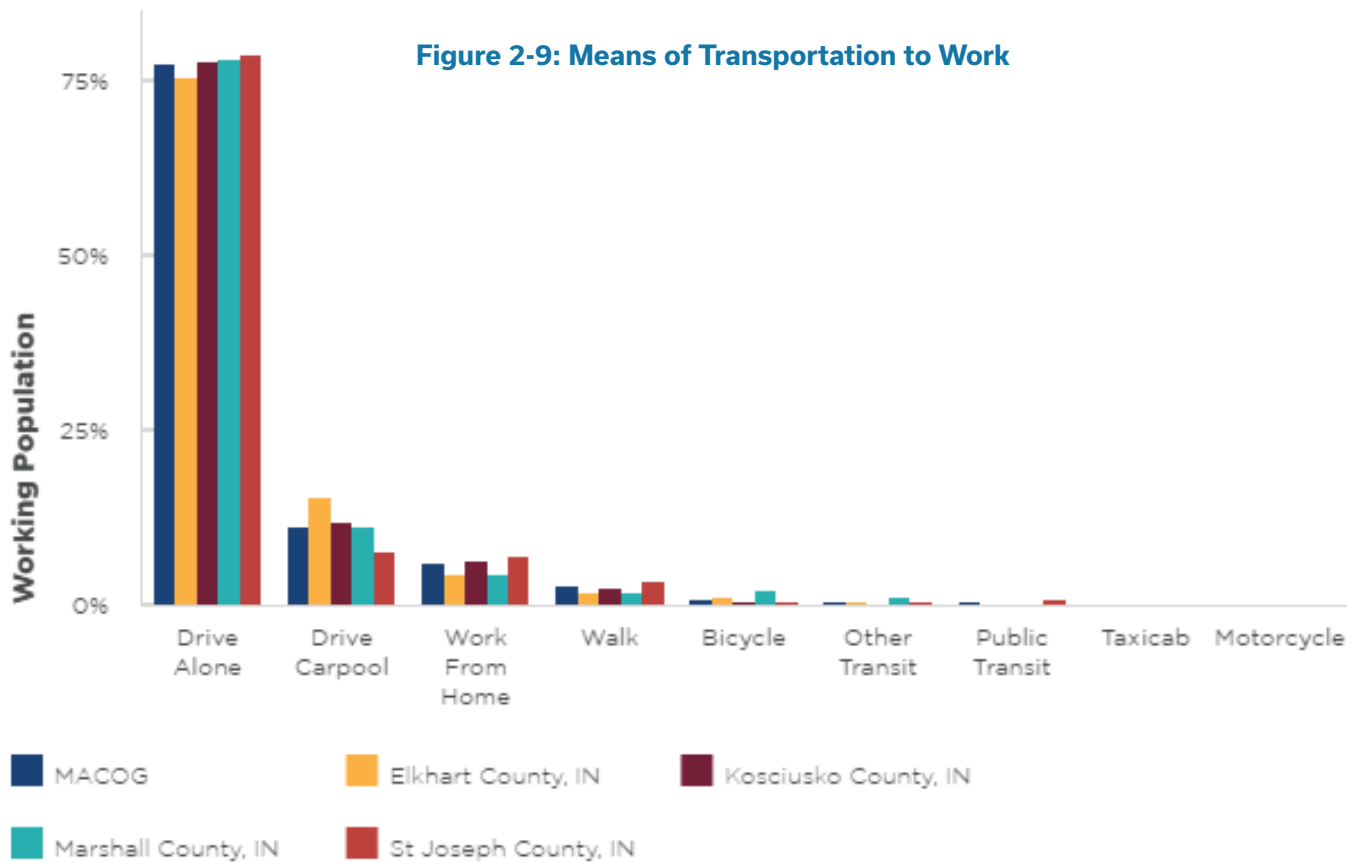
Figure 2-8: Employment by Sector

Industry by County (2021)

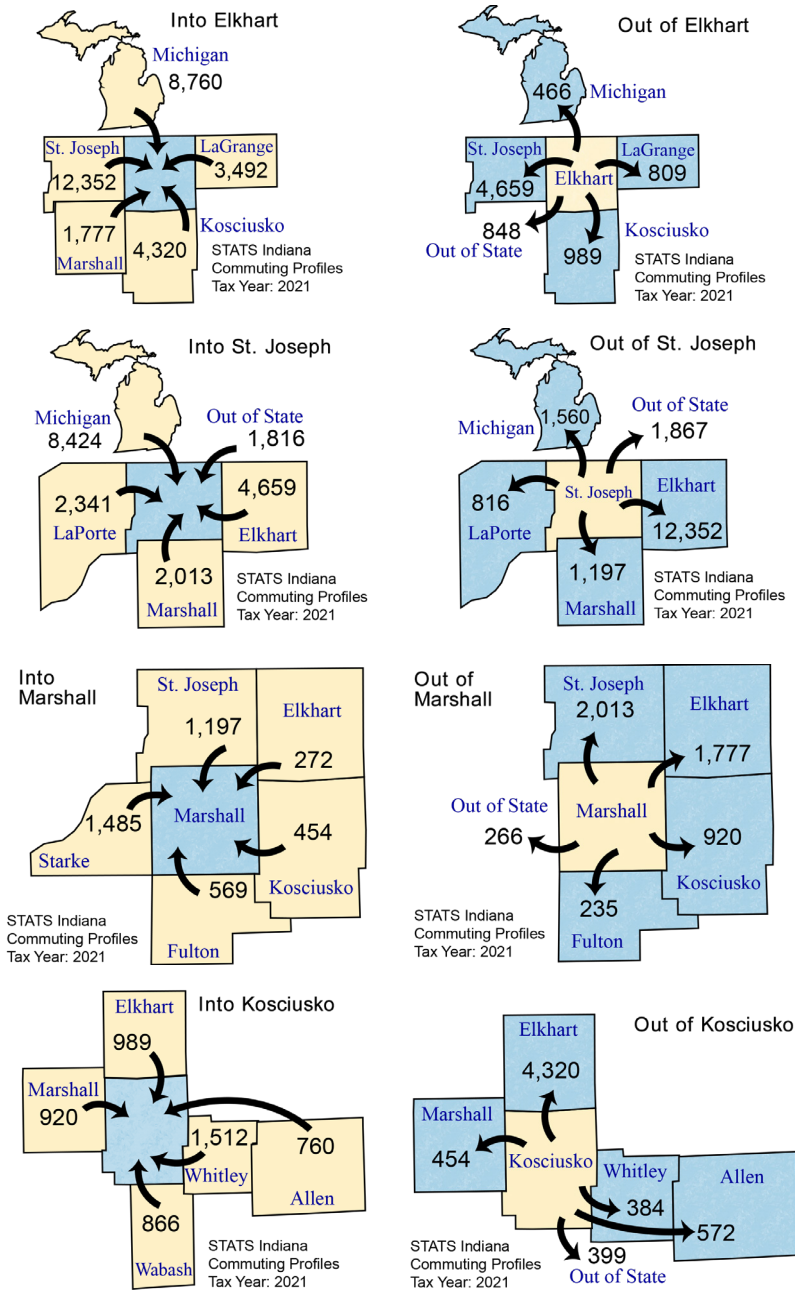**Figure 2-9: Means of Transportation to Work**

Sources: US Census Bureau ACS 5-year 2017-2021

Commuting Flows

Traffic flow commuting profiles can be used as one way to understand how traffic moves throughout Elkhart, Kosciusko, Marshall, and St. Joseph County. Understanding traffic flows between counties is important for planning future transportation needs. Elkhart County and St. Joseph County are major employment centers for the region, attracting 30,701 and 19,253 commuters respectively. Based on Indiana IT-40 2021 Tax returns, a little over 82% of Elkhart and St. Joseph County workers have jobs located within their county of residence. Of the remaining 18%, generally 17,011 workers, or 30%, travel between Elkhart and St. Joseph County to work. The remaining workers commute to Michigan and the surrounding counties including LaGrange, Kosciusko, Marshall, and LaPorte Counties.

Marshall and Kosciusko County exhibit different travel patterns, with a slightly higher percentage of workers commuting to other counties. In both, there are more commuters traveling outside the county to work then those traveling into the county to work. In Marshall County, 83% of workers stay in the county for work. The majority of the remaining workers commute to St. Joseph, Elkhart, and Kosciusko Counties. Kosciusko County retains 86% of workers, while 14% of their workers travel to the surrounding counties with the majority of these workers commuting to Elkhart County. See Figure 2-10 for the maps of the regions commuting patterns.

Figure 2-10: Commuting Flows

Into Elkhart

Michigan 8,760
St. Joseph 12,352
LaGrange 3,492
Kosciusko 4,320
Marshall 1,777

STATS Indiana Commuting Profiles Tax Year: 2021

Out of Elkhart

Michigan 466
St. Joseph 4,659
LaGrange 809
Out of State 848
Kosciusko 989

STATS Indiana Commuting Profiles Tax Year: 2021

Into St. Joseph

Michigan 8,424
Out of State 1,816
LaPorte 2,341
Elkhart 4,659
Marshall 2,013

STATS Indiana Commuting Profiles Tax Year: 2021

Out of St. Joseph

Michigan 1,560
Out of State 1,867
LaPorte 816
Elkhart 12,352
Marshall 1,197

STATS Indiana Commuting Profiles Tax Year: 2021

Into Marshall

St. Joseph 1,197
Elkhart 272
Starke 1,485
Kosciusko 454
Fulton 569

STATS Indiana Commuting Profiles Tax Year: 2021

Out of Marshall

St. Joseph 2,013
Elkhart 1,777
Out of State 266
Kosciusko 920
Fulton 235

STATS Indiana Commuting Profiles Tax Year: 2021

Into Kosciusko

Elkhart 989
Marshall 920
Whitley 1,512
Allen 760
Wabash 866

STATS Indiana Commuting Profiles Tax Year: 2021

Out of Kosciusko

Elkhart 4,320
Marshall 454
Whitley 384
Allen 572
Out of State 399

STATS Indiana Commuting Profiles Tax Year: 2021

Broadband and Remote Work Capabilities

High-speed internet access is a crucial service for residents and businesses in any community, as people increasingly rely on online services for everything from remote work and schooling to virtual home health care. As mentioned in the MACOG's Comprehensive Economic Development Strategy report (CEDS), an extensive fiber-optic network is currently available in St. Joseph County, along with a smaller-scale network in Marshall and Elkhart counties. However, many of the rural areas do not have access to the same level of broadband service as the urbanized areas. Additionally, the United Health Foundation found that Indiana as a state ranks just 37th nationwide for percentage of the population with access to high speed broadband internet via computer, smartphone or tablet (currently 86.4 percent), one of the social determinants of health. MACOG conducted a state of digital inclusion with Purdue University to assess existing supply and demand. In the MACOG region, 12.7% of households have no internet access and 9.1% of households have no computer.

Connectivity and Accessibility

Efficient transportation networks play a pivotal role in enhancing the quality of life by connecting residential neighborhoods, commercial areas, and recreational facilities. A well-connected network accommodates diverse transportation modes, boosting reliability and efficiency. The Michiana area's strategic location offers excellent accessibility to major regional cities like Chicago, Indianapolis, Detroit, Toledo, and Fort Wayne, all within a 3-hour travel window via interstates and highways such as I-80/I-90, US 31, and US 30. This connectivity not only benefits local residents but also facilitates the movement of goods for manufacturers and warehouses.

The region's local road network contributes to efficient commutes, with average travel times below the national mean of 27.6 minutes (2021) . Most commuters within the region experience a commute of 24 minutes or less. Elkhart County boasts the shortest mean travel time to work at 19.4 minutes, while Kosciusko County follows closely at 19.6 minutes. St. Joseph County and Marshall County have slightly longer mean travel times at 21.2 and 23.3 minutes, respectively. Notably, Kosciusko and Marshall Counties have the highest percentage of workers with commutes under 10 minutes, while Elkhart and St. Joseph Counties show a greater percentage of commuters with travel times between 15 and 19 minutes. This efficient network of roads contributes to accessible and streamlined daily commutes for the region's residents.

Education

The educational attainment data provides valuable insights into the educational landscape of the MACOG region and its counties. High school degree holders form a significant portion of the population, with variations ranging from 29.6% in St. Joseph County to 37.1% in Marshall County. Notably, Elkhart County, Kosciusko County, and St. Joseph County exhibit substantial percentages of bachelor's degree holders, suggesting a focus on higher education and skilled workforce development. St. Joseph County stands out with the highest percentage of graduate degree holders (13.0%), indicating a strong emphasis on advanced education. These educational trends reflect a region with diverse opportunities for education and workforce development, potentially influencing the region's economic prospects and competitiveness.

Economic Resiliency

The comparison across the MACOG region and its counties reveals key indicators of economic resiliency and growth. Notably, housing supply and vacancy trends show a region that can swiftly adapt to changing demand, reflected in the decrease in household vacancies between 2010 and 2020. Commuting characteristics underscore a commitment to sustainable mobility strategies, with work-from-home arrangements and increased bicycle and public transit usage. Educational

attainment data demonstrates the region's investment in higher education, as seen in the significant percentages of bachelor's and graduate degree holders, implying a skilled and competitive workforce. Moreover, the emphasis on broadband access highlights a forward-looking approach to technology and communication infrastructure, aligning with future economic demands. These factors together portray a region poised for sustained growth, with a resilient approach to change, a skilled workforce, and infrastructure readiness. The MACOG region and its counties exemplify a proactive and adaptable strategy for economic prosperity.

Environmental Trends

The ongoing issue concerning changing climate is projected to affect not only us individually, but many aspects of our society including our water resources, human health, vital infrastructure, agriculture, economies, energy use, urban environments, and ecosystems.

Increasing Temperatures

There are multiple sets of data trends that show that there are no signs of declination of temperatures. Temperature increases have become more intensified in the last decade, which can be experienced in every season in the region. Annual average temperature is an overall indicator that is looked at to identify extreme years and detect short- and long-term trends. Annual average temperatures have had record breaking occurrences many times in the last decade. Temperature increases bring stress and challenges to agriculture with lengthening growing seasons, diminishes air quality, extends allergy seasons with increased frost-free days, and many more effects to human health and the environment.

Extreme Weather Events

As temperatures increase the amount of precipitation that falls is also increasing. Average annual rainfall has increased by 1.33 inches per decade across Indiana. This trend is expected to continue, as well as changes in the type of precipitation and when it falls; meaning precipitation can occur in different seasons As the climate warms, rainfall will take the place of what would generally be much of the snowfall that

occurs in the cold season for the region. The wetter winters and springs would ultimately increase the risk of extreme weather events such as the risk of flooding. Our region has experienced significant flooding events over the past decade. When flooding occurs, there are significant impacts on vulnerable transportation assets and the ability for people to move efficiently throughout the region. Thus, it is an important consideration to ensure transportation infrastructure resilience is being planned for and discussed in a changing climate.
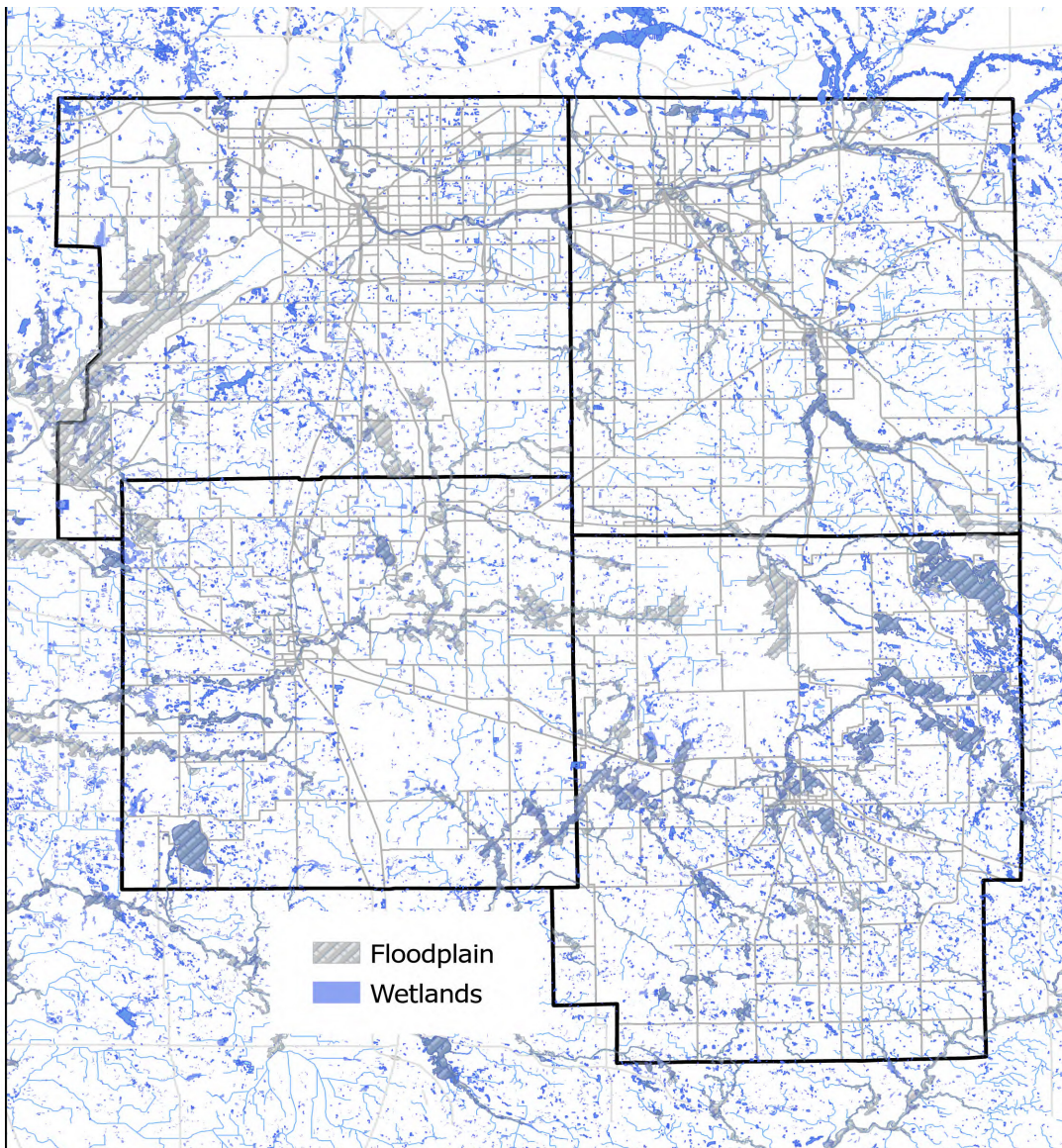
Figure 2-12 illustrates the floodplains and wetlands that exist in the region.

Figure 2-11: 2018 Flooding in South Bend

Source: WVPE

Figure 2-12: Map of Wetlands and Floodplains

Land Coverage Change

Land coverage change provides insights on possible environmental impacts as well as previous growth trends throughout the region.

Figure 2-13 depicts the change in land cover over the past 20 years.

Figure 2-13: Map of Land Coverage Change Over Time

2000

2010

2020