

Introduction

The transportation needs of a region are determined by the travel decisions that members of the community make on a daily basis. Travel decisions are determined by a variety of factors, such as family size, work location, travel time and available modes.

This chapter is a community profile of the DMATS region based on demographic and socioeconomic data. This information is the basis for travel behavior in the region and will input into the DMATS model.

Population

DMATS has adjusted its boundary to keep up with the growth of the Dubuque metropolitan area. The boundary adjustments have made it difficult to do a historical analysis of population of the DMATS area. DMATS therefore uses Dubuque County as a basis for studying population trends. Figure 2.1. shows historical population for Dubuque County over the past 50 years.

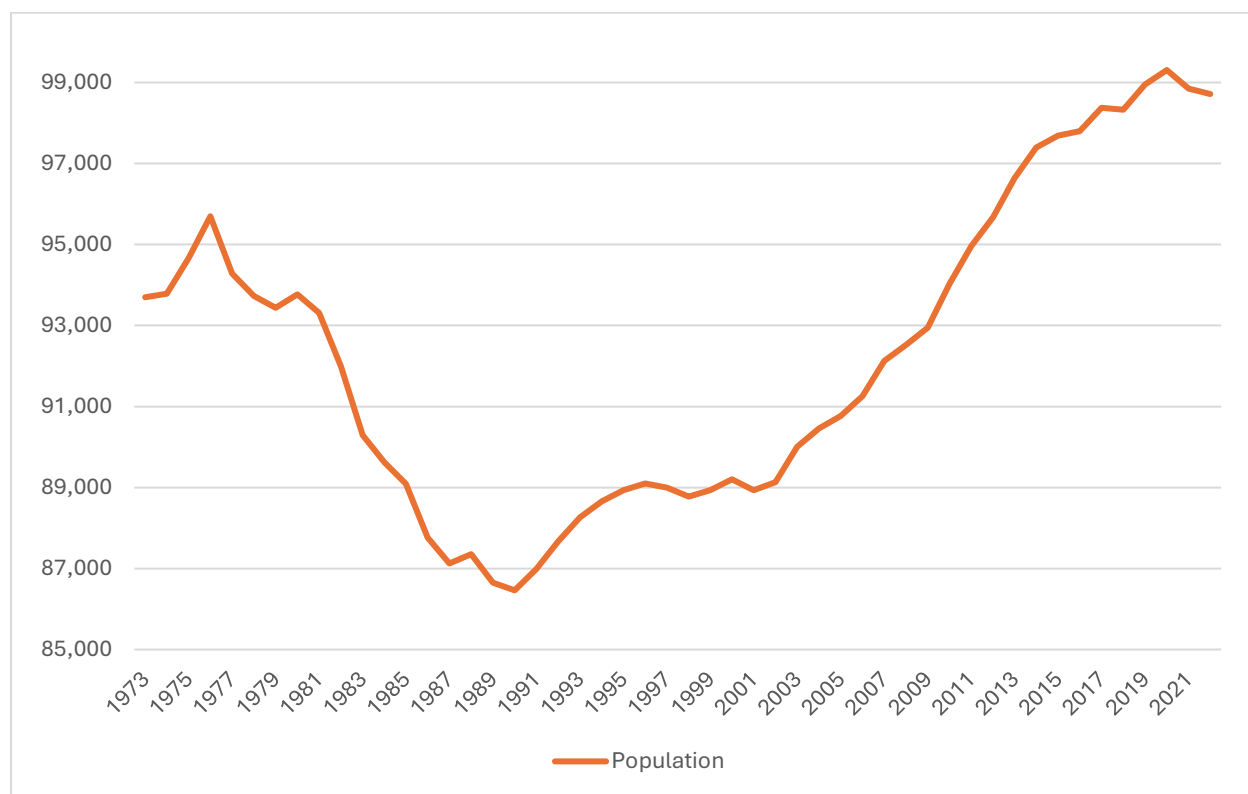


Figure 2.1 Dubuque County Historical Population, 1973-2023

Source: US Census Bureau, American Community Survey, Woods and Poole Economics

DMATS Population Projection

Accurate forecasts of future demographic conditions are necessary for efficient distribution of transportation resources. DMATS relies on population forecast models to provide a picture of what future transportation demand might look like within the region. DMATS staff produced a population forecast for the DMATS planning area for the year 2055 using the Age Cohorts Method. The Cohorts Method was chosen because, in addition to total population, the model produces forecasts for five-year age groups. Age group, also known as cohort, forecasts are useful for the planning process because as people age, their transportation needs change. The most recent decennial census, 2020, serves as the base year for the projection. The model then estimates future population using three primary components of population change: births, deaths, and migration. First, the model applies current birth and death rates to the base year population data in five-year increments.

Second, the model estimates migration by forecasting population change from births and deaths for an already measured year, and comparing observed and projected values. Staff created a projection for 2020 based on the 2010 census and compared the 2020 forecast to observed 2020 Census data. The difference between the model forecast and the Census data is assumed to be the result of migration. Staff used the difference to create age-specific migration factors that were applied to all projected years. The below chart shows the results of the DMATS area population forecast.

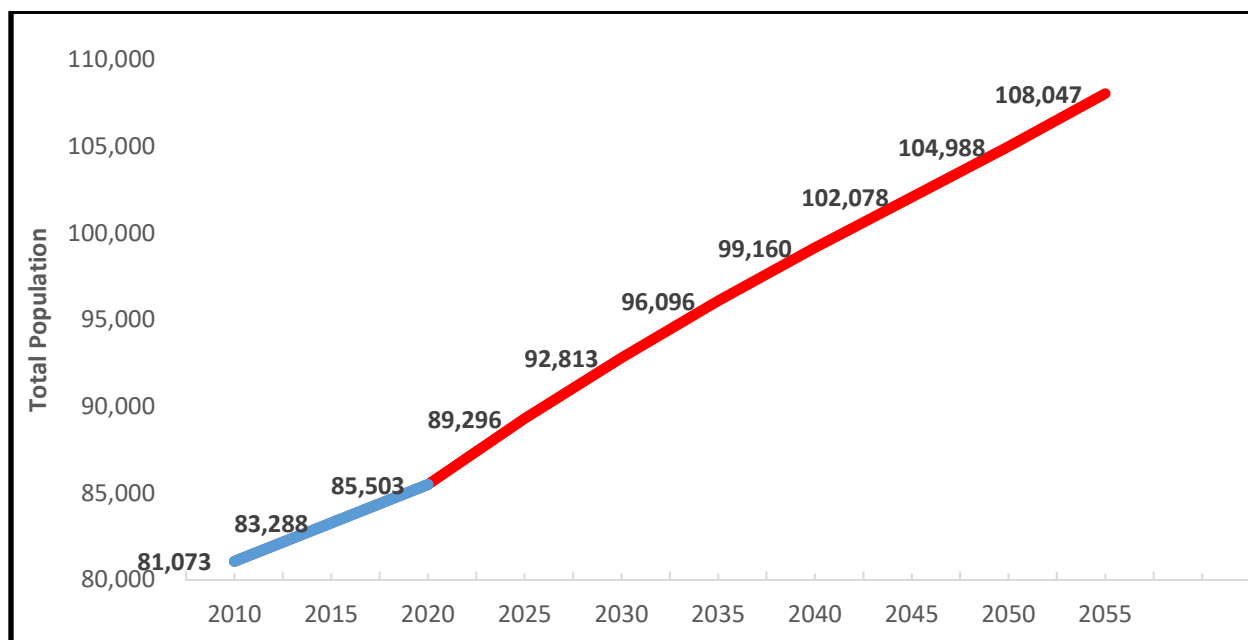


Figure 2.2 DMATS Population Projection

Source: ECIA

Age Cohort Projection by Age

The Age Cohorts model forecasts that population of the DMATS planning will grow to 108,047 by 2055. The projected population growth of 22,544 between 2020 and 2055 equals a 26.4 percent increase in population or a 0.75 percent average annual increase over 35 years. Growth is expected to occur in most age cohorts, but most prominently with people ages 20-54. This can be attributed to an aging workforce potentially attracting younger workers to replace them after they retire. Below is a figure showing the population projection by cohort.

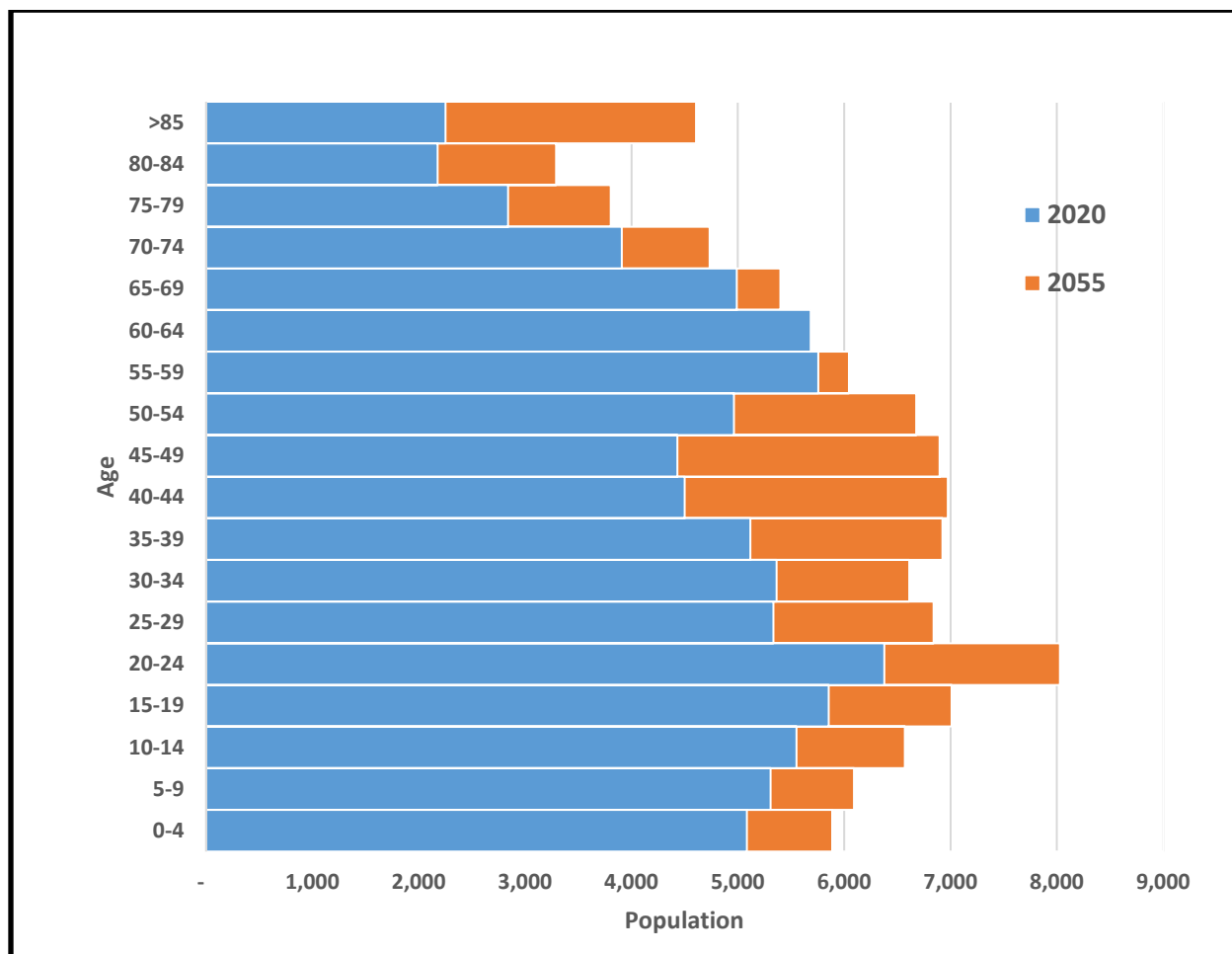


Figure 2.3 DMATS Age Cohort Prediction

Source: ECIA

Population Projection Reasonableness Check

DMATS staff created additional population scenarios to check the reasonableness of the age cohorts population projection. Scenarios were based on historical population data from 1970 to 2014, and are intended to represent plausible future population growth outcomes for the DMATS area. The four growth scenarios are listed below.

- 2020-2023 Dubuque County Average Growth - -0.13% Annual Growth
- 2010-2020 Dubuque County Average Growth – 0.6% Annual Growth
- 1980 – 2020 Average Growth – 0.15% Annual Growth
- Best Year– 1% Annual Growth¹

¹ From 1970 to 2014, Dubuque County had several years of 1% annual population growth. The County sustained a 1% annual growth rate in the early 1970s and had several years of 1% annual growth in the mid to late 2000s. The “Best Year” growth scenario represents a best-case scenario where Dubuque County sustains a 1% annual growth rate over the entire forecast period.

DMATS staff plotted the four growth scenarios and the age cohorts projections on a graph and compared the results. The age cohorts projection fell within the four growth scenarios. This result indicates that the age cohorts projection is reasonable. Below shows the comparison of different population scenarios.

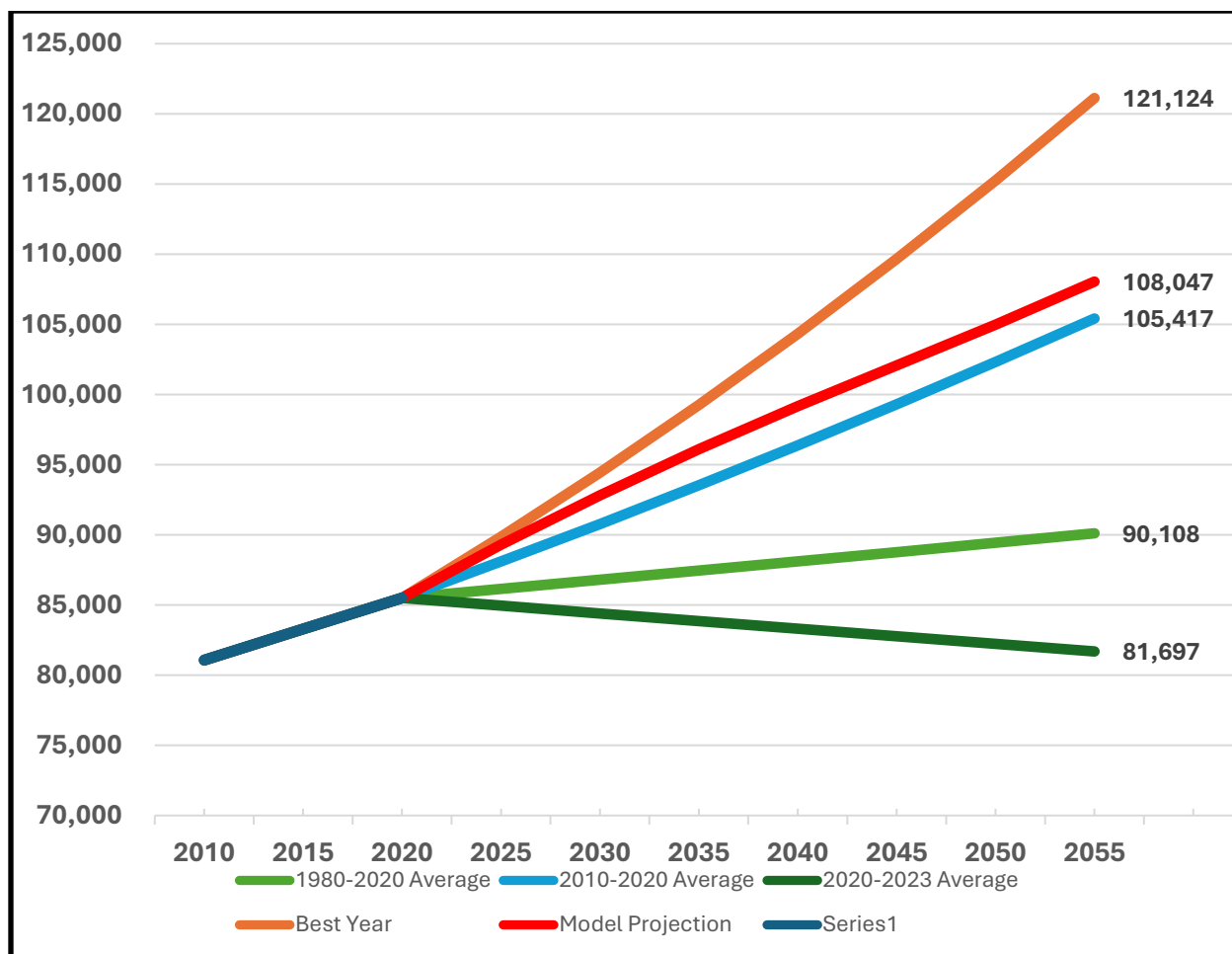


Figure 2.4 DMATS Population Projection Reasonableness Check

Source: ECIA

Approved Population Projection

The DMATS Policy Board reviewed the population projection and the historical growth scenarios. The Policy Board determined that the age cohorts method provided a reasonable population forecast for the planning area and approved it as the official population projection to be used in the DMATS LRTP. The following table summarizes the population projection approved by the DMATS Policy Board.

2020 Base Year Population	85,503
2055 Population Projection	108,047
Total Percent Increase	26.4%
Annual Average Percent Increase	0.75%

Table 2.1 DMATS Approved Population Projection

Source: ECIA

Population Density

Knowing the distribution of where people live in the region is important to understanding where a bulk of transportation originates. Below is a map showing the population density by people per square kilometer for each census tract in the DMATS region. Population density is higher in areas east of the Northwest Arterial and north of US 20, with the North End neighborhood being especially dense.

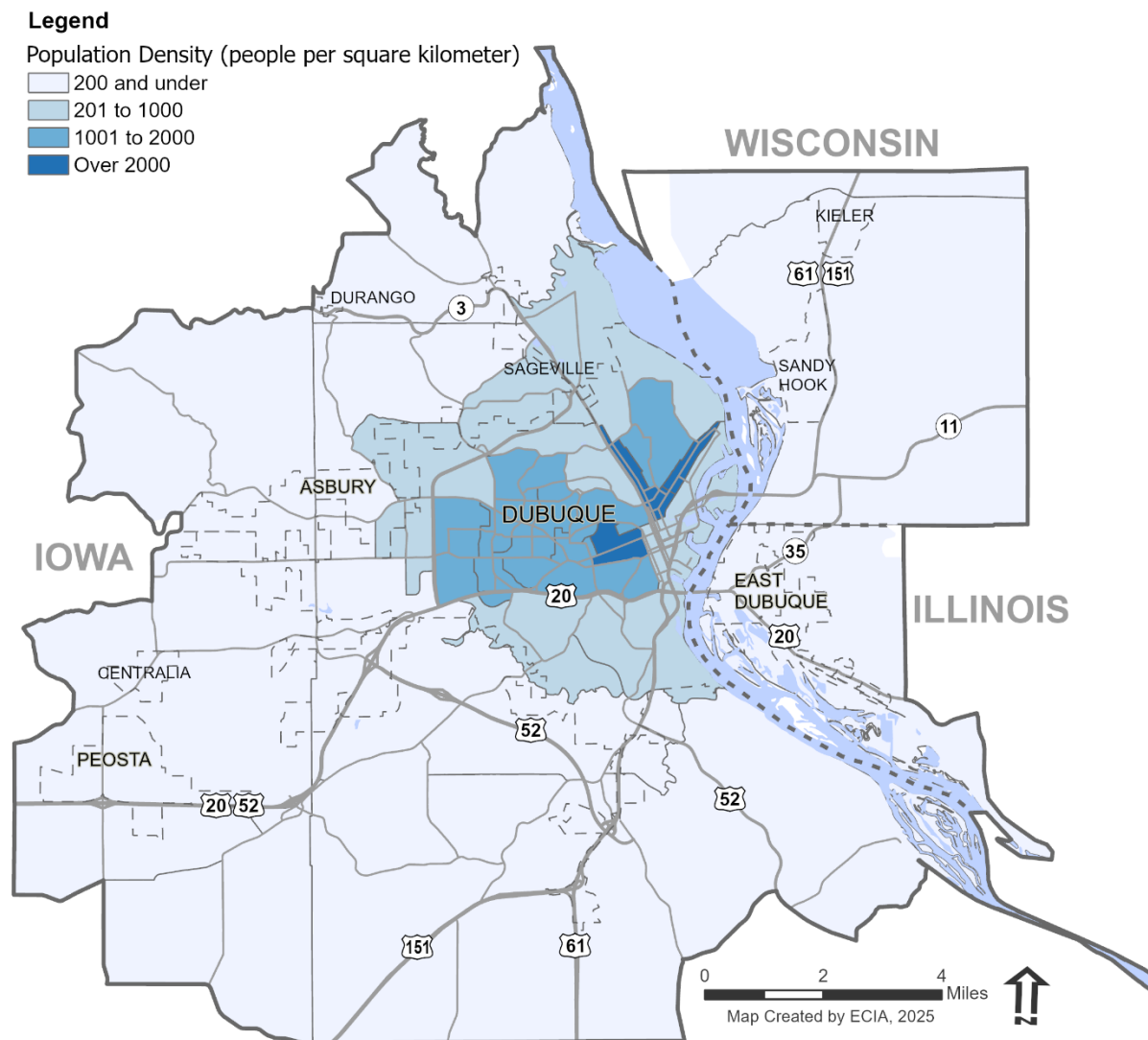


Figure 2.5 Population Density in the DMATS Area, 2019-2023

Source: US Census Bureau, 5-Year American Community Survey Estimates

Employment

The number and location of jobs has a huge impact on the long-range transportation planning. Jobs affect where people live and travel and can help DMATS model travel patterns in the region. Similarly to population, the fluctuations of the DMATS boundary makes historical analysis difficult, so Dubuque County is used for analysis. Figure 2.5 shows the historical employment in Dubuque County over the past 50 years. Figure 2.6 charts monthly employment in Dubuque County in 2024.

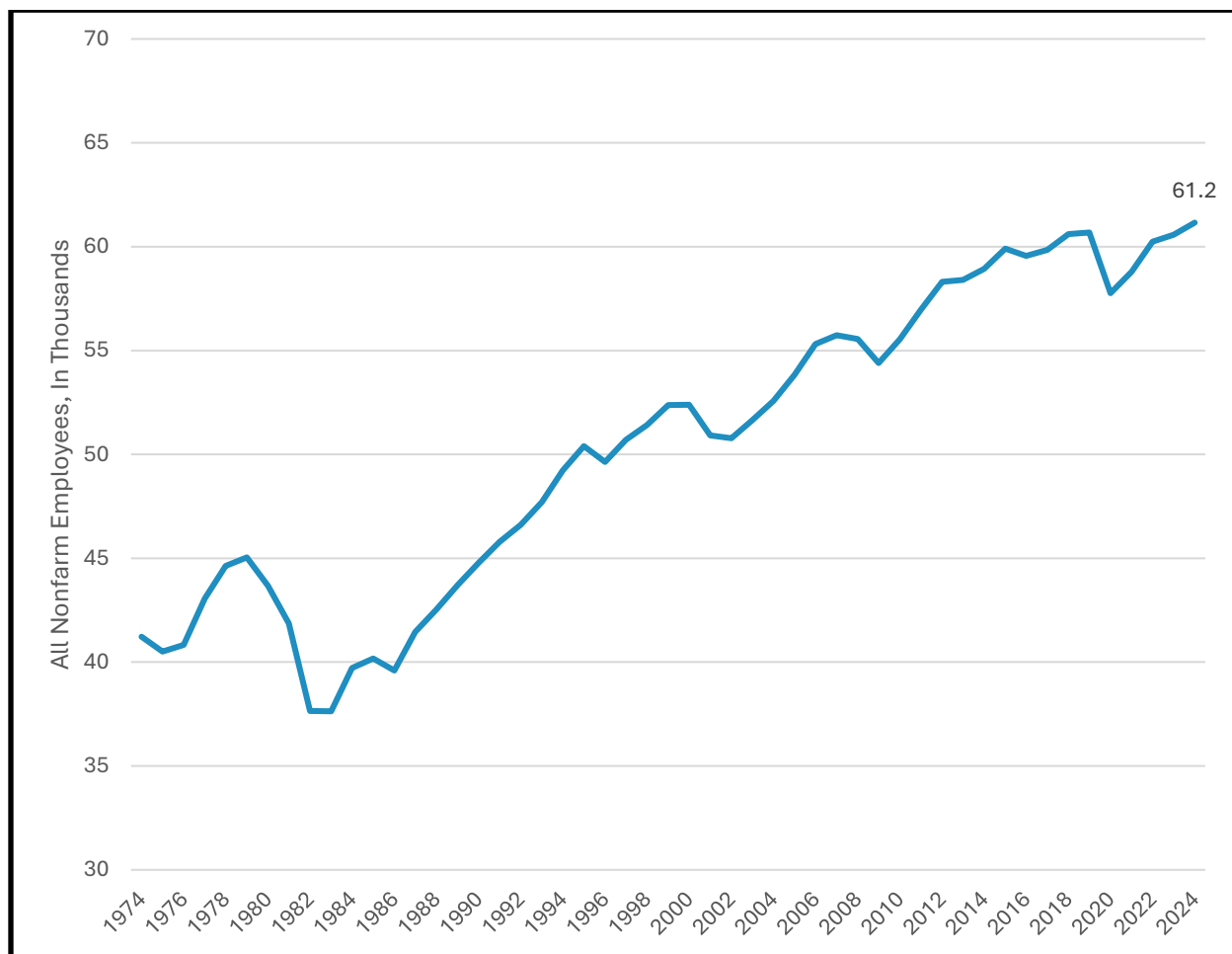


Figure 2.6 Dubuque County Historical Employment

Source: Iowa Workforce Development

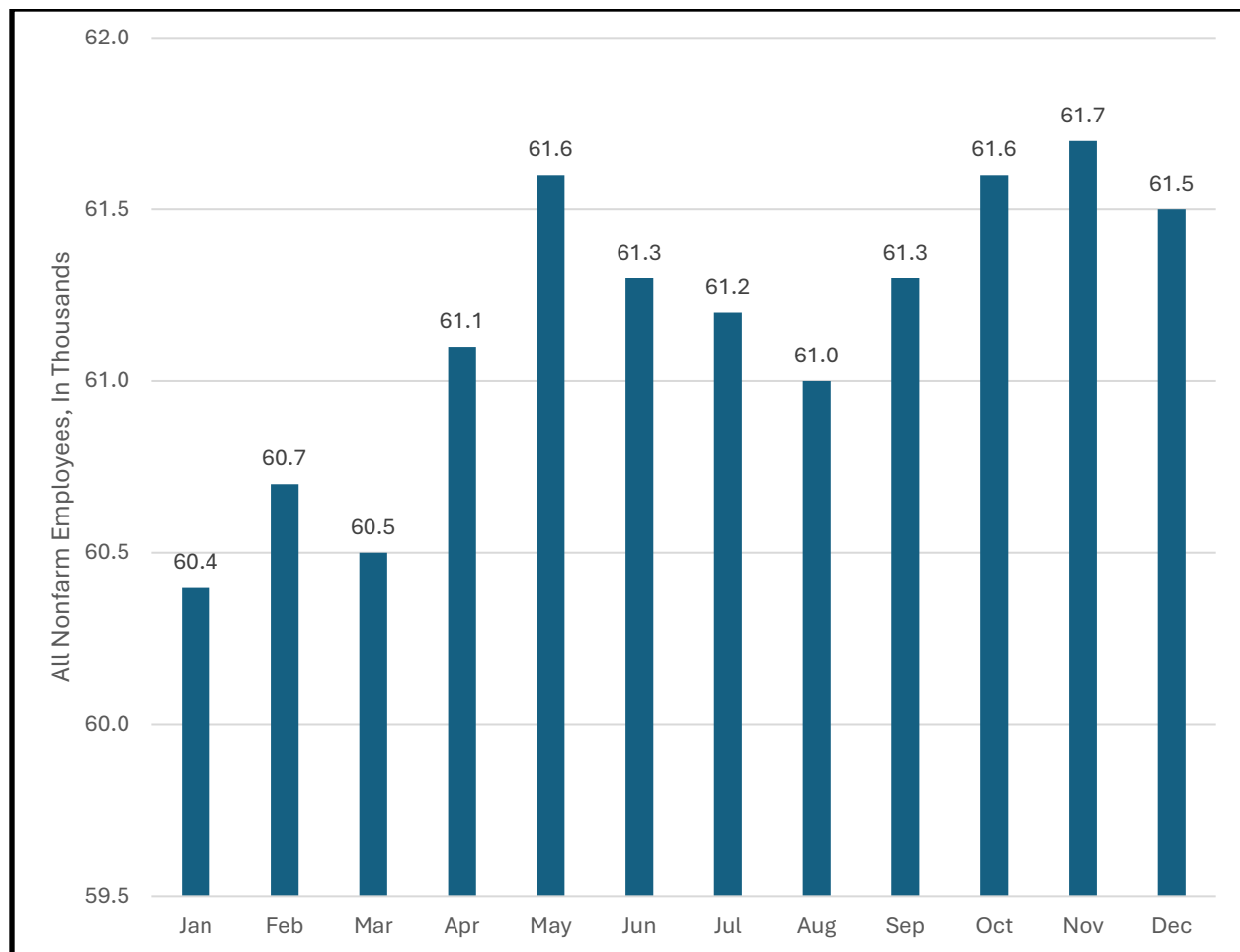


Figure 2.7 Dubuque County Monthly Employment, 2024

Source: Iowa Workforce Development

Employment Distribution

The distribution of jobs across the region affects the traffic patterns within.

Locations with jobs tend to create more trips and therefore have more activity.

Figure 2.7 shows the location of jobs throughout the DMATS area, with larger circles containing more jobs.

Census Block Employment

- 1 - 100
- 101 - 500
- 501 - 1,000
- 1,001 - 2,893

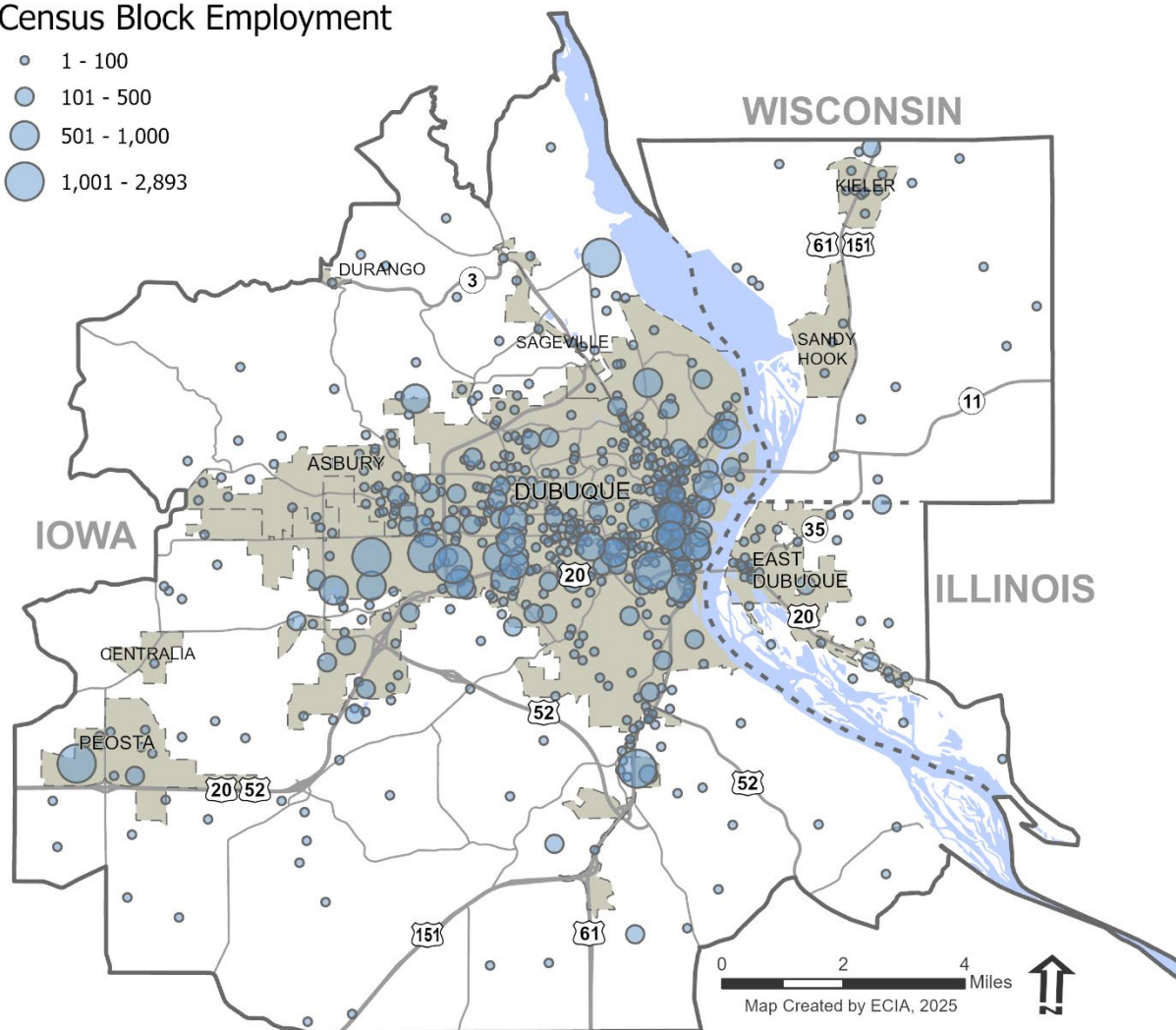


Figure 2.8 DMATS Employment by Location

Source: US Census Bureau, Census OnTheMap

DMATS Employment Projection

In addition to population projections, good long range transportation planning also requires reliable forecasts of future employment. To develop its employment forecast, DMATS started with data from the Census Bureau's OnTheMap program to estimate the base year employment for the DMATS area. Based on this data, DMATS estimated total employment within the planning area at 53,481 for the base year of 2022.

From the base year, staff created employment forecast scenarios based on historical employment data for Dubuque County. Five scenarios were created based on the annual average employment growth rate observed during four different periods in Dubuque County's history as well as one scenario based on the growth rate from Woods and Poole data. The scenario growth rates are listed below.

Period	Rate
2018-2022	-0.41%
2013-2022	0.43%
2008-2022	0.6%
2003-2022	0.92%
Woods and Poole	1.03%

Table 2.2 Dubuque County Employment Growth Rates

Source: US Census Bureau, Census OnTheMap

Below is a chart showing the five scenario growth rates projected to 2055.

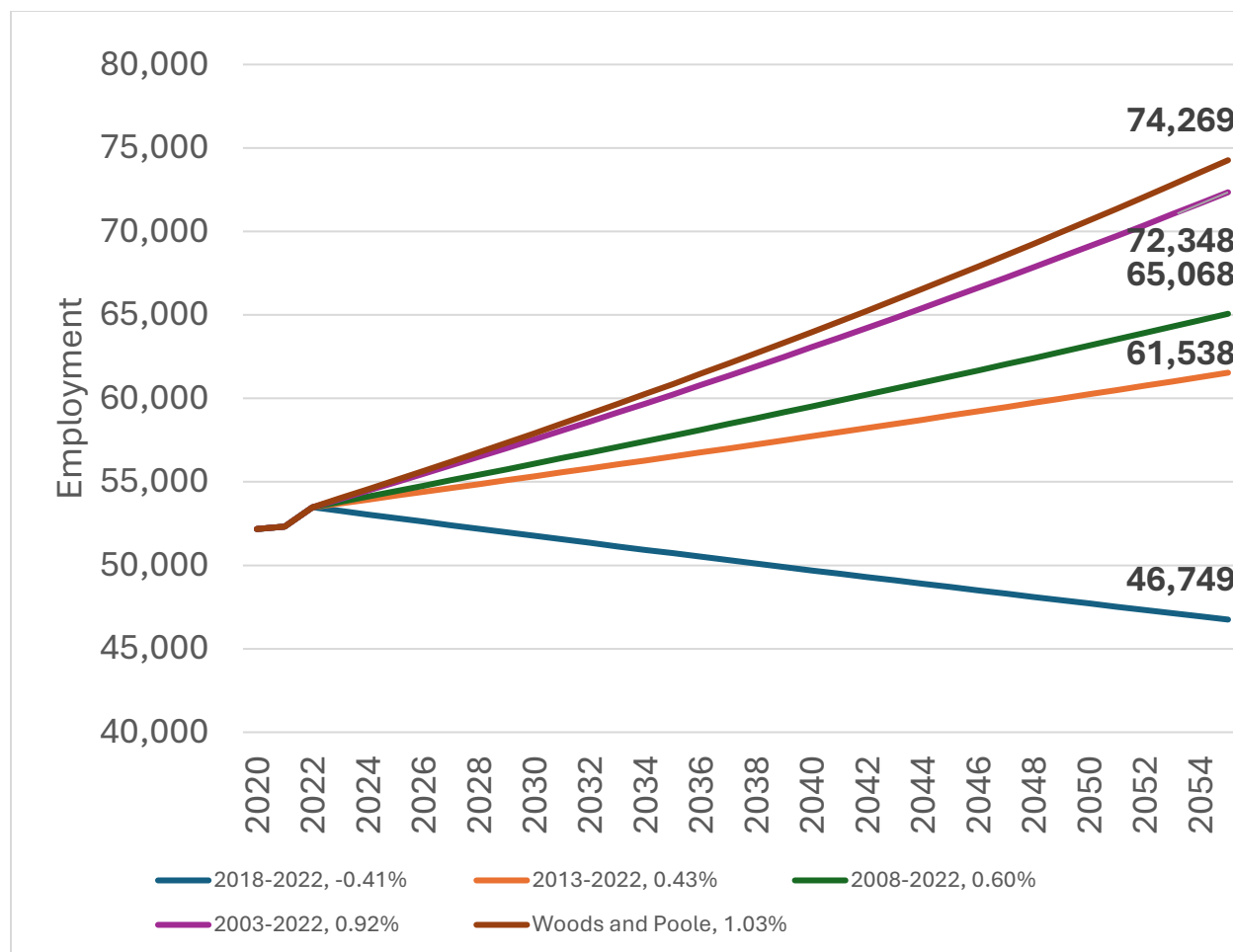


Figure 2.9 DMATS Employment Projections

Source: ECIA

Approved Employment Projection

The DMATS Policy Board reviewed the employment projection scenarios. Taking the historical scenario forecasts into account, DMATS selected the 2008-2022 scenario with its 0.6% employment growth rate for its employment projection. This scenario was chosen as it was the median of the provided scenarios. Using this rate, total employment is projected to increase from 53,481 in 2022 to 65,068 in 2055, a total increase of 11,587.

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The Policy Board determined that the 2008-2022 scenario provided a reasonable employment forecast for the planning area and approved it as the official employment projection to be used in the DMATS LRTP. The table below summarizes the population projection approved by the DMATS Policy Board.

2022 Base Year Employment	53,481
2055 Employment Projection	65,068
Total Percent Increase	8.94%
Annual Average Percent Increase	0.6%

Table 2.3 DMATS Approved Employment Projection

Source: ECIA

The below figure shows the projected population projection graphed over the 33 year period.

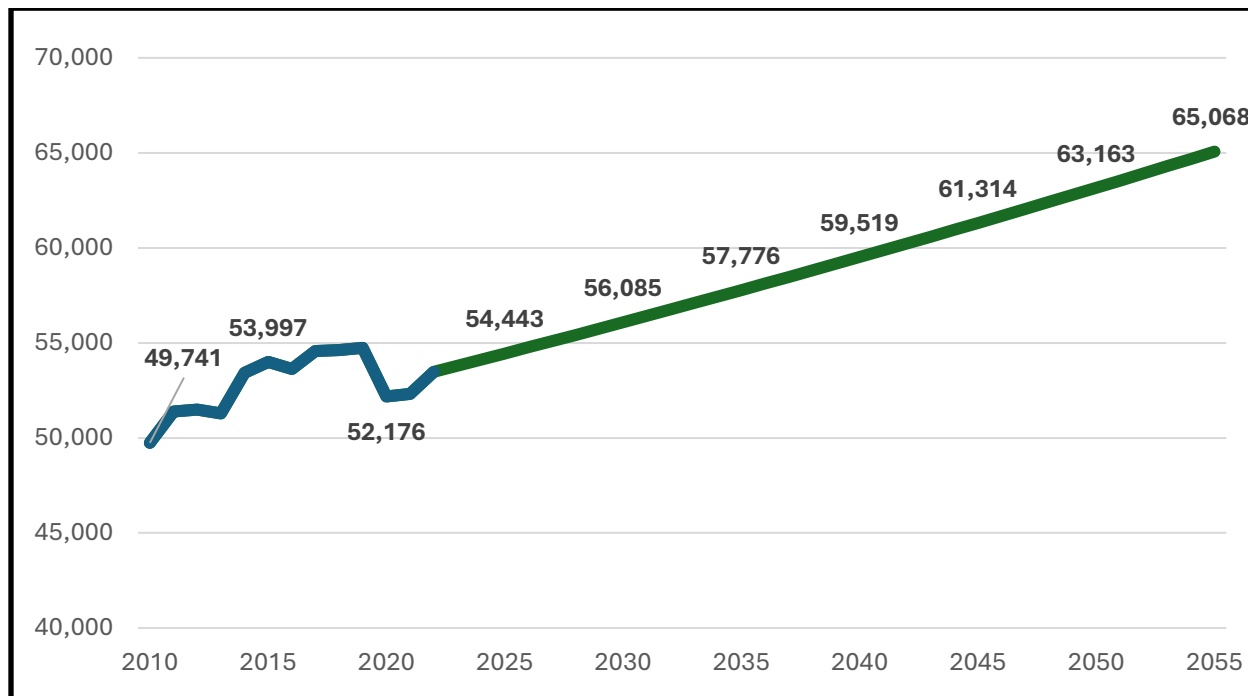


Figure 2.10 DMATS Employment Projection

Source: ECIA

Employment Projection Reasonableness Check

	2025	2030	2035	2040	2045	2050	2055
Population Projection	89,296	92,813	96,096	99,160	102,078	104,988	108,047
Employment Projection	54,443	56,085	57,776	59,519	61,314	63,918	65,068
Employment/ Population Ratio	0.61	0.6	0.6	0.6	0.6	0.61	0.6

Table 2.4 DMATS Employment Projection Reasonableness Check

Source: US Census Bureau, Census OnTheMap

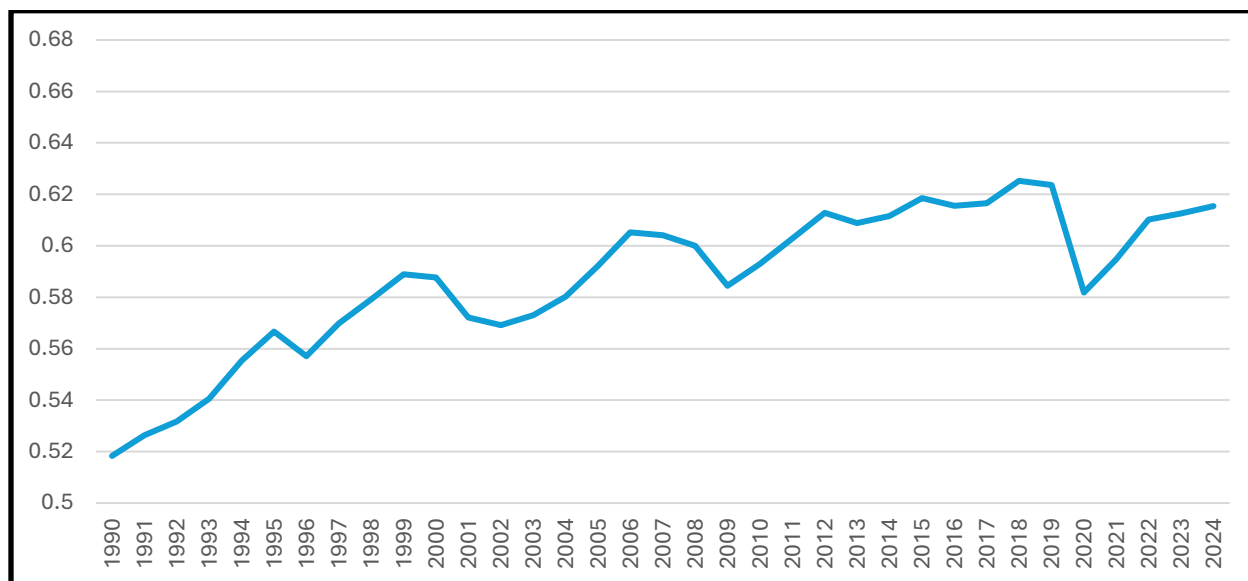


Figure 2.11 Dubuque County Employment/Population Ratio

Source: Iowa Workforce Development

The next section of this chapter will be focused on looking at other demographic trends within the region, primarily using data from the US Census Bureau. Since data from the DMATS area specifically is less available, many of the figures and tables below will use Dubuque County to represent the area.

Income

Income is a very important indicator of individual mobility. While driving is the prominent mode of transportation in the region, the cost of owning and operating a vehicle is a huge expense for some. Therefore, low-income individuals tend to be more reliant on lower-cost modes of transportation such as walking, biking and taking transit. Knowing the location and size of these individuals helps ensure that the plan considers the right modes of transportation for people living in the region. Table 2.5. shows the inflation-adjusted median household income for Dubuque County residents and State of Iowa residents in 1999, 2010, 2018 and 2023.

Year	Dubuque County	State of Iowa
2023	\$75,919	\$73,147
2018	\$74,013	\$70,705
2010	\$68,723	\$66,218
1999	\$70,361	\$70,160

Table 2.5 Median Household Income, Dubuque County and the State of Iowa
Source: US Census Bureau, Decennial Census and American Community Survey

Figure 2.11 shows the percentage of all households in each income range for Dubuque County and the State of Iowa. The distribution is similar in both the County and the State.

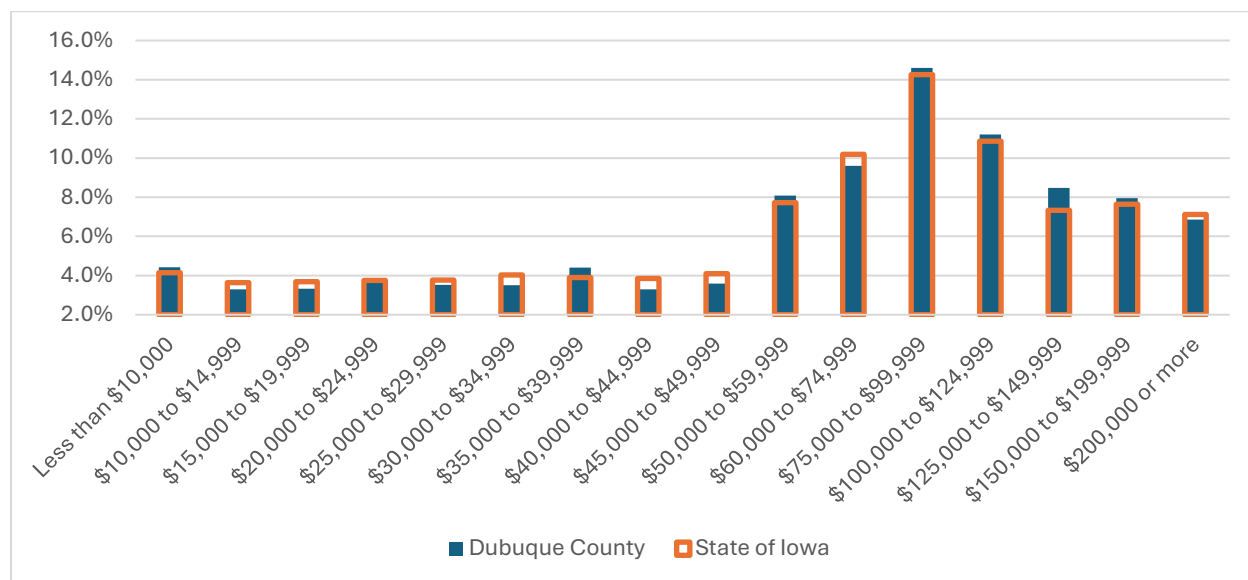


Figure 2.12 Distribution of Income in Dubuque County and the State of Iowa, 2019-2023

Source: US Census Bureau, American Community Survey

Figure 2.12 shows the distribution of median household income within the DMATS area. Lower-income households tend to be within the City of Dubuque, especially in the downtown area. The western area outside the City of Dubuque containing the cities of the Asbury, Centralia and Peosta have a higher median income.



Figure 2.13 Distribution of Median Household Income in the DMATS Region, 2019-2023

Race and Ethnicity

Making sure all populations are included in the planning process is crucial for development of a successful plan. Minority populations have historically had disproportionately lower incomes and lower mobility. Dubuque County has grown more diverse over the past 5 years, as individuals identifying as White alone has fallen from 92.9% in 2018 to 89.9% in 2023. This information will be used to meet the **Federal law (Title VI of the Civil Rights Act of 1964)** prohibits discrimination based on race, color, or national origin in programs receiving federal funds.

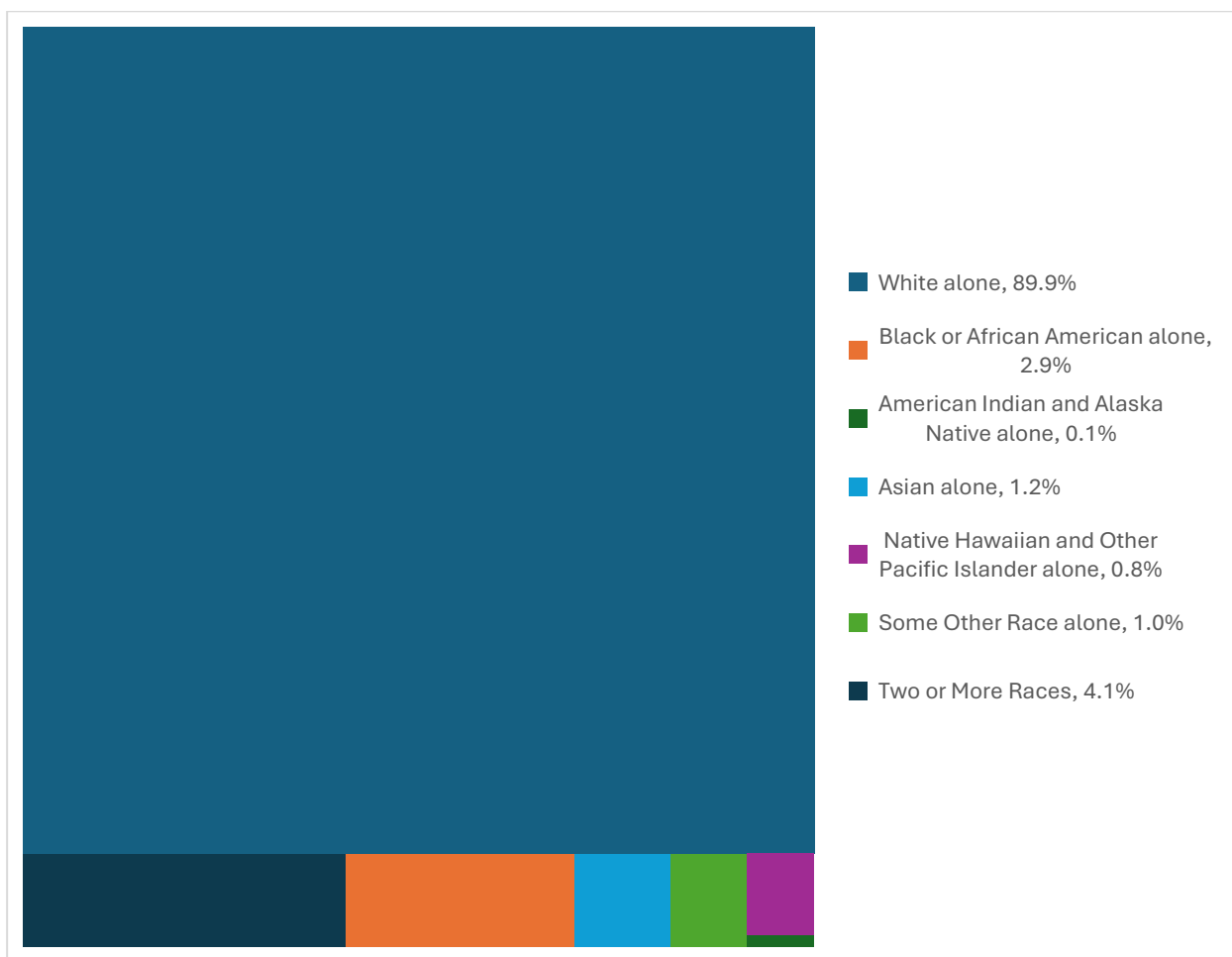


Figure 2.14 Race in Dubuque County, 2019-2023

Source: US Census Bureau, American Community Survey

Vehicles Available to Households

Households also make travel decisions based on the vehicles available to them. Households with more vehicles will create more trips, while households with less vehicles will rely more on other forms of transportation. Figure 2.14 shows the number of vehicles available to households in Dubuque County from 2013 to 2023 in 5 year increments.

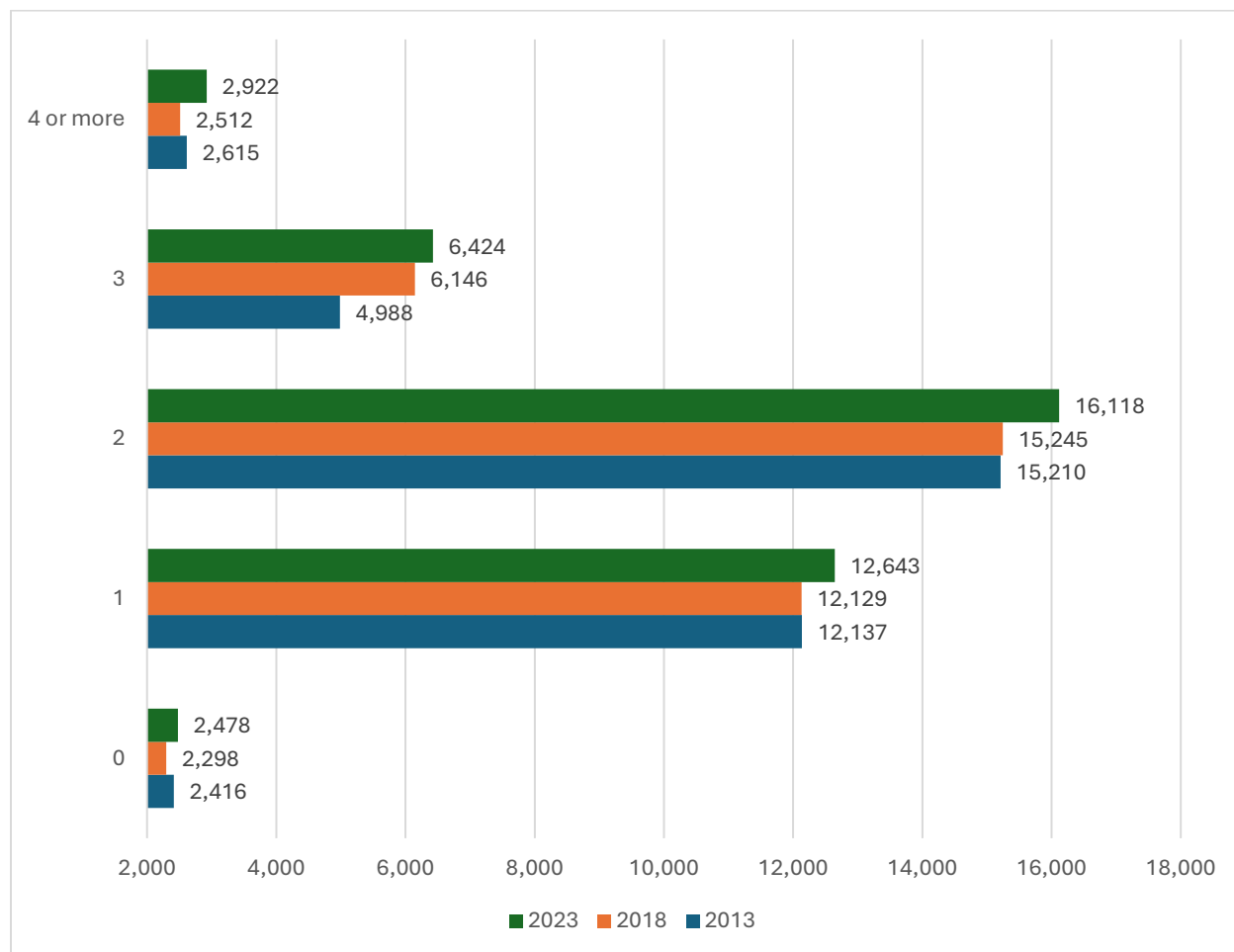


Figure 2.15 Dubuque County Households by Number of Vehicles, 2013-2023

Source: US Census Bureau, American Community Survey

Areas where households have less vehicles may see fewer trips from vehicles and more walking and biking use. Below is a map showing Census tracts in the DMATS area by percentage of households with no vehicles. Downtown and the North End in Dubuque have the highest concentration of households with no vehicles. The Census definition of households excludes group quarters such as long-term care facilities or group homes, where residents often do not have access to vehicles.

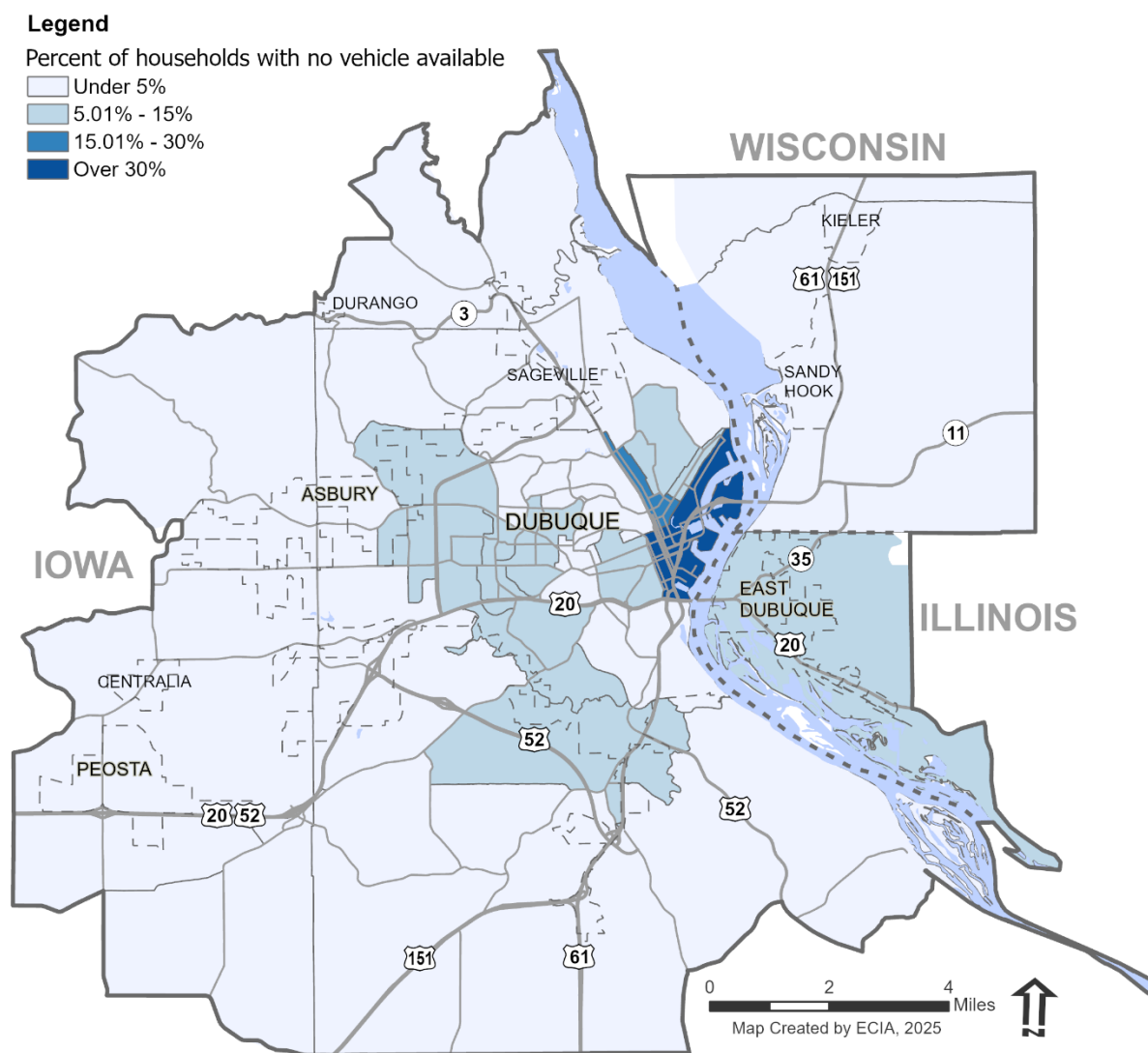


Figure 2.16 Distribution of Households with no Vehicles in the DMATS Area, 2019-2023

Source: US Census Bureau, American Community Survey

Limited English Proficient Populations

People with limited English proficiency (LEP) are often working lower-wage jobs that require few communication skills and are therefore often unable to afford a car. This means they are reliant on public transportation but may have difficulty learning about their options when all information is being communicated in English.

Knowing where LEP populations live can help transportation officials target language services to the areas they are most needed. According to FTA Circular C 4702.1B, “Limited English Proficient (LEP) persons refers to persons for whom English is not their primary language and who have a limited ability to read, write, speak, or understand English”.

Figure 2.15 shows the distribution of the LEP population in the DMATS Area. The Department of Justice defines the Safe Harbor threshold as 1,000 persons and 5% of the total population for a particular language, whichever is less, requiring vital document translation.

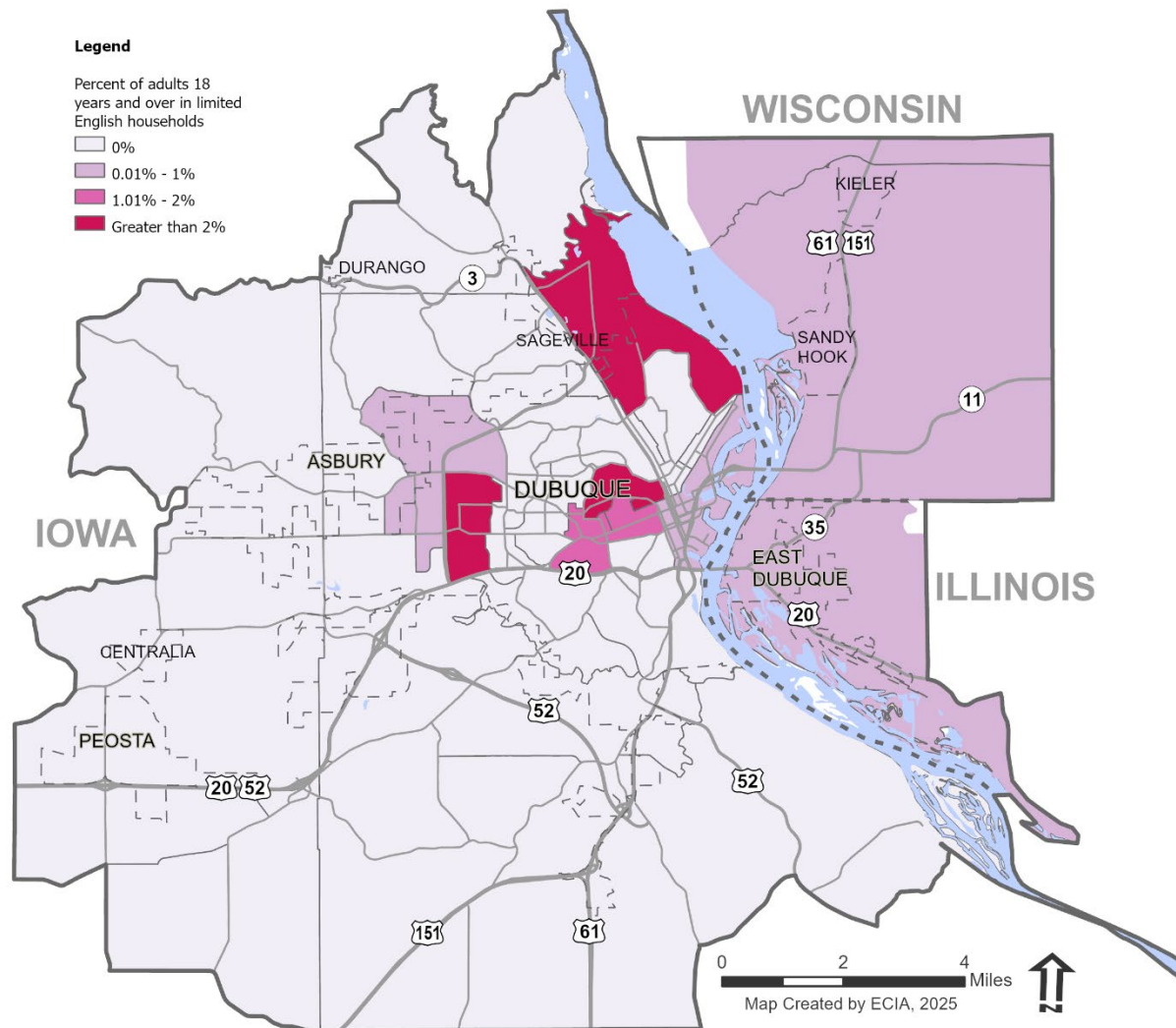


Figure 2.17 Distribution of LEP Population in the DMATS Region, 2019-2023
Source: US Census Bureau, American Community Survey

Commuting Patterns

As the Dubuque region is a regional hub for employment, travel comes from people who live outside the area. Table 2.6 shows the commuting pattern data for Dubuque County. The County has a net job inflow of 6,636. Commuting data highlights the importance of a regional perspective for transportation planning, as the region's economy relies on the transportation network to move workers safely and efficiently.

Worker Totals and Flows	Count	Share
Employed in the Selection Area	58,516	100%
Employed in the Selection Area but Living Outside	22,147	37.8%
Employed and Living in the Selection Area	36,369	62.2%
Living in the Selection Area	51,880	100%
Living in the Selection Area but Employed Outside	15,511	29.9%
Living and Employed in the Selection Area	36,369	70.1%
Net Job Inflow	6,636	

Table 2.6 Commuter Flows in Dubuque County, 2022

Source: US Census Bureau, OnTheMap

Mode to Work

Analyzing what modes of transportation people take to work informs which modes the region should plan most for. Figure 2.16 shows the mode of transportation to work for people in Dubuque County and other metros. Most workers in the Dubuque region drive to work.

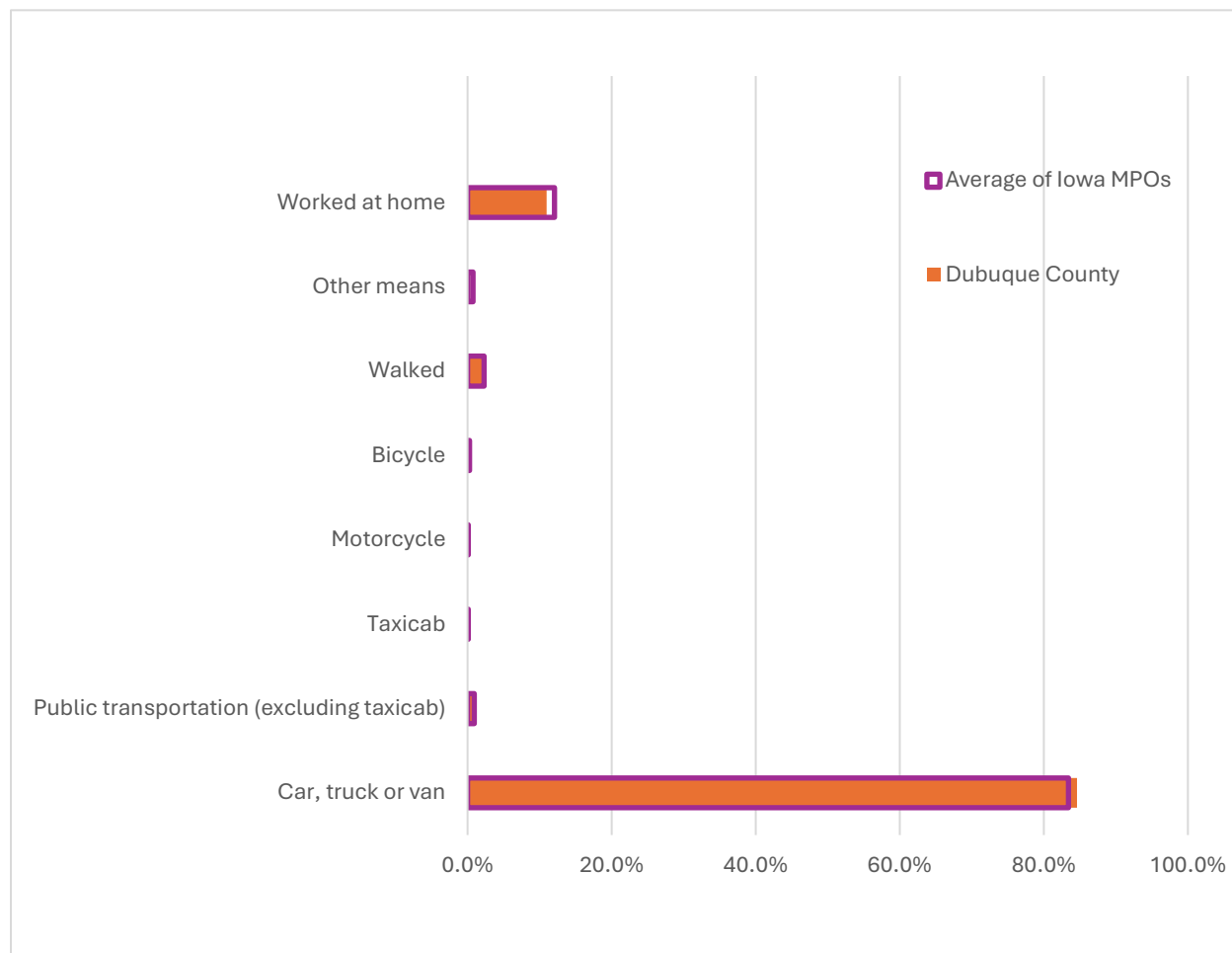


Figure 2.18 Mode to Work by Percentage in Dubuque County and other Iowa Metros, 2019-2023

Source: US Census Bureau, American Community Survey

Travel Time to Work

Travel time to work can be an indication of efficiency for the transportation network. Figure 2.17 shows the distribution of travel times within the region. Residents of the Dubuque region typically have shorter commute times than residents in other regions.

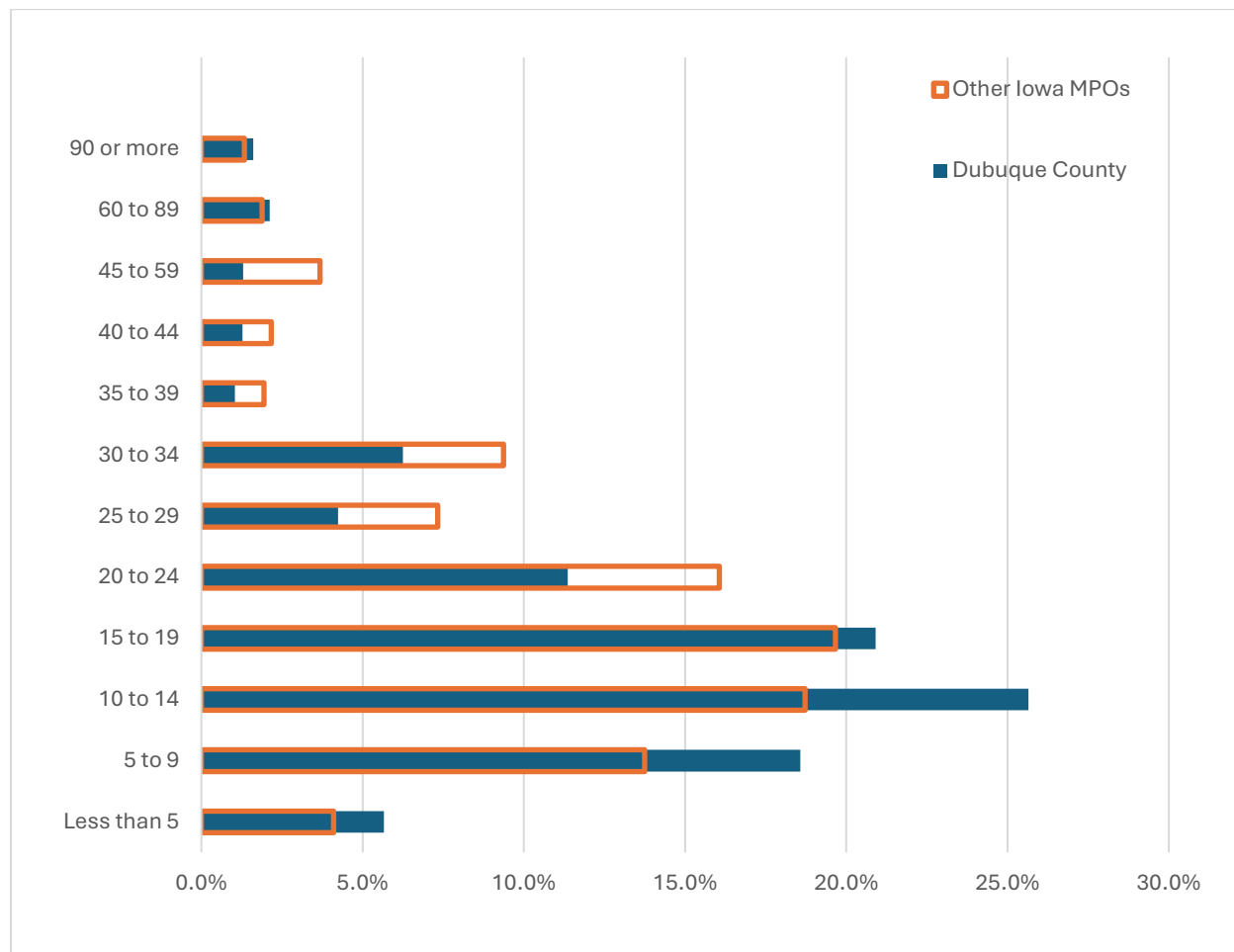


Figure 2.19 Travel Time to Work by Percentage in Dubuque County and other Iowa Metros, 2019-2023

Source: US Census Bureau, American Community Survey

The below table shows the percentage of workers with a travel time of less than 15 minutes for each MSA in Iowa. The 15 minute number was chosen to represent a short commute that allows for sufficient work-life balance. Out of Iowa MSAs, Dubuque has the highest percentage of workers with a travel time under 15 minutes.

Metro	Travel Time to Work Under 15 Minutes	Total Workers	Percent
Ames, IA	27,399	59,132	46.3%
Cedar Rapids, IA	49,160	152,792	32.2%
Davenport-Moline-Rock Island, IA-IL	57,540	168,918	34.1%
Des Moines-West Des Moines, IA	100,171	324,102	30.9%
Dubuque, IA	22,713	45,786	49.6%
Iowa City, IA	32,193	84,290	38.2%
Omaha-Council Bluffs, NE-IA	136,191	444,642	30.6%
Sioux City, IA-NE-SD	30,439	69,726	43.7%
Waterloo-Cedar Falls, IA	36,602	77,046	47.5%

Table 2.6 Workers With Travel Time to Work Under 15 Minutes within Iowa MSAs

Source: US Census Bureau, Decennial American Community Survey