

State and County Population Projections 2020-2050: A Brief Summary of Findings

Background

Wisconsin's Department of Administration has developed population projections based on the U.S. Census Bureau's 2020 counts. Projections methodology is summarized in a separate document.¹ Projections results spreadsheets are available on the web page that hosts this document.²

State Projections (Sum of County Projections)

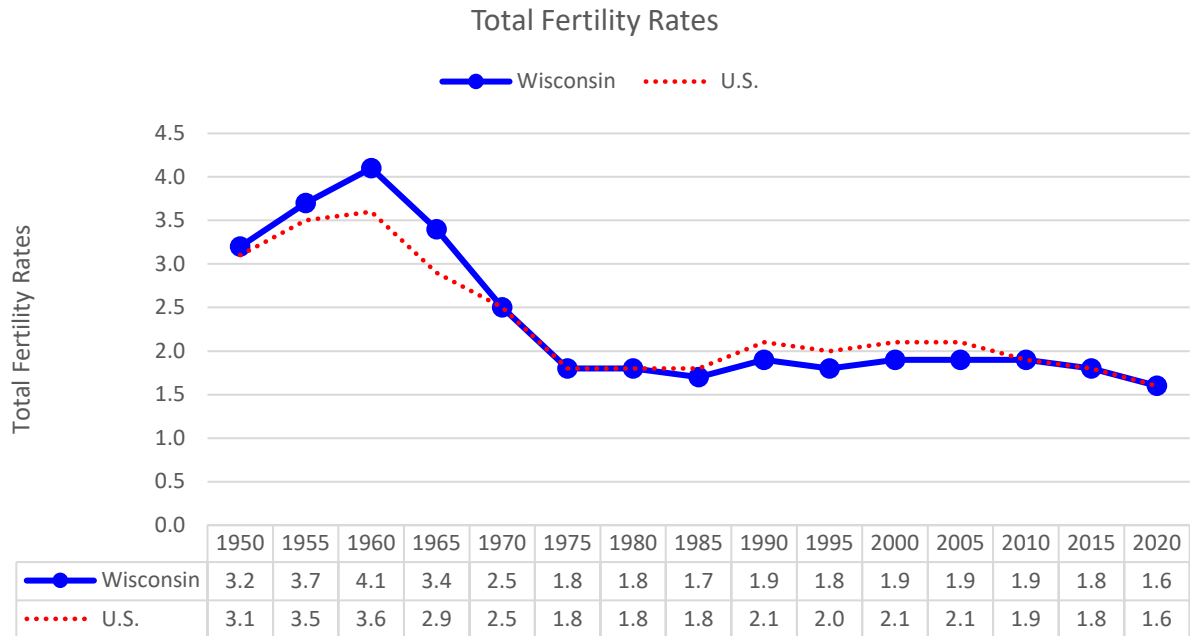
The Department of Administration population projections are largely driven by Wisconsin's changing age distribution. Wisconsin's changing age distribution, in turn, is largely driven by long-term trends in fertility rates. In the graph below, the Total Fertility Rate is an estimate of the number of children that would be born to each female during her lifetime if she were to have children at the same rate as females did in that year.³ The left-most portion of the graph shows a period including 1950 and 1965 when Total Fertility Rates were roughly 3.2 to 4.1.⁴ The higher fertility rates around this time caused the baby boom generation (people born 1946 to 1964) to be more numerous than prior generations. Unless in-movers outnumber out-movers, stable population generally occurs when Total Fertility Rates are closer to the 2.04-2.09 range. Wisconsin's Total Fertility Rates have often been closer to the 1.6-1.9 range from 1975 to 2020. Higher fertility rates in the distant past indicate that the older population is larger today. Below-replacement Total Fertility Rates for the last 45 years indicate that the younger generations are smaller today. Therefore, unless in-movers outnumbered out-movers by unexpected margins, projected population increases would be unlikely.

¹ See Wisconsin Department of Administration, Demographic Services Center, "Vintage 2024 County and Minor Civil Division Projection Methodology: a Brief Overview", https://doa.wi.gov/DIR/Method_Pop_Proj_2020_2050.pdf.

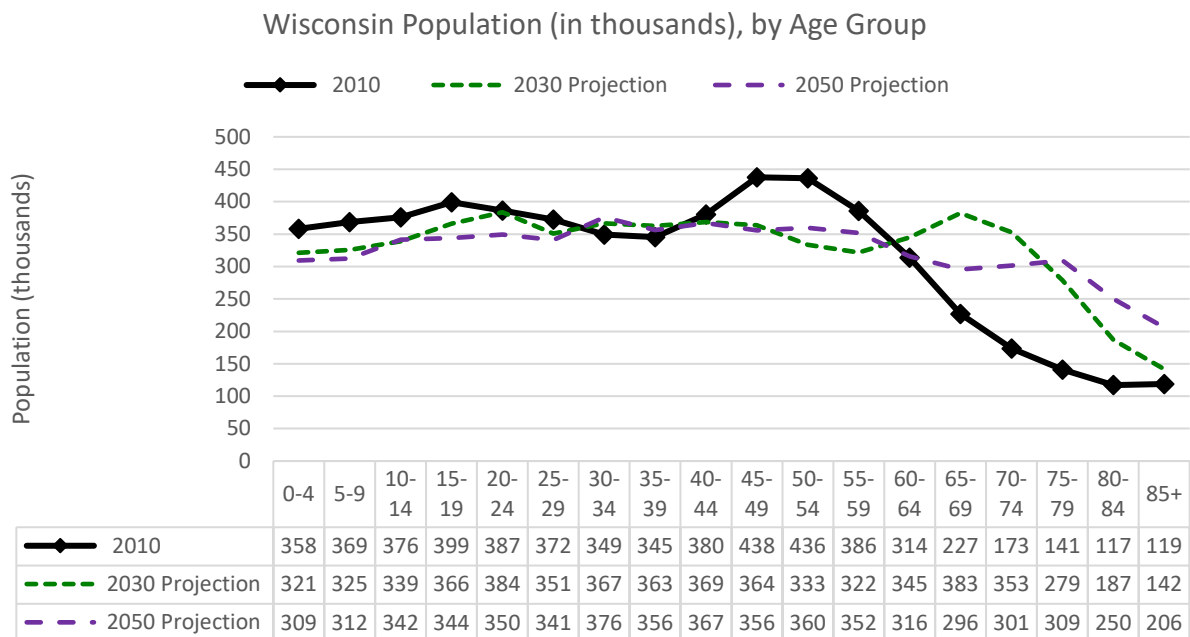
² See state and county age-sex population projections, https://doa.wi.gov/DIR/Proj_Co_State_2020_2050.xlsx See also, Minor Civil Division and Municipal Population Projections 2020-2050, https://doa.wi.gov/DIR/Proj_Muni_2020_2050.xlsx.

³ Traditionally, demographic methods assumed that longer lifespans for people categorized "females" and no births to people categorized as "males" justified the use of these binary categories. Population projections rely on population counts and fertility rates that follow this convention. Population projections to follow suit without endorsing the convention.

⁴ See <https://www.dhs.wisconsin.gov/wish/fertility/measurements.htm>, "Total Fertility in Wisconsin and the U.S.". Also, for U.S. Total Fertility Rate in 2020, see Osterman, Michelle J. K.; Hamilton, Brady E.; Martin, Joyce A.; Driscoll, Anne K.; Valenzuela, Claudia P. (2022) "Births: final data for 2020." *NCHS National Vital Statistics Reports*. <https://stacks.cdc.gov/view/cdc/112078>.

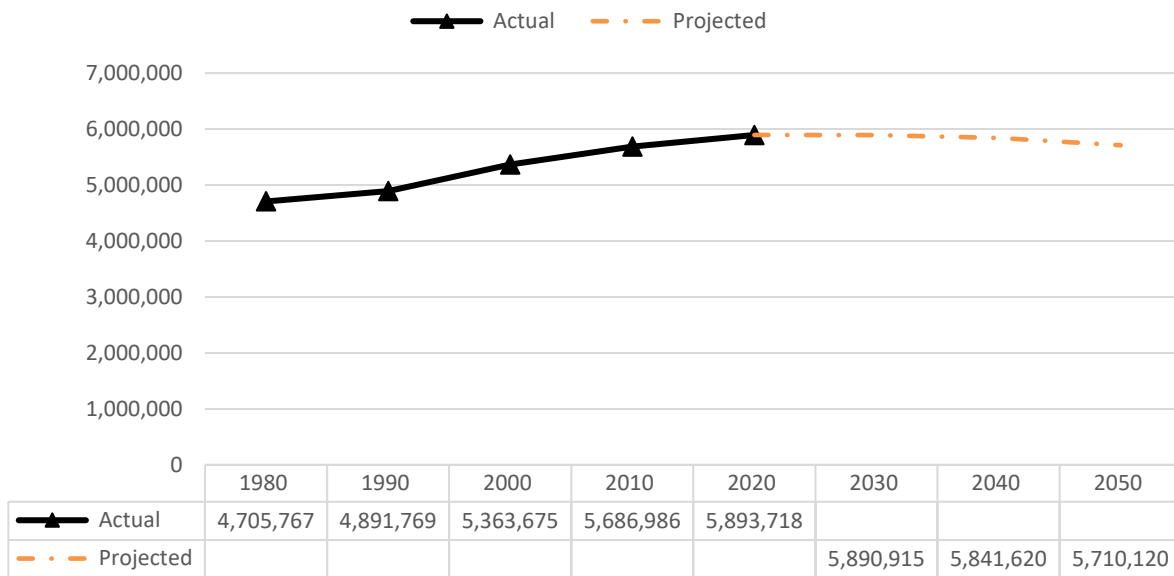


The above decrease in the Total Fertility Rate causes uneven age distribution. As time passes, the age distribution's peak shifts from younger age groups to older age groups. As baby boomers enter an age group, that age group's ranks swell. As they leave an age group, that age group's ranks shrink. The graph below shows Wisconsin age distribution for 2010, projected age distribution for 2030, and projected age distribution for 2050.



In 2010, the two largest age groups were 45-49 and 50-54. This might be called a “population bump”, corresponding to a generation larger than the ones before and the ones after. By 2030, this bump moves rightward to ages 65-69 and ages 70-74 and, by 2050, what remains of the bump is 85-and-over. This shift in the age distribution’s peak seems likely to play a part in Wisconsin’s future population change. In the first decade of the projections period (2020-2030) Wisconsin’s total population is expected to be somewhat stable. In the two decades following that (2030-2040 and 2040-2050), Wisconsin’s total population is expected to decrease slightly, while remaining above its 2010 level.

Wisconsin Population (Actual and Projected)



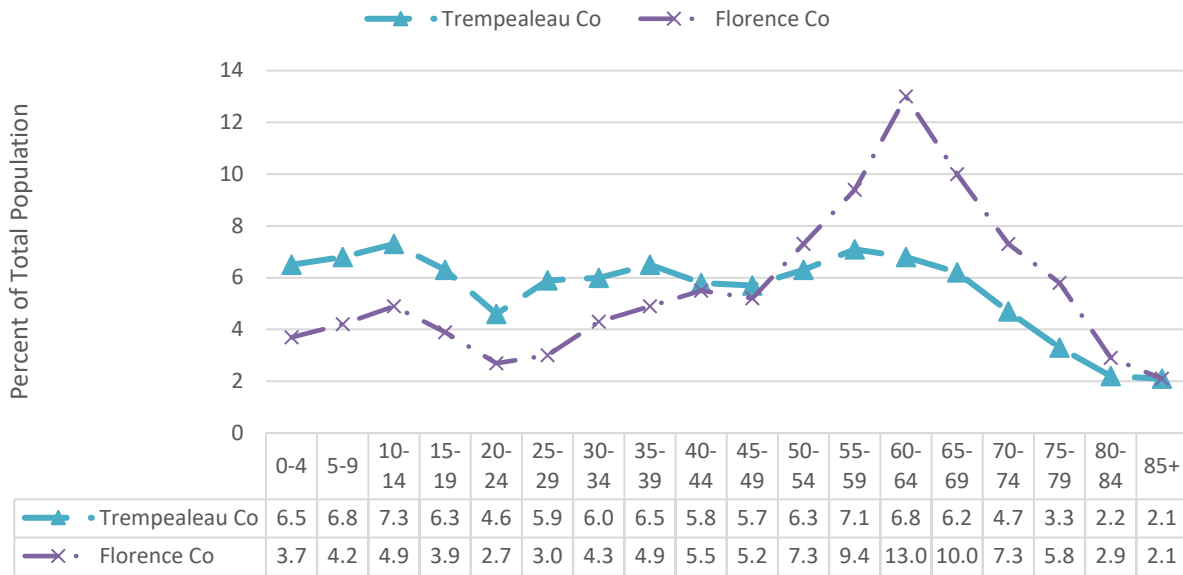
To maintain prior decades’ population increase would require a large unforeseen shift. This unexpected shift would be one or more of the following: a large decrease in mortality; a large increase in fertility; or a large increase in net in-migration (probably not domestic).⁵

⁵ There are reasons to expect that domestic migration will not drive population increase. Significant percentages of the people moving to Wisconsin come from the Upper Midwest and other places facing shifting age distributions like Wisconsin’s. The places that have sent people to Wisconsin may have fewer people to send. Those places may work harder to keep their residents and/or attract Wisconsin residents to move to those places to fill emerging gaps. Wisconsin may be unlikely to experience very large net migration increases unless the appetite for non-domestic in-migration changes. Related discussion appears on page 9 under the heading “Uncertainty Could Increase”.

County Projections

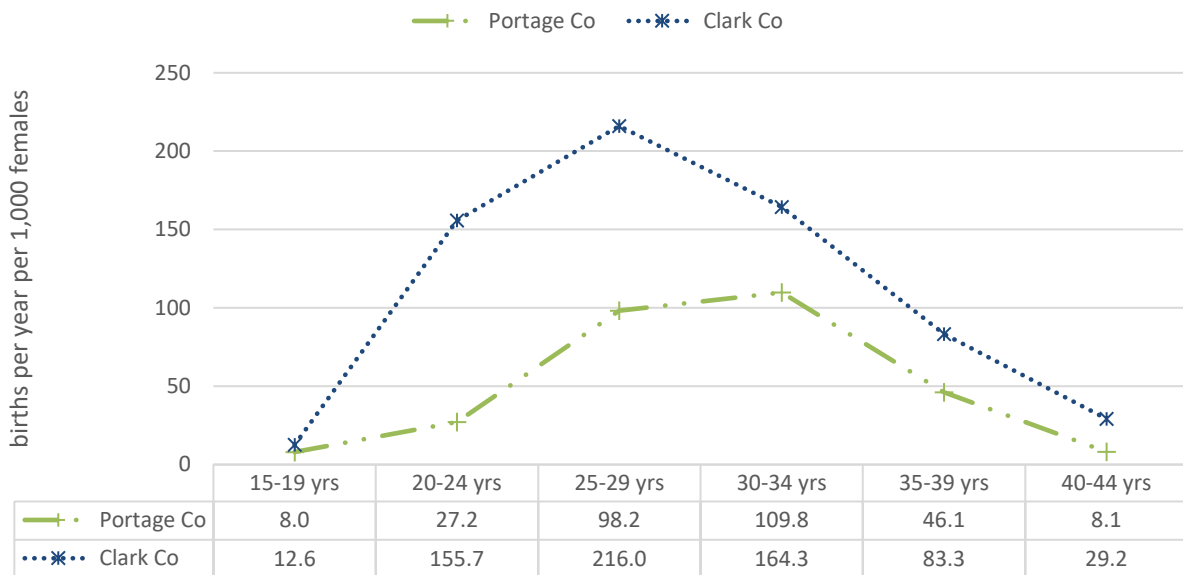
Wisconsin's counties have different age distributions, so they will expect different population change patterns. The graph below illustrates how different two counties' age distributions can be.

Age Distribution (percent of total population in each age group)



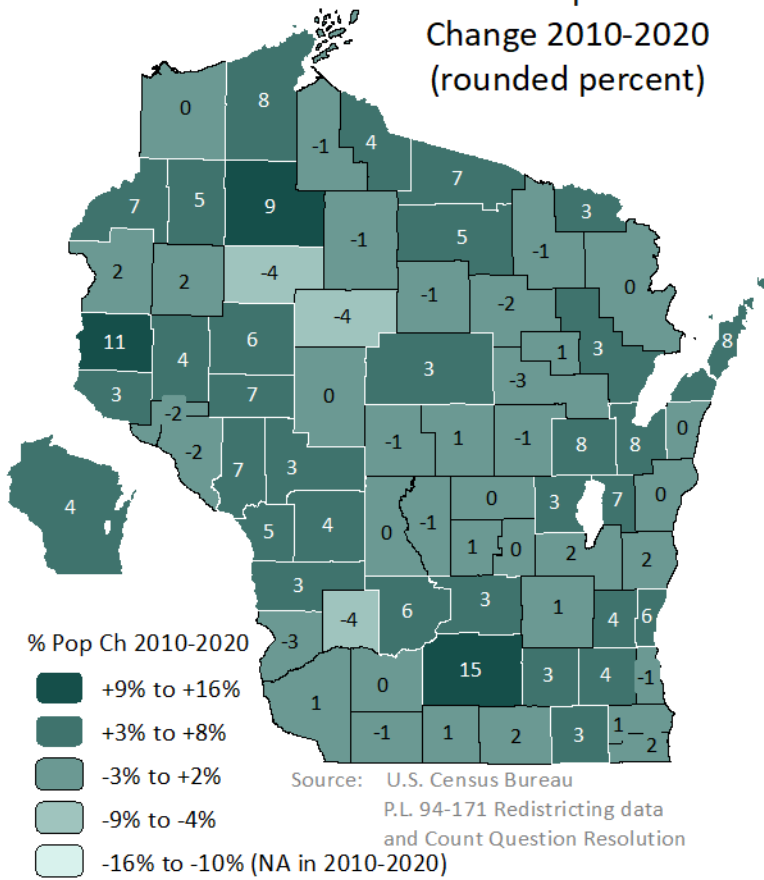
In addition to different age distributions, counties also have different Age-Specific Fertility Rates. (The Age-Specific Fertility Rate is the number of births to females in an age group per year per thousand females in the age group.) The graph below shows considerable differences in 2016-2020 Age-Specific Fertility Rates in two Wisconsin counties.

Age-Specific Fertility Rates 2016-2020 (births per year per 1,000 females)

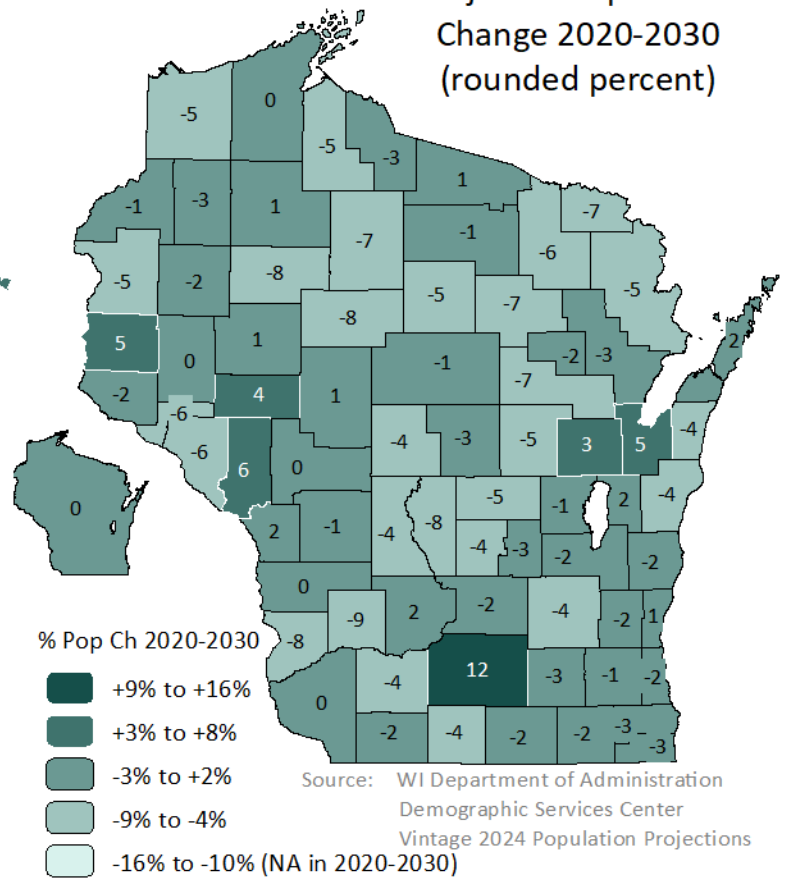


Together, the age distribution differences, and the fertility rate differences will contribute to different expectations for total population change in each county. The four maps on the next page show population change figures (in rounded percentages) for four decades. The upper left map (2010-2020) reflects actual change from between the 2010 census and the 2020 census; the other three maps reflect projected changes. The darkest shading indicates the fastest increase rates (+9% or more). The lightest shading indicates the fastest decrease rates (-10% or more). This lightest shade does not appear in the upper left map for actual population change from 2010 to 2020 or in the upper right map for projected population change from 2020 to 2030. In many cases, projected population decreases are associated with decreasing fertility rates or the age distributions shifting older or both.

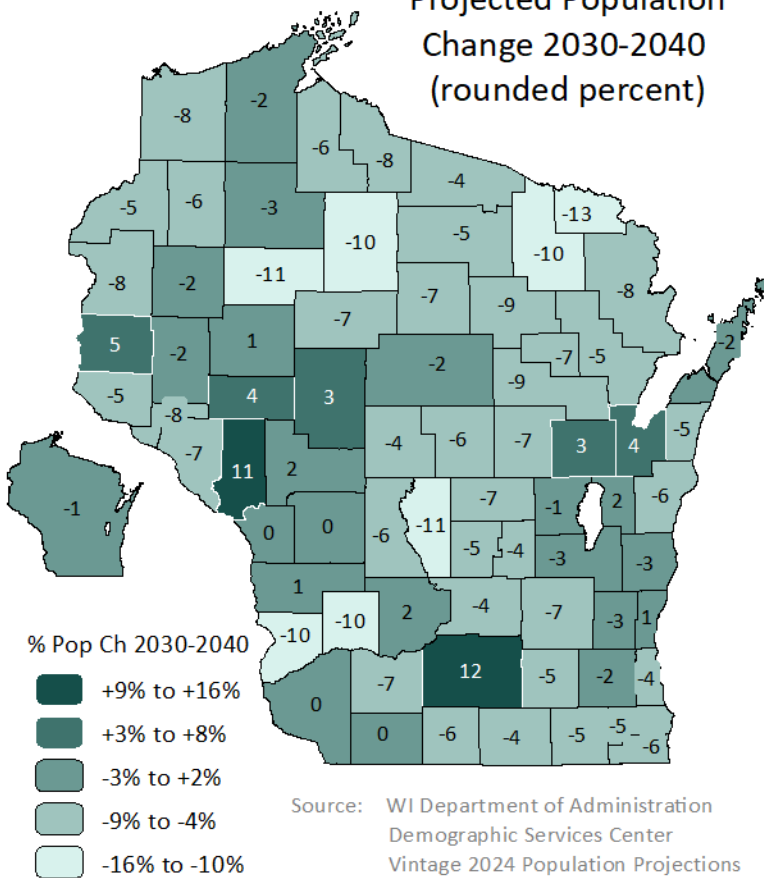
Actual Population Change 2010-2020 (rounded percent)



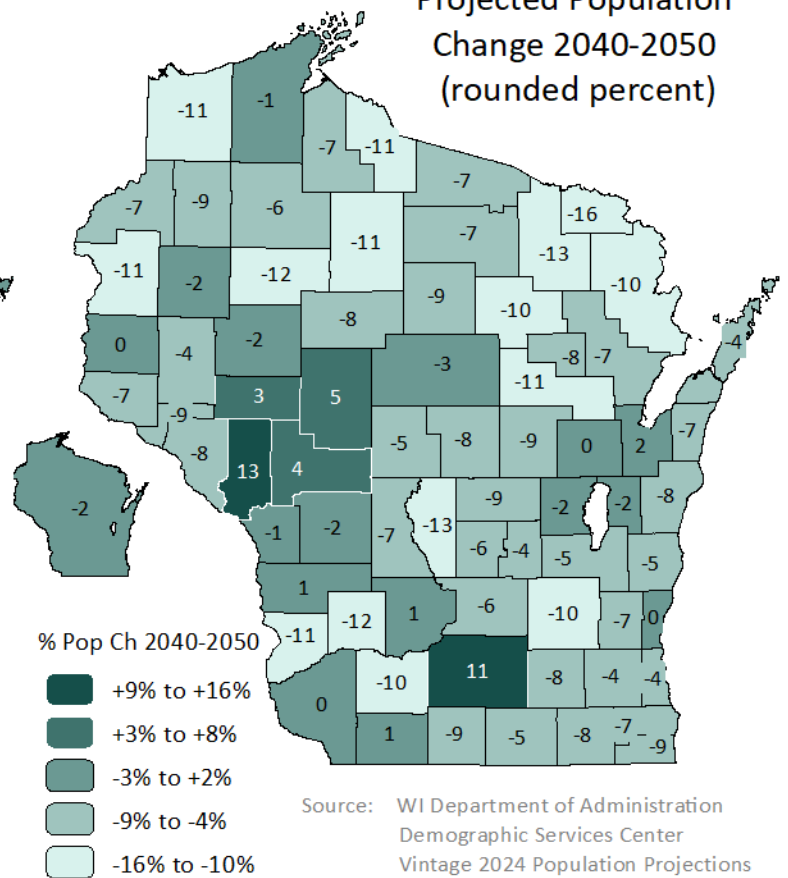
Projected Population Change 2020-2030 (rounded percent)



Projected Population Change 2030-2040 (rounded percent)



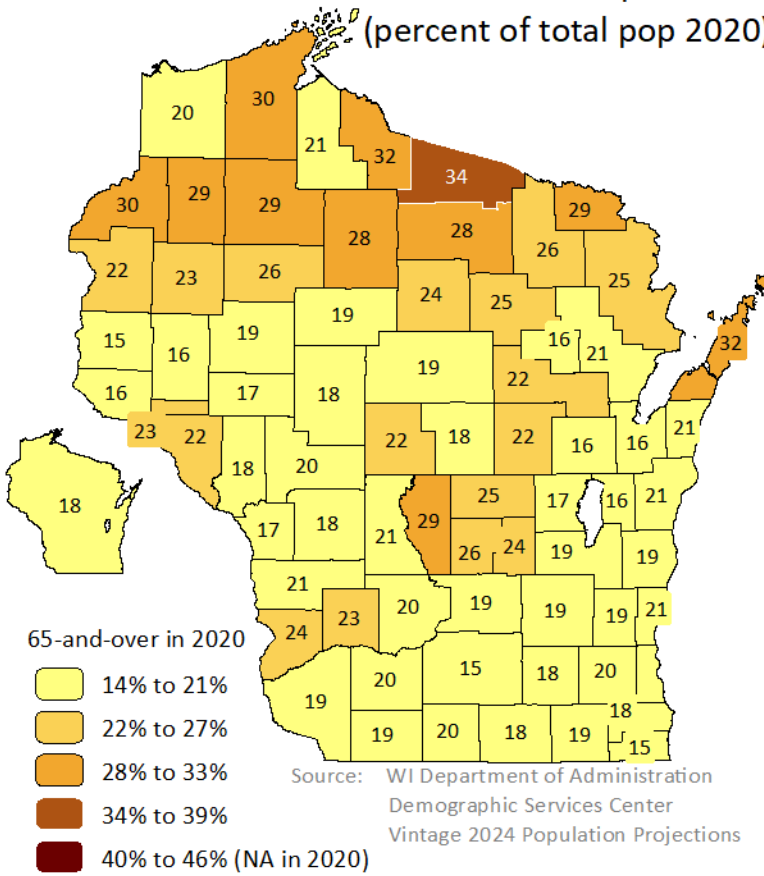
Projected Population Change 2040-2050 (rounded percent)



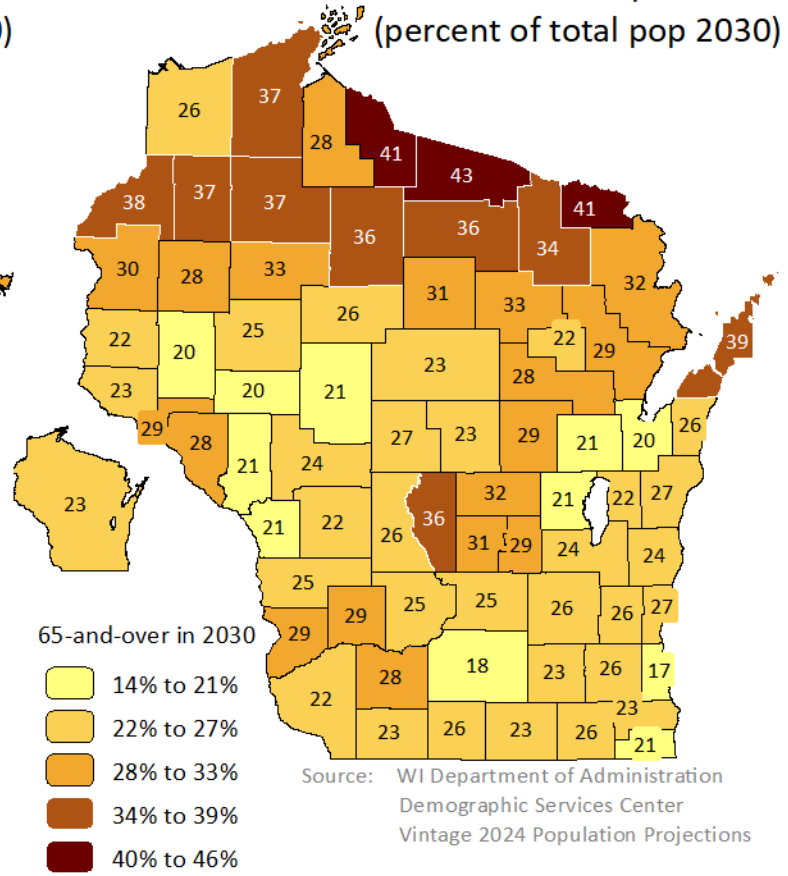
Population watchers often calculate how many people will be 65-and-over, as a percentage of the total population. This indicator can inform expectations about future labor force participation, health care demand and transportation infrastructure. The four maps below show what percentage of the total population was aged 65-and-over in the 2020 census and what percentage of the total population is projected to be 65-and over in 2030, 2040, and 2050.

One salient feature of these four maps is that the fastest change happens between 2020 (the upper left map) and 2030 (the upper right map), when the youngest baby boomers enter the 65-and-over age groups. There is a notable decrease in the number of counties in the lightest shade (smallest percentages of the population in the 65-and-over age groups). Another salient feature is that comparatively stable 65-and-over percentages appear in the 2030, 2040, and 2050 projections, with several counties remaining in the same categories. The highest concentrations of older residents remain mostly in northern Wisconsin, except Adams County, which is in central Wisconsin.

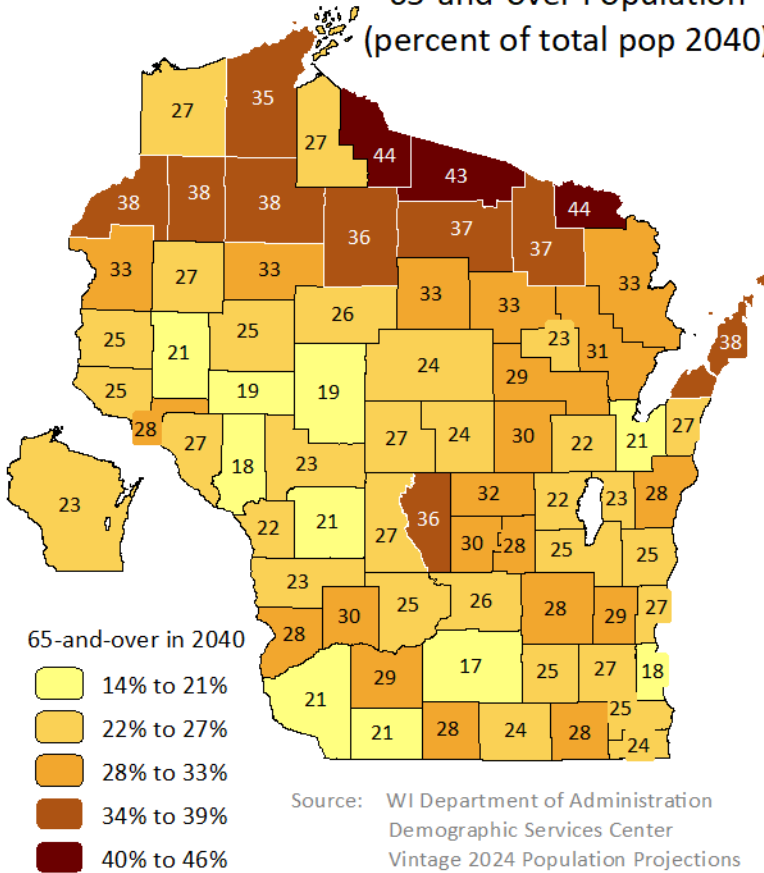
65-and-over Population
(percent of total pop 2020)



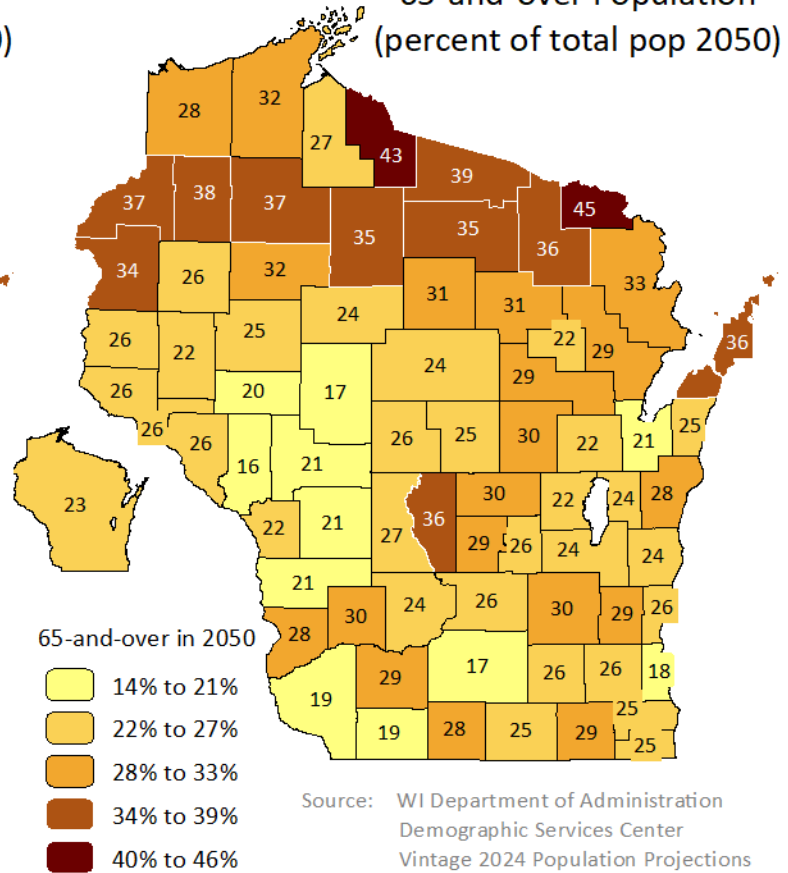
65-and-over Population
(percent of total pop 2030)



65-and-over Population
(percent of total pop 2040)



65-and-over Population
(percent of total pop 2050)



Uncertainty Could Increase

Population change has two components. The first component, natural change, is births minus deaths. Fertility and mortality trends tend to be somewhat predictable. The second component, net migration, is in-movers minus out-movers. In contrast to natural change, net migration changes more quickly with less warning and less coherent explanation.

In coming decades, Wisconsin's largest generation, the baby boomers, will enter higher-mortality age groups. As this happens, there will be increasing probability of negative natural change. (The methodology used for these projections does not allow disaggregation of population change into natural change and net migration.) If Wisconsin's natural change (births minus deaths) approaches neutral territory, changes in net migration (toward net in-migration or net out-migration) could have a larger relative impact on total population change. If the predictable component of population change (births minus deaths) became a smaller share of total population change and the unpredictable portion of population change (in-movers minus out-movers) became a larger share of total population change, then the uncertainty accompanying population projections could increase.

Questions have arisen about climate-motivated migration. On the one hand, some people who move will include climate considerations in their decisions. On the other hand, there is insufficient data to know how many people, how much weight climate concerns will have, what places they will leave, and what places they will go to. In the recent past, some of the country's most hurricane-prone or water-scarce areas also experienced some of the fastest net in-migration in the U.S. Department of Administration population projections do not model or refute the possibility of climate-motivated migration; such migration is simply far too detailed to be specifically analyzed in the scope of these population projections.

Thanks

The Department of Administration thanks the data scientists who reviewed projections materials and provided valuable feedback.

Emily Camfield, Wisconsin Department of Revenue, Division of Research and Policy
David Egan-Robertson, University of Wisconsin-Madison Applied Population Laboratory
Eric Grosso, Wisconsin Department of Health Services, Bureau of Aging and Disability Resources
Jaspreet Kaur, Wisconsin Department of Workforce Development, Office of Economic Advisors
Matt Kaneshiro, Wisconsin Department of Health Services, Office of Health Informatics
Dale Knapp, Wisconsin Counties Association, Forward Analytics
Franklin Otis, Wisconsin Department of Workforce Development, Office of Economic Advisors
Dan Younan, University of Wisconsin-Madison, Office of Policy Analysis and Research