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Coordinated Population Forecast for Washington County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2020-2070

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Coordinated Population Forecast

2020

Through

2070

Washington County

Urban Growth Boundaries (UGB) & Area Outside UGBs

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2020-2070

Prepared by

Population Research Center

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How to Read this Report

This report should be read with reference to the documents listed below, which are downloadable on the Forecast Program website (http://www.pdx.edu/prc/opfp).

- *Methods and Data for Developing Coordinated Population Forecasts*: Provides a detailed description and discussion of the forecast methods employed. This document also describes the assumptions that feed into these methods and determine the forecast output.
- *Forecast Tables*: Provides complete tables of population forecast numbers by county and all sub-areas within each county for each five-year interval of the forecast period (2020-2070).

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Modified Methodology

The Population Research Center, in consultation with DLCD, has identified cost savings associated with a modified methodology for the latter half of the 50-year forecast period (years 26 to 50). Fortunately, stakeholder feedback has indicated that a 25-year forecast fulfills most requirements for local planning purposes. Thus, we focus on years 1 through 25 to improve the cost effectiveness of the program. The cost savings from this change will allow DLCD to direct additional resources toward local government grants.

For the modified methodology, the Population Research Center continues to use forecast methods when estimating county and sub-area populations for the first 25 years of the 50-year forecast period. We then use a modified projection method for the remaining 25 years. A description of the forecast methodology can be accessed through the forecast program website (www.pdx.edu/prc/opfp). A summary of our modified projection method is below.

For years 26-50, PRC projects the county population using the annual growth rate from the 24^{th}-25^{th} year. For example, if we were to forecast a county to grow by 0.4 percent between the 24th and 25th year of the forecast, we would project the county population thereafter using a 0.4 percent annual growth rate. To allocate the projected county population to its sub-areas, we extrapolate the change in sub-area shares of county population observed in years 1-25 and apply the resulting shares to the projected county population.

Comparison to Cycle 1 (2015-17)

To keep up to date with local trends and shifting demands, the Oregon Population Forecast Program (OPFP) regularly updates its coordinated population forecasts for Oregon's counties and their sub-areas. The 2020 forecast for Washington County is an update of the 2017 version, and it differs from the prior iteration in several ways. Overall, we forecast a lower starting population but similar population growth rates in Washington County for the 25-year forecast period (2020-2045). In part due to a lower starting population, we expect fewer births and deaths, ultimately translating to similar but slightly slower natural population increase than previously forecasted. We continue to expect strong net in-migration to Washington County during the forecast period. However, compared with the previous forecast we have observed lower levels of net in-migration during the late 2010s and expect less net migration for the 2020-2025 period. In the long-term, we expect net in-migration to rise to roughly the same level as previously forecasted.

In addition to the county as a whole, this report presents forecasts for Washington County sub-areas outside of Metro's jurisdiction. As the metropolitan planning organization for the Portland region, Metro produces forecasts for cities within its jurisdiction. At the sub-area level, we expect more consistent growth patterns in Banks and slightly faster growth in Gaston. We forecast similar growth rates in North Plains, but—given a higher starting population than previously forecasted—we predict a higher population at the end of the forecast period. We do not markedly change our forecast for the share of the total county population that lives in Washington County outside of Metro's jurisdiction. Rather, we continue to forecast that those communities will represent about four percent of the county's total population in 2045, a decrease from about five percent in 2020.

The full breakdown of differences between the current and previous forecasts by county and sub-area can be accessed at the following website: https://www.pdx.edu/prc/current-documents-and-presentations.

Executive Summary

Historical

Different areas within Oregon counties experience different growth patterns. Those patterns combine to collectively determine county-level demographic changes. Washington County is comprised of three types of areas: areas within Metro's jurisdiction, urban-growth boundary (UGB) areas outside of Metro's jurisdiction (Banks, Gaston, and North Plains), and areas outside of Metro and those UGBs. In this report, we focus on Washington County as a whole as well as non-Metro sub-areas.

Washington County's total population has grown swiftly over the last half century, only slowing modestly during Oregon's deep 1980s recession. Since 1990, average annual growth rates have slowed from above 3 percent to around 1.5 percent during the 2010s (see **Figure 3**). Most of this population growth occurred within areas now part of Metro's jurisdiction. Washington County's small sub-areas outside of Metro, on the other hand, exhibited a variety of growth patterns over the last two decades. After a housing boom in the late 1990s, population growth slowed in Banks. Nearby Gaston experienced limited growth, if any. And North Plains, the sub-area closest to Washington County's job centers, experienced steady growth since 2000, culminating in an ongoing surge in housing construction set to produce strong population gains in the 2020s.

Considered as a whole, Washington County's population growth between 2000 and 2010 resulted from a healthy mix of natural population increase (births exceeding deaths) and consistent net in-migration. Washington County especially excelled at attracting in-migrants between 25 and 39, some with children in tow. Since 2009, Washington County's natural increase has begun to decline in magnitude, falling from roughly 5,000 to 3,000 people annually. This is due to several factors. Most notably, between 2000 and 2010, Washington County's total fertility rate fell twice as fast than the statewide rate—though from a higher starting point. This—combined with the national trend of aging population—led to fewer births and more deaths over time, and thus, declining natural increase.

Forecast

The Population Research Center forecasts that, despite declining natural increase, Washington County will continue its strong and steady growth pattern, gaining over 200,000 residents by 2045 and another 250,000 by 2070 (**Figure 1**). This will result primarily due to net in-migration, with natural increase playing a smaller role over the forecast period as the number of deaths each year rises. Among non-Metro sub-areas, population will grow fastest in North Plains, which benefits from its proximity to Washington County job centers. Banks and Gaston will experience more limited growth.

Figure 1. Washington County and Sub-Areas—Historical and Forecast Populations, and Average Annual Growth Rates (AAGR)

Area	Population (2000)	Population (2010)	AAGR (2000-2010)	Population (2020)	Population (2045)	Population (2070)	AAGR (2010-2020)	AAGR (2020-2045)	AAGR (2045-2070)
Washington County	**445,342**	**529,710**	***1.8%***	**608,124**	**828,985**	**1,078,508**	***1.4%***	***1.2%***	***1.1%***
Banks	1,395	1,876	*3.0%*	1,855	2,797	3,957	*-0.1%*	*1.7%*	*1.4%*
Gaston (Washington)	624	646	*0.3%*	628	772	900	*-0.3%*	*0.8%*	*0.6%*
North Plains	1,605	1,964	*2.0%*	3,410	7,573	13,708	*5.5%*	*3.2%*	*2.4%*
Outside UGBs	25,553	25,429	*0.0%*	25,175	24,564	19,822	*-0.1%*	*-0.1%*	*-0.9%*

Figure 1 Sources: U.S. Census Bureau, 2000 and 2010 Censuses; Forecast by Population Research Center (PRC). Note: For simplicity each UGB is referred to by its primary city's name.

14-Year Population Forecast

Figure 2 provides a 14-year population forecast (2020-2034) for the county and its sub-areas, as required by House Bill 2254. Populations at the 14th year of the forecast were interpolated using the average annual growth rate during the 2030-2035 period. The population interpolation template can be accessed at the following website: https://www.pdx.edu/prc/current-documents-and-presentations.

Figure 2. Washington County and Sub-Areas—14-Year Population Forecast

Area	Population (2020)	Population (2034)	14-Year Change	AAGR (2020-2034)
Washington County	**608,124**	**731,661**	**123,536**	***1.3%***
Banks	1,855	2,381	526	*1.8%*
Gaston (Washington)	628	701	73	*0.8%*
North Plains	3,410	6,446	3,035	*4.7%*
Outside UGBs	25,175	24,999	-176	*-0.1%*

Figure 2 Source: Forecast by Population Research Center (PRC). Note: For simplicity each UGB is referred to by its primary city's name.

Historical Trends

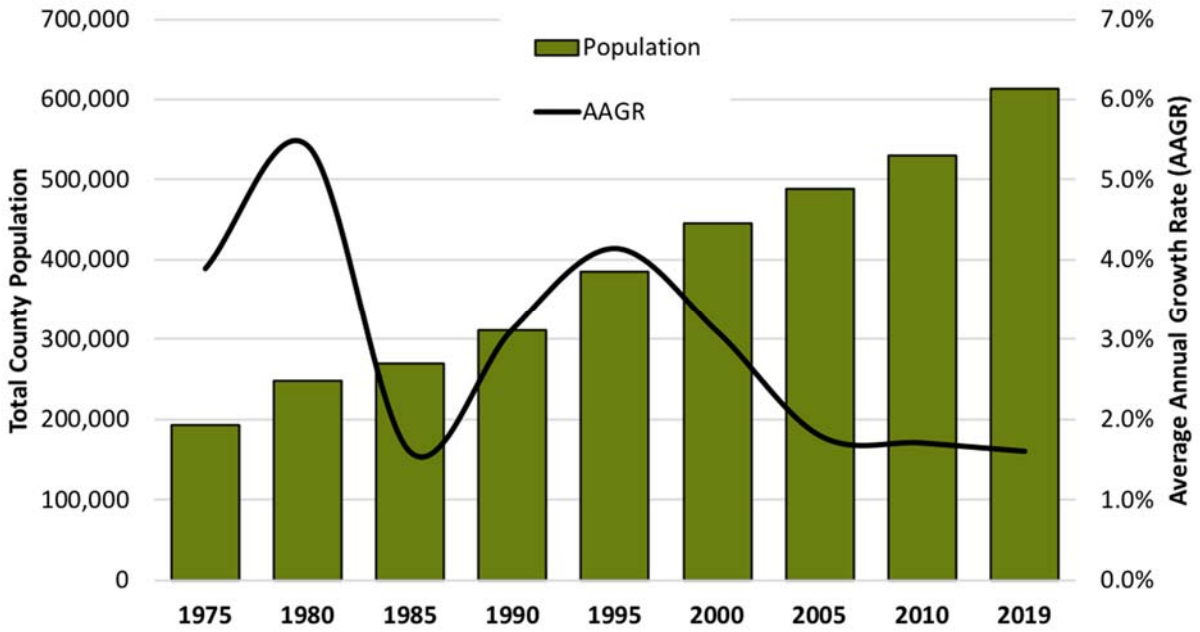
We examined Washington County and its sub-areas outside of Metro's jurisdiction to identify important demographic characteristics and trends that might influence those areas' population forecasts. Factors analyzed include historical population levels, age composition of the population, race and ethnicity, births, deaths, migration, the number of housing units, occupancy rate, and persons per household (PPH). As the coming pages demonstrate, population trends within individual sub-areas often differ from those of the overall county. In the case of Washington County, countywide trends are most influenced by changes within Metro's jurisdiction.

Population

Figure 3 graphs Washington County's historical populations and growth rates in 5-year increments, from 1975 to 2019. Washington County's total population grew from 192,904 in 1975 to 613,410 in 2019.

In the late 1970s and early 1980s, the county grew rapidly, averaging between 4 and 5.5 percent growth annually. However, during the mid-1980s, challenging economic conditions nationally and in Oregon led to a brief period in which the average annual population growth rate fell to roughly 1.5 percent annually. Growth rates recovered to between roughly 3 and 4 percent during the 1990s and early 2000s. Since 2005, average annual growth rates have flattened to around 1.7 percent. **Figure 3** includes a table below the chart containing the exact values plotted, a format applied to many charts throughout this report.

Figure 3. Washington County—Total Population by Five-year Intervals (1975-2019)



Year	1975	1980	1985	1990	1995	2000	2005	2010	2019
Population	192,904	247,848	269,242	311,554	385,410	445,342	488,907	529,710	613,410
AAGR	3.9%	5.4%	1.6%	3.1%	4.1%	3.1%	1.8%	1.7%	1.6%

Figure 3 Sources: U.S. Census Bureau, 1980, 1990, 2000, and 2010 Censuses; Population Research Center (PRC), July 1st Annual Estimates 1975, 1985, 1995, 2005 and 2019.

Note: Population Estimates from the Oregon Population Estimates Program (OPEP) may not be consistent with the 2019 population forecast due to different methodologies and data sources.

Between 2000 and 2010, Washington County's average annual population growth rate was 1.8 percent (see **Figure 4**). The county's non-Metro UGB areas grew during the decade, some faster than the county as a whole. North Plains and Banks—near Highway 26 and close to Washington County job centers—grew fastest at 2 and 3 percent, respectively. Meanwhile, more distant Gaston grew more slowly, averaging less than 0.5 percent growth annually. Areas outside of UGBs lost population during the 2000s, decreasing from a 5.7 to 4.8 percent share of county residents.

Figure 4. Washington County and Sub-Areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010)

Area	Population (2000)	Population (2010)	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change in Share (2000-2010)
Washington County	*445,342*	*529,710*	*1.8%*	*100.0%*	*100.0%*	*0.0%*
Banks	*1,395*	*1,876*	3.0%	0.3%	0.4%	0.0%
Gaston (Washington County)	*624*	*646*	0.3%	0.1%	0.1%	0.0%
North Plains	*1,605*	*1,964*	2.0%	0.4%	0.4%	0.0%
Outside UGBs	*25,553*	*25,429*	0.0%	5.7%	4.8%	-0.9%

Figure 4 Source: U.S. Census Bureau, 2000 and 2010 Censuses. Note: For simplicity each UGB is referred to by its primary city's name.

Note: When considering growth rates and population growth overall, it should be noted that a slowing of growth rates does not necessarily correspond to a slowing of population growth in absolute numbers. For example, if a UGB with a population of 100 grows by another 100 people, it has doubled in population. If it then grows by another 100 people during the next year, its relative growth is half of what it was before even though absolute growth stays the same.

Age Structure of the Population

Like most areas across Oregon, Washington County's population is aging. This means the county's older age cohorts are growing as a share of the county's total population. As the population ages, the number of deaths may increase and the proportion of women in their childbearing years may decrease, resulting in fewer births.

Figure 5 illustrates this phenomenon by showing how Washington County's age structure has changed over time. The figure contains two "population pyramids," one for 2000 and one for 2010. Each pyramid shows the percentage of the total county population that falls within each five-year age and gender cohort (e.g. female 35-39-year-olds). The oldest age cohort shown is 85 years and older. Between 2000 and 2010, one of the county's age cohorts—Baby Boomers in their 40s and 50s—aged into their 50s and 60s. As a result, individuals over 65 years old grew from an 8.8 to a 10 percent share of the county's total population. During the same time period, females between ages 15 and 49—considered childbearing years—declined as a proportion of the total population from 27 to 25 percent, and their fertility rates fell, resulting in fewer births per female. Together, these facts create the overall aging effect described above, where older residents come to comprise a greater share of all residents.

Figure 5. Washington County—Age Structure of the Population (2000 and 2010)

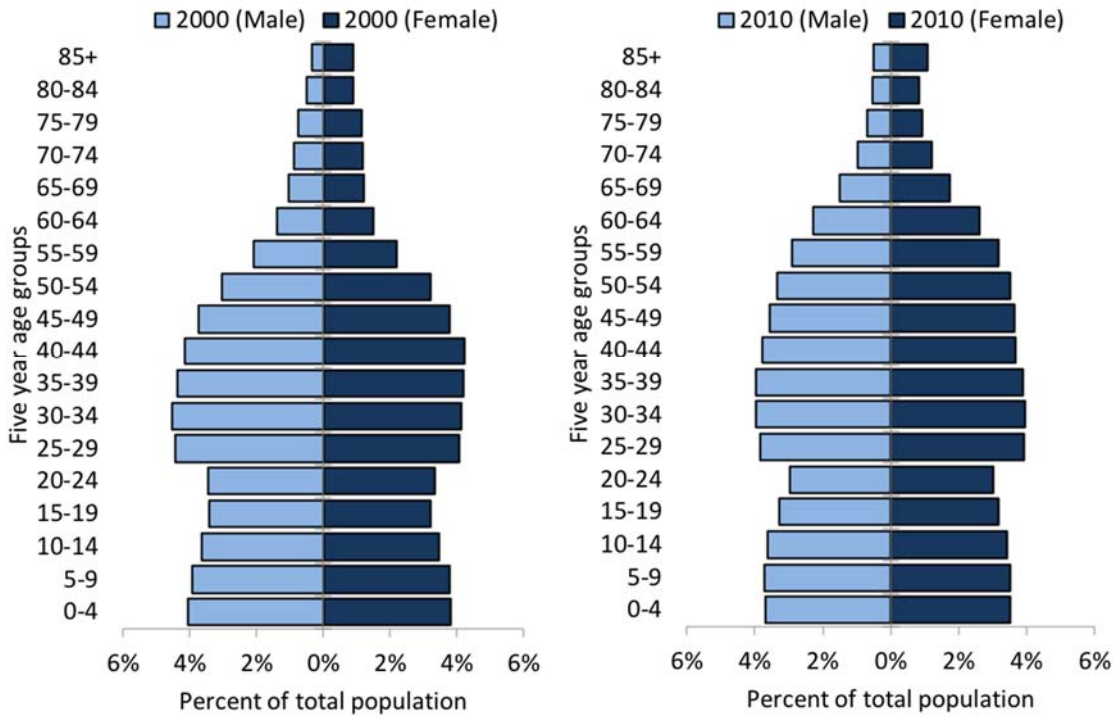


Figure 5 Source: U.S. Census Bureau, 2000 and 2010 Censuses.

Race and Ethnicity

In addition to statewide aging, another demographic shift is occurring across Oregon: growing racial and ethnic diversity. Between 2000 and 2010, Washington County primarily saw this shift in an increase in its Latino population. The county's Black, Asian, and Pacific Islander populations—as well as individuals who identify as two or more races—grew significantly as well. These shifts are noteworthy on their own, but also for their impact on the components of population change. This is particularly true for the Latino population. First, fertility rates among Latinas have tended to be higher than those among White, non-Latinas. Although recent data shows that Latina fertility rates are quickly declining in some areas, the population is younger and thus still contributes more births. Second, Latino households have tended to be larger, on average, than White, non-Latino households. Thus, growth of Latino populations in Oregon has the potential to raise average household sizes.

Between 2000 to 2010, the Latino population in Washington County increased by over 33,000 people. That represents a 67 percent increase, growing the Latino population from 11.2 percent of the county's population to 15.7 percent (see **Figure 6**). During the same time period, Washington County's White, non-Latino population declined as a share of the overall population, decreasing from 77.7 to 69.7 percent.

Figure 6. Washington County—Hispanic or Latino and Race (2000 and 2010)

Race and Ethnicity	Pop. (2000)	Pop. Share (2000)	Pop. (2010)	Pop. Share (2010)	Absolute Change	Relative Change
Total population	445,342	100.0%	529,710	100.0%	84,368	18.9%
Hispanic or Latino	49,735	11.2%	83,270	15.7%	33,535	67.4%
Not Hispanic or Latino	395,607	88.8%	446,440	84.3%	50,833	12.8%
White alone	346,251	77.7%	369,453	69.7%	23,202	6.7%
Black or African American alone	4,778	1.1%	8,861	1.7%	4,083	85.5%
American Indian and Alaska Native alone	2,335	0.5%	2,559	0.5%	224	9.6%
Asian alone	29,552	6.6%	45,354	8.6%	15,802	53.5%
Native Hawaiian and Other Pacific Islander alone	1,249	0.3%	2,269	0.4%	1,020	81.7%
Some Other Race alone	650	0.1%	940	0.2%	290	44.6%
Two or More Races	10,792	2.4%	17,004	3.2%	6,212	57.6%

Figure 6 Source: U.S. Census Bureau, 2000 and 2010 Censuses.

Births

In Oregon, the total fertility rate (TFR), or the average number of children a woman would have over her childbearing years based on age-specific rates at a given point in time, declined from 1.98 in 2000 to 1.79 in 2010 (see **Figure 7**). In contrast, over that same time period Washington County's TFR declined more dramatically: from 2.20 to 1.82. We have observed continued sharp decline in both Oregon's and Washington County's TFR since 2010. Consequently, we forecast that Washington County's TFR will fall to 1.53 throughout the forecast period, while Oregon's TFR will fall to 1.51.

Figure 7. Washington County and Oregon—Total Fertility Rates (2000 and 2010)

Area	Total Fertility Rate (2000)	Total Fertility Rate (2010)	Total Fertility Rate (2045)
Washington County	2.20	1.82	1.53
Oregon	1.98	1.79	1.51

Figure 7 Sources: U.S. Census Bureau, 2000 and 2010 Censuses; Oregon Health Authority, Center for Health Statistics. Calculations and forecast by Population Research Center (PRC).

Figure 8 provides more detail on fertility trends by presenting a graph of Washington County's historical fertility rates by female age cohort. It shows that between 2000 and 2010 Washington County's fertility declined among all female age cohorts under 35 years old. Fertility rates remained roughly the same for individuals over 35 years old.

Figure 8. Washington County—Age-Specific Fertility Rates (2000 and 2010)

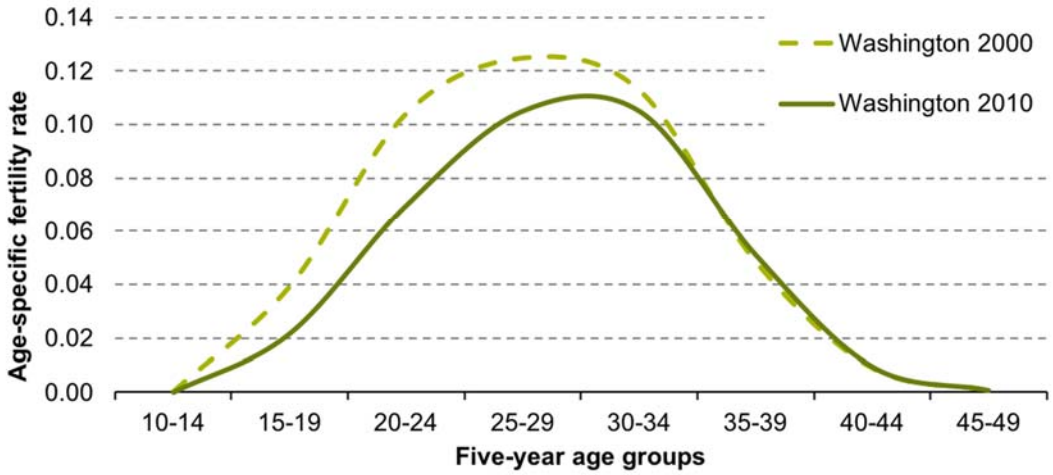
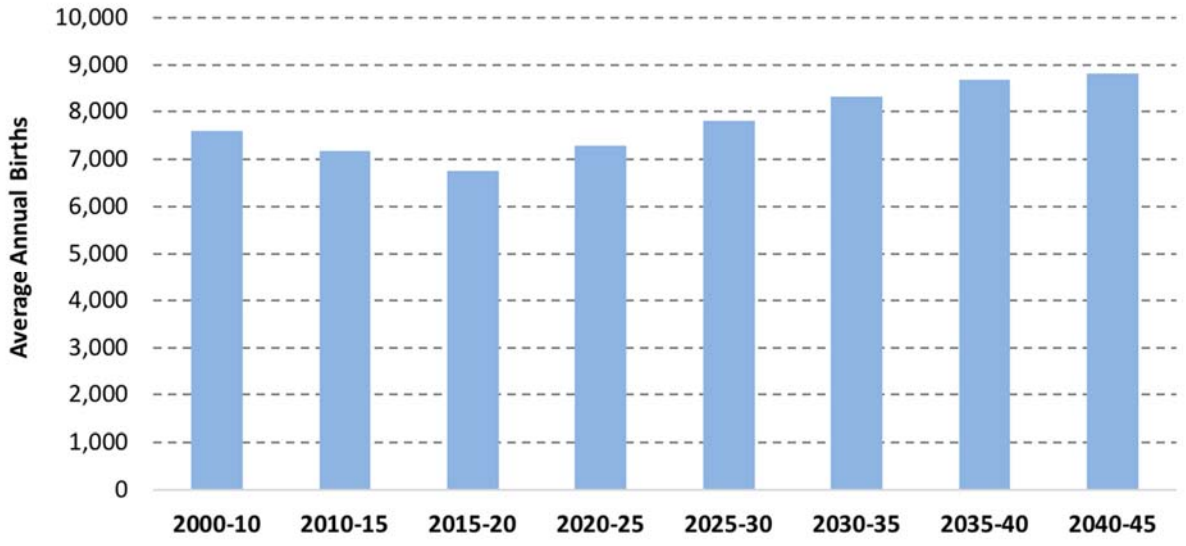


Figure 8 Sources: U.S. Census Bureau, 2000 and 2010 Censuses; Oregon Health Authority, Center for Health Statistics. Calculations by Population Research Center (PRC).

Figure 9 unites the concepts explored in **Figures 5 through 8** by showing the number of historical and forecasted births in Washington County. We expect the average annual number of births to Washington County residents to decline from around 7,600 in the 2000s to roughly 7,000 between 2015 and 2025. We expect births to slowly recover after 2020, reaching roughly 8,800 births per year by 2045.

This may seem odd considering Washington County's declining fertility rates. While we expect women, on average, to have fewer children in the future, we also expect that over the forecast period, more women of childbearing age will live in Washington County than live there currently. This expectation is based on Washington County's history of strong net in-migration of young adults.

Figure 9. Washington County—Average Annual Births (2010-2045)



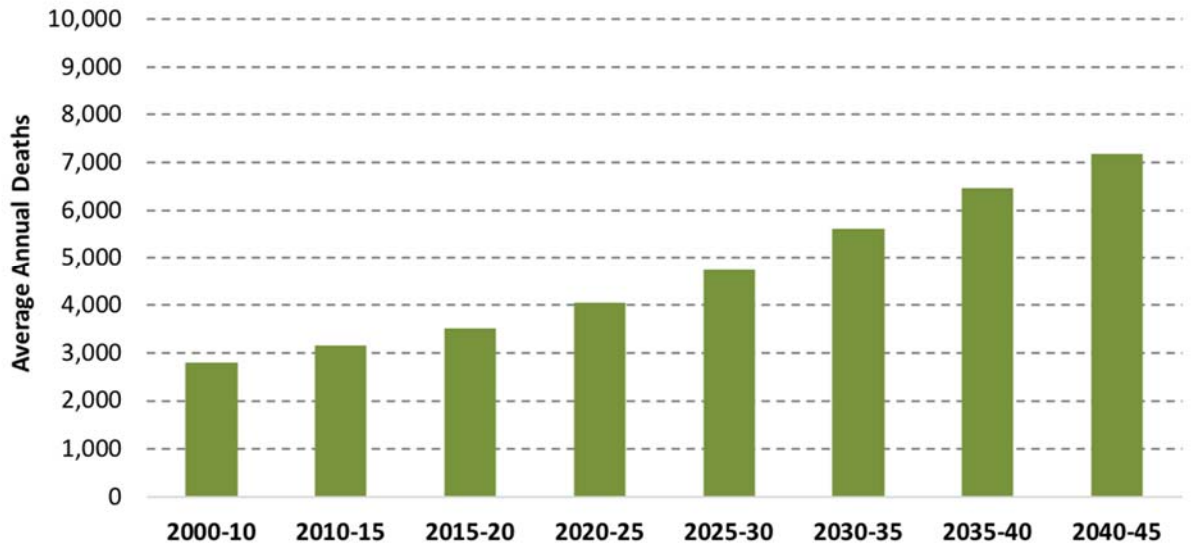
Year	2000-10	2010-15	2015-20	2020-25	2025-30	2030-35	2035-40	2040-45
Births	7,615	7,180	6,754	7,296	7,807	8,327	8,669	8,809

Figure 9 Sources: Oregon Health Authority, Center for Health Statistics. Calculations and forecast by Population Research Center (PRC).

Deaths

The population in Washington County is aging, yet the county's survival rates changed very little between 2000 and 2010. This underscores the fact that mortality is a relatively stable component of population change when compared with birth and migration rates. Average annual deaths in Washington County have grown since the 2000s, from around 2,800 between 2000 and 2010 to 3,500 between 2015 and 2020. Due to population aging, deaths are expected to continue increasing in the coming years. **Figure 10** depicts that forecasted increase, showing that average annual deaths will roughly double from 3,500 during the 2015-20 period to 7,100 during the 2040-45 period.

Figure 10. Washington County—Average Annual Deaths (2010-2045)



Year	2000-10	2010-15	2015-20	2020-25	2025-30	2030-35	2035-40	2040-45
Deaths	2,798	3,146	3,502	4,039	4,748	5,621	6,467	7,189

Figure 10 Sources: Oregon Health Authority, Center for Health Statistics. Calculations and forecast by Population Research Center (PRC).

Migration

Age and stage of life strongly influence people's likelihood of migrating from one city or county to another. As such, age-specific migration rates are critical in assessing migration patterns. Age-specific migration rates are the number of net migrants per person for an age group. **Figure 11** graphs Oregon's and Washington County's historical age-specific migration rates by five-year age group (e.g. ages 35-39). In general, between 2000 and 2010, Oregon attracted migrants across all age cohorts, especially individuals in their late 20s and early 30s. Oregon only experienced out-migration among individuals older than 85 years, perhaps in search of end-of-life care.

Washington County's migration patterns were more nuanced. The county experienced slightly positive net in-migration of children, who moved to the county with their parents. However, the vast majority of the county's in-migration came from individuals aged 25 to 44, who likely moved to the county for its employment and housing opportunities. Likewise, individuals older than 70 contributed to the county's net in-migration, suggesting the existence of attractive options for retirement and end-of-life care. A few age cohorts, such as college-age adults between 20 and 24 years old, exhibited a small rate of net out-migration.

Figure 11. Washington County and Oregon—Age-Specific Migration Rates (2000-2010)

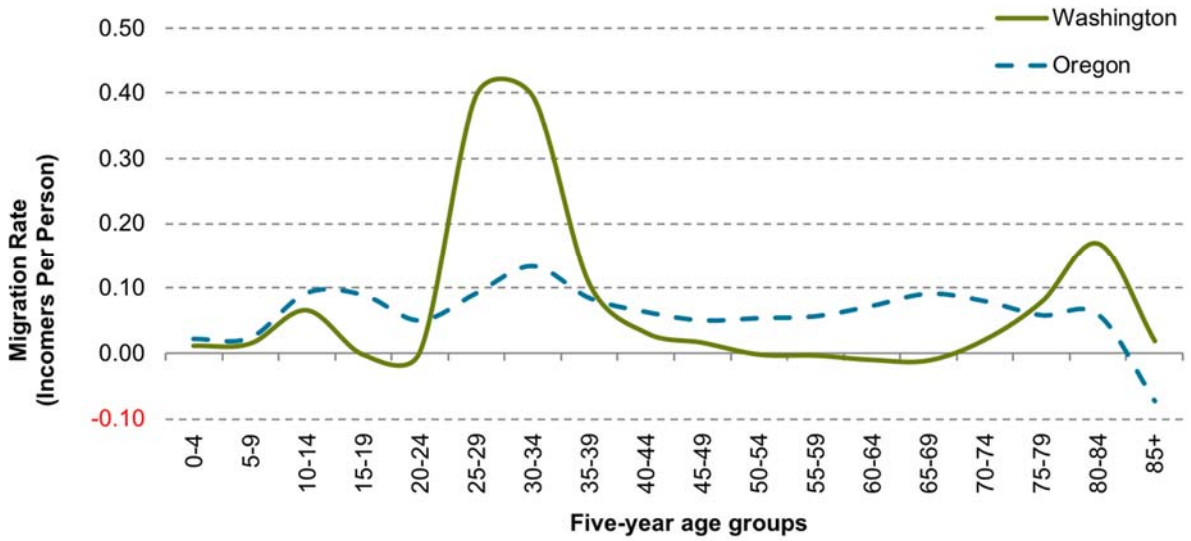


Figure 11 Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

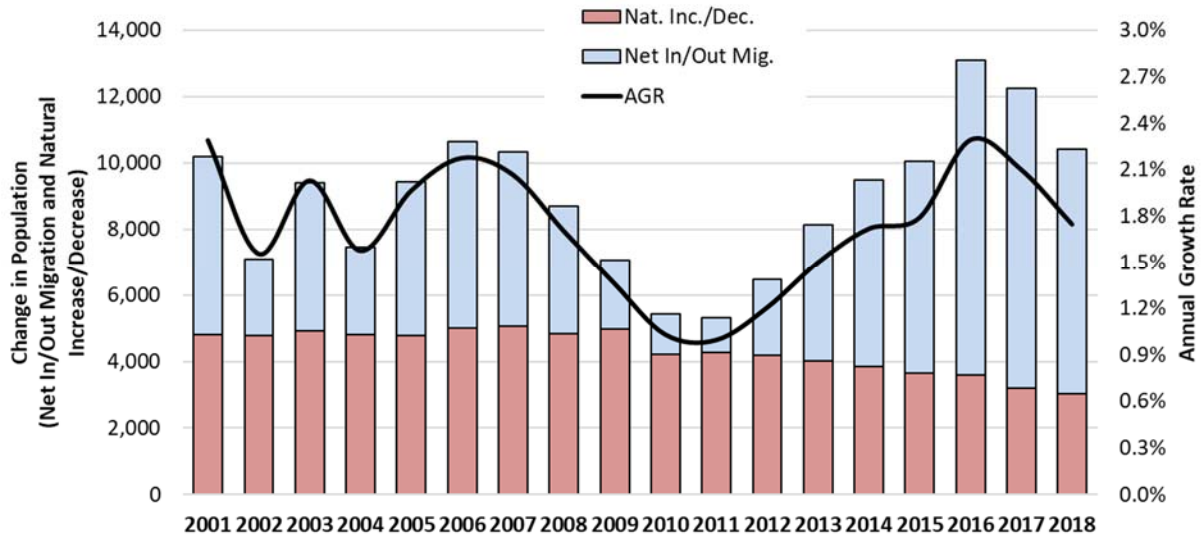
Historical Trends in Components of Population Change

In this subsection, we summarize many of the demographic trends described above. First, we integrate birth and death trends by calculating natural increase (births minus deaths). Second, we translate migration rates from **Figure 11** into absolute net in- or out-migration. Finally, we graph annual net migration, natural increase, and the resulting population growth rate for each year from 2001 to 2018 in **Figure 12**. The figure reveals that Washington County experienced strong, consistent natural increase—more births than deaths—in every year between 2001 and 2018. However, natural increase peaked in 2006 at 5,600 more births than deaths, then declined to roughly 3,000 in 2018. This shift resulted from a combination of factors, especially the county's relatively strong but declining total fertility rate and the fact that, over two decades, the large Baby Boomer cohort steadily aged toward life stages with significant declines in survival (see **Figure 5**).

Net in-migration added to consistently strong population growth in Washington County since 2000. However, in-migration was much more variable over the last two decades than natural increase. Net in-migration declined noticeably during periods of economic contraction, such as the early 2000s recession and the Great Recession between 2007 and 2013. Still, it never fell below 1,000 more arrivals than departures, signaling the county's enduring attractiveness to in-migrants, especially working-age adults.

With strong natural increase and variable but positive net in-migration, population growth rates in Washington County have remained consistently positive since 2000, ranging from roughly 1 to 2.5 percent.

Figure 12. Washington County—Components of Population Change (2001-2018)



Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Net Mig.	5,396	2,308	4,478	2,631	4,660	5,630	5,283	3,876	2,095
Nat. Inc./Dec.	4,806	4,787	4,917	4,814	4,770	5,015	5,052	4,819	4,965
AGR	2.3%	1.6%	2.0%	1.6%	2.0%	2.2%	2.1%	1.7%	1.4%

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Mig.	1,213	1,044	2,286	4,142	5,617	6,410	9,495	9,062	7,392
Nat. Inc./Dec.	4,216	4,256	4,189	4,003	3,858	3,635	3,590	3,203	3,028
AGR	1.0%	1.0%	1.2%	1.5%	1.7%	1.8%	2.3%	2.1%	1.7%

Figure 12 Sources: Population Research Center, July 1st Annual Estimates 2001-2018 Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

Note: Annual net in/out-migration estimates are based on population estimates from the Oregon Population Estimates Program. As such, migration assumptions for the 2019 population forecast may not be consistent with assumptions from OPEP.

Housing and Households

The total number of housing units in Washington County increased from 179,000 in 2000 to 212,000 in 2010, a 19 percent increase (see **Figure 13**). Only 3 percent of new housing units built during this time period were built outside of Metro's jurisdiction. All non-Metro UGB areas added housing at roughly the same rate, just over 1.5 percent annually. Areas outside of UGBs added housing more slowly, averaging a 0.6 percent annual increase over the decade. Housing unit counts from the ongoing 2020 Census will clarify whether these trends have continued since 2010.

Housing growth rates may differ from population growth rates because (1) the numbers of total housing units are fewer than the numbers of people; (2) the UGB has experienced changes in the average number of persons per household; or (3) occupancy rates have changed.

Figure 13. Washington County and Sub-Areas—Total Housing Units (2000 and 2010)

Area	Housing Units (2000)	Housing Units (2010)	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
Washington County	*178,913*	*212,450*	*1.7%*	*100.0%*	*100.0%*	*0.0%*
Banks	527	622	1.7%	0.3%	0.3%	0.0%
Gaston (Washington County)	211	253	1.8%	0.1%	0.1%	0.0%
North Plains	634	753	1.7%	0.4%	0.4%	0.0%
Outside UGBs	9,419	10,005	0.6%	5.3%	4.7%	-0.6%

Figure 13 Source: U.S. Census Bureau, 2000 and 2010 Censuses. Note: For simplicity each UGB is referred to by its primary city's name.

Average household size—or persons per household (PPH)—in Washington County held steady at 2.6 during the 2000s (see **Figure 14**). Outside of Metro's jurisdiction, Banks and North Plains both experienced modest increases in PPH. This ran counter to the statewide trend of decreasing PPH.

Occupancy rates tend to fluctuate more than PPH. This is particularly true in smaller UGBs where fewer housing units allow for larger relative changes in occupancy rates. During the 2000s, the occupancy rate in Washington County held steady around 94.5 percent (see **Figure 14**). Among non-Metro UGBs, Banks and North Plains experienced increases in occupancy. The portion of Gaston in Washington County and areas outside of UGBs experienced slight declines. However, the portion of Gaston in Yamhill County experienced a sharp increase in occupancy, up from 85 percent in 2000 to 98 percent in 2010.

Figure 14. Washington County and Sub-Areas—Persons per Household (PPH) and Occupancy Rate (2000 and 2010)

Area	Persons per Household (2000)	Persons per Household (2010)	Change 2000-2010	Occupancy Rate (2000)	Occupancy Rate (2010)	Change 2000-2010
Washington County	*2.6*	*2.6*	*-0.2%*	*94.5%*	*94.6%*	*0.0%*
Banks	*2.9*	*3.2*	*7.5%*	*89.9%*	*95.3%*	*5.4%*
Gaston (Washington)	*3.1*	*2.7*	*-13.5%*	*96.2%*	*96.0%*	*-0.2%*
North Plains	*2.7*	*2.8*	*2.0%*	*93.7%*	*94.3%*	*0.6%*
Outside UGBs	*2.8*	*2.7*	*-4.8%*	*94.3%*	*93.4%*	*-0.9%*

Figure 14 Source: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC). Note: For simplicity each UGB is referred to by its primary city's name.

Assumptions for Future Population Change

Evaluating past demographic trends provides clues about what the future will look like. This helps us establish reasonable assumptions for likely scenarios of population change.

In order to make population forecasts, we rely on two methods and two corresponding sets of assumptions. Please see the Glossary of Key Terms at the end of this report for a brief description of these methods or refer to the *Methods* document for a more detailed description of these forecasting techniques.

- We forecast county sub-areas with populations greater than 8,000 in the forecast launch year using the cohort-component method. This method requires assumptions about fertility, mortality, and migration.
- We forecast county sub-areas with populations less than 8,000 in the forecast launch year using the housing-unit method. This method requires assumptions about changes in the number of total housing units, PPH, occupancy rates, and group quarters population.

We used the cohort-component method to generate Washington County's forecast as well as the forecast for the area outside of its UGBs. We used the housing-unit method to generate forecasts for all other sub-areas.

The assumptions involved in those forecasts are described below. Unfortunately, we cannot accurately predict the timing and course of some key phenomena that will influence demographic change in Oregon, such as economic recessions, climate change, or a major earthquake. We update our forecasts according to our scheduled multi-year cycle in order to enable us to correct our course as information about those and other unpredictable factors becomes available. The global outbreak of COVID-19 is an example of an unpredictable, yet important event that will influence demographic patterns around the world. It offers a fresh reminder of several key forecasting dynamics that we must consider alongside the assumptions and forecast numbers below. First, we cannot predict the timing of exogenous events such as pandemics or recessions. Second, future developments ranging from national immigration policies to state and local economic, housing, and land use strategies may alter the trajectory of population change.

Assumptions for the County

The cohort-component model used for counties and large sub-areas requires assumptions about fertility, mortality, and migration.

1. We expect Washington County to continue the steady growth patterns exhibited since 2000.
2. Net in-migration will increase throughout the forecast period (2020-45).
3. We incorporate state and local trends into our assumptions for fertility and mortality.
    a. Deaths will increase throughout the forecast period due to aging Baby Boomers.
    b. Total fertility rates will decline, but births will hold steady throughout the forecast period due to strong in-migration of residents in their 20s and 30s.
    c. Growth due to natural increase (births minus deaths) will decline, but remain positive throughout the forecast period.
4. Total population is expected to increase due to both in-migration and natural increase.

Assumptions for Smaller Sub-Areas

Rates of population growth for the smaller UGBs are determined by corresponding growth in the number of housing units as well as changes in housing occupancy rates and PPH. The change in housing unit growth is much more variable than change in housing occupancy rates or PPH.

1. If planned housing units were reported in the surveys, we expect that they will be built within roughly 5 years, followed by a return to long range historic patterns. This assumption applies, in particular, to North Plains, which reported hundreds of new units under construction.
2. If no planned housing units were reported, we assume future housing construction will follow historic patterns.
3. We expect persons per household (PPH) to continue to slightly decline, resulting from observed declines in fertility rates and an aging population.

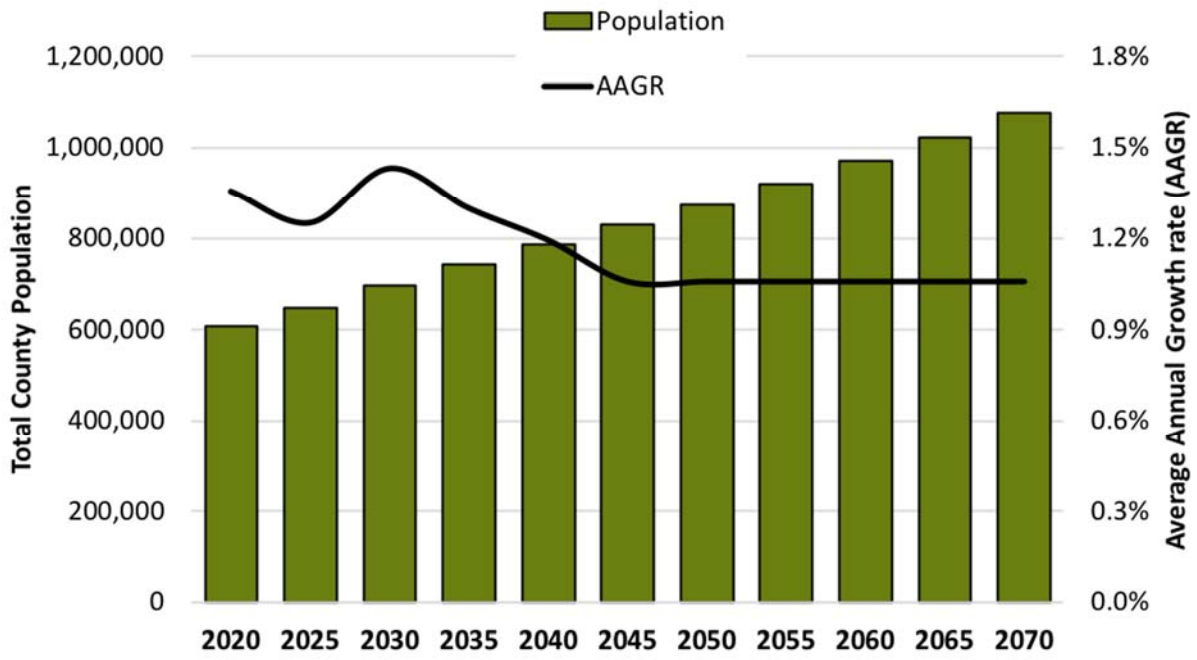
Forecast Trends

Forecast Trends in the County

We expect steady growth in Washington County throughout the forecast period.

Figure 15 plots forecasted population and the average annual growth rate in five-year intervals, starting in 2020 and ending in 2070. The countywide average annual population growth rate is forecast to hold steady between 1 and 1.5 percent over the period, slightly slower but still in line with growth rates exhibited since 2000. Given this steady growth rate, Washington County's total population is forecast to increase by roughly 450,000 people (77 percent) between 2020 and 2070. This will translate into a total countywide population of 1,078,508 in 2070.

Figure 15. Washington County—Total Forecast Population by Five-year Intervals (2020-2070)



Year	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
Pop.	608,124	647,148	694,830	741,170	786,487	828,985	873,780	920,995	970,762	1,023,218	1,078,508
AAGR	1.4%	1.3%	1.4%	1.3%	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%

Figure 15 Source: Forecast by Population Research Center (PRC).

Forecast Trends in Sub-Areas

We forecast that Washington County's non-Metro UGBs will also grow between 2020 and 2070 (see **Figure 16**). We forecast that North Plains and Banks will grow fastest, given their proximity to job centers in the western Portland Metro area, averaging annual growth rates between 1.5 and 3.5 percent during the forecast period. We expect slower growth in Gaston, below 1 percent annually, and gradual population decline in areas outside of UGBs.

Over time, sub-areas with average growth rates or below the level experienced countywide will represent smaller and smaller shares of the county's total population. As a result, Washington County will experience a spatial redistribution of its population as certain places grow faster than others. Specifically, we expect the area outside of Washington County's UGBs to have a decreasing share of the county's total population over the forecast period, while North Plains expands its share of the total population.

Figure 16. Washington County and Sub-Areas—Forecast Population and AAGR

Area	Population (2020)	Population (2045)	Population (2070)	AAGR (2020-2045)	AAGR (2045-2070)	Share of County 2020	Share of County 2045	Share of County 2070
Washington County	**608,124**	**828,985**	**1,078,508**	***1.2%***	***1.1%***	--	--	--
Banks	1,855	2,797	3,957	*1.7%*	*1.4%*	*0.3%*	*0.3%*	*0.4%*
Gaston (Washington County)	628	772	900	*0.8%*	*0.6%*	*0.1%*	*0.1%*	*0.1%*
North Plains	3,410	7,573	13,708	*3.2%*	*2.4%*	*0.6%*	*0.9%*	*1.3%*
Outside UGBs	25,175	24,564	19,822	*-0.1%*	*-0.9%*	*4.1%*	*3.0%*	*1.8%*

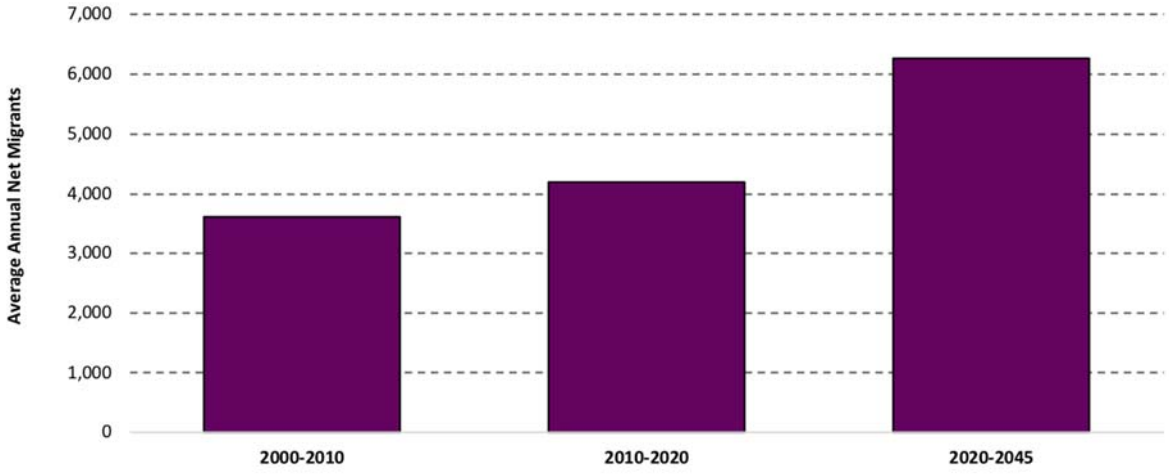
Figure 16 Source: Forecast by Population Research Center (PRC). Note: For simplicity each UGB is referred to by its primary city's name.

Forecast Trends in Components of Population Change

As previously discussed, we forecast that in-migrants will outnumber out-migrants in Washington County, creating positive net in-migration of new residents throughout the forecast period. Important drivers of this dynamic are the forecasted aging of the population and increase in the county's number of deaths. As aging occurs and the large existing cohort of older residents pass away or retire, we assume that housing and jobs will become available, attracting new residents who migrate to the county to fill essential roles in the community.

Figure 17 shows that Washington County's annual net in-migration averaged over 3,600 people between 2000 and 2010. During the following decade—concurrent with the recovery from the Great Recession and continued expansion of Washington County's large technology and advanced manufacturing sectors—net in-migration increased to roughly 4,200 people annually. Due to the factors listed in the paragraph above, between 2020 and 2045, we forecast that net in-migration will continue to rise above levels observed in the 2000s and 2010s to roughly 6,250 people annually.

Figure 17. Washington County—Average Annual Net In/Out-Migration (2000-2010, 2010-2020, and 2020-2045)



Year	2000-10	2010-20	2020-45
Washington County	3,621	4,198	6,266

Figure 17 Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculations and Forecast by Population Research Center (PRC). Note: The average annual numbers were calculated for the 10-year periods (2000-2010 and 2010-2020) and the 25-year period (2020-2045).

As mentioned above, a key factor shaping Washington County's forecasted population is population aging. **Figure 18** plots Washington County's population pyramids for three years: 2020, 2030, and 2045. Each pyramid graphs the percentage of the total population that falls within each five-year age and gender cohort (e.g. female 35-39-year-olds). The oldest age cohort shown is 85 years and older. **Figure 18** shows that between 2020 and 2045 the proportion of the county's population 65 years of age or older is forecast to grow from 14 to 19 percent. These changes represent the large Baby Boomer generation continuing to age through the population pyramid. Also depicted in **Figure 18** is that between 2020 and 2045 we forecast that children and young adults under the age of 20 will shrink as a percentage of the total population, from 24.5 to 22 percent. This represents a continuation in the decline in children's representation within Washington County's age distribution, down from 29 percent in 2000. For a more detailed look at the age structure of Washington County's population, see the final forecast table published on the forecast program website: https://www.pdx.edu/prc/current-documents-and-presentations.

Figure 18. Washington County—Age Structure of the Population (2020, 2030, and 2045)

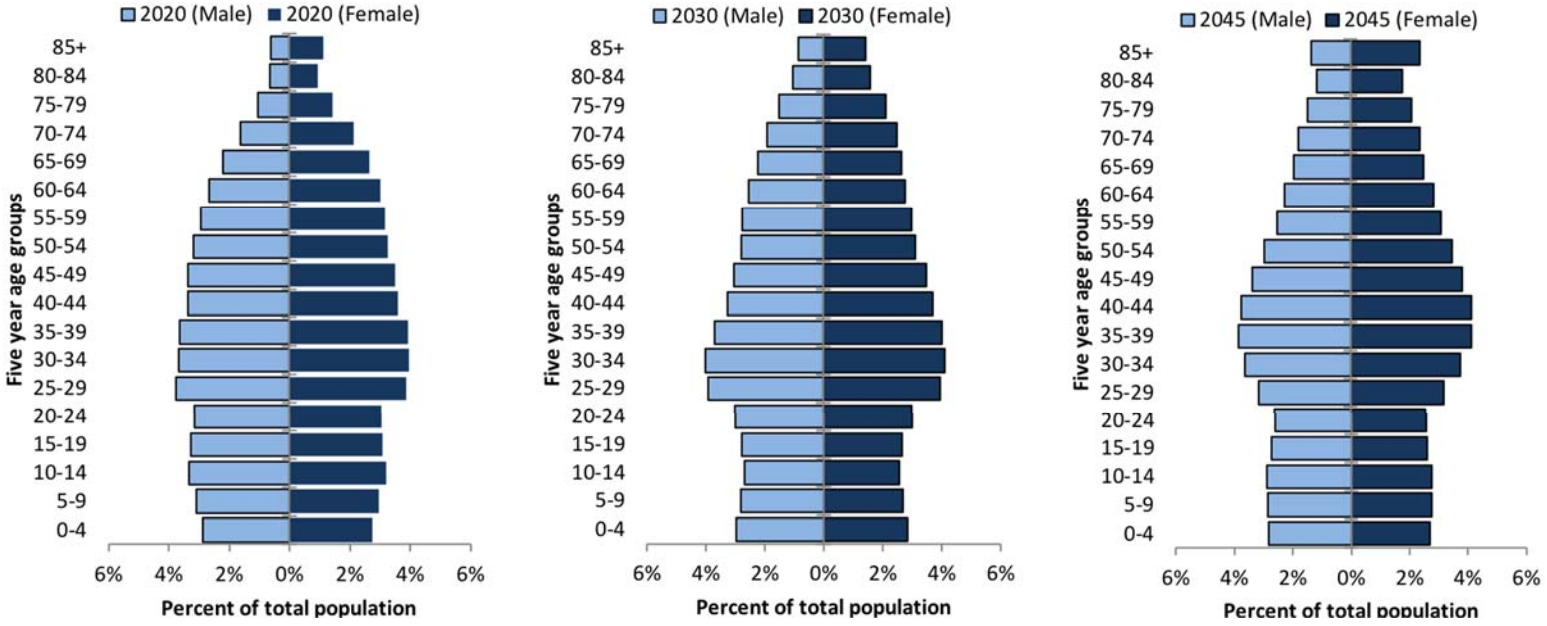
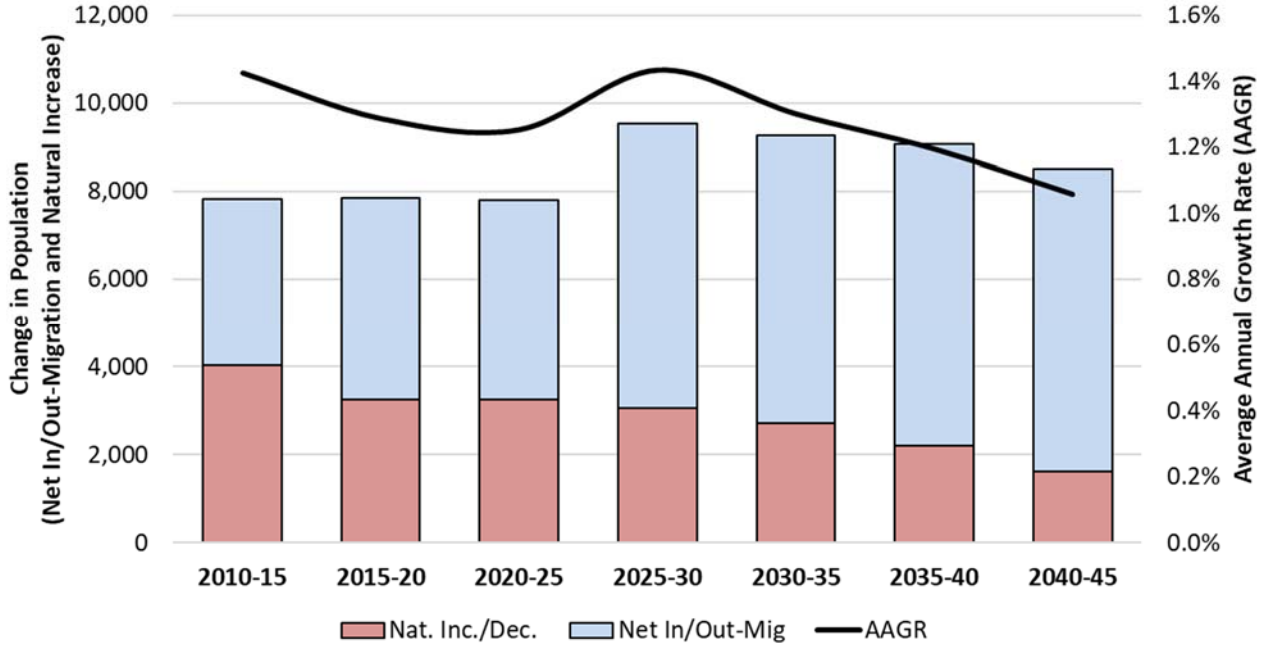


Figure 18 Source: Forecast by Population Research Center (PRC)

Figure 19 summarizes the forecasts described above by graphing the key components of population change: annual net migration, natural increase (births minus deaths), and the resulting population growth rate. The figure plots those components in five-year intervals, starting in the 2010-15 period and ending in the 2040-45 period. **Figure 19** reiterates that we forecast population growth between 1 and 1.5 percent annually in Washington County, with growth due to annual net in-migration accounting for most growth while natural population increase wanes but remains positive through 2045.

Figure 19. Washington County—Components of Population Change (2010-2045)



Year	2010-15	2015-20	2020-25	2025-30	2030-35	2035-40	2040-45
Net Mig.	3,791	4,606	4,547	6,478	6,563	6,861	6,879
Nat. Inc./Dec.	4,034	3,252	3,258	3,059	2,705	2,202	1,621
AAGR	1.4%	1.3%	1.3%	1.4%	1.3%	1.2%	1.1%

Figure 19 Source: Forecast by Population Research Center (PRC)

Note: 2010-15 components are based on population estimates from the Oregon Population Estimates Program. As such, natural increase and net in-migration for the period may not align with the 2020 forecast assumptions.

Glossary of Key Terms

Cohort-Component Method: A method used to forecast future populations based on changes in births, deaths, and migration over time.

Coordinated population forecast: A population forecast prepared for the County along with population forecasts for its urban growth boundary (UGB) areas and non-UGB area.

Housing unit: A house, apartment, mobile home or trailer, group of rooms, or single room that is occupied or is intended for occupancy.

Housing-Unit Method: A method used to forecast future populations based on changes in housing unit counts, vacancy rates, the average numbers of persons per household (PPH), and group quarter population counts.

Occupancy rate: The proportion of total housing units that are occupied by an individual or group of persons.

Persons per household (PPH): The average household size (i.e. the average number of persons per occupied housing unit).

Replacement Level Fertility: The average number of children each woman needs to bear in order to replace the population (to replace each male and female) under current mortality conditions in the U.S. This is commonly estimated to be 2.1 children per woman.

Appendix A: Surveys and Supporting Information

Supporting information pertains to characteristics of each city area, and to changes expected to occur in the future. The PRC gathers supporting information by soliciting responses to the OPFP General Survey in the fall prior to the forecast. Representatives from Cornelius, Durham, North Plains, and Tigard completed the OPFP General Survey. Their responses are included below.

General Survey for the Oregon Population Forecast Program – Cornelius

Questions	Answers
Timestamp	10/23/2019
Jurisdiction	City of Cornelius
Name and Title	Ryan Wells, Community Development Director
Observations about population composition (e.g. children, the elderly, racial and ethnic groups)	Larger families, many young children, Latino majority and growing
Observations about housing	High growth in single-family housing in community. Over 1,200 housing units approved and in various stages of construction. 72% homeowner occupied. Limited infill potential and activity - most growth is in newly annexed areas.
Planned housing development and estimate of project(s) completion date	Over 1,200 new housing units approved - various stages of construction. Ten separate housing project, including multifamily and single-family. Strong mix of detached, duplexes and townhouses among the projects. Full build-out of all projects within five years.
Future Group Quarters facilities	Potential development of one senior assisted living facility (5 residents) in converted home within next year.
Future employers	Food production facility - 60 employees (open Jan 2020); Manufacturing facility - 45 employees (open summer/fall 2020)
Infrastructure	New sanitary sewer pump station serving 905-unit subdivision (completed 2019). Additional street construction around periphery of city.
Promotions and hindrances to population growth	Promos: copious new residential development, lower cost of living compared to metro core, growing employment base Hinders: still limited employment opportunities, outskirts of metro region
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth.	TSP adopted 2018 shows 47% population increase , 155% increase in retail employees, 194% increase in service employees, and 395% increase in other employees by 2040. Town Center Plan adopted summer 2019 incorporates higher residential densities and mixed use development. Urban Renewal Plan adopted summer 2019 ($25.6 million in total TIF

	financing) may spur additional commercial and employment growth.
Comments?	

General Survey for the Oregon Population Forecast Program – Durham

Questions	Answers
Timestamp	10/23/2019 11:03:26
Jurisdiction	City of Durham
Name and Title	Emily Baker, Administrative Assistant
Observations about population composition (e.g. children, the elderly, racial and ethnic groups)	
Observations about housing	
Planned housing development and estimate of project(s) completion date	Possible residential development of 30 houses in the next 2 years
Future Group Quarters facilities	n/a
Future employers	n/a
Infrastructure	Single ODOT road, appearing to be at capacity
Promotions and hindrances to population growth	n/a
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth.	n/a
Comments?	

General Survey for the Oregon Population Forecast Program – North Plains

Questions	Answers
Timestamp	12/4/2019
Jurisdiction	City of North Plains
Name and Title	Andy Varner, City Manager
Observations about population composition (e.g. children, the elderly, racial and ethnic groups)	Fastest growing city in Washington County. Bedroom community aspects, many 'new' residents affiliated with high-wage employers. That MHI data has elevated City out of CDBG eligibility. Not in METRO area.
Observations about housing	Mostly SFR, all residential housing opportunities about to be exploited within current UGB unless City takes new zone change approaches allowing mixed use, upzoning, etc.
Planned housing development and estimate of project(s) completion date	See survey for details. Sunset Ridge II; Brynhill; Holmstead; Kemmer Meadows II; Sunset Terrace II
Future Group Quarters facilities	N/A
Future employers	Far West Recycling; JT Fowler; Taco Bell
Infrastructure	Water in good shape with newly adopted master plan; City breaking ground on 2MG water reservoir in 2020. New elementary school opening in 2021. City needs additional access ramp to Hwy 26 with growth, in addition to sidewalks and another east-west collector through town. Also need a larger 10+ acre park.
Promotions and hindrances to population growth	Promos: great highway access to large regional employers and Portland, rural/small town feel, low property taxes. Hinder: Not a lot of economic development and commercial development, ie local jobs.

Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth.	City has updated about every functional document since early 2018: HNA, EOA, TSP, Water, and Parks Master Plans, in addition to Comp Plan. Undergoing UGB Expansion process in 2020.
Comments?	

General Survey for the Oregon Population Forecast Program – Tigard

Questions	Answers
Timestamp	
Jurisdiction	City of Tigard
Name and Title	Anonymous
Observations about population composition (e.g. children, the elderly, racial and ethnic groups)	We do not have data about demographics that would be statistically valid other than what is available in the ACS.
Observations about housing	Housing starts have slowed slightly in the past two years. The city has seen an uptick in ADU applications and applications for new missing middle housing types, however these represent less than 75 units of housing total in 2019.
Planned housing development and estimate of project(s) completion date	See housing development survey
Future Group Quarters facilities	Two assisted living facilities. One has been submitted to the City and the other has only had a pre-application conference.
Future employers	We do not have data on future employers looking to locate to the area.
Infrastructure	This question is difficult to answer in a short answer. Like most jurisdictions, Tigard faces challenges in providing infrastructure for growth in a constrained fiscal environment.
Promotions and hindrances to population growth	The city has been awarded a 2040 Planning and Development grant to conduct conceptual planning work on a potential annexation of lands into the UGB. The city has a constrained supply of employment lands.
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth.	An Affordable Housing Plan was adopted in 2019 that has provided a policy roadmap to encourage development and preservation of more affordable housing options.

	As mentioned above, two potential urban expansion areas are being considered – River Terrace West and South.
Comments?	

Appendix B: Specific Assumptions

Banks

We assume housing unit growth will decline from roughly 2 percent annually to 1 percent by the end of the forecast period. This roughly matches average historical growth, though that masks a significant boom in housing production between 1995 and 2000. We assume the occupancy rate and persons per household (PPH) will hold steady at 95.3 percent and 3.06, respectively, over the 25-year forecast period. We assume group quarters population will remain constant.

Gaston (Washington County)

We assume housing unit growth will hover around 1 percent annually, roughly the historical average since 2000. We assume the occupancy rate will hold steady at 96.0 percent, but that PPH will decline from 2.46 to 2.30 over the 25-year forecast period. We assume group quarters population will remain constant.

North Plains

We assume housing unit growth will start above 5 percent annually due to housing units already in the development pipeline. Over the 25-year forecast period, we assume the growth rate will return to the historical average between 1 and 2 percent. We assume the occupancy rate and PPH will hold steady at 94.3 percent and 2.70, respectively. We assume group quarters population will remain unchanged.

Outside UGB Areas

Like the county overall, fertility rates for women under 30 have been falling. However, the declines have not been as steep in these areas, and unlike the county, fertility rates for women age 30 to 34 have increased. Therefore, the TFR declines very little in the forecast, from 1.82 in 2010 to 1.79 in 2030 and beyond. Survival rates are similar to county rates and change very little throughout the forecast period. Age-specific net migration rates differ from county patterns; the county sees a net gain of residents in their 20s due to migration, while the area outside of UGBs, mostly rural in character, sees a net loss. Conversely, the area outside of UGBs has higher rates of net in-migration among adults age 35-64 and among children under 15 when compared to the county overall.

Appendix C: Detailed Population Forecast Results

Figure 20. Washington County—Forecasted Population by Five-Year Age Group

Population Forecasts by Age Group	Population (2020)	Population (2025)	Population (2030)	Population (2035)	Population (2040)	Population (2045)
0-4	34,235	37,140	40,406	43,090	44,966	45,693
5-9	36,603	34,758	38,344	41,708	44,582	46,523
10-14	39,712	37,725	36,421	40,171	43,795	46,813
15-19	38,699	39,217	37,903	36,586	40,449	44,098
20-24	37,771	40,396	41,612	40,209	38,899	43,007
25-29	46,416	50,399	54,598	56,237	54,436	52,662
30-34	46,426	51,327	56,587	61,295	63,273	61,247
35-39	45,910	47,711	53,620	59,094	64,162	66,237
40-44	42,271	45,781	48,404	54,380	60,059	65,217
45-49	41,645	41,706	45,514	48,024	53,967	59,593
50-54	39,270	40,818	41,187	44,858	47,357	53,212
55-59	37,113	38,181	39,983	40,270	43,891	46,343
60-64	34,524	35,635	36,918	38,591	38,902	42,420
65-69	29,405	32,348	33,701	34,863	36,480	36,808
70-74	22,905	27,497	30,481	31,766	32,860	34,413
75-79	14,949	21,108	25,100	27,546	28,716	29,693
80-84	9,614	12,918	18,206	21,191	23,273	24,260
85+	10,657	12,482	15,845	21,293	26,419	30,748
Total	**608,124**	**647,148**	**694,830**	**741,170**	**786,487**	**828,985**

Figure 21. Washington County's Sub-Areas—Forecasted Total Population

Area	Pop. (2020)	Pop. (2025)	Pop. (2030)	Pop. (2035)	Pop. (2040)	Pop. (2045)	Pop. (2050)	Pop. (2055)	Pop. (2060)	Pop. (2065)	Pop. (2070)
Washington County	**608,124**	**647,148**	**694,830**	**741,170**	**786,487**	**828,985**	**873,780**	**920,995**	**970,762**	**1,023,218**	**1,078,508**
Banks	1,855	2,043	2,232	2,420	2,608	2,797	3,009	3,253	3,486	3,718	3,957
Gaston (Washington)	628	645	675	708	741	772	793	809	835	865	900
North Plains	3,410	4,497	5,936	6,580	7,076	7,573	8,725	10,183	11,419	12,575	13,708
Outside UGB Area	25,175	25,184	25,102	24,973	24,783	24,564	23,553	21,720	20,738	20,161	19,822