

Portland State University

**PDXScholar**

---

Oregon Population Forecast Program

Population Research Center

---

6-30-2019

# Coordinated Population Forecast for Gilliam County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2019-2069

Portland State University. Population Research Center

Nicholas Chun

*Portland State University*

Kevin Rancik

*Portland State University*

Rhey Haggerty

*Portland State University*

Jason R. Jurjevich

*Portland State University, jjason@email.arizona.edu*

Follow this and additional works at: <https://pdxscholar.library.pdx.edu/opfp>



Part of the Urban Studies and Planning Commons

**Let us know how access to this document benefits you.**

---

## Recommended Citation

Portland State University. Population Research Center; Chun, Nicholas; Rancik, Kevin; Haggerty, Rhey; Jurjevich, Jason R.; and Rynerson, Charles, "Coordinated Population Forecast for Gilliam County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2019-2069" (2019). *Oregon Population Forecast Program*. 50.

<https://pdxscholar.library.pdx.edu/opfp/50>

This Report is brought to you for free and open access. It has been accepted for inclusion in Oregon Population Forecast Program by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

---

**Authors**

Portland State University. Population Research Center, Nicholas Chun, Kevin Rancik, Rhey Haggerty, Jason R. Jurjevich, and Charles Rynerson

# Coordinated Population Forecast



**2019**

Through

**2069**

## Gilliam County

Urban Growth  
Boundaries (UGB)  
& Area Outside UGBs

Cover Photo: Wind turbines in the evening west of Condon, Gilliam County. Gary Halvorson, Oregon State Archives.

**Coordinated Population Forecast for Gilliam County, its Urban  
Growth Boundaries (UGB), and  
Area Outside UGBs  
2019-2069**

**Prepared by  
Population Research Center  
College of Urban and Public Affairs  
Portland State University**

**June 30, 2019**

This project is funded by the State of Oregon through the Department of Land Conservation and Development (DLCD). The contents of this document do not necessarily reflect the views or policies of the State of Oregon.

**Project Staff:**

*Nicholas Chun, Population Forecast Program Manager*

*Kevin Rancik, GIS & Research Analyst*

*Rhey Haggerty, Graduate Research Assistant*

*Jason Jurjevich, Associate Director of Population Research Center*

*Charles Rynerson, Research Consultant*

*The Population Research Center and project staff wish to acknowledge and express gratitude for support from the Forecast Advisory Committee (DLCD), the hard work of our staff Deborah Loftus, data reviewers, and many people who contributed to the development of these forecasts by answering questions, lending insight, providing data, or giving feedback.*

## How to Read this Report

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

Specifically, the reader should refer to the following documents:

- *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 (2019-2069).

# Table of Contents

Modified Methodology .....	6
Comparison to Cycle 1 (2015-17).....	6
Executive Summary.....	7
14-Year Population Forecast.....	9
Historical Trends .....	10
Population.....	10
Age Structure of the Population .....	11
Race and Ethnicity.....	12
Births .....	13
Deaths .....	15
Migration .....	16
Historical Trends in Components of Population Change .....	17
Housing and Households .....	18
Assumptions for Future Population Change .....	20
Assumptions for the County and Sub-Areas.....	20
Forecast Trends.....	21
Forecast Trends in Components of Population Change .....	23
Glossary of Key Terms.....	25
Appendix A: Surveys and Supporting Information .....	26
Appendix B: Specific Assumptions .....	30
Appendix C: Detailed Population Forecast Results.....	31



## Table of Figures

Figure 1. Gilliam County and Sub-Areas—Historical and Forecast Populations, and Average Annual Growth Rates (AAGR).....	8
Figure 2. Gilliam County and Sub-Areas—14-Year Population Forecast .....	9
Figure 3. Gilliam County—Total Population by Five-year Intervals (1975-2018) .....	10
Figure 4. Gilliam County and Sub-areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010) .....	11
Figure 5. Gilliam County—Age Structure of the Population (2000 and 2010) .....	12
Figure 6. Gilliam County—Hispanic or Latino and Race (2000 and 2010) .....	13
Figure 7. Gilliam County and Region 2—Total Fertility Rates (2000 and 2010) .....	13
Figure 8. Gilliam County and Region 2—Age Specific Fertility Rate (2000 and 2010).....	14
Figure 9. Gilliam County—Average Annual Births (2010-2045).....	14
Figure 10. Gilliam County—Average Annual Deaths (2010-2045).....	15
Figure 11. Gilliam County, Region 2, and Oregon—Age Specific Migration Rates (2000-2010) .....	16
Figure 12. Gilliam County—Components of Population Change (2001-2017) .....	17
Figure 13. Gilliam County and Sub-Areas—Total Housing Units (2000 and 2010).....	18
Figure 14. Gilliam County and Sub-Areas—Persons per Household (PPH) and Occupancy Rate.....	19
Figure 15. Gilliam County—Total Forecast Population by Five-year Intervals (2019-2069).....	21
Figure 16. Gilliam County and Sub-Areas—Forecast Population and AAGR .....	22
Figure 17. Gilliam County—Average Annual Net In/Out-Migration (2000-2010, 2010-2020, and 2020-2044) .....	23
Figure 18. Gilliam County—Age Structure of the Population (2019, 2030, and 2044).....	24
Figure 19. Gilliam County—Components of Population Change (2015-2045) .....	24
Figure 20. Gilliam County—Population by Five-Year Age Group.....	31
Figure 21. Gilliam County’s Sub-Areas—Total Population.....	31

## **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). Based on feedback we have received, a 25-year forecast fulfills most requirements for local planning purposes and, in an effort to improve the cost effectiveness of the program; we will place more focus on years 1 through 25. Additionally, the cost savings from this move will allow DLCD to utilize additional resources for local government grants. To clarify, we use forecast methods to produce sub-area and county populations for the first 25 years and a modified projection method for the remaining 25 years. The description of our forecast methodology can be accessed through the forecast program website ([www.pdx.edu/prc/opfp](http://www.pdx.edu/prc/opfp)), while the 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<sup>th</sup>-25<sup>th</sup> year. For example, if we forecast a county to grow 0.4 percent between the 24<sup>th</sup> and 25<sup>th</sup> year of the forecast, we would project the county population thereafter using a 0.4 percent AAGR. 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 them to the projected county population.

## **Comparison to Cycle 1 (2015-17)**

To keep up to date with local trends and shifting demands, OPFP regularly updates coordinated population forecasts for Oregon's areas. Beyond the modification to our methodology and additional forecast region (from three regions to four), there are differences between the 2019 updated forecast for Gilliam County and the 2016 version. Last round's forecast expected births and overall growth to pick up as the County came out of the recession, but it has been slower than anticipated. Consequently, we expect slower growth in the early period (2018-25) which results in a more conservative forecast overall for the 25 year horizon (2018-2043). Specifically, we expect fewer births and slower net in-migration for Gilliam County. These county-level differences translate to the sub-areas, which are expected to capture a larger share of the County's future population as a whole relative to the 2016 forecast. The full breakdown of differences by county and sub-area is stored here: <https://www.pdx.edu/prc/current-documents-and-presentations>.

# Executive Summary

## Historical

Different parts of the County experience different growth patterns. Local trends within UGBs and the area outside them collectively influence population growth rates for the County as a whole. UGBs in Gilliam County include Arlington, Condon, and Lonerock.

Gilliam County's total population declined slightly in the 2000s (**Figure 1**); however, its largest sub-area, Arlington, experienced population growth during this period.

The population growth that did occur in Gilliam County in the 2000s was largely the result of net in-migration. An aging population not only led to an increase in deaths but also resulted in a smaller proportion of women in their childbearing years. This, along with more women having fewer children and having them at older ages has led to births stagnating in recent years. A larger number of deaths relative to births caused a natural decrease (more deaths than births) in almost every year from 2001 to 2017, resulting in steady population decline.

## Forecast

Total population in Gilliam County as a whole, as well as within its sub-areas, will likely decrease at a quicker pace in the near-term (2019 to 2044) compared to the long-term (**Figure 1**). Population decline is largely driven by natural decrease outpacing net in-migration. Gilliam County's total population is forecast to decline by roughly 48 people over the next 25 years (2019-2044) and by 58 in total over the entire 50-year period (2019-2069).

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

	Historical			Forecast					
	2000	2010	AAGR (2000-2010)	2019	2044	2069	AAGR (2010-2019)	AAGR (2019-2044)	AAGR (2044-2069)
<b>Gilliam County</b>	<b>1,915</b>	<b>1,871</b>	<b>-0.2%</b>	<b>1,808</b>	<b>1,760</b>	<b>1,750</b>	<b>-0.4%</b>	<b>-0.1%</b>	<b>0.0%</b>
Arlington	538	645	1.8%	673	768	874	0.5%	0.5%	0.5%
Condon	759	683	-1.0%	631	603	588	-0.8%	-0.2%	-0.1%
Lonerock	24	21	-1.3%	19	16	13	-0.9%	-0.7%	-0.8%
Outside UGBs	594	522	-1.3%	484	372	275	-0.8%	-1.0%	-1.2%

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

In accordance with House Bill 2254, which streamlined the UGB process based on long-term housing and employment needs, **Figure 2** provides a 14-year population forecast (2019-2033) for the County and its sub-areas. Populations at the 14<sup>th</sup> year of the forecast were interpolated using the average annual growth rate between the 2030-2035 period. The population interpolation template is stored here: <https://www.pdx.edu/prc/current-documents-and-presentations>.

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

	<b>2019</b>	<b>2033</b>	<b>14-Year Change</b>	<b>AAGR (2019-2033)</b>
<b>Gilliam County</b>	<b>1,808</b>	<b>1,763</b>	<b>-45</b>	<b>-0.2%</b>
Arlington	673	724	51	0.5%
Condon	631	615	-16	-0.2%
Lonerock	19	16	-3	-1.2%
Outside UGBs	484	407	-77	-1.2%

*Sources: Forecast by Population Research Center (PRC).*

*Note: For simplicity each UGB is referred to by its primary city's name.*

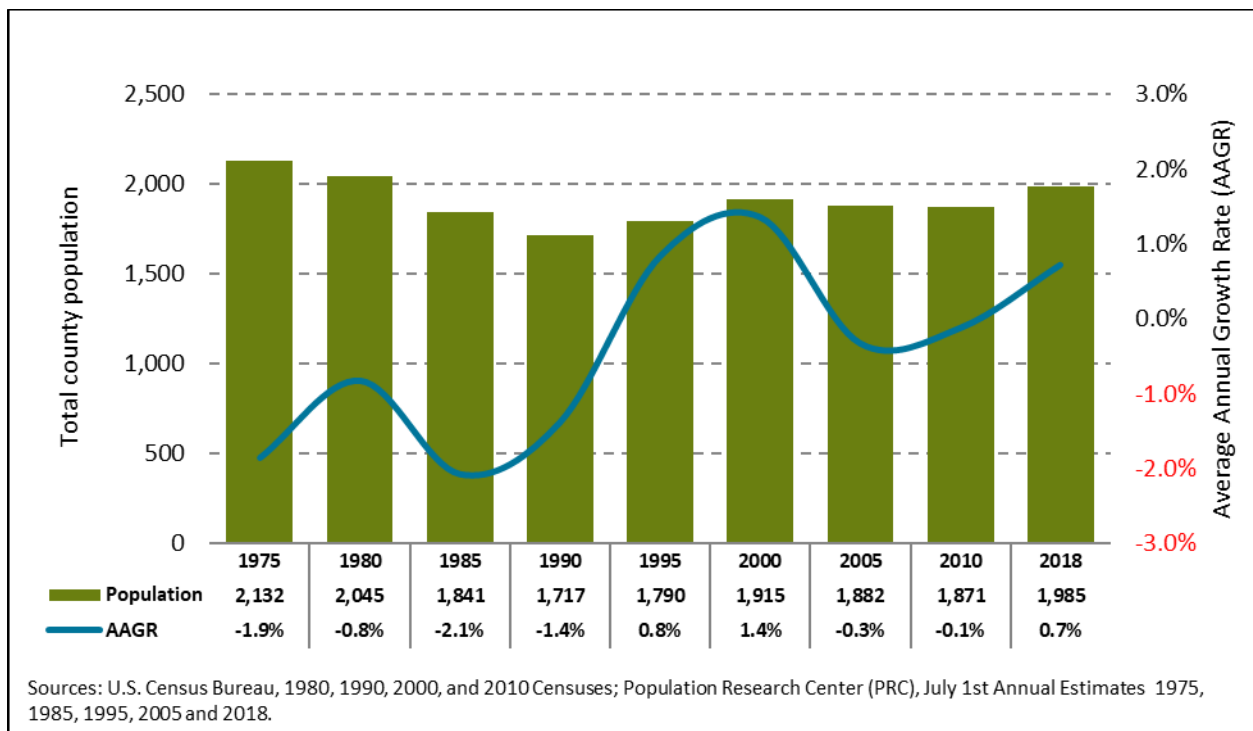
## Historical Trends

Different growth patterns occur in different parts of Gilliam County. Each of Gilliam County’s sub-areas were examined for any significant demographic characteristics or changes in population or housing growth that might influence their individual forecasts. Factors analyzed include age composition of the population, race and ethnicity, births, deaths, migration, the number of housing units, occupancy rate, and persons per household (PPH). It should be noted that population trends of individual sub-areas often differ from those of the County as a whole. However, population growth rates for the County are collectively influenced by local trends within its sub-areas.

### Population

Gilliam County’s total population declined from 2,132 in 1975 to about 1,985<sup>1</sup> in 2018 (Figure 3). During the early 1980s, challenging economic conditions, both nationally and within the County, led to negative population growth rates. Growth rates increased throughout the 1990s, peaking in 2000 at 1.4 percent. Following the turn of the century, Gilliam County has experienced negligible population change.

Figure 3. Gilliam County—Total Population by Five-year Intervals (1975-2018)



<sup>1</sup> 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.

During the 2000s, Gilliam County’s average annual population growth rate stood at -0.2 percent (**Figure 4**). Arlington recorded an average annual growth rate of 1.8 percent, increasing as a share of the County by 6.4 percent. Population in Condon, Lonerock, and the outside UGB area moderately declined.

**Figure 4. Gilliam County and Sub-areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010)<sup>2</sup>**

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
<i>Gilliam County</i>	1,915	1,871	-0.2%	100.0%	100.0%	0.0%
Arlington	538	645	1.8%	28.1%	34.5%	6.4%
Condon	759	683	-1.0%	39.6%	36.5%	-3.1%
Lonerock	24	21	-1.3%	1.3%	1.1%	-0.1%
Outside UGBs	594	522	-1.3%	31.0%	27.9%	-3.1%

*Sources: U.S. Census Bureau, 2000 and 2010 Censuses.*

*Note: For simplicity each UGB is referred to by its primary city's name.*

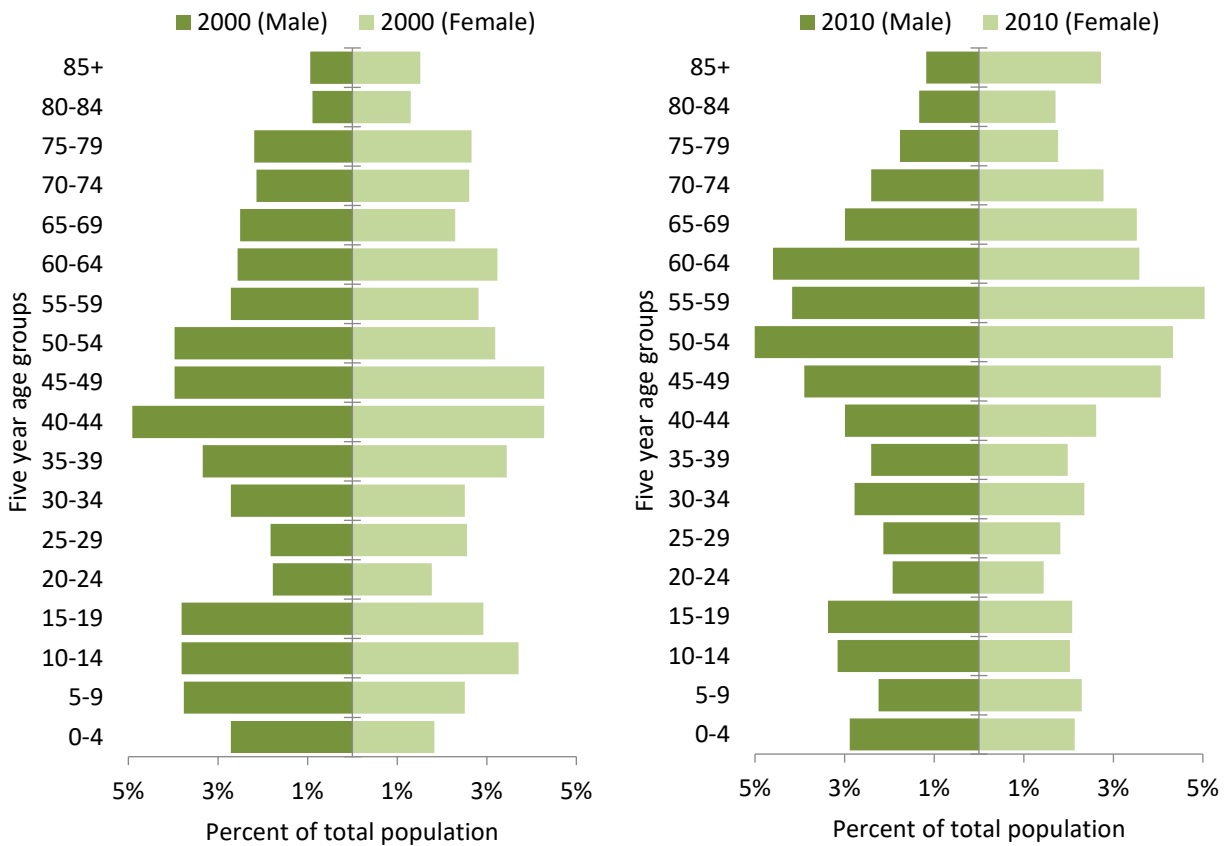
**Age Structure of the Population**

Similar to most areas across Oregon, Gilliam County’s population is aging. An aging population significantly influences the number of deaths but also yields a smaller proportion of women in their childbearing years, which may result in a slowdown or decline in births. The shift in the age structure from 2000 to 2010 illustrates this phenomenon (**Figure 5**). Further underscoring the countywide trend in aging, the median age went from 42.8 in 2000 to 49.7 in 2010<sup>3</sup>.

<sup>2</sup> 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.

<sup>3</sup> Median age is sourced from the U.S. Census Bureau’s 2000 and 2010 Censuses.

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



Sources: U.S. Census Bureau, 2000 and 2010 Censuses

### Race and Ethnicity

While the statewide population is aging, another demographic shift is occurring across Oregon: minority populations are growing as a share of total population. A growing minority population affects both the number of births and average household size. The Hispanic population within Gilliam County increased modestly from 2000 to 2010 (**Figure 6**), while the White; not Hispanic population decreased over the same time period. This increase in the Hispanic population and other minority populations brings with it several implications for future population change. First, both nationally and at the state level, fertility rates among Hispanic and minority women tend to be higher than among White; not Hispanic women. However, it is important to note more recent trends show these rates are quickly decreasing. Second, Hispanic and minority households tend to be larger relative to White; not Hispanic households.



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

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
<i>Total population</i>	1,915	100.0%	1,871	100.0%	-44	-2.3%
Hispanic or Latino	35	1.8%	88	4.7%	53	151.4%
Not Hispanic or Latino	1,880	98.2%	1,783	95.3%	-97	-5.2%
White alone	1,839	96.0%	1,725	92.2%	-114	-6.2%
Black or African American alone	3	0.2%	3	0.2%	0	0.0%
American Indian and Alaska Native alone	16	0.8%	18	1.0%	2	12.5%
Asian alone	3	0.2%	3	0.2%	0	0.0%
Native Hawaiian and Other Pacific Islander alone	0	0.0%	13	0.7%	13	--
Some Other Race alone	1	0.1%	0	0.0%	-1	-100.0%
Two or More Races	18	0.9%	21	1.1%	3	16.7%

Sources: U.S. Census Bureau, 2000 and 2010 Censuses.

### Births

Historic total fertility rates (TFR), or the average number of children that would be born to a woman over her lifetime, have increased substantially in Gilliam County in comparison to eastern Oregon counties as a whole (Region 2) (**Figure 7**). TFR increased greatly in Gilliam County from 2000 to 2010, while Region 2 experienced a slight increase in TFR. At the same time, fertility for women under 30 increased in Gilliam County but remained stable for Region 2 (**Figure 8**). Total fertility in both the County and Region 2 remain above replacement fertility (2.1), indicating that future cohorts of women in their birth-giving years will grow overtime, excluding the influence of net in/out-migration.

**Figure 7. Gilliam County and Region 2—Total Fertility Rates (2000 and 2010)**

	2000	2010
<b>Gilliam County</b>	1.62	3.15
<b>Region 2</b>	2.32	2.37

Sources: U.S. Census Bureau, 2000 and 2010 Censuses.

Oregon Health Authority, Center for Health Statistics.

Calculations by Population Research Center (PRC).

**Figure 8. Gilliam County and Region 2—Age Specific Fertility Rate (2000 and 2010)**

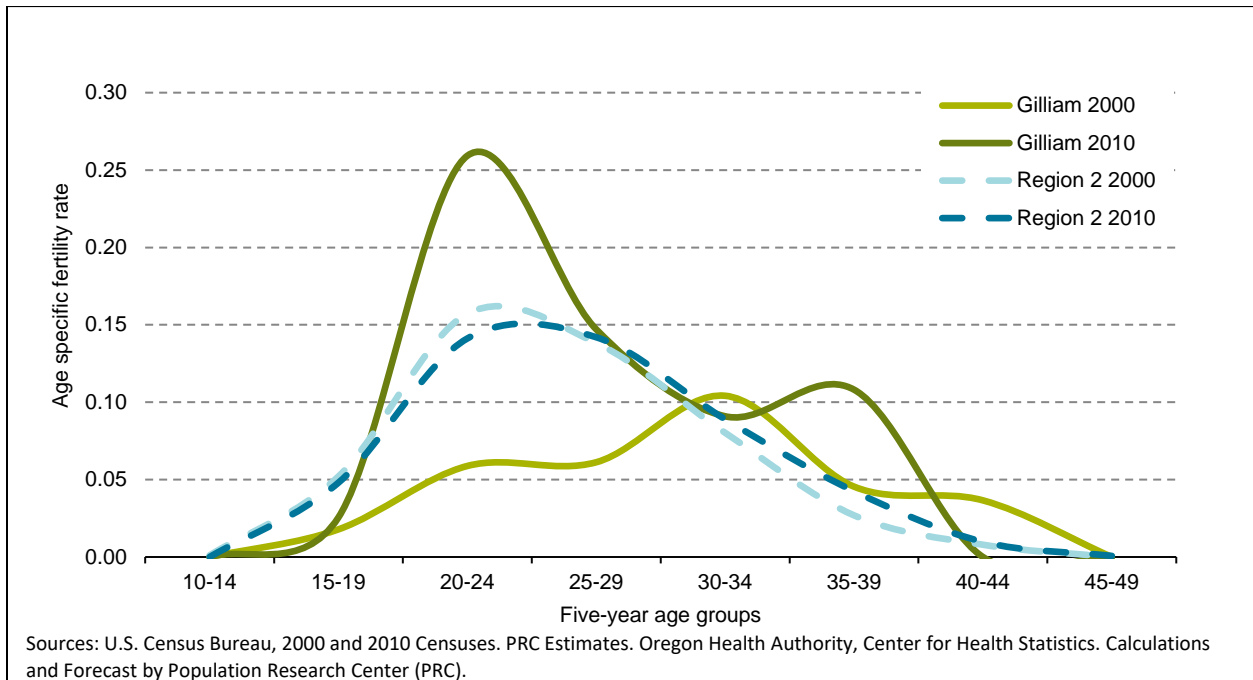
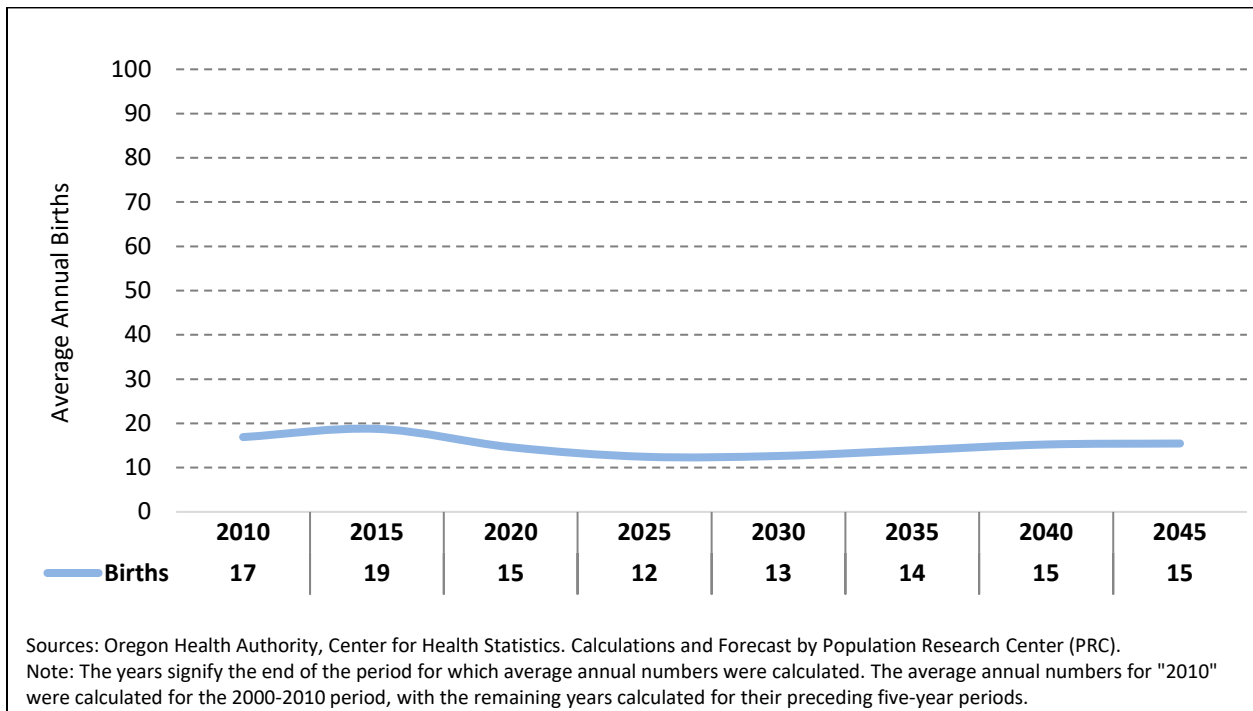


Figure 9 shows the number of historic and forecasted births for the County. The number of annual births from 2000-10 to 2010-15 remained relatively unchanged and is expected to remain stable throughout the 25-year period.

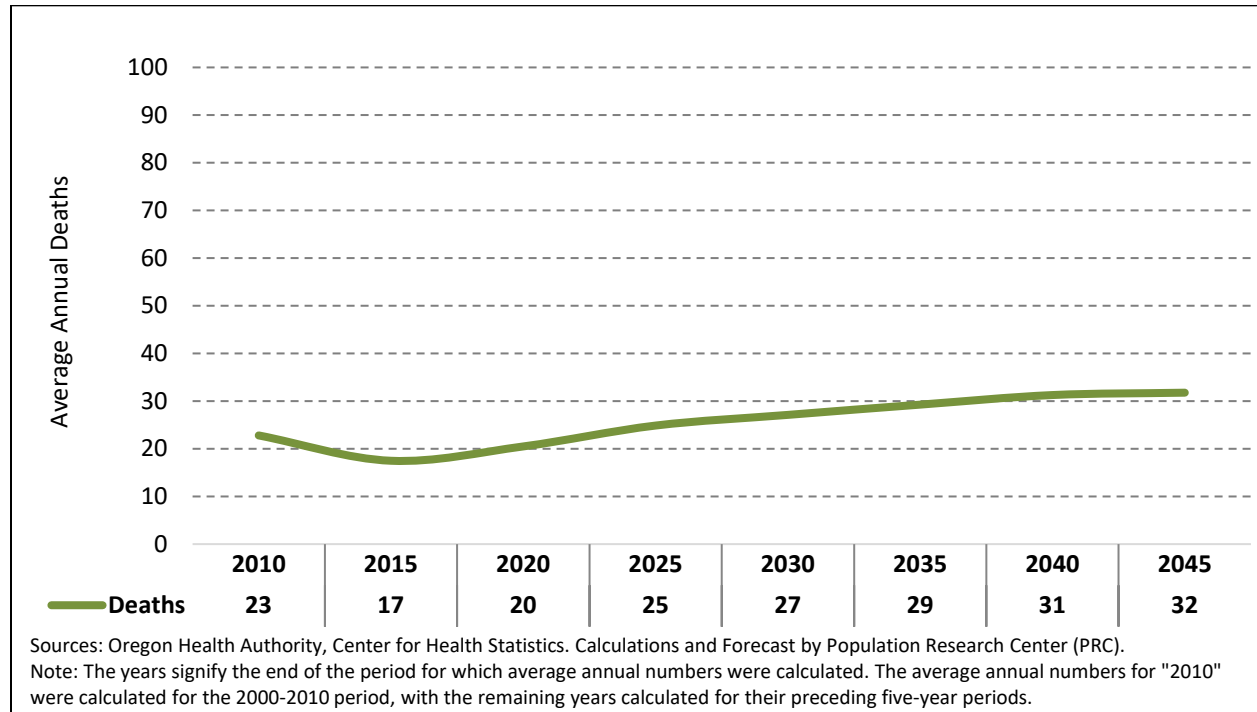
**Figure 9. Gilliam County—Average Annual Births (2010-2045)**



## Deaths

The population in the County, as a whole, is aging and contrary to the statewide trend, people of all ages are not necessarily living longer<sup>4</sup>. For both Gilliam County and eastern Oregon the survival rates changed little between 2000 and 2010, underscoring the fact that mortality is the most stable component, relative to birth and migration rates, of population change. Average annual deaths decreased slightly from 2000-10 and 2010-15 but are expected to increase slowly overtime (**Figure 10**).

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



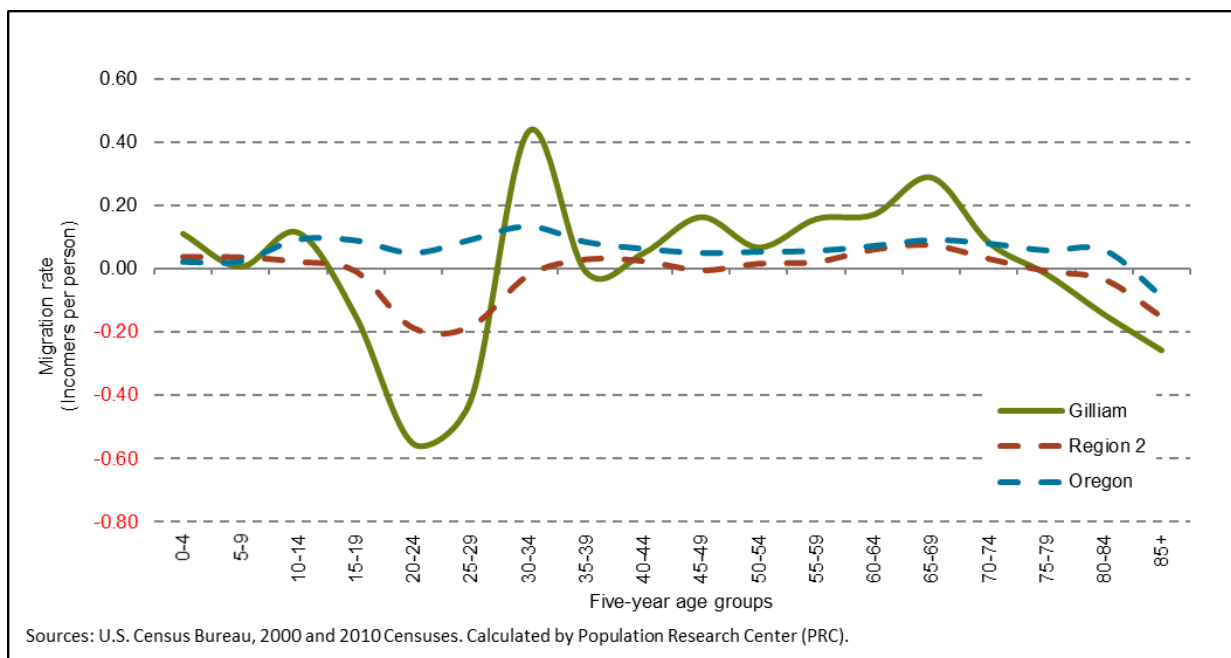
<sup>4</sup> Researchers have found evidence for a widening rural-urban gap in life expectancy. This gap is particularly apparent between race and income groups and may be one explanation for the decline in life expectancy in the 2000s. See the following research article for more information. *Singh, Gopal K., and Mohammad Siahpush. "Widening rural-urban disparities in life expectancy, US, 1969-2009." American Journal of Preventative Medicine 46, no. 2 (2014): e19-e29.*

## Migration

The propensity to migrate is strongly linked to age and stage of life. As such, age-specific migration rates are critically important for assessing these patterns across five-year age cohorts. **Figure 11** shows the historical age-specific migration rates by five-year age group for Gilliam County, eastern Oregon (Region 2), and Oregon. The migration rate is shown as the number of net migrants per person by age group.

Gilliam County’s migration rates reflect the patterns of many other Oregon counties. Young adults (20-29) leave the County seeking higher education and employment opportunities, but return in their early 30’s with their children. Retirees made up a large proportion of net in-migrants in the 00s, but left the County shortly thereafter to areas with medical facilities and end-of-life care.

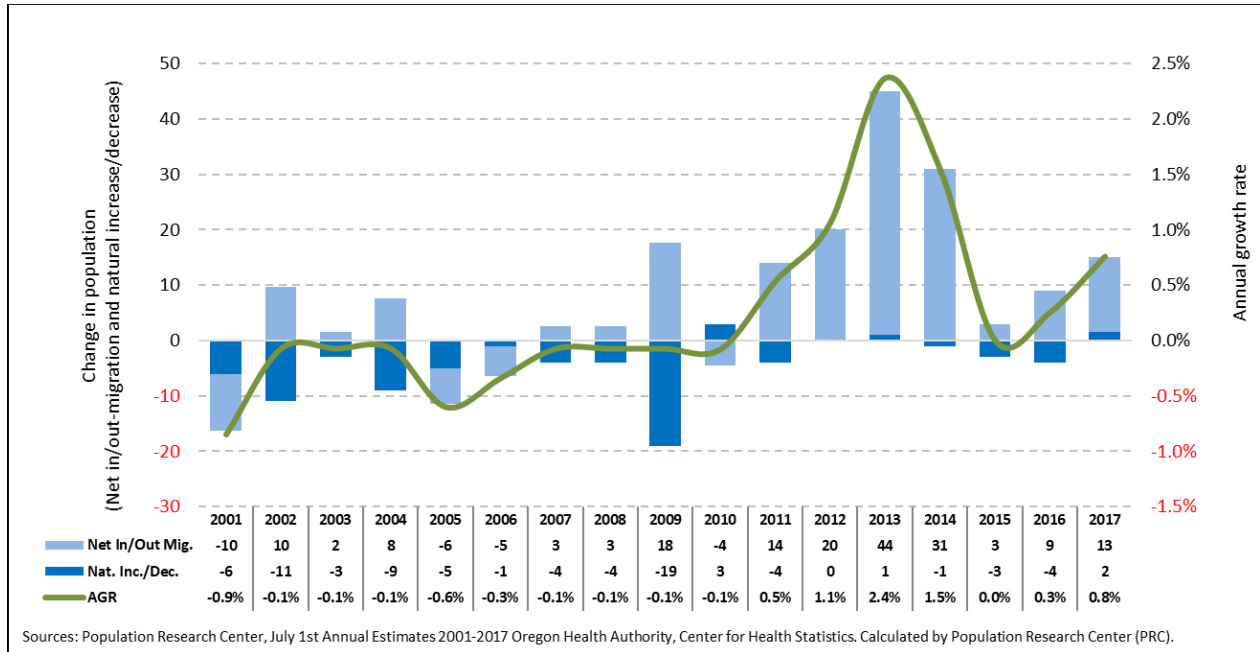
**Figure 11. Gilliam County, Region 2, and Oregon—Age Specific Migration Rates (2000-2010)**



## Historical Trends in Components of Population Change

In summary, the larger number of deaths relative to births led to a consistent natural decrease in almost every year from 2001 to 2017 (Figure 12). Sporadic net in-migration combined with natural decrease has produced minimal population change for the County.

Figure 12. Gilliam County—Components of Population Change (2001-2017)<sup>5</sup>



<sup>5</sup> 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

Housing unit growth in Gilliam County slowed with the onset of the Great Recession in 2008. Over the entire 2000 to 2010 period, the total number of housing units increased by 10.8 percent countywide; this was more than 100 new housing units (**Figure 13**). Nearly half of the new housing units (56) were built in Arlington. Condon also saw an increase in the number of housing units (44), while Lonerock lost 2 units. The housing stock outside of the UGBs increased by 15 units.

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 (typically most pronounced in coastal locations with vacation-oriented housing).

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

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
<i>Gilliam County</i>	1,043	1,156	1.0%	100.0%	100.0%	0.0%
Arlington	284	340	1.8%	27.2%	29.4%	2.2%
Condon	413	457	1.0%	39.6%	39.5%	-0.1%
Lonerock	27	25	-0.8%	2.6%	2.2%	-0.4%
Outside UGBs	319	334	0.5%	30.6%	28.9%	-1.7%

Sources: 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 Gilliam County was 2.1 in 2010, slightly down from the 2.3 PPH in 2000 (**Figure 14**). Gilliam County’s PPH in 2010 was slightly lower than Oregon’s as a whole, which had a PPH of 2.5. PPH varied across the sub-areas, ranging from 2.3 in Arlington to 1.8 in Lonerock. However, Lonerock was the only sub-area with an increase in PPH between 2000 and 2010. Despite a decline, the outside UGB area still had a higher PPH (2.4) than any of the UGBs. In general, areas with an older or aging population will, more often than not, experience a decline in PPH over time.

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. From 2000 to 2010, the occupancy rate in Gilliam County decreased slightly (**Figure 14**). While Arlington saw a slight increase in occupancy rates, Condon, Lonerock, and the outside UGB area experienced declines.

**Figure 14. Gilliam County and Sub-Areas—Persons per Household (PPH) and Occupancy Rate**

	Persons Per Household (PPH)			Occupancy Rate		
	2000	2010	Change 2000-2010	2000	2010	Change 2000-2010
<i>Gilliam County</i>	2.3	2.1	-7.1%	78.5%	74.7%	-3.8%
Arlington	2.3	2.3	-1.3%	81.0%	82.4%	1.4%
Condon	2.1	1.9	-13.5%	83.1%	78.3%	-4.7%
Lonerock	1.6	1.8	9.4%	55.6%	48.0%	-7.6%
Outside UGBs	2.6	2.4	-5.1%	72.4%	64.1%	-8.3%

Sources: 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 and helps determine assumptions of likely scenarios for population change. Assumptions about fertility, mortality, and migration were developed for Gilliam County's forecast and for each of its larger sub-areas<sup>6</sup>. Population change for smaller sub-areas is determined by the change in the number of total housing units, PPH, occupancy rates, and group quarters population. Assumptions around these components of growth are derived from observations of historic building patterns, current plans for future housing development, and household demographics.

### Assumptions for the County and Sub-Areas

From 2000 to 2010 Gilliam County experienced 59 more deaths than births, causing a natural decrease. Some of this population loss was mitigated by net in-migration (15 persons), which resulted in a population decline of 44 people during the 2000 to 2010 period. We expect natural decrease to grow in magnitude over time, resulting in continued population loss throughout the forecast period.

During the forecast period, the population in Gilliam County is expected to age more quickly during the first half of the forecast period and then remain relatively stable over the forecast horizon. The total fertility rate is expected to decrease throughout the forecast period (2.93 in 2019 to 2.75 in 2044), though births will stagnate due to a net out-migration of young adults. Our assumptions of fertility for the County's sub-areas vary and are detailed in Appendix B.

Changes in survival rates are more stable than fertility and migration rates; overall life expectancy is expected to increase slightly over the forecast period. In spite of this trend, Gilliam County's aging population will increase the overall number of deaths throughout the forecast period.

Migration is the most volatile and challenging demographic component to forecast due to the many factors influencing migration patterns. Economic, social, and environmental factors such as employment, educational opportunities, housing availability, family ties, cultural affinity, climate change, and natural amenities occurring both inside and outside the study area can affect both the direction and the volume of migration.

We assume rates will change in line with historic trends unique to Gilliam County. Net out-migration of young adults and net in-migration of families and retirees will persist throughout the forecast period. We assume that as deaths rise over time, net in-migration will increase with home turnover rates. Specifically, countywide average annual net migration is expected to increase from 2 net out-migrants in 2019 to 16 net in-migrants in 2044. A growing natural decrease is expected to curb net in-migration, which results in a negligible population decline.

---

<sup>6</sup>County sub-areas with populations greater than 7,000 in the forecast launch year were forecast using the cohort-component method. County sub-areas with populations less than 7,000 in forecast launch year were forecast using the housing-unit method. See 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.

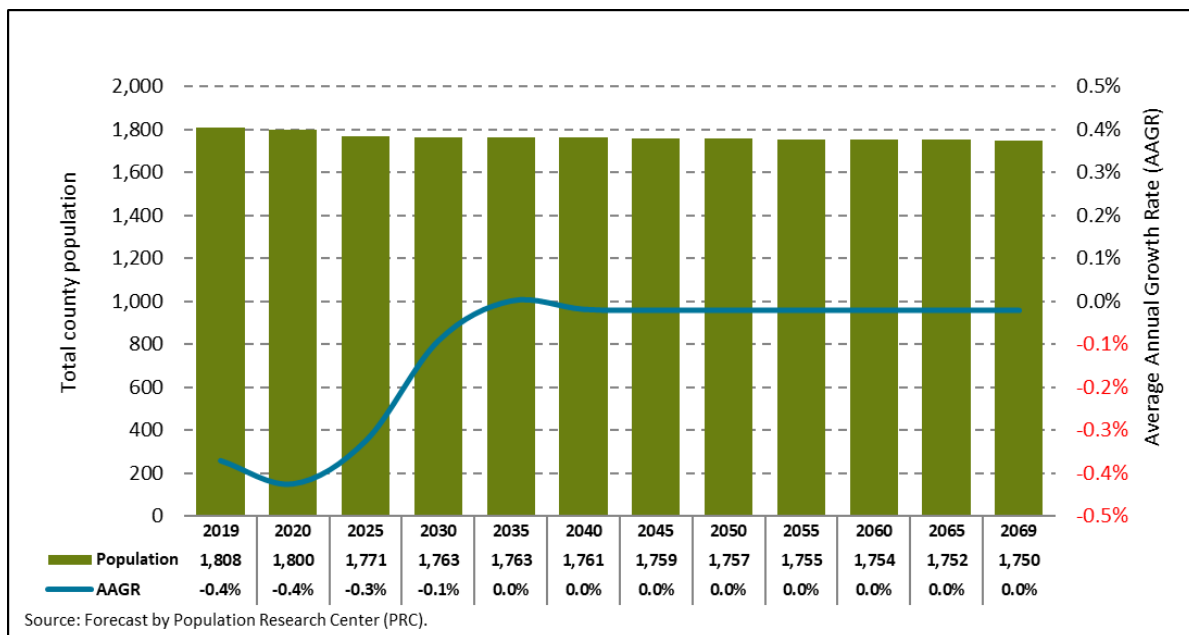


## Forecast Trends

Under the most-likely population growth scenario for Gilliam County, we expect minimal change to countywide and sub-area populations over the forecast period. The countywide population growth rate is forecast to reach zero percent in 2035 and then remain steady, resulting in a slight population decline throughout the forecast period. Population decline is driven by an aging population, contributing to steady increase in deaths, and stagnating births.

Gilliam County’s total population is forecast to decrease by roughly 60 persons (3.2 percent) from 2019 to 2069, which translates into a total countywide population of 1,750 in 2069 (**Figure 15**). The population is forecast to decline at a rate of 0.4 percent during the near-term (2019-2025).

**Figure 15. Gilliam County—Total Forecast Population by Five-year Intervals (2019-2069)**



Gilliam County’s largest UGB, Arlington, is forecast to experience a population growth of roughly 100 people from 2019 to 2044 and another 100 people from 2044 to 2069 (**Figure 16**). By 2069, the population of Arlington is expected to make up nearly half of the Gilliam County’s population. This is due in part to a forecasted population decline for the rest of the County. The populations of Condon and Lonerock are forecast to decline by 43 and 6 persons, respectively, from 2019 to 2069. The outside UGB area is expected to experience the largest decline (over 200 people) during the fifty year timeframe.

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

	2019	2044	2069	AAGR (2019-2044)	AAGR (2044-2069)	Share of County 2019	Share of County 2044	Share of County 2069
<b>Gilliam County</b>	<b>1,808</b>	<b>1,760</b>	<b>1,750</b>	<b>-0.1%</b>	<b>0.0%</b>	--	--	--
Arlington	673	768	874	0.5%	0.5%	37.2%	43.7%	49.9%
Condon	631	603	588	-0.2%	-0.1%	34.9%	34.3%	33.6%
Lonerock	19	16	13	-0.7%	-0.8%	1.1%	0.9%	0.7%
Outside UGBs	484	372	275	-1.0%	-1.2%	26.8%	21.2%	15.7%

*Source: Forecast by Population Research Center (PRC)*

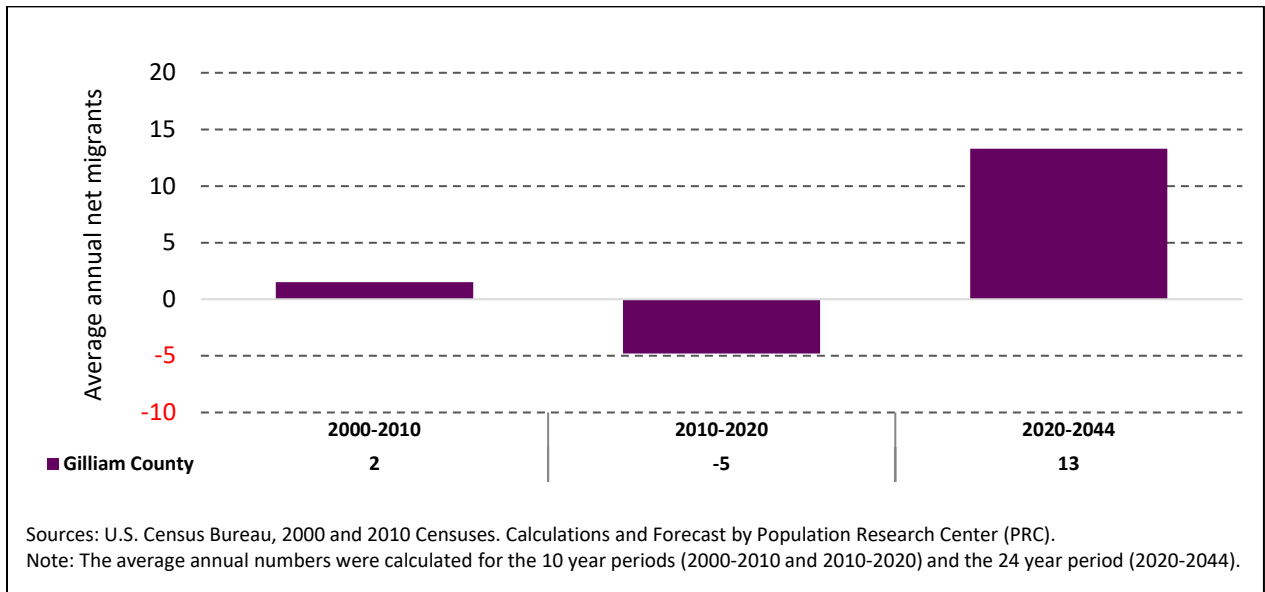
*Note: For simplicity each UGB is referred to by its primary city's name.*

The decline in population outside of the UGBs, coupled with the population growth in Arlington, is expected to create a slight redistribution of the population. The countywide population share for Arlington is forecast to increase from 37 percent in 2019 to nearly 50 percent in 2069. Although in decline, the population share of the County for both Condon and Lonerock will remain relatively stable through 2069. However, the population share of the County for the outside UGB area is expected to decrease from over 25 percent to just over 15 percent during the forecast period.

## Forecast Trends in Components of Population Change

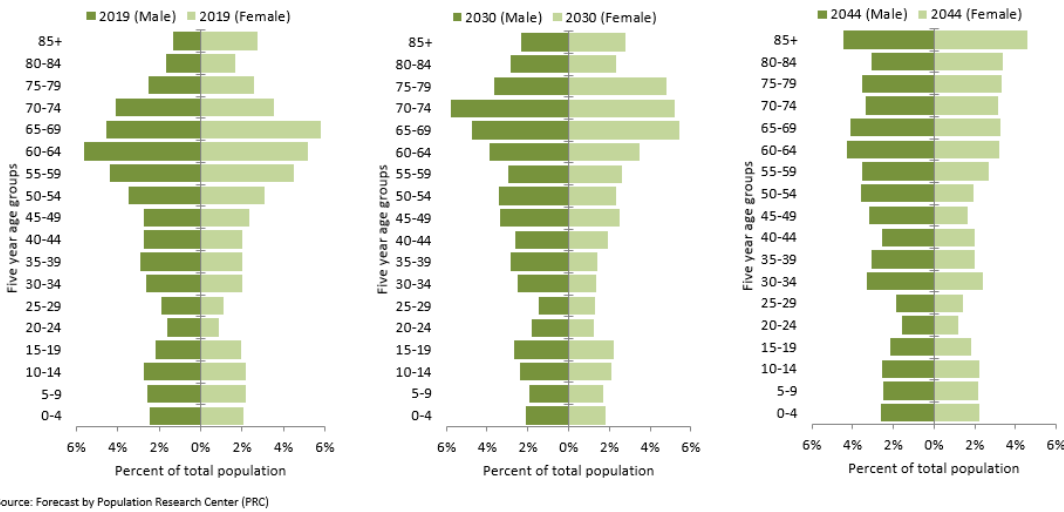
As previously discussed, the number of in-migrants is forecast to outweigh the number of out-migrants in Gilliam County, creating a positive net in-migration of new residents that is expected to persist throughout the forecast period as housing turnover increases with deaths. Furthermore, the average annual net out-migration is forecast to transition from 5 individuals (2010-2020) to an average annual net in-migration of 13 individuals later in the forecast (2020-2044) (**Figure 17**). The majority of these net in-migrants are expected to be families and older individuals.

**Figure 17. Gilliam County—Average Annual Net In/Out-Migration (2000-2010, 2010-2020, and 2020-2044)**



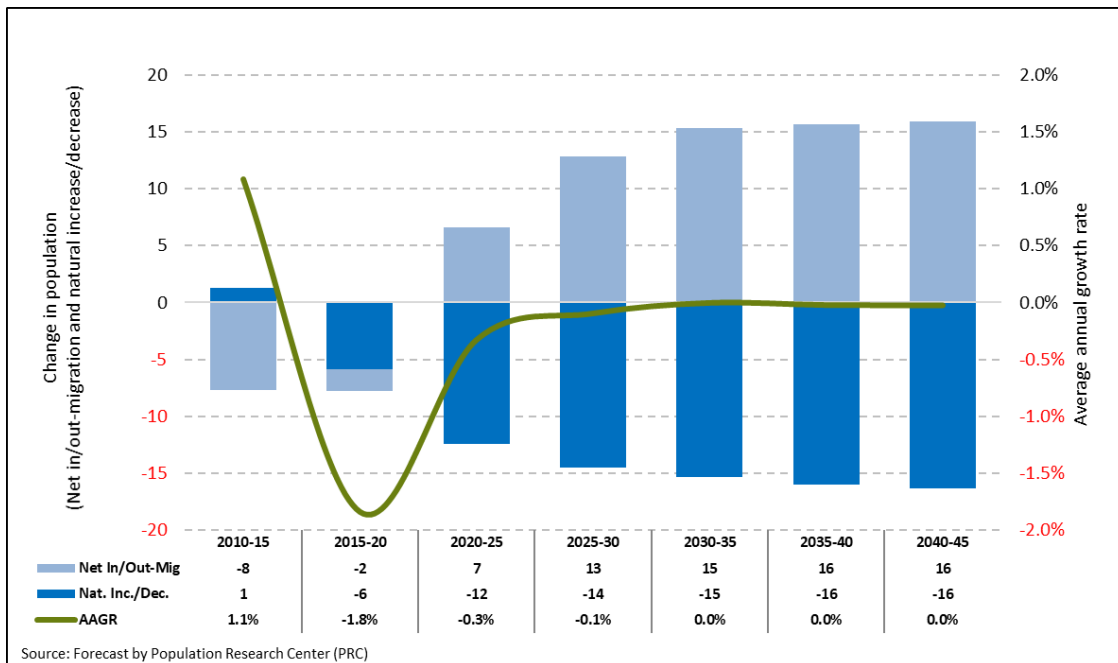
In addition to net in-migration, the other key component shaping Gilliam County's forecasted population is the aging population. From 2019 to 2030, the proportion of the County population 65 years of age or older is forecast to grow from roughly 30 percent to 40 percent, before slightly declining to 36 percent by 2044 (**Figure 18**). For a more detailed look at the age structure of Gilliam County's population, see the final forecast table published to the forecast program website (<https://www.pdx.edu/prc/current-documents-and-presentations>).

**Figure 18. Gilliam County—Age Structure of the Population (2019, 2030, and 2044)**



In summary, the population is expected to decline through the entire forecast period, but the average annual growth rate will begin to level off after 2025 due to the higher rates of net-in migration (**Figure 19**). Net in-migration is expected to increase slightly throughout the forecast period in tandem with natural decrease, though the latter is expected to outweigh the former.

**Figure 19. Gilliam County—Components of Population Change (2015-2045)<sup>7</sup>**



<sup>7</sup> 2010-15 components are based on population estimates from the Oregon Population Estimates Program. As such, natural increase/decrease and net in/out-migration for that period may not be consistent with the 2019 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 is based on planning documents and reports, and from submissions to PRC from city officials and staff, and other stakeholders. The information pertains to characteristics of each city area, and to changes thought to occur in the future.

General Survey for Oregon Population Forecast Program	
Jurisdiction: Gilliam County	Date: October 10 , 2018
Observations about Population Composition (e.g. children, the elderly, racial and ethnic groups)	
Observations about Housing	We are in crisis. Gilliam County has financial incentives to facilitate development, but the lack of contractor availability is a defining factor.
Planned Housing Dev./Est. Year Completion (for detailed information submissions please use the Housing Development Survey)	There are planned housing development projects currently planned in Gilliam County.
Planned future construction of Group Quarters facilities	There are no current, or planned group quarters in Gilliam County. Temporary construction workers arrive with and live in RVs.
Future Employers Locating to the Area	The lack of housing inhibits recruitment entirely.
Capacity and condition of infrastructure to accommodate growth.	The lack of funds for water/sewer/roads infrastructure are additional barriers.
Any Promotions (promos) and Hindrances (hinders) to Population Growth; Other notes	There is strong support for promoting population growth, but efforts are halted by a lack of housing and infrastructure.
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth (including any plans for UGB expansion and the stage in the expansion process)	The major take-away is that without available housing there can be no economic development.
Comments?	Lacking the tools to implement growth is frustrating.

Rachel Weinstein

Gilliam County

Director of Community Development

*Name*

*Organization*

*Title*



General Survey for Oregon Population Forecast Program	
Jurisdiction: <b>City of Arlington</b>	Date: <b>12/10/18</b>
Observations about Population Composition (e.g. children, the elderly, racial and ethnic groups)	A large amount of elderly, and school age children, predominately white.
Observations about Housing	Mostly older homes, but in the last few years there have been a handful of new homes built.
Planned Housing Dev./Est. Year Completion (for detailed information submissions please use the Housing Development Survey)	None
Planned future construction of Group Quarters facilities	None
Future Employers Locating to the Area	None
Capacity and condition of infrastructure to accommodate growth.	There are a couple of fiber optic companies bringing in high speed internet to homes and businesses.
Any Promotions (promos) and Hindrances (hinders) to Population Growth; Other notes	Hinders, is the housing situation, there aren't very many affordable rentals, therefore employees are choosing to commute from larger cities.
Do you have a buildable lands inventory for your area/UGB? If yes, it would be helpful if you could please share it with our center in GIS format.	
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth (including any plans for UGB expansion and the stage in the expansion process)	

**Pam Rosenbalm**

**City of Arlington**

**Recorder**

*Name*

*Organization*  
PO Box 751, Portland OR 97207  
[askpr@psu.edu](mailto:askpr@psu.edu)  
(503) 725-3922

*Title*

# General Survey for Oregon Population Forecast Program

Jurisdiction: City of Condon

Date: December 12, 2018

Observations about Population Composition (e.g. children, the elderly, racial and ethnic groups)	
Observations about Housing	We are lacking housing - workforce, low-income, rentals
Planned Housing Dev./Est. Year Completion (for detailed information submissions please use the Housing Development Survey)	None planned
Planned future construction of Group Quarters facilities	None planned
Future Employers Locating to the Area	None that I am aware of at this time
Capacity and condition of infrastructure to accommodate growth.	We have water and sewer facilities that are not at capacity
Any Promotions (promos) and Hindrances (hinders) to Population Growth; Other notes	We are about to get a main fiber line through town that is owned by city and county that hopefully will provide more affordable broadband to businesses and residents. Hinderances is lack of employment, housing, access to emergency health care, schools offering bare minimum in classes at high school level and no education for trades.
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth (including any plans for UGB expansion and the stage in the expansion process)	
Comments?	

Kathryn Greiner

City of Condon

City Administrator

*Name*

*Organization*

*Title*



# General Survey for Oregon Population Forecast Program

Jurisdiction: City of Lonerock

Date: November 12 , 2018

Observations about Population Composition (e.g. children, the elderly, racial and ethnic groups)	Elderly
Observations about Housing	Private homes
Planned Housing Dev./Est. Year Completion (for detailed information submissions please use the Housing Development Survey)	
Planned future construction of Group Quarters facilities	
Future Employers Locating to the Area	
Capacity and condition of infrastructure to accommodate growth.	
Any Promotions (promos) and Hindrances (hinders) to Population Growth; Other notes	
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth (including any plans for UGB expansion and the stage in the expansion process)	
Comments?	

Tami Forrest

City of Lonerock

City Clerk

*Name*

*Organization*

*Title*

## **Appendix B: Specific Assumptions**

### **Arlington**

We assume steady housing unit growth throughout the forecast period. We assume the occupancy rate to remain stable at 82.4 percent while persons per household (PPH) will decline slightly from 2.27 to 2.20 for the 25-year horizon. There is no group quarters population in this sub-area.

### **Condon**

We assume steady housing unit growth throughout the forecast period. We assume the occupancy rate will decline from 75.3 percent to 68.3 percent the persons per household (PPH) will decline from 1.75 to 1.62 for the 25-year horizon. We assume the group quarters population to remain at 20.

### **Lonerock**

We assume no change to the housing unit inventory for the forecast period. We assume the occupancy rate will decline from 44.0 percent to 40.0 percent and persons per household (PPH) will decline from 1.75 to 1.60 for the 25-year horizon. There is no group quarters population in this sub-area.

### **Outside UGBs**

We assume the housing unit growth to be slow, but stable throughout the forecast period. We assume the occupancy rate will decline from 60.1 percent to 49.6 percent and the persons per household (PPH) will decline from 2.39 to 2.04 for the 25-year horizon. There is no group quarters population in this sub-area.

## Appendix C: Detailed Population Forecast Results

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

<b>Population Forecasts by Age</b>							
<b>Group / Year</b>	<b>2019</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2044</b>
00-04	81	77	67	69	78	85	86
05-09	87	87	72	65	68	76	82
10-14	89	88	95	79	73	77	84
15-19	75	74	76	87	73	67	70
20-24	45	43	46	54	62	52	49
25-29	54	52	44	49	58	67	58
30-34	84	80	75	67	75	90	100
35-39	89	89	76	75	70	77	89
40-44	86	87	92	80	80	74	80
45-49	92	88	95	103	91	91	85
50-54	118	111	90	101	111	98	97
55-59	161	154	119	98	111	121	110
60-64	195	198	166	130	108	122	131
65-69	187	194	211	180	142	118	130
70-74	138	146	175	194	168	132	114
75-79	92	95	123	150	169	145	120
80-84	60	62	70	92	114	127	113
85+	74	73	80	90	112	140	159
<b>Total</b>	<b>1,808</b>	<b>1,800</b>	<b>1,771</b>	<b>1,763</b>	<b>1,763</b>	<b>1,761</b>	<b>1,760</b>

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

<b>Area / Year</b>	<b>2019</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>	<b>2050</b>	<b>2055</b>	<b>2060</b>	<b>2065</b>	<b>2069</b>
Gilliam County	1,808	1,800	1,771	1,763	1,763	1,761	1,759	1,757	1,755	1,754	1,752	1,750
Arlington	673	676	686	710	734	752	772	797	827	847	862	874
Condon	631	631	618	614	616	609	602	599	595	592	590	588
Lonerock	19	19	18	16	16	16	16	15	14	14	13	13
Outside UGB Area	484	475	449	422	397	384	369	347	319	300	286	275