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Coordinated Population Forecast for Grant County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2016-2066

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Coordinated Population Forecast

2016

Through

2066

Grant County

Urban Growth Boundaries (UGB) & Area Outside UGBs

Population Research Center
PORTLAND STATE UNIVERSITY

Photo Credit: A barn near Dayville. (Photo No. graDA0066a)
Gary Halvorson, Oregon State Archives.
http://arcweb.sos.state.or.us/pages/records/local/county/scenic/grant/111.html

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Prepared by

Population Research Center

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Portland State University

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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 methods employed to prepare the forecasts. This document also describes the data sets and 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 (i.e., 2016-2066).

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Executive Summary

Historical

Grant County's total population has declined since 2000, losing an average of about 50 persons per year between 2000 and 2010 (Figure 1). With the exception of minimal population increase among three small UGBs, every sub-area recorded population loss during the 2000s. Prairie City and the area outside UGBs posted the largest losses, losing on average about 17 and 19 persons per year, respectively.

Grant County's population decline in the 2000s was the result of a consistent natural decrease as well as relatively steady net out-migration (Figure 12). The smaller number of births relative to deaths led to a natural decrease (more deaths than births) in nearly every year from 2000 to 2015. While net out-migration was common during the last decade (2000-2010), in recent years (2010-2015) net in-migration has occurred. Even so, natural decrease has persisted and generally exceeded net in-migration, leading to continued population decline.

Forecast

Grant County is expected to experience population decline over the 50-year forecast period. This population loss will likely occur at a relatively uniform rate among the county's sub-areas, with losses occurring at an increasing rate as time progresses.

For Grant County as a whole, increasing natural decrease and relatively steady net in-migration are expected to lead to population decline. An aging population is expected to not only lead to an increase in deaths, but a smaller proportion of women in their childbearing years will likely result in a long-term decline in births. Net in-migration is expected to persist throughout the entire forecast period, but will not fully offset the natural decrease, leading to population decline.

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

	Historical			Forecast				
	2000	2010	AAGR (2000-2010)	2016	2035	2066	AAGR (2016-2035)	AAGR (2035-2066)
Grant County	*7,935*	*7,445*	*-0.6%*	*7,412*	*7,074*	*6,125*	*-0.2%*	*-0.5%*
Canyon City UGB	699	739	0.6%	751	777	789	0.2%	0.0%
Dayville UGB	136	149	0.9%	150	140	111	-0.4%	-0.7%
Granite UGB	24	38	4.6%	38	36	29	-0.4%	-0.7%
John Day UGB	2,169	2,126	-0.2%	2,106	2,043	1,837	-0.2%	-0.3%
Long Creek UGB	228	197	-1.5%	197	184	155	-0.4%	-0.6%
Monument UGB	151	128	-1.7%	128	119	100	-0.4%	-0.6%
Mt. Vernon UGB	604	535	-1.2%	525	491	406	-0.4%	-0.6%
Prairie City UGB	1,083	909	-1.8%	908	847	713	-0.4%	-0.6%
Seneca UGB	223	199	-1.1%	209	195	159	-0.4%	-0.7%
Outside UGBs	2,618	2,425	-0.8%	2,400	2,242	1,826	-0.4%	-0.7%

Sources: U.S. Census Bureau, 2000 and 2010 Censuses; Forecast by Population Research Center (PRC).

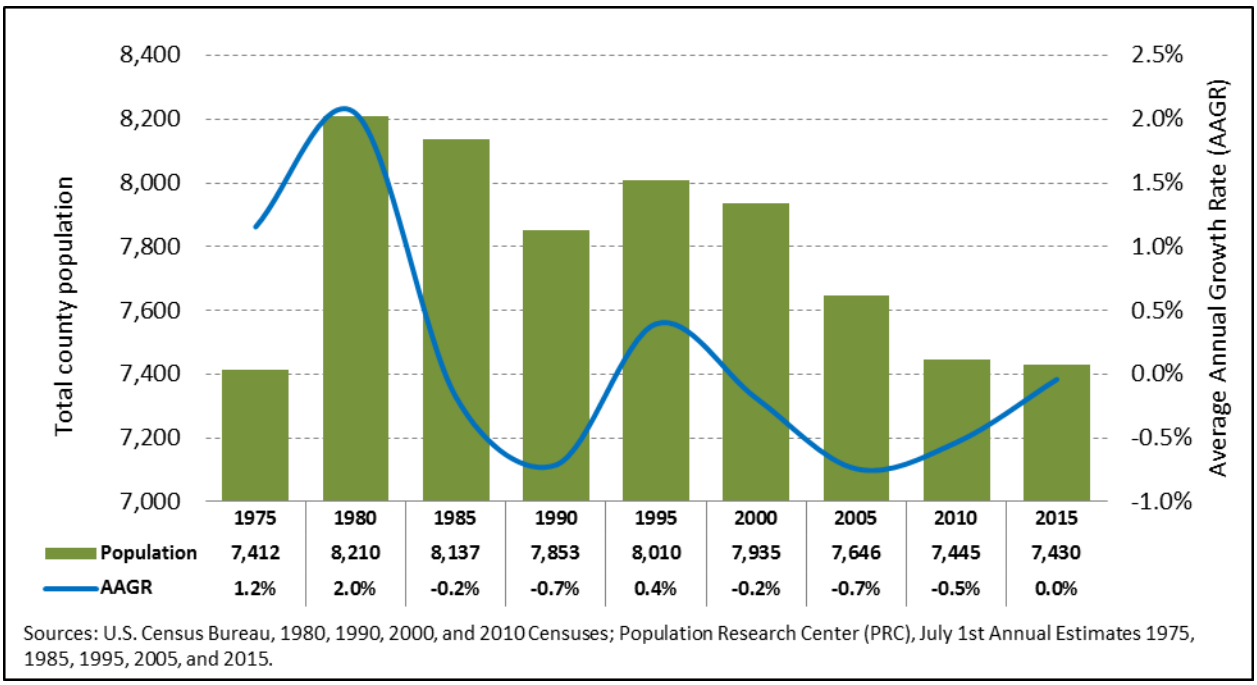
Historical Trends

Different growth patterns occur in different parts of the County. Each of Grant County's sub-areas was examined for any significant demographic characteristics or changes in population or housing growth that might influence their individual forecasts. Factors that were analyzed include age composition of the population, ethnicity and race, births, deaths, migration, and number or growth rate of *housing units* as well as the *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, in general, local trends within sub-areas collectively influence population growth rates for the county.

Population

Grant County experienced relatively little change in total population between 1975 and 2015—starting at roughly 7,410 in 1975 and ending at about 7,430 in 2015 (Figure 2). During this 40-year period, the county saw a substantial population increase in the late 1970s, which coincided with a period of relative economic prosperity both nationally and within the county. Grant County's population peaked at about 8,200 in 1980, and then generally decreased until 2010, with the exception of a slight increase in the early 1990s. In recent years (2005-2015) the population has remained relatively steady, staying at a little more than 7,400 persons.

Figure 2. Grant County—Total Population by Five-year Intervals (1975-2015)



Sources: U.S. Census Bureau, 1980, 1990, 2000, and 2010 Censuses; Population Research Center (PRC), July 1st Annual Estimates 1975, 1985, 1995, 2005, and 2015.

Grant County's population change is the combined population growth or decline within each sub-area. During the 2000s, Grant County experienced population decline, averaging a loss of about 50 persons per year (Figure 3). However, three of the county's sub-areas—Canyon City, Dayville, and Granite—experienced a slight population increase between 2000 and 2010. The sub-areas that accounted for the

majority of the population decrease were Prairie City and the area outside UGBs, both losing between 15 and 20 people per year over the last decade.

Figure 3. Grant County and Sub-areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010)

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
Grant County	*7,935*	*7,445*	*-0.6%*	*100.0%*	*100.0%*
Canyon City	699	739	0.6%	8.8%	9.9%
Dayville	136	149	0.9%	1.7%	2.0%
Granite	24	38	4.6%	0.3%	0.5%
John Day	2,169	2,126	-0.2%	27.3%	28.6%
Long Creek	228	197	-1.5%	2.9%	2.6%
Monument	151	128	-1.7%	1.9%	1.7%
Mount Vernon	604	535	-1.2%	7.6%	7.2%
Prairie City	1,083	909	-1.8%	13.6%	12.2%
Seneca	223	199	-1.1%	2.8%	2.7%
Outside UGBs	2,618	2,425	-0.8%	33.0%	32.6%

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

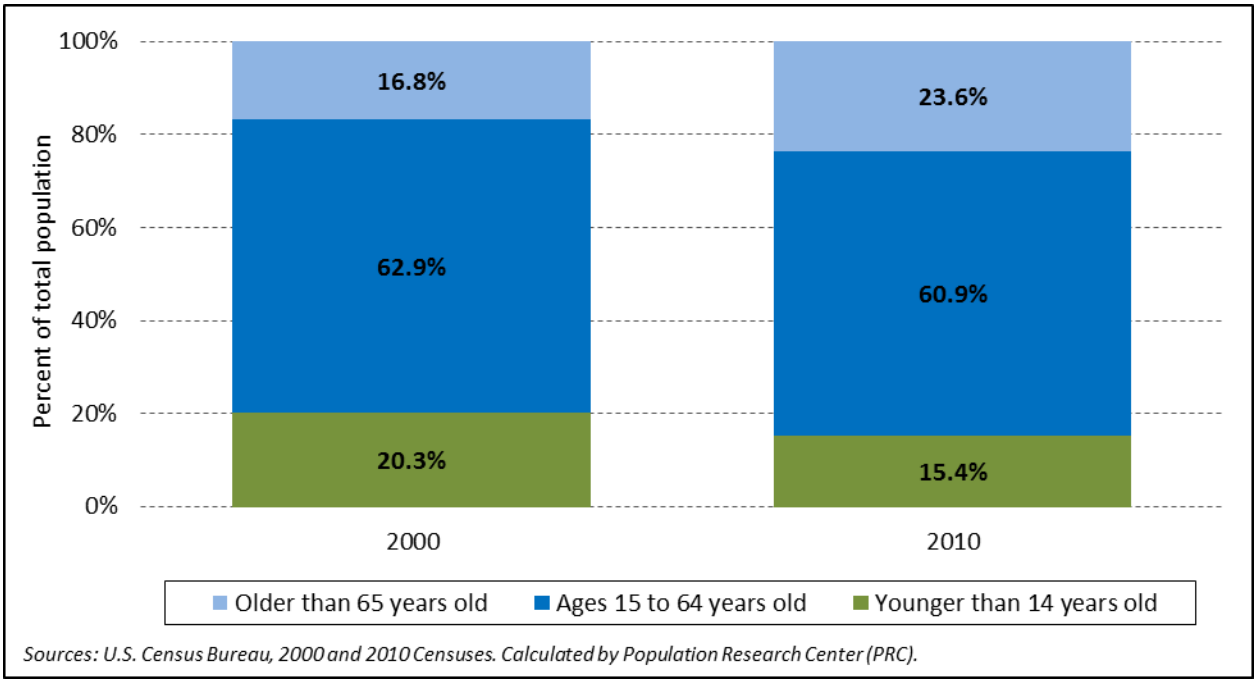
Note 1: For simplicity each UGB is referred to by its primary city's name.

Age Structure of the Population

Grant County's population is aging, a trend observed both statewide and nationally. 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 decline in births. Within Grant County the proportion of the population 65 or older is increased from 17 percent in 2000 to 24 percent in 2010 (Figure 4). Further underscoring Grant County's faster trend in aging, the median age went from about 42 in 2000 to 50 in 2010, an increase that is more than four times the increase observed statewide[1].

[1] Median age is sourced from the U.S. Census Bureau's 2000 and 2010 Censuses, DP-1.

Figure 4. Grant County—Age Structure of the Population (2000 and 2010)



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

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 mainly the number of births and average household size[2]. The Hispanic population within Sherman County increased slightly from 2000 to 2010 (Figure 5), while the White, non-Hispanic population decreased over the same time period. The increase in the Hispanic population and some other minority populations is notable, but overall the minority population has remained a relatively small proportion of total population and will likely not substantively influence future population change.

[2] Historical data shows that some racial/ethnic groups, such as Hispanics, generally have higher fertility rates than other groups (http://www.pewsocialtrends.org/2012/05/17/explaining-why-minority-births-now-outnumber-white-births/); also average household sizes can vary among racial/ethnic groups (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&sqi=2&ved=0ahUKEwjp09-PltXMAhUC_WMKHQFZCBEQFggcMAA&url=http%3A%2F%2Fwww.census.gov%2Fpopulation%2Fsocdemo%2Fhh-fam%2Fcps2011%2FtabAVG1.xls&usg=AFQjCNFfO2dYB_OKGxp-ag3hBMVDx4_j9w&cad=rja).

Figure 5. Grant County—Hispanic or Latino and Race (2000 and 2010)

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
Total population	*7,935*	*100.0%*	*7,445*	*100.0%*	*-490*	*-6.2%*
Hispanic or Latino	163	2.1%	207	2.8%	44	27.0%
Not Hispanic or Latino	7,772	97.9%	7,238	97.2%	-534	-6.9%
White alone	7,506	94.6%	6,951	93.4%	-555	-7.4%
Black or African American alone	8	0.1%	11	0.1%	3	37.5%
American Indian and Alaska Native alone	124	1.6%	88	1.2%	-36	-29.0%
Asian alone	15	0.2%	24	0.3%	9	60.0%
Native Hawaiian and Other Pacific Islander alone	3	0.0%	6	0.1%	3	100.0%
Some Other Race alone	6	0.1%	2	0.0%	-4	-66.7%
Two or More Races	110	1.4%	156	2.1%	46	41.8%

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

Births

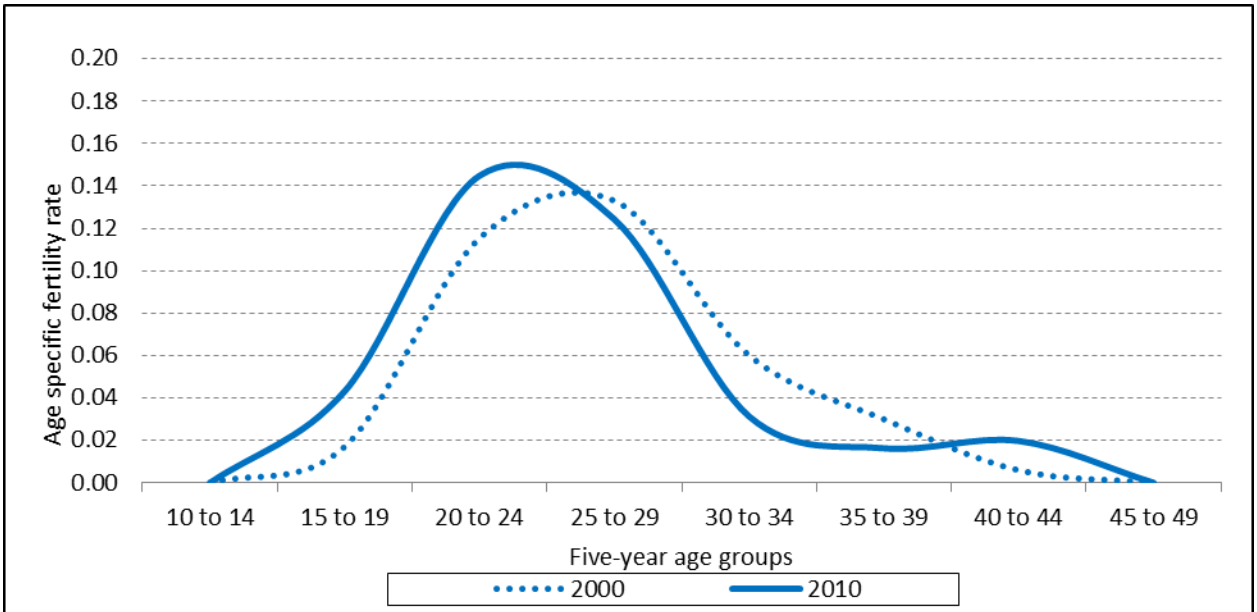
Historical fertility rates for Grant County do not mirror trends similar to Oregon as a whole. Total fertility rates increased in Grant County from 2000 to 2010, while they decreased for the state over the same time period (Figure 6). At the same time, peak fertility for women in Grant County shifted toward younger ages, while Oregon as whole saw peak fertility move toward older ages (Figure 7 and Figure 8).

Figure 6. Grant County and Oregon—Total Fertility Rates (2000 and 2010)

	2000	2010
Grant County	1.81	1.90
Oregon	1.98	1.80

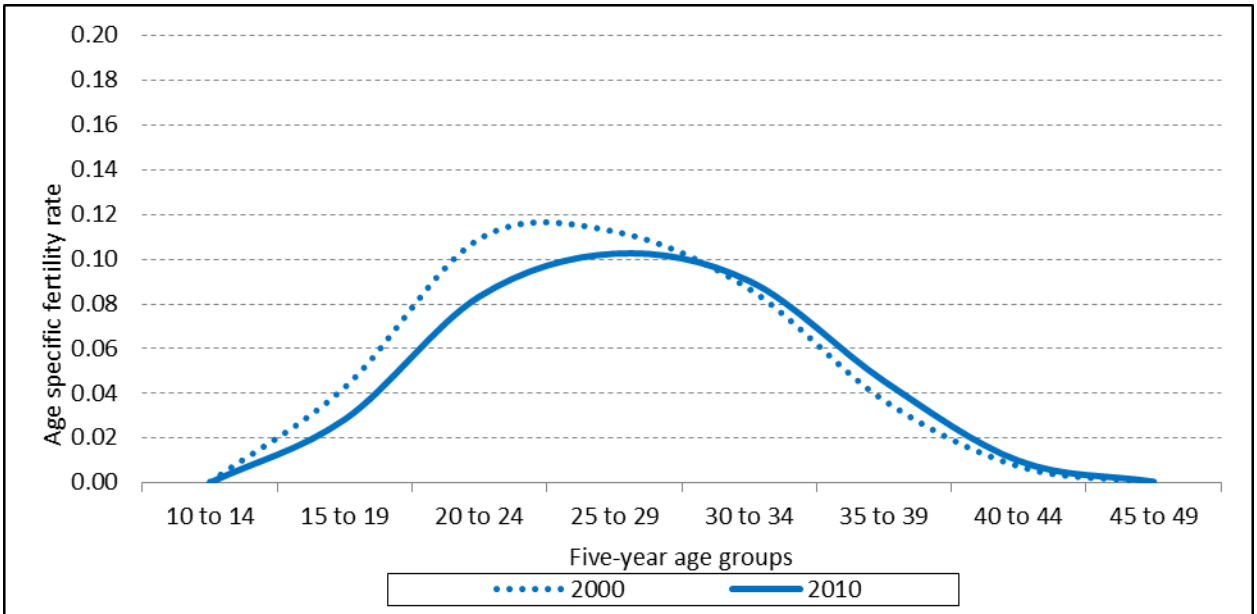
Sources: U.S. Census Bureau, 2000 and 2010 Censuses .
Oregon Health Authority, Center for Health Statistics.
Calculated by Population Research Center (PRC).

Figure 7. Grant County—Age Specific Fertility Rate (2000 and 2010)



Sources: U.S. Census Bureau, 2000 and 2010 Censuses . Oregon Health Authority, Center for Health Statistics. Calculated by Population

Figure 8. Oregon—Age Specific Fertility Rate (2000 and 2010)



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

Figure 9 shows the number of births for Grant County. Generally the number of births fluctuates from year to year. For example a sub-area with a decrease in births between two years could easily show an

increase for a different time period; however for the 10-year period from 2000 to 2010 the county as a whole saw a slight decrease in births (Figure 9).

Figure 9. Grant County and Sub-Areas—Total Births (2000 and 2010)

	2000	2010	Absolute Change	Relative Change
Grant County	*69*	*59*	*-10*	*-14.5%*

Sources: Oregon Health Authority, Center for Health Statistics. Aggregated by Population Research Center (PRC).

Deaths

The population in the county, as a whole, is aging and people are living longer. For Grant County in 2000, life expectancy for males was 74 years and for females was 80 years; by 2010, life expectancy had increased to 80 for males and 85 for females. For both Grant County and Oregon, the survival rates changed little between 2000 and 2010—underscoring the fact that mortality is the most stable component of population change. The total number of countywide deaths decreased over the 10-year period (Figure 10).

Figure 10. Grant County and Sub-Areas—Total Deaths (2000 and 2010)

	2000	2010	Absolute Change	Relative Change
Grant County	*95*	*83*	*-12*	*-12.6%*

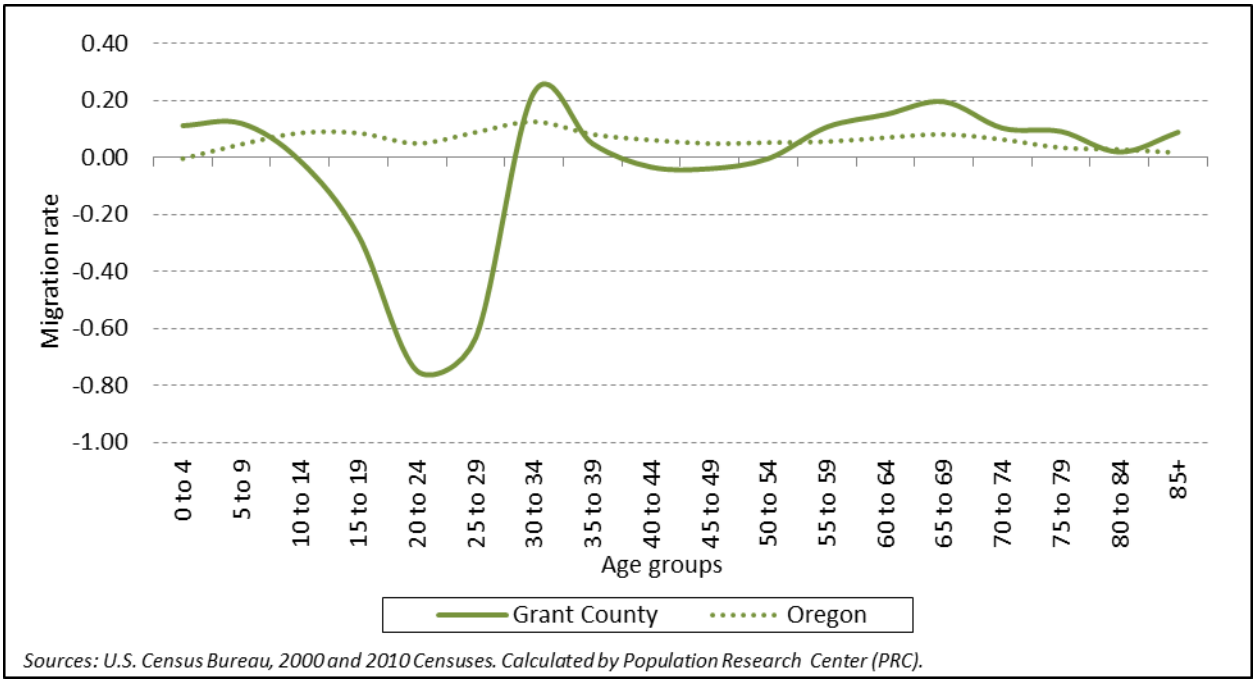
Sources: Oregon Health Authority, Center for Health Statistics. Aggregated by Population Research Center (PRC).

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, both for Grant County and Oregon. The migration rate is shown as the number of net migrants per person by age group.

From 2000 to 2010, younger individuals (ages with the highest mobility levels) moved out of the county in search of employment and education opportunities, as well as military service. At the same time however, the county attracted a substantial number of middle-age and older migrants, who likely moved into the county for economic opportunities or to be near medical facilities in John Day. Many of the middle-age migrants were assumed to be accompanied by their children as shown in the in-migration of persons under the age of 14 in Figure 11.

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

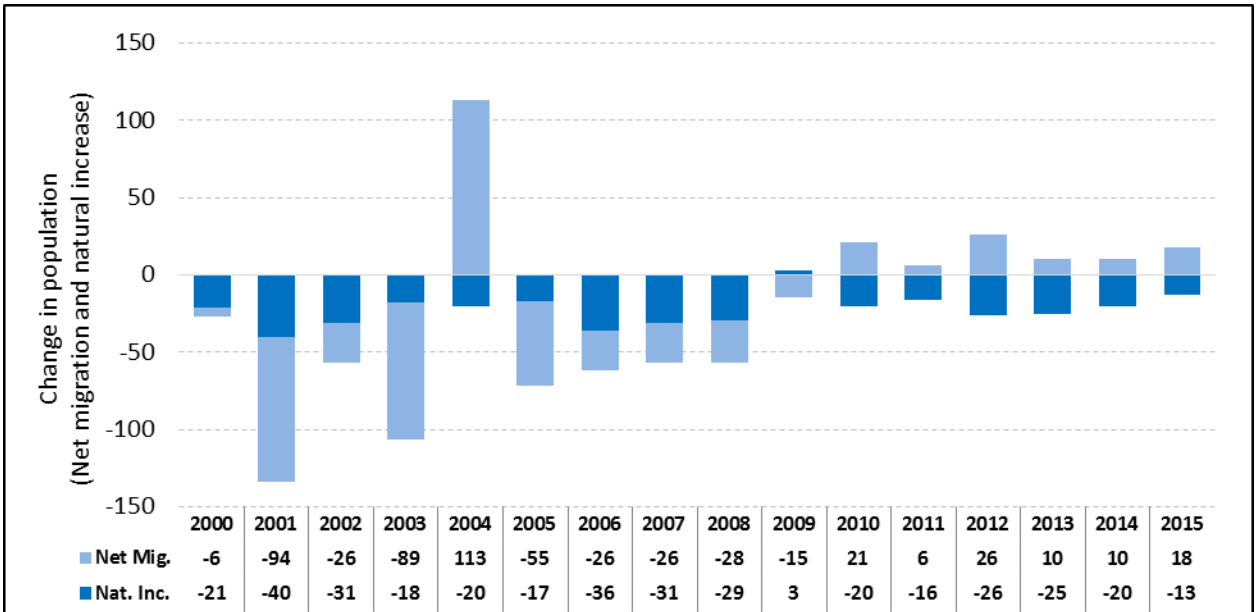


Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

Historical Trends in Components of Population Change

In summary, Grant County's negative population growth in the 2000s was the result of a steady natural decrease as well as relatively steady net out-migration (Figure 12). The smaller number of births relative to deaths led to natural decrease (more deaths than births) in nearly every year from 2000 to 2015. While net out-migration was common during the last decade, in recent years net in-migration has occurred. Even so natural decrease has persisted and generally exceeded net in-migration, leading to continued population decline.

Figure 12. Grant County—Components of Population Change (2000-2015)



Sources: Population Research Center, July 1st Annual Estimates 2000-2015. Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

Housing and Households

Over the entire 2000 to 2010 period, the total number of housing units increased by about eight percent countywide; this resulted in more than 300 new housing units (Figure 13). The area outside urban growth boundaries (UGBs) captured the largest share of growth in housings units, with John Day and Canyon City also capturing substantial shares of countywide growth in housing units.

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

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
Grant County	*4,004*	*4,344*	*0.8%*	*100.0%*	*100.0%*
Canyon City	308	375	2.0%	7.7%	8.6%
Dayville	75	93	2.2%	1.9%	2.1%
Granite	74	88	1.7%	1.8%	2.0%
John Day	1,006	1,080	0.7%	25.1%	24.9%
Long Creek	115	112	-0.3%	2.9%	2.6%
Monument	81	82	0.1%	2.0%	1.9%
Mount Vernon	272	286	0.5%	6.8%	6.6%
Prairie City	494	476	-0.4%	12.3%	11.0%
Seneca	115	128	1.1%	2.9%	2.9%
Outside UGBs	1,464	1,624	1.0%	36.6%	37.4%

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

Note 1: For simplicity each UGB is referred to by its primary city's name.

Occupancy rates tend to fluctuate more than PPH. This is particularly true in smaller UGB areas where fewer housing units allow for larger changes—in relative terms. From 2000 to 2010 the occupancy rate in Grant County slightly declined; this was most likely due to slack in demand for housing as individuals experienced the effects of the Great Recession. Three of the county's sub-areas experienced more dramatic declines in occupancy rates—a drop of more than eight percentage points in Long Creek and Seneca, and more than 16 percentage points in Monument. At the same time Canyon City, Granite, and John Day all recorded increases of two percentage points or more in occupancy rates.

Average household size, or PPH, in Grant County was 2.2 in 2010, lower than 2.4 in 2000 (Figure 14). Grant County's PPH in 2010 was slightly lower than for Oregon as a whole, which had a PPH of 2.5. In 2010 PPH was relatively similar across Grant County's sub-areas, with all of them falling near two persons per household.

Figure 14. Grant 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
Grant County	*2.4*	*2.2*	*-0.2*	*81.1%*	*77.2%*	*-3.9%*
Canyon City	2.5	2.2	-0.3	87.7%	90.4%	2.7%
Dayville	2.3	2.1	-0.3	77.3%	77.4%	0.1%
Granite	1.6	1.7	0.1	20.3%	25.0%	4.7%
John Day	2.4	2.1	-0.2	87.5%	89.3%	1.8%
Long Creek	2.4	2.3	0.0	83.5%	75.0%	-8.5%
Monument	2.2	2.3	0.1	84.0%	67.1%	-16.9%
Mount Vernon	2.4	2.0	-0.4	91.9%	92.0%	0.0%
Prairie City	2.4	2.2	-0.2	87.9%	84.5%	-3.4%
Seneca	2.3	2.1	-0.3	82.6%	74.2%	-8.4%
Outside UGBs	2.4	2.3	-0.1	73.8%	65.0%	-8.7%

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

Note 1: 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 the most likely scenarios for population change. Past trends also explain the dynamics of population growth specific to local areas. Relating recent and historical population change to events that influence population change serves as a gauge for what might realistically occur in a given area over the long-term.

Assumptions about fertility, mortality, and migration were developed for Grant County's population forecast. The assumptions are derived from observations based on life events, as well as trends unique to Grant County. Population change for sub-areas is determined by the change either in the number or the growth rate of total housing units, occupancy rates, and PPH. Assumptions around housing unit growth as well as occupancy rates are derived from observations of historical building patterns and current plans for future housing development. In addition, assumptions for PPH are based on observed historical patterns of household demographics—for example, the average age of householder. The forecast period is 2016-2066.

Assumptions for the County

The population in Grant County is expected to age during the initial 19-year period and then actually shift toward a younger population over the remaining 31-year period. Even so, fertility rates are expected to slightly decline over the entire forecast period. Total fertility in Grant County is forecast to decrease from 1.9 children per woman in 2015 to 1.8 children per woman by 2065.

Changes in mortality and life expectancy are more stable compared to fertility and migration. One influential factor affecting mortality and life expectancy is the advancement in medical technology and health care. The county is projected to follow the statewide trend of increasing life expectancy throughout the forecast period—progressing from a life expectancy of 82 years in 2010 to 90 in 2060. However, in spite of increasing life expectancy and the corresponding increase in survival rates, Grant County's aging population and large population cohort reaching a later stage of life 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. Net migration rates will change in line with historical trends unique to Grant County. Net out-migration of younger persons and net in-migration of middle-age and older individuals will persist throughout the forecast period. Countywide average annual net migration is expected to increase from 10 net in-migrants in 2016 to 65 net in-migrants in 2035. Over the last 31 years of the forecast period it is expected to remain relatively stable at about 80 new persons per year through 2065. Net in-migration is expected to account for most of Grant County's population growth throughout the entire forecast period.

Assumptions for Sub-Areas

Rates of population growth for the smaller UGBs are assumed to be determined by corresponding growth in the number or growth rate 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.

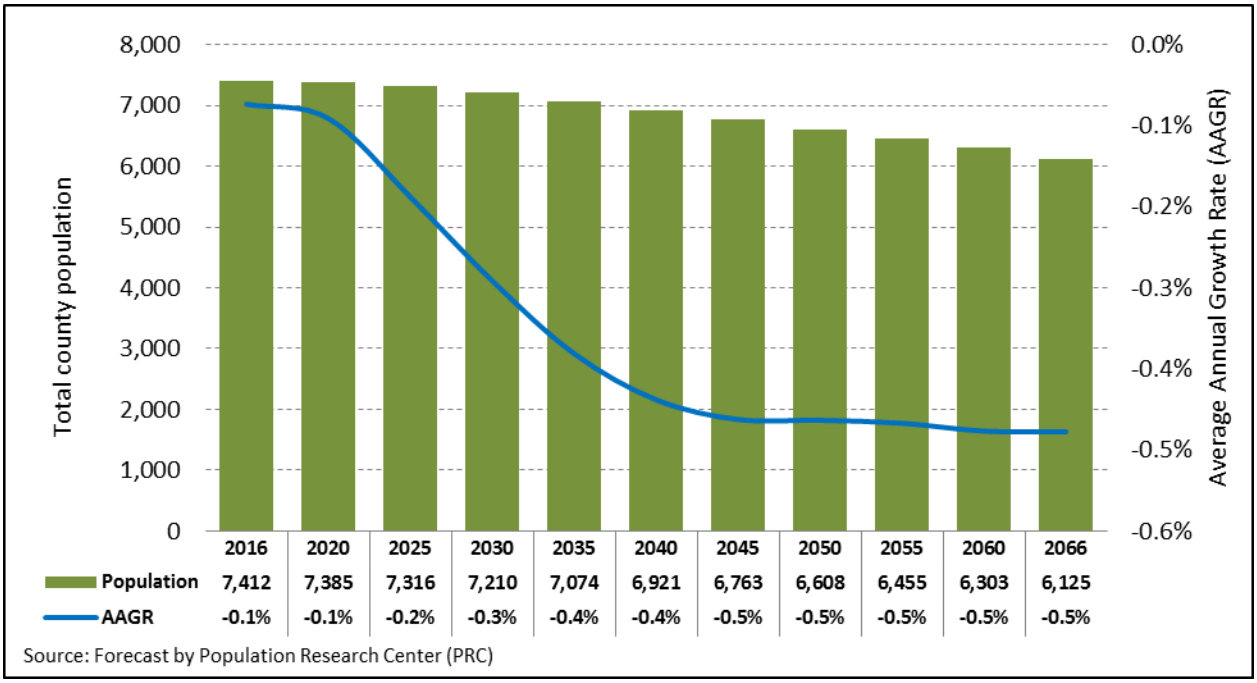
Occupancy rates and PPH are assumed to follow historical trends over the forecast period. If planned housing units were reported in the surveys, then they are assumed to be constructed over the next 5-15 years. For county sub-areas where population growth has been flat or declined, and there is no planned housing construction, population is assumed to continue to decline, but at slightly more modest rates than observed in recent years.

Forecast Trends

Under the most-likely population growth scenario in Grant County, countywide and most sub-area populations are expected to decrease over the forecast period. The countywide population is forecast to decline at an increasing rate over the entire forecast period, progressing from an average annual loss of about five persons in 2016 to nearly 30 persons per year by 2066. Forecasting population loss is driven by both an aging population—contributing to steady increase in deaths over the entire forecast period—as well as the expectation of relatively stable in-migration over the final 31 years of the forecast period.

Grant County's total population is forecast to decrease by nearly 1,300 persons (17 percent) from 2016 to 2066, which translates into a total countywide population of about 6,100 in 2066 (Figure 15). The population is forecast to decrease at increasing rates, meaning more people are expected to die or leave the county as time progresses. The anticipated population decrease is based on the assumption that Grant County's natural decrease will continue to grow in magnitude, exceeding net in-migration over the forecast horizon.

Figure 15. Grant County—Total Population (2016-2066)



Only one of Grant County's sub-areas, Canyon City UGB, is expected to see a population increase, but even so it is forecast to be minimal. Canyon City's population is expected to increase by roughly 26 persons during the initial 19-year period, and only 12 over the last 31-year period. At the same time the remaining sub-areas are all expected to experience population loss. The John Day UGB and area outside UGBs—the most populous sub-areas—are forecast to see population losses of 63 and 158, respectively, in the initial 19-year period. Both are expected to see even larger losses in the remaining 31-year period.

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

	2016	2035	2066	AAGR (2016-2035)	AAGR (2035-2066)	Share of County 2016	Share of County 2035	Share of County 2066
Grant County	*7,412*	*7,074*	*6,125*	*-0.2%*	*-0.5%*	*100.0%*	*100.0%*	*100.0%*
Canyon City	751	777	789	0.2%	0.0%	10.1%	11.0%	12.9%
Dayville	150	140	111	-0.4%	-0.7%	2.0%	2.0%	1.8%
Granite	38	36	29	-0.4%	-0.7%	0.5%	0.5%	0.5%
John Day	2,106	2,043	1,837	-0.2%	-0.3%	28.4%	28.9%	30.0%
Long Creek	197	184	155	-0.4%	-0.6%	2.7%	2.6%	2.5%
Monument	128	119	100	-0.4%	-0.6%	1.7%	1.7%	1.6%
Mt. Vernon	525	491	406	-0.4%	-0.6%	7.1%	6.9%	6.6%
Prairie City	908	847	713	-0.4%	-0.6%	12.3%	12.0%	11.6%
Seneca	209	195	159	-0.4%	-0.7%	2.8%	2.8%	2.6%
Outside UGBs	2,400	2,242	1,826	-0.4%	-0.7%	32.4%	31.7%	29.8%

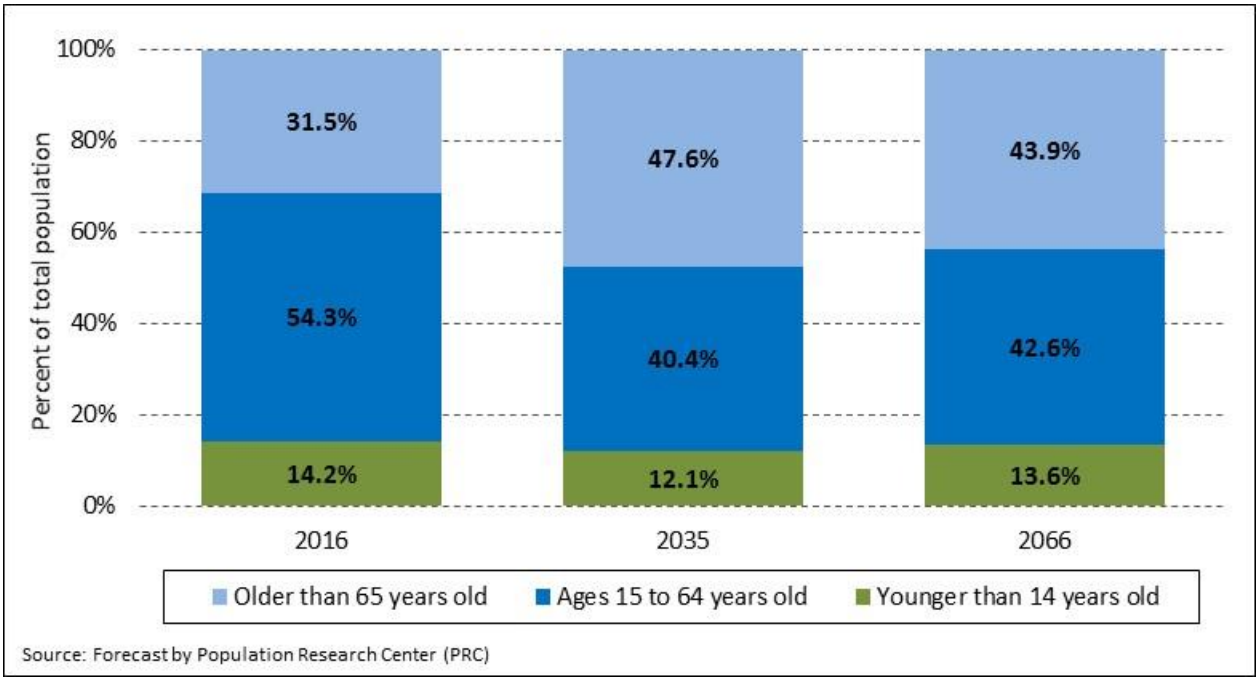
Source: Forecast by Population Research Center (PRC)

Note 1: For simplicity each UGB is referred to by its primary city's name.

Forecast Trends in Components of Population Change

As previously discussed, a key factor in increasing deaths is an aging population. From 2016 to 2035 the proportion of county population 65 or older is forecast to grow from roughly 32 percent to about 48 percent; however the proportion of the population 65 or older is expected to actually slightly decrease from 2035 to 2066 (Figure 17). For a more detailed look at the age structure of Grant County's population see the forecast table published to the forecast program website (http://www.pdx.edu/prc/opfp).

Figure 17. Grant County—Age Structure of the Population (2016, 2035, and 2066)

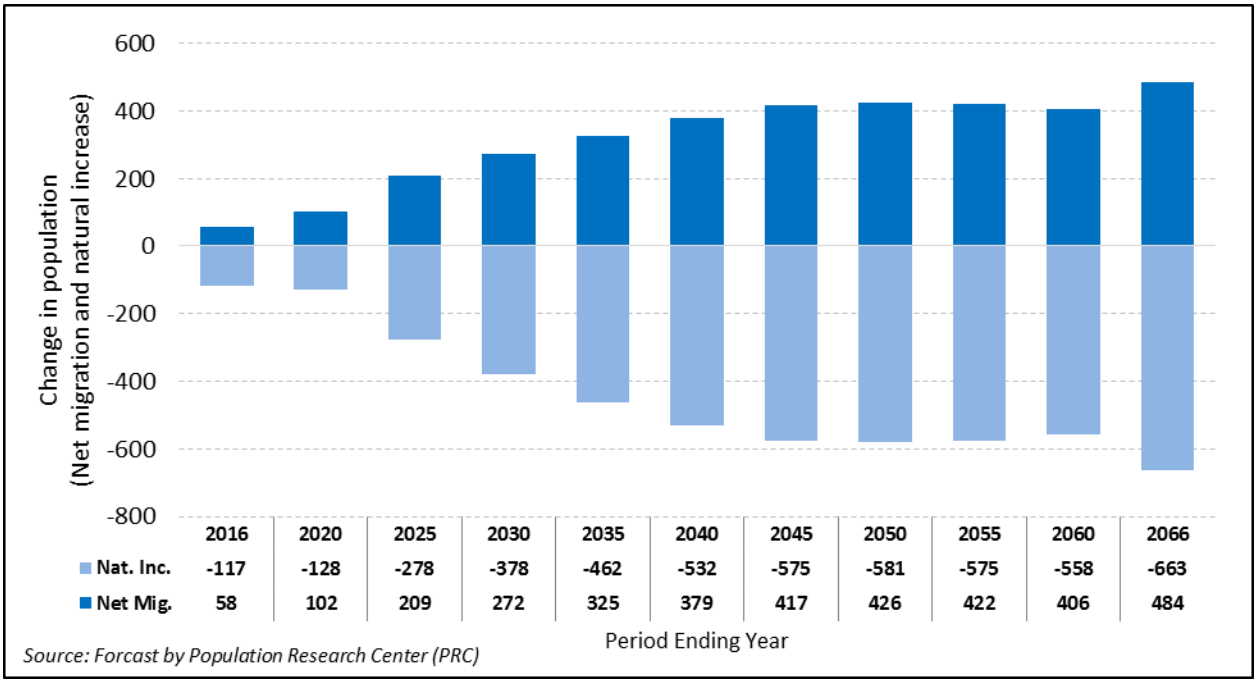


As the countywide population ages in the near-term—contributing to a slow-growing population of women in their years of peak fertility—and more women choose to have fewer children and have them at an older age, the number of births is expected to decrease; this combined with the rise in number of deaths, is expected to cause natural decrease to grow in magnitude (Figure 18).

Net in-migration is forecast to increase rapidly in the near-term and then remain relatively stable over the remainder of the forecast period. The majority of these net in-migrants are expected to be middle-age or older individuals and children under the age of 14.

In summary, increasing natural decrease and relatively steady net in-migration are expected to lead to population decline over the entire forecast period (Figure 18). An aging population is expected to not only lead to an increase in deaths, but a smaller proportion of women in their childbearing years will likely result in a long-term decline in births. Net in-migration is expected to persist throughout the entire forecast period, but will not fully offset natural decrease, leading to population decline.

Figure 18. Grant County—Components of Population Change, 2016-2066



Glossary of Key Terms

Cohort-Component Method: A method used to forecast future populations based on changes in births, deaths, and migration over time; this method models the population in age cohorts, which are survived into progressively older age groups over time and are subject to age-specific mortality, fertility and net migration rates to account for population change.

Coordinated population forecast: A population forecast prepared for the county along with population forecasts for its city 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 residency.

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 quarters population counts.

Occupancy rate: The proportion of total housing units that is occupied by individuals or groups of persons.

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

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. This is commonly estimated to be 2.1 children per woman in the U.S.

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. The cities of Canyon City, Granite, Long Creek, Monument, Mount Vernon, Prairie City, and Seneca did not submit survey responses.

Canyon City—Grant County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
						Promos: **Hinders:**

Canyon City—Grant County—NO SURVEY RESPONSE	
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Dayville— Grant County—11/05/2015						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
N/A	Housing occupancy appears to remain stable.	Nothing planned.	None	None	No new development of our infrastructure is planned.	**Promos:** **Hinders:**
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies	No anticipated growth.					

Dayville— Grant County—11/05/2015	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Granite—Grant County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
						Promos: **Hinders:**
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies						

Granite—Grant County—NO SURVEY RESPONSE	
Other information (e.g. planning documents, email correspondence, housing development survey)	

City of John Day—Grant County—10/30/2015						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
Median age of residents: 42.2 years. However, the cities demographic profile tilts toward the elderly. Population is 93.8% White; 2.7% Hispanic; 1.5% Native American; 0.7% Asian Americans and 0.5% African Americans.	Most of the building permits issued are for remodeling projects, accessory buildings, decks, garages and carports. In 2014, we issued only one building permit for a new single family home.	No applications for planned housing development.	Currently processing a land use application for an Adult Foster Care facility for a maximum of 5 clients.	Through the work of the Blue Mountain Forest Collaborative in John Day, the effort to increase the pace of federal forest restoration work has already begun. John Day based Iron Triangle LLC began work on the Malheur national	City and Rural Fire District are partners in building a new fire station currently under construction estimated completion date 2016; 2015 completed a sidewalk/beautification project in the Downtown area; new sidewalk project scheduled for construction in 2018. City needs to replace Wastewater Treatment Plant Facility within next 10 years.	**Promos:** Economic opportunities for John Day lie in locating new industries at the Grant County Airport Industrial Park and taking advantage of the natural resources, especially those offered by the public lands in the county. **Hinders:** Lack of high-speed internet; decline in workforce; restrictions to annual saw log timber harvest; changes to FEMA National Flood Insurance Program; application of Oregon Land Use laws in Rural Oregon (urban vs. rural areas have been an ongoing issue affecting economic development in eastern Oregon); insufficient

City of John Day—Grant County—10/30/2015						
				Forest's ambitious stewardship program for accelerated forest restoration. It will increase its workforce by as much as 20% due to a 10-year contract, and in late 2013, the Malheur National Forest Service added about 20 positions in preparation for the work ahead.		infrastructure to support growth (the capacity to pay for it is a limiting constraint. The lack of growth and tax revenues). .

City of John Day—Grant County—10/30/2015	
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Long Creek—Grant County—NO SURVEY RESPONSE

Long Creek—Grant County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
						Promos: **Hinders:**
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and						

Long Creek—Grant County—NO SURVEY RESPONSE	
studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Monument—Grant County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
						Promos: **Hinders:**
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and						

Monument—Grant County—NO SURVEY RESPONSE	
studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Mount Vernon—Grant County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
						Promos: **Hinders:**
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and						

Mount Vernon—Grant County—NO SURVEY RESPONSE	
studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Prairie City—Grant County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
						Promos: **Hinders:**
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and						

Prairie City—Grant County—NO SURVEY RESPONSE	
studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Seneca—Grant County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	**Observations about Housing (including vacancy rates)**	**Planned Housing Development/Est. Year Completion**	**Future Group quarterss Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
						Promos: **Hinders:**
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and						

Seneca—Grant County—NO SURVEY RESPONSE	
studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Appendix B: Specific Assumptions

Canyon City

The 5-year average annual housing unit growth rate is assumed to gradually decline throughout the forecast period, but the overall 50-year annual average is close to 0.21 percent, a rate slightly higher than the 2010-2015 average level. The occupancy rate is assumed to slightly decrease, but averages 85 percent throughout the 50-year horizon. PPH is assumed to stay stable at 2.15 over the forecast period. The group quarters population is assumed to stay at the average level as in the 2000s.

Dayville

The 5-year average annual housing unit growth rate is assumed to gradually decline throughout the forecast period, which is consistent as the historical trend after 2000. The occupancy rate is assumed to gradually decrease, and averages 69 percent throughout the 50-year horizon. PPH is assumed to stay stable at 2.09 over the forecast period. The group quarters population is assumed to remain at zero.

Granite

The 5-year average annual housing unit growth rate is assumed to gradually decline throughout the forecast period, and the overall 50-year annual average is slightly below zero percent. The occupancy rate is assumed to gradually decrease throughout the 50-year horizon, and averages 22 percent, which is slightly lower than in Census 2010. PPH is assumed to stay stable over the forecast period, and averages 1.73 annually. There is no group quarters population in Granite.

John Day

The 5-year average annual housing unit growth rate is assumed to gradually decline over the forecast period, but still remain higher than the average rate during 2010-2015. The occupancy rate is assumed to slightly decrease, and averages above 84 percent throughout the 50-year horizon. PPH is assumed to stay steady at 2.15 over the forecast period. The group quarters population is assumed to stay at the historical average level as in the 2010s.

Long Creek

The 5-year average annual housing unit growth rate is assumed to be fairly stable, but the overall 50-year annual average rate is close to zero percent throughout the forecast period. The occupancy rate is assumed to gradually decrease throughout the 50-year horizon, and averages above 67 percent. PPH is assumed to stay stable at 2.34 over the forecast period. The group quarters population is assumed to remain at zero.

Monument

The 5-year average annual housing unit growth rate is assumed to be fairly stable, and the overall future 50-year annual average rate is close to zero percent. The occupancy rate is assumed to slightly decrease,

but averages above 60 percent over the 50-year horizon. PPH is assumed to stay stable over the forecast period, and averages 2.33. There is no group quarters population in Monument.

Mt. Vernon

The 5-year average annual housing unit growth rate is assumed to gradually decline over the forecast period, and the overall 50-year annual average is slightly below zero percent. The occupancy rate is assumed to gradually decrease throughout the 50-year horizon, and averages above 79 percent. PPH is assumed to stay steady at 2.1 over the forecast period. The group quarters population is assumed to remain at zero.

Prairie City

The 5-year average annual housing unit growth rate is assumed to be stable at an average of near zero percent throughout the forecast period. The occupancy rate is assumed to gradually decrease, but averages 77 percent throughout the 50-year horizon. PPH is assumed to stay stable at 2.2 over the forecast period. The group quarters population is assumed to stay at the historical level after 2010.

Seneca

The 5-year average annual housing unit growth rate is assumed to gradually decline throughout the forecast period, and the overall 50-year annual average is slightly below zero percent. The occupancy rate is assumed to slightly decrease throughout the 50-year horizon, but averages above 65 percent. PPH is assumed to stay stable over the forecast period, and averages 2.23 annually. There is no group quarters population in Seneca.

Outside UGBs

The 5-year average annual housing unit growth rate is assumed to gradually decline throughout the forecast period, but the overall 50-year annual average is higher than the average growth rate between 2010 and 2015. The occupancy rate is assumed to gradually decrease, but averages above 62 percent throughout the 50-year horizon. PPH is assumed to be stable at 2.1 over the forecast period. The group quarters population is assumed to remain at zero.

Appendix C: Detailed Population Forecast Results

Figure 19. Grant County - Population by Five-Year Age Group

Population Forecasts by Age Group / Year	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2066
00-04	322	295	265	251	251	254	255	255	248	247	243	241
05-09	367	355	324	296	285	293	301	302	291	287	284	282
10-14	364	375	366	339	317	314	327	336	324	317	312	309
15-19	376	317	336	334	317	304	306	319	314	308	301	297
20-24	270	253	209	226	231	226	221	222	223	223	219	216
25-29	193	192	182	153	170	179	178	174	168	171	171	170
30-34	320	214	220	212	182	208	222	220	207	204	207	205
35-39	343	367	226	236	232	205	238	253	242	231	227	226
40-44	359	337	375	234	250	253	226	262	269	261	248	245
45-49	363	360	337	381	244	268	275	246	274	286	277	272
50-54	469	362	366	347	402	264	294	303	260	295	307	302
55-59	613	524	387	397	386	458	305	340	336	295	333	333
60-64	719	668	559	420	441	440	529	354	379	382	334	339
65-69	722	782	727	617	475	512	518	624	401	436	441	425
70-74	568	677	764	724	630	498	549	554	641	420	457	454
75-79	445	546	683	784	762	679	547	604	582	685	448	452
80-84	291	371	488	620	729	728	660	530	562	554	650	593
85+	309	391	502	640	769	838	812	710	735	702	697	764
Total	**7,412**	**7,385**	**7,316**	**7,210**	**7,074**	**6,921**	**6,763**	**6,608**	**6,455**	**6,303**	**6,154**	**6,125**

Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2016.

Figure 20. Grant County's Sub-Areas - Total Population

Area/Year	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2066
Grant County	7,412	7,385	7,316	7,210	7,074	6,921	6,763	6,608	6,455	6,303	6,154	6,125
Canyon City UGB	751	758	765	772	777	781	783	786	787	788	789	789
Dayville UGB	150	150	148	145	140	136	131	126	121	117	112	111
Granite UGB	38	38	37	37	36	34	33	32	31	30	29	29
John Day UGB	2,106	2,098	2,088	2,070	2,043	2,013	1,981	1,948	1,914	1,878	1,843	1,837
Long Creek UGB	197	196	193	189	184	179	174	169	164	160	155	155
Monument UGB	128	127	125	123	119	116	113	109	106	103	100	100
Mt. Vernon UGB	525	522	515	504	491	477	462	448	435	422	409	406
Prairie City UGB	908	901	887	868	847	823	800	778	757	736	717	713
Seneca UGB	209	208	205	200	195	189	183	177	172	166	160	159
Outside UGB Area	2,400	2,388	2,354	2,304	2,242	2,173	2,103	2,035	1,968	1,903	1,839	1,826

Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2016.