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

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Coordinated Population Forecast

2016

Through

2066

Wasco County

Urban Growth Boundaries (UGB) & Area Outside UGBs

Population Research Center
PORTLAND STATE UNIVERSITY

Photo Credit: The Dalles Bridge. (Photo No. wascDB2901)
Gary Halvorson, Oregon State Archives
http://arcweb.sos.state.or.us/pages/records/local/county/scenic/wasco/9.html

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Prepared by

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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

Wasco County's total population has grown slowly since 2000, with average annual growth rates of less than one percent between 2000 and 2010 (Figure 1). The Dalles UGB and the area outside UGBs posted the highest average annual growth rates, both at about 0.6 percent during the 2000 to 2010 period.

Wasco County's positive population growth in the 2000s was the result of a substantial net in-migration and periods of small natural increases and decreases (Figure 12). While net in-migration fluctuated dramatically during the early years of the last decade, the number of in-migrants has been more stable during second half of the decade and the recent years, contributing to a population increase.

Forecast

Total population in Wasco County as a whole as well as within some of its sub-areas will likely grow at a slightly faster pace in the near-term (2016 to 2035) compared to the long-term (Figure 1). The tapering of growth rates is largely driven by an aging population—a demographic trend which is expected to contribute to a natural decrease (more deaths than births)—as well as a decline in net in-migration toward the end of the forecast.

Even so, Wasco County's total population is forecast to increase by nearly 4,400 over the next 19 years (2016-2035) and by more than 10,500 over the entire 50-year forecast period (2016-2066). The Dalles, Mosier, and the area outside UGBs are expected to grow the most of all of Wasco County's sub-areas.

Figure 1. Wasco 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)
Wasco County	*23,791*	*25,213*	*0.6%*	*26,553*	*30,928*	*37,093*	*0.8%*	*0.6%*
Antelope UGB	59	46	-2.5%	51	51	51	0.0%	0.0%
Dufur UGB	602	610	0.1%	611	618	620	0.1%	0.0%
Maupin UGB	420	421	0.0%	428	452	500	0.3%	0.3%
Mosier UGB	418	441	0.5%	456	561	716	1.1%	0.8%
Shaniko UGB	26	36	3.3%	36	36	36	0.0%	0.0%
The Dalles UGB	14,840	15,792	0.6%	16,823	20,208	25,103	1.0%	0.7%
Outside UGBs	7,426	7,867	0.6%	8,147	9,000	10,066	0.5%	0.4%

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

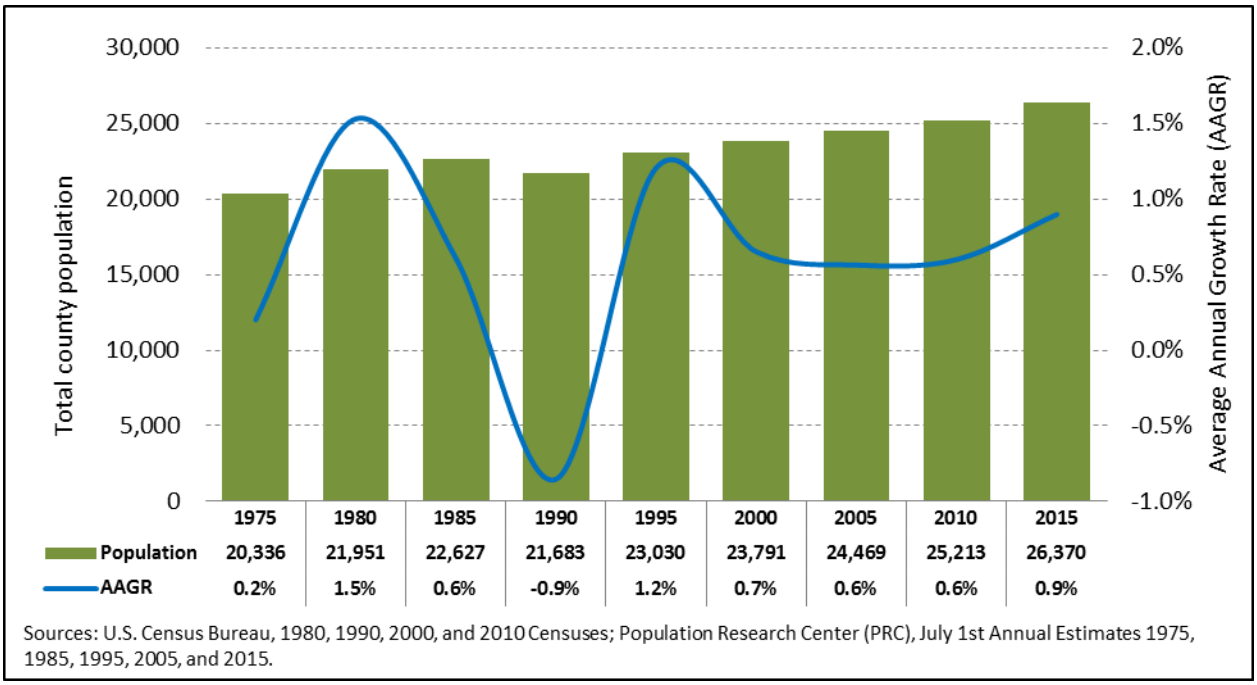
Historical Trends

Different growth patterns occur in different parts of the County. Each of Wasco 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

Wasco County's total population grew by about 30 percent between 1975 and 2015—from roughly 20,300 in 1975 to about 26,400 in 2015 (Figure 2). During this 40-year period, the county realized the highest growth rates in the late 1970s, which coincided with a period of relative economic prosperity. During the 1980s, challenging economic conditions, both nationally and within the county, led to population decline. The early 1990s brought a rebound in population growth, but again challenging economic conditions in the late 1990s yielded declines in population growth. Even so Wasco County experienced positive population growth over the last decade (2000 to 2010)—averaging around half of one percent per year. In recent years, growth rates have slightly increased, leading to faster paced population growth between 2010 and 2015.

Figure 2. Wasco County—Total Population (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.

Wasco County's population change is the combined population growth or decline within its sub-area. During the 2000s, Wasco County's average annual population growth rate stood at a less than one percent (Figure 3). Every sub-area with the exception of The Dalles, Shaniko, and the area outside UGBs

recorded average annual growth rates below that of the county. Shaniko's average annual growth rate of 3.3 percent is an outlier, as this growth rate equates to one person per year for the urban area to reach a total of 36 persons in 2010. The Dalles and the area outside UGBs compose the majority of Wasco County's total population which means that these two sub-areas strongly influence countywide trends in population change. This is observed in the consistency of average annual growth rates between The Dalles, the area outside UGBs, and the county as a whole.

Figure 3. Wasco 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
Wasco County	*23,791*	*25,213*	*0.6%*	*100.0%*	*100.0%*
Antelope	59	46	-2.5%	0.2%	0.2%
Dufur	602	610	0.1%	2.5%	2.4%
Maupin	420	421	0.0%	1.8%	1.7%
Mosier	418	441	0.5%	1.8%	1.7%
Shaniko	26	36	3.3%	0.1%	0.1%
The Dalles	14,840	15,792	0.6%	62.4%	62.6%
Outside UGBs	7,426	7,867	0.6%	31.2%	31.2%

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

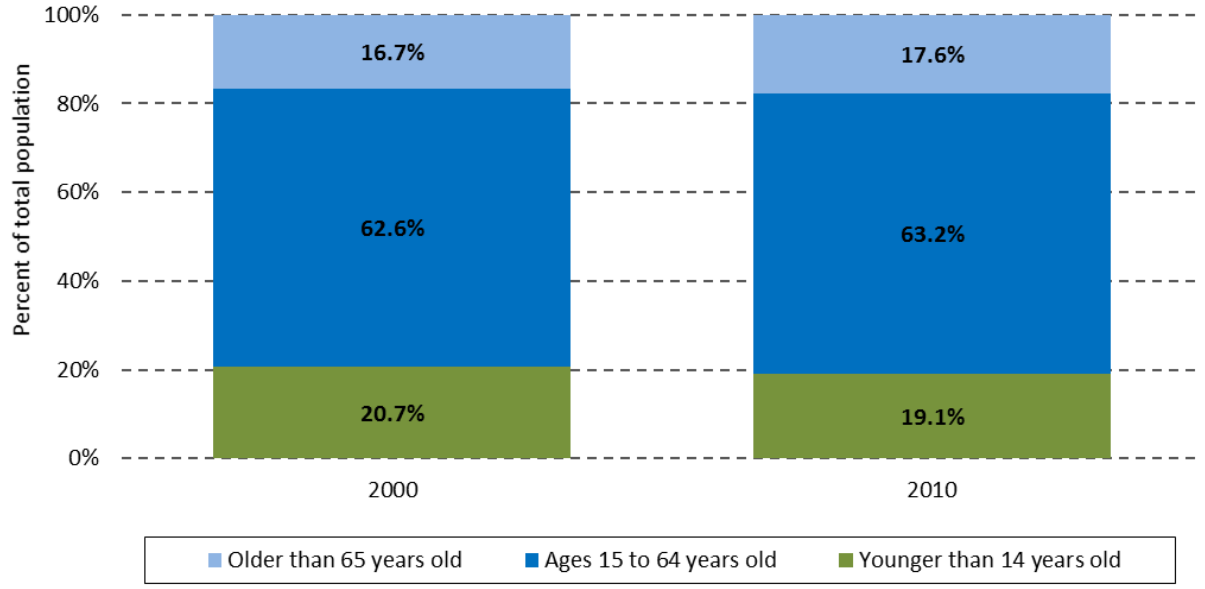
Note: For simplicity each UGB is referred to by its primary city's name.

Age Structure of the Population

Wasco County's population is aging, a trend observed in many areas across Oregon and the nation (Figure 4). 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. For Wasco County this has been true. Further underscoring Wasco County's trend in aging, the median age increased from about 40 in 2000 to around 42 in 2010.[1]

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

Figure 4. Wasco 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 both the number of births and average household size[2]. The Hispanic population within Wasco County increased substantially 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 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 have tended to be higher than among White, non-Hispanic women. Second, Hispanic and minority households tend to be larger relative to White, non-Hispanic households.

[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. Wasco County—Hispanic or Latino and Race (2000 and 2010)

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
Total population	*23,791*	*100.0%*	*25,213*	*100.0%*	*1,422*	*6.0%*
Hispanic or Latino	2,214	9.3%	3,743	14.8%	1,529	69.1%
Not Hispanic or Latino	21,577	90.7%	21,470	85.2%	-107	-0.5%
White alone	19,967	83.9%	19,556	77.6%	-411	-2.1%
Black or African American alone	65	0.3%	85	0.3%	20	30.8%
American Indian and Alaska Native alone	845	3.6%	1,018	4.0%	173	20.5%
Asian alone	189	0.8%	191	0.8%	2	1.1%
Native Hawaiian and Other Pacific Islander alone	116	0.5%	142	0.6%	26	22.4%
Some Other Race alone	19	0.1%	16	0.1%	-3	-15.8%
Two or More Races	376	1.6%	462	1.8%	86	22.9%

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

Births

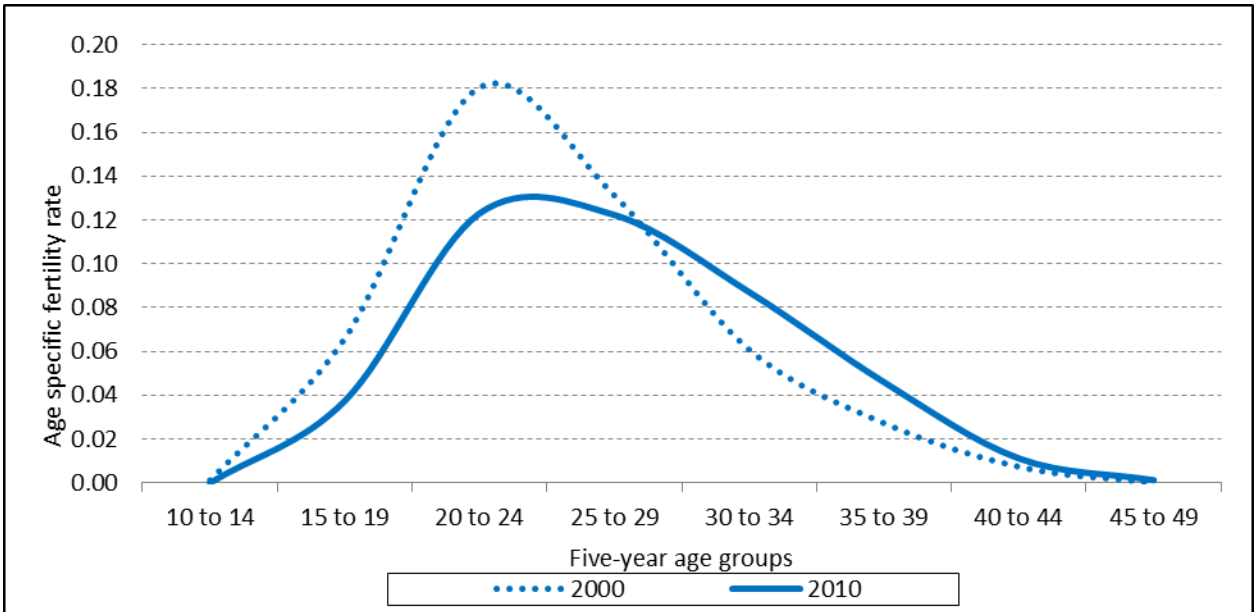
Historical fertility rates for Wasco County mirror trends similar to Oregon as a whole. Total fertility rates decreased in Wasco County from 2000 to 2010, just as they decreased for the state over the same time period (Figure 6). At the same time fertility rates among younger women in Wasco County were lower in 2010 compared to 2000, and women are choosing to have children at older ages (Figure 7). While age specific fertility largely follows statewide patterns, county fertility changes are distinct from those of the state in two ways. First, total fertility in Wasco County decreased during the 2000s by a larger amount than observed for the state; and it remained above *replacement fertility*, while for Oregon as a whole, it continued to fall further below the replacement rate. Second, the fertility of women in their years of peak fertility declined more dramatically with a more pronounced shift of fertility to older age groups in Wasco County than in Oregon as a whole.

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

	2000	2010
Wasco County	2.37	2.14
Oregon	1.98	1.80

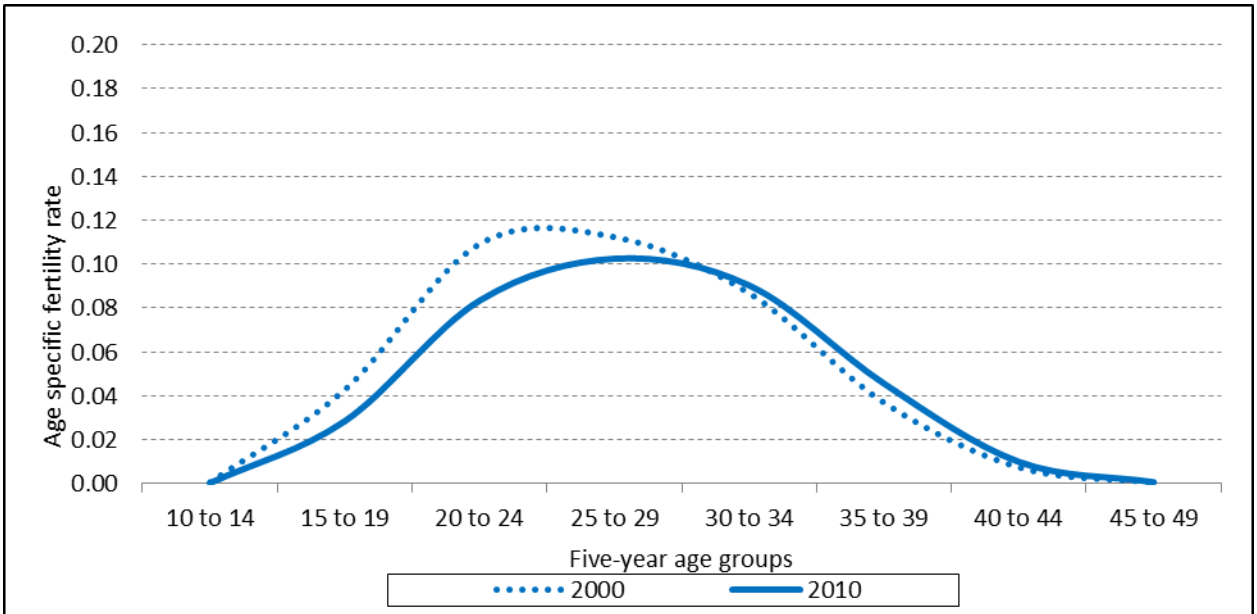
Sources: U.S. Census Bureau, 2000 and 2010 Censuses .
Oregon Health Authority, Center for Health Statistics.
Calculated by Population Research Center (PRC).

Figure 7. Wasco 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 Research Center (PRC).

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 by the area in which the mother resides. Generally the number of births fluctuates from year to year. For example, a sub-area with an increase in births between two years could easily show a decrease for a different time period; however for the 10-year period from 2000 to 2010, the county as a whole saw a decrease in births, while The Dalles UGB, the most populous

urban area, recorded an increase in births (Figure 9). The countywide decrease in births is accounted for in the decrease among the smaller UGBs and area outside UGBs.

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

	2000	2010	Absolute Change	Relative Change	Share of County 2000	Share of County 2010
Wasco County	*301*	*298*	*-3*	*-1.0%*	*100.0%*	*100.0%*
The Dalles	203	214	11	5.4%	67.4%	71.8%
Smaller UGBs	22	9	-13	-59.1%	7.3%	3.0%
Outside UGBs	76	75	-1	-1.3%	25.2%	25.2%

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

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

Note 2: Smaller UGBs are those with populations less than 7,000 in forecast launch year.

Deaths

The population in the county, as a whole, is aging and people are living longer. For Wasco County in 2000, life expectancy for males was 73 years and for females was 81 years. By 2010, life expectancy had increased to 76 for males, but had remained relatively the same for females. For both Wasco 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. Even so, the total number of countywide deaths increased (Figure 10), mostly due to an increase in the number of baby boomers reaching their senior years and an aging population.

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

	2000	2010	Absolute Change	Relative Change	Share of County 2000	Share of County 2010
Wasco County	*272*	*286*	*14*	*5.1%*	*100.0%*	*100.0%*
The Dalles	182	196	14	7.7%	66.9%	68.5%
All other areas	90	90	0	0.0%	33.1%	31.5%

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

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

Note 2: All other areas includes some larger UGBs (those with populations greater than 7,000), all smaller UGBs (those with populations less than 7,000), and the area outside UGBs. Detailed, point level death data were unavailable for 2000, thus PRC was unable to assign deaths to some UGBs.

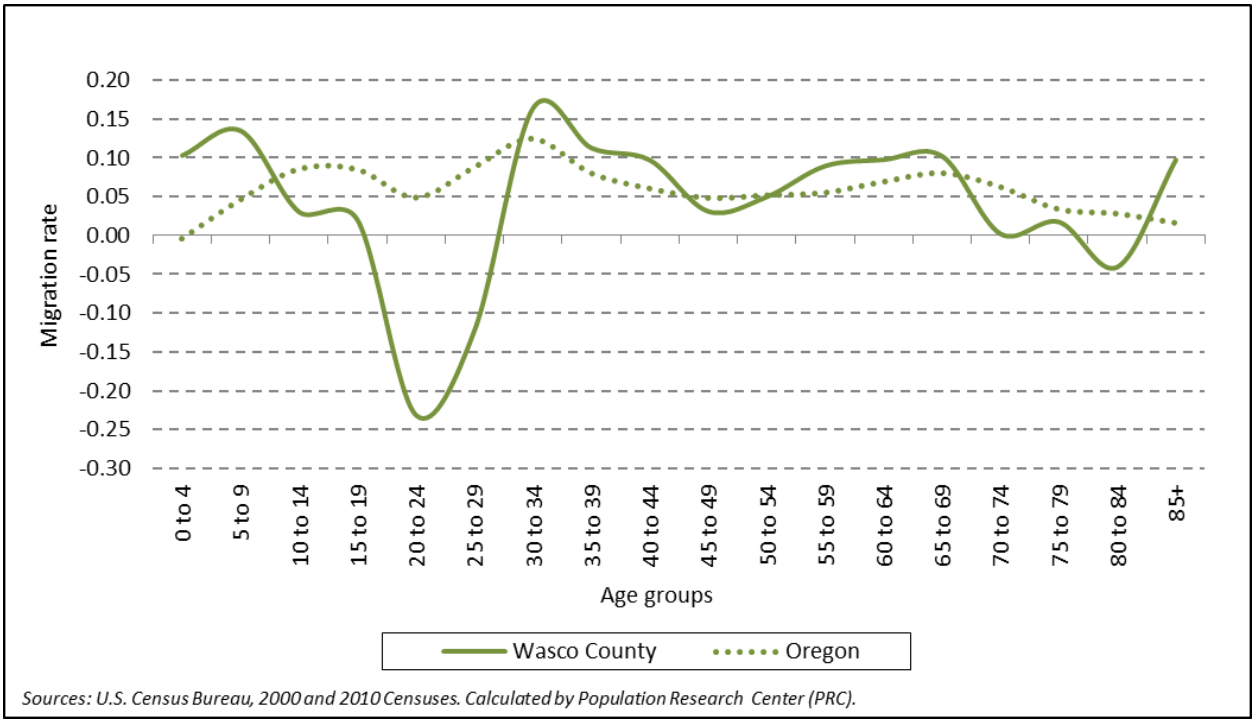
Migration

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 groups. Figure 11 shows the historical age-specific migration rates by five-year age group, both for Wasco County and Oregon. The migration rate is shown as the number of net migrants per person by age group.

From 2000 to 2010, younger adults (ages with the highest mobility levels) moved out of the county in search of employment, education opportunities, or a different life experience, as well as for serving in

the military. At the same time, however, the county attracted a substantial number of middle aged migrants who likely moved into the county due to economic opportunities or in search of affordable housing. Many in this group of migrants were assumed to be accompanied by their children as shown in the in-migration of persons under the age of 14.

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

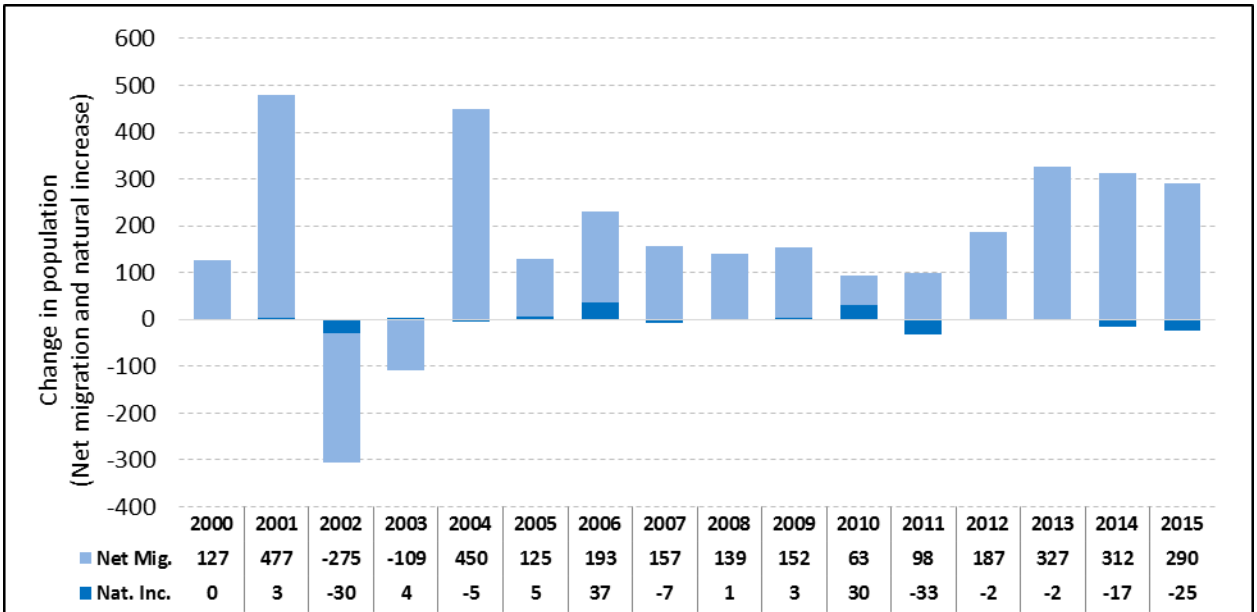


Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

Historical Trends in Components of Population Change

In summary, Wasco County's positive population growth in the 2000s was the result of substantial net in-migration (Figure 12). Natural increase (more births than deaths) fluctuated over the forecast period, but has been consistently negative since 2010. While net in-migration fluctuated dramatically during the early years of the last decade, the number of in-migrants has been more stable during recent years, contributing to a population increase.

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



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Net Mig.	127	477	-275	-109	450	125	193	157	139	152	63	98	187	327	312	290
Nat. Inc.	0	3	-30	4	-5	5	37	-7	1	3	30	-33	-2	-2	-17	-25

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

The total number of housing units in Wasco County increased rapidly during the mid-2000s, but this growth slowed with the onset of the national recession in 2007. Over the entire 2000 to 2010 period, the total number of housing units increased by about eight percent countywide; this resulted in more than 800 new housing units (Figure 13). The Dalles and area outside UGBs captured about 92 percent of these 800 new housing units. In terms of relative housing growth, Mosier grew at the highest rate during the 2000s - its housing unit inventory increased nearly 29 percent (57 housing units) by 2010.

The rates of increase in the number of total housing units are similar to the growth rates of populations in The Dalles and the area outside UGBs, which are Wasco County's more populous areas. For the remaining areas of the county, the growth rates for housing may differ from the rates for population due to the number of total housing units being smaller than the number of persons, or the UGB has experienced changes in the average number of persons per household or in occupancy rates.

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

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
Wasco County	*10,651*	*11,487*	*0.8%*	*100.0%*	*100.0%*
Antelope	41	43	0.5%	0.4%	0.4%
Dufur	271	266	-0.2%	2.5%	2.3%
Maupin	247	275	1.1%	2.3%	2.4%
Mosier	197	254	2.5%	1.8%	2.2%
Shaniko	35	24	-3.8%	0.3%	0.2%
The Dalles	6,329	6,787	0.7%	59.4%	59.1%
Outside UGBs	3,531	3,838	0.8%	33.2%	33.4%

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

[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 can cause relatively larger change in occupancy rates. From 2000 to 2010 the occupancy rate in Wasco County declined slightly; this was most likely due to slack in demand for housing as individuals experienced the effects of the Great Recession. Many sub-areas experienced similar declines in occupancy rates, but two UGBs, Dufur and Shaniko, recorded increases in occupancy rates.

Average household size, or PPH, in Wasco County was 2.4 in 2010, slightly lower than in 2000 (Figure 14). Wasco County's PPH in 2010 was slightly lower than for Oregon as a whole, which had a PPH of 2.5. PPH varied across the seven sub areas, with all of them falling between 1.6 and 2.5 persons per household. In 2010 the highest PPH was in Dufur and the area outside UGBs at 2.5 and the lowest in Antelope at 1.6.

Figure 14. Wasco 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
Wasco County	*2.5*	*2.4*	*0.0*	*88.3%*	*87.3%*	*-0.9%*
Antelope	2.2	1.6	-0.5	65.9%	65.1%	-0.7%
Dufur	2.4	2.5	0.1	92.3%	92.9%	0.6%
Maupin	2.3	2.0	-0.3	74.5%	72.7%	-1.8%
Mosier	2.5	2.1	-0.4	85.3%	81.5%	-3.8%
Shaniko	1.9	2.1	0.3	40.0%	70.8%	30.8%
The Dalles	2.4	2.4	0.0	93.8%	93.0%	-0.8%
Outside UGBs	2.6	2.5	-0.1	79.9%	78.7%	-1.2%

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

[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 might 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 forecast horizon.

Assumptions about fertility, mortality, and migration are derived from observations based on life events, as well as trends unique to Wasco County and its larger sub-areas.[3] Population change for smaller sub-areas is determined by the change in the number or the growth rate of total housing units 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 and the propensity for older households to have smaller PPHs. The forecast period is 2016-2066.

Assumptions for the County and Larger Sub-Areas

During the forecast period, the population in Wasco County is expected to age more quickly during the first half of the forecast period and then remain relatively stable over the forecast horizon. Fertility rates are expected to decline only very slightly throughout the 50-year period. Total fertility in Wasco County is forecast to decrease from 2.1 children per woman in 2015 to 2.0 children per woman by 2065. The area outside UGBs is expected to follow a similar fertility pattern, but The Dalles is forecast to have total fertility remain stable at around 2.2 children per woman over the entire forecast period.

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 and larger sub-areas are projected to follow the statewide trend of increasing life expectancy throughout the forecast period—progressing from a life expectancy of 78 years in 2010 to 86 in 2060. However, in spite of increasing life expectancy and the corresponding increase in survival rates, Wasco County's aging population and large population cohorts reaching later stages of life will increase the overall number of deaths throughout the forecast period. Larger sub-areas within the county will experience a similar increase in deaths as their population ages.

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

[3] 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.

unique to Wasco County. Net out-migration of younger persons and net in-migration of middle-age and some older individuals will persist throughout the forecast period. Countywide average annual net migration is expected to increase from 228 net in-migrants in 2015 to 305 net in-migrants in 2035. Over the last 30 years of the forecast period average annual net migration is expected to decrease some to about 254 net in-migrants by 2065. Net in-migration is expected to account for all of Wasco County's population growth throughout the entire forecast period.

Assumptions for Smaller 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.

PPHs are assumed to stay relatively stable over the forecast period, with smaller household sizes being associated with an aging population in Wasco County and its sub-areas. Occupancy rates are forecast to remain stable for Antelope, Dufur, and Shaniko, while they are expected to gradually increase for Maupin and Mosier.

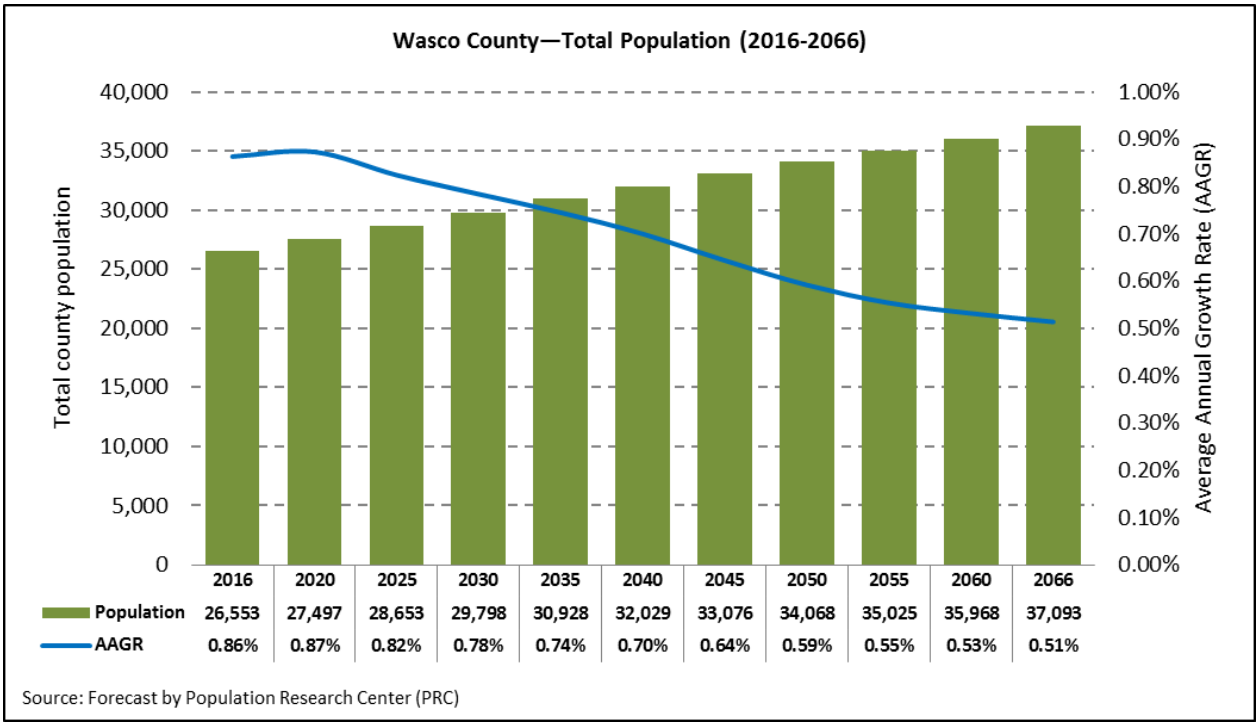
In addition, for sub-areas experiencing population growth, we assume a higher growth rate in the near-term, with growth stabilizing over the remainder of the forecast period. If planned housing units were reported in the surveys, then they are assumed to be constructed over the next 5-15 years. Finally, for county sub-areas where population growth has been flat or has declined, and there is no planned housing construction, population growth is held mostly stable with little to no change.

Forecast Trends

Under the most-likely population growth scenario in Wasco County, countywide and sub-area populations are expected to increase over the forecast period. The countywide population growth rate is forecast to slowly decline throughout the forecast period. Forecasting tapered population growth is driven by both an aging population—contributing to a steady increase in deaths over the entire forecast period—as well as the expectation of declining in-migration over the second half of the forecast period. The combination of these factors will likely result in a slowly declining population growth rate as time progresses through the forecast period.

Wasco County's total population is forecast to grow by a little more than 10,500 persons (40 percent) from 2016 to 2066, which amounts to a total countywide population of 37,093 in 2066 (Figure 15). The population is forecast to grow at the highest rate—just under one percent per year—in the near-term (2016-2020). This anticipated population growth in the near-term is based on two core assumptions: (1) Wasco County's economy will continue to strengthen in the next 4 years; (2) Middle-age persons will continue to migrate into the county—bringing their families or having more children. Net in-migration is the basic contributor to population growth over the forecast period.

Figure 15. Wasco County—Total Forecast Population by Five-year Intervals (2016-2066)



Source: Forecast by Population Research Center (PRC)

The Dalles, Wasco County's most populous UGB, is forecast to experience population growth of nearly 3,400 from 2016 to 2035 and about 4,900 from 2035 to 2066 (Figure 16). The Dalles population is forecast to increase as a share of total county population.

Population outside UGBs is expected to grow by more than 850 people from 2016 to 2035, but is expected to grow at a slightly slower rate during the remaining 31 years of the forecast period, only

adding a little less than 1,100 people from 2035 to 2066. The population of the area outside UGBs is forecast to decline as a share of total countywide population over the forecast period, composing 31 percent of the countywide population in 2016 and about 27 percent in 2066.

Figure 16. Wasco County and Larger 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
Wasco County	*26,553*	*30,928*	*37,093*	*0.8%*	*0.6%*	*100.0%*	*100.0%*	*100.0%*
The Dalles	16,823	20,208	25,103	1.0%	0.7%	63.4%	65.3%	67.7%
Smaller UGBs	1,583	1,719	1,924	0.4%	0.4%	6.0%	5.6%	5.2%
Outside UGBs	8,147	9,000	10,066	0.5%	0.4%	30.7%	29.1%	27.1%

Source: Forecast by Population Research Center (PRC)

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

Note 2: Smaller UGBs are those with populations less than 7,000 in forecast launch year.

The Dalles is expected to capture the largest share of total countywide population growth during the initial 19 years of the forecast period (Figure 17). The Dalles share of growth is forecast to increase during the last 31 years of the forecast. At the same time the area outside UGBs is forecast to capture the second largest share of countywide population growth during the initial 19 years of the forecast, but is expected to garner a slightly smaller share of growth during the last 31 years of the forecast period.

Figure 17. Wasco County and Larger Sub-Areas—Share of Countywide Population Growth

	2015-2035	2035-2065
Wasco County	*100.0%*	*100.0%*
The Dalles	77.4%	79.4%
Smaller UGBs	3.1%	3.3%
Outside UGBs	19.5%	17.3%

Source: Forecast by Population Research Center (PRC)

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

Note 2: Smaller UGBs are those with populations less than 7,000 in forecast launch y

The remaining smaller UGBs are expected to grow by a combined number of about 140 persons from 2016 to 2035, with a combined average annual growth rate of less than half percent (Figure 16). This growth rate is due to expected slow growth among all but one smaller UGB (Figure 18). Nearly all of the population growth is forecast to occur in Mosier, with the remaining four smaller UGBs growing only slightly or not at all. Mosier is forecast to add about 100 new residents by 2035 while Dufur and Maupin are expected to add a combined total of about 30 persons. Antelope and Shaniko are forecast to remain at current population levels. Mosier is expected to increase as a share of total countywide population, while all of the remaining smaller UGBs are forecast to decrease as shares.

Figure 18. Wasco County and Smaller 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
Wasco County	*26,553*	*30,928*	*37,093*	*0.8%*	*0.6%*	*100.0%*	*100.0%*	*100.0%*
Antelope	51	51	51	0.0%	0.0%	0.2%	0.2%	0.1%
Dufur	611	618	620	0.1%	0.0%	2.3%	2.0%	1.7%
Maupin	428	452	500	0.3%	0.3%	1.6%	1.5%	1.3%
Mosier	456	561	716	1.1%	0.8%	1.7%	1.8%	1.9%
Shaniko	36	36	36	0.0%	0.0%	0.1%	0.1%	0.1%
Larger UGBs	16,823	20,208	25,103	1.0%	0.7%	63.4%	65.3%	67.7%
Outside UGBs	8,147	9,000	10,066	0.5%	0.4%	30.7%	29.1%	27.1%

Source: Forecast by Population Research Center (PRC)

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

Note 2: Larger UGBs are those with populations equal to or greater than 7,000 in forecast launch year.

Wasco County's smaller sub-areas are expected to compose roughly three percent of countywide population growth in the initial 19 years of the forecast period, with only a slight increase in this share during the last 31 years (Figure 17). Only Maupin and Mosier are forecast to capture an increasing share of countywide population growth between the initial 19-year period and final 31 years of the forecast.

Figure 19. Wasco County and Smaller Sub-Areas—Share of Countywide Population Growth

	2016-2035	2035-2066
Wasco County	*100.0%*	*100.0%*
Antelope	0.0%	0.0%
Dufur	0.1%	0.0%
Maupin	0.6%	0.8%
Mosier	2.4%	2.5%
Shaniko	0.0%	0.0%
Larger UGBs	77.4%	79.4%
Outside UGBs	19.5%	17.3%

Source: Forecast by Population Research Center (PRC)

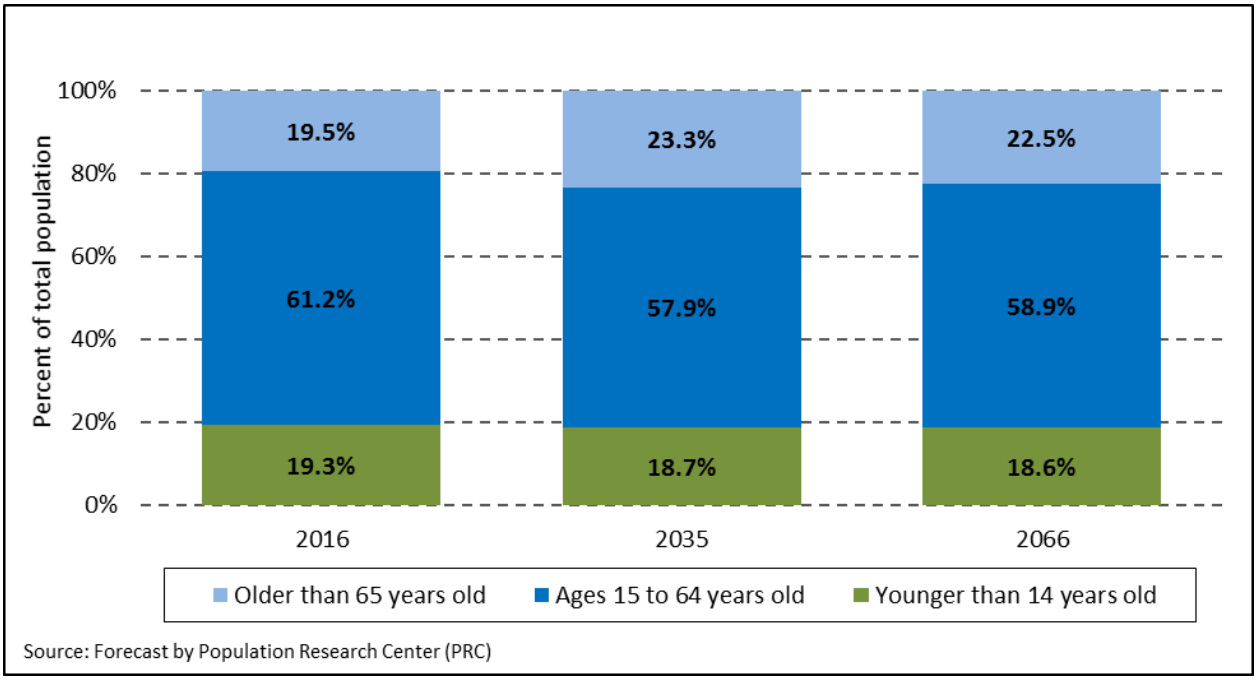
Note 1: For simplicity each UGB is referred to by its primary city's name.

Note 2: Larger UGBs are those with populations equal to or greater than 7,000 in forecast launch year.

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 20 percent to about 23 percent; however the proportion of the population 65 or older is expected to actually slightly decrease from 2035 to 2066 (Figure 20). For a more detailed look at the age structure of Wasco County's population see the forecast table published to the forecast program website (http://www.pdx.edu/prc/opfp).

Figure 20. Wasco County—Age Structure of the Population (2016, 2035, and 2066)

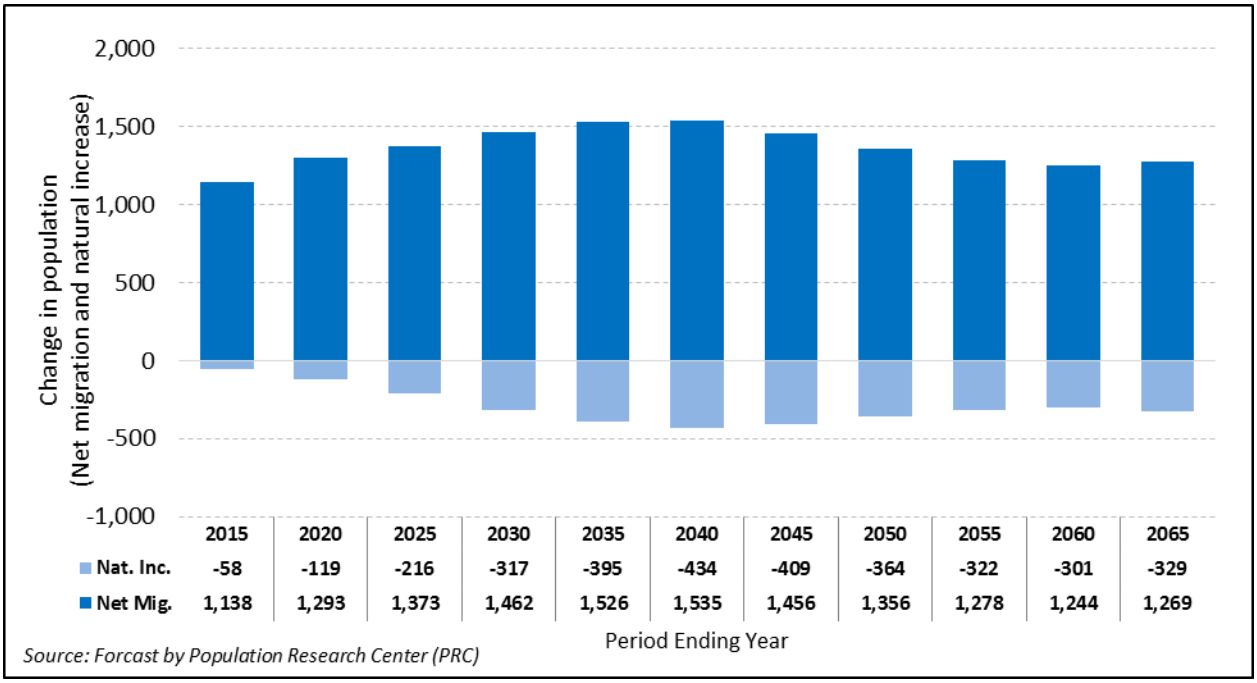


As the countywide population ages in the near-term—contributing to a slow-growing population of women in their years of peak fertility—and more women choose to have fewer children and have them at an older age, the increase in average annual births is expected to slow; this combined with the rise in number of deaths, is expected to cause the natural decrease already occurring to rise in magnitude (Figure 21).

Net in-migration is forecast to increase rapidly between 2016 and 2040, and then decline over the remainder of the forecast period. The majority of these net in-migrants are expected to be middle-aged individuals and children under the age of 14.

In summary, although there will be a rise in the magnitude of natural decrease, a steadily increasing net in-migration will more than offset it; and it will lead to a population increase, reach its peak in 2040 and then slightly taper through the remainder of the forecast period (Figure 21). 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 slowing in the number of births. The net migration is expected to offset the natural decrease, leading to a population increase, but population increase will be slower as in-migration slows down through the end of the forecast.

Figure 21. Wasco County—Components of Population Change, 2015-2065



Source: Forcast by Population Research Center (PRC)

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 Dufur, Shaniko, and The Dalles did not submit survey responses.

Antelope—Wasco County—10/24/2015						
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 Quarters Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
Mostly elderly, few children.	Mostly old late 1800s to early 1900s stick built. A few late 1990s and early 2000s manufactured homes, and a number of older (1960s to 1970s) single & double-wide trailers.	None	None	None	A failing water supply system.	**Promos:** **Hinders:** Very restrictive land use plan.

Antelope—Wasco County—10/24/2015	
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies	Current land use plan has a UGB MUCH SMALLER than the city limits which prevents ANY further growth of the city in terms of housing. There is a small amount of land zoned commercial which could theoretically be developed.
Other information (e.g. planning documents, email correspondence, housing development survey)	

Dufur—Wasco 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 Quarters 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						

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

Maupin—Wasco 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 Quarters Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
Generally 'aging'. School Age population now stable at 230, up from a low of 220.	1-4 single family homes have been approved for construction/ occupancy during each of the last 5 years. Mix of young families and retired couples (2nd Homes).	Probably 1-4 new single family homes.	Temporary Seasonal Housing for summer recreational employees in planned. Very tight rental market.	A new restaurant opened this summer with raving reviews and very impressive patronage. Employs about 8-10 employees.	None.	**Promos:** New Liberty/City Hall Civic Center planned for 2017. **Hinders:** None that we can control.
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and	N/A					

studies	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Mosier—Wasco County—11/16/2015						
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 Quarters Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
City of Mosier does not do forecasting or population composition studies.	Occupancy rates stable. Very little rental housing available, which is a concern for Hood River, The Dalles, Mosier. Unclear how many of the 5 building permits issued this year are for second homes.	2 projects with a total of 78 SFR units and 1 project with 4 MU apt units are planned. The Tanawashee Subdivision: 34 SFR units in 4 phases, Phase I final plat approved this year and lots are selling. Target price: $300k and above, expensive lots with views. Mosier Bluffs' subdivision: 44 SFR units in 5 phases, phases II	None	None	Mosier Water Systems Study being prepared to weigh options for a back up water supply, which might result in drilling a new well.	**Promos:** Mosier's two subdivisions and vacant infill lots are starting to sell. **Hinders:** The city is concerned about the effects of the increasing Short Term Vacation Rental use for existing houses.

		and IV not yet approved but set to begin next year. Target price: $300k and above. Syncline Studios: 4 apt units in 3 phases. Ph1 nearing completion.				
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies	No recent studies on population/housing growth.					

Mosier—Wasco County—11/16/2015	
Other information (e.g. planning documents, email correspondence, housing development survey)	

Shaniko—Wasco 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 Quarters 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						

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

The Dalles—Wasco 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 Quarters 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						

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

Non-UGB Unincorporated Area—Wasco County—11/09/2015						
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 Quarters Facilities**	**Future Employers**	**Infrastructure**	**Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes**
Increasing retirement population, slight decrease in school enrollment numbers, large population of seasonal agriculture laborers, growing numbers of seasonal residents for recreation uses, increase in second home owners in rural areas.	Regional shortage of workforce housing, shortage of seasonal agriculture housing, affordable housing has become a regional concern due to the increase in out of area residents purchasing second homes and other homes	In 2014, 8 new SFDs were approved and must be constructed by 2016. So far, 13 new single family dwellings have been approved in 2015 and must be constructed by 2017.	None.	There have been discussions of future employers locating in Tygh Valley, but this has not yet been confirmed.	Beyond County road improvements, no new significant infrastructure has been proposed for unincorporated areas of Wasco County.	**Promos:** Google expansion inside the City of The Dalles, increase in rural tourism, wineries and cideries. **Hinders:** Aquifer shortages for new dwellings outside cities, lack of available housing for new residents relocating to the area, lack of jobs for young professionals

Non-UGB Unincorporated Area—Wasco County—11/09/2015						
	becoming vacation rentals					
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies	2009 Buildable Lands Study: "Wasco County contains 2,668 existing buildable rural residential Lots covering approximately 12,620.96 acres. Under current regulations, these lots could be partitioned into 3,245 lots. Of the Potential Buildable Lots, 1,658 (51%) are developed and 1,587 (49%) are vacant or redevelopable. Wasco County has available industrial lands and commercial lands in unincorporated communities. The 2009 Transportation System Plan: based on 2030 future transportation conditions and population projections.					
Other information (e.g. planning documents, email correspondence, housing development survey)						

Appendix B: Specific Assumptions

Antelope

The 5-year average annual housing unit growth rate is assumed to be flat over the forecast period. This trend is similar to the historical changes between 2010 and 2015. The occupancy rate is assumed to gradually increase. It averages 66 percent throughout the 50-year horizon, which is higher than Census 2000 and 2010 levels. PPH is assumed to be steady at 1.8 over the forecast period, higher than in Census 2010. There is no group quarters population.

Dufur

The 5-year average annual housing unit growth rate is assumed to slightly decline over the forecast period. The overall 50-year annual average housing unit growth rate is close to zero percent, which is the average of the 2000s and 2010-2015 period. The occupancy rate is assumed to be stable at 92 percent throughout the 50-year horizon, a rate that is marginally lower than the historical rates in the 2000 and 2010 Censuses. PPH is assumed to be steady at 2.47 over the forecast period, the same level as in the 2010 Census. The group quarters population is also assumed to stay the same as in Census 2010.

Maupin

The 5-year average annual housing unit growth rate is assumed to slightly decline over the forecast period, a trend similar to the historical changes from the 2000s to post 2010 period, and the overall 50-year annual average is zero percent. The occupancy rate is assumed to gradually increase, and averages 80 percent throughout the 50-year horizon, which is higher than the Census 2000 and 2010 rates. PPH is assumed to stay at 1.99 over the forecast period, the same rate as in Census 2010. The group quarters population is assumed to stay the same as in Census 2010.

Mosier

The 5-year average annual housing unit growth rate is assumed to gradually decrease through the 50-year horizon, a trend that is similar to the historical trend during the 2000s and 2010-2015. The overall 50-year annual average growth rate is 0.7 percent. The occupancy rate is assumed to gradually increase. It averages 88.6 percent throughout the 50-year horizon, which is higher than the Census 2000 and 2010 rates. PPH is assumed to be stable at 2.13 over the forecast period, the same rate as in Census 2010. The group quarters population is assumed to remain at zero.

Shaniko

The 5-year average annual housing unit growth rate is assumed to fluctuate within a small range through the forecast period. The overall 50-year annual average growth rate is close to zero percent, a rate that is higher than the historical rate in the 2000s. The occupancy rate is assumed to be fairly stable at 70.8 percent throughout the 50-year horizon, which is the same as in Census 2010. PPH is assumed to

be steady at 2.12 over the forecast period, the same as in Census 2010. There is no group quarters population in Shaniko.

The Dalles

Total fertility rates are assumed to be stable at the historical magnitude (observed from the Census 2010) over the forecast period. Survival rates for the whole 50-year horizon are assumed to gradually increase to 2060. Survival rates for 2060 are assumed to be the same as those forecast for the county as a whole. Age-specific net migration rates are assumed to generally follow historical patterns for Wasco County, but with smaller up and down turns for younger age groups, and higher rates for senior age groups between 70 and 84 over the forecast period.

Outside UGBs

Total fertility rates are assumed to be stable over the forecast period but at a magnitude slightly higher than in 2010. Survival rates for the entire 50-year horizon are assumed to gradually increase. Survival rates in 2060 are assumed to be the same as those forecast for the county as a whole. Age-specific net migration rates are assumed to generally follow historical patterns for Wasco County over the forecast period, but at milder magnitudes for multiple age groups.

Appendix C: Detailed Population Forecast Results

Figure 22. Wasco 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	1,619	1,647	1,696	1,779	1,876	1,955	2,022	2,068	2,109	2,156	2,202	2,210
05-09	1,779	1,759	1,800	1,860	1,962	2,066	2,151	2,203	2,238	2,280	2,332	2,342
10-14	1,714	1,856	1,833	1,883	1,956	2,059	2,165	2,232	2,271	2,304	2,349	2,360
15-19	1,686	1,735	1,920	1,903	1,967	2,039	2,144	2,232	2,286	2,323	2,358	2,368
20-24	1,517	1,513	1,572	1,747	1,742	1,796	1,859	1,935	2,001	2,046	2,081	2,088
25-29	1,353	1,458	1,456	1,520	1,698	1,690	1,740	1,783	1,842	1,903	1,947	1,956
30-34	1,612	1,462	1,610	1,615	1,695	1,891	1,880	1,917	1,951	2,014	2,082	2,092
35-39	1,557	1,769	1,568	1,734	1,750	1,833	2,043	2,013	2,039	2,074	2,143	2,158
40-44	1,494	1,604	1,885	1,678	1,866	1,880	1,968	2,174	2,127	2,153	2,192	2,207
45-49	1,488	1,499	1,642	1,938	1,736	1,928	1,941	2,014	2,210	2,161	2,190	2,199
50-54	1,634	1,526	1,544	1,698	2,017	1,805	2,003	1,998	2,060	2,260	2,213	2,220
55-59	1,917	1,712	1,576	1,602	1,774	2,105	1,886	2,073	2,057	2,123	2,333	2,324
60-64	2,004	2,024	1,763	1,631	1,670	1,847	2,192	1,950	2,129	2,115	2,188	2,230
65-69	1,844	1,974	2,004	1,757	1,640	1,680	1,861	2,194	1,942	2,126	2,118	2,133
70-74	1,293	1,657	1,809	1,854	1,642	1,533	1,573	1,730	2,030	1,804	1,979	1,979
75-79	888	1,070	1,467	1,613	1,671	1,482	1,387	1,414	1,550	1,824	1,629	1,660
80-84	553	580	742	1,033	1,149	1,203	1,074	1,003	1,023	1,126	1,336	1,308
85+	599	652	766	951	1,117	1,238	1,187	1,138	1,160	1,175	1,236	1,261
Total	**26,553**	**27,497**	**28,653**	**29,798**	**30,928**	**32,029**	**33,076**	**34,068**	**35,025**	**35,968**	**36,907**	**37,093**

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

Figure 23. Wasco County's Sub-Areas - Total Population

Area/Year	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2066
Wasco County	26,553	27,497	28,653	29,798	30,928	32,029	33,076	34,068	35,025	35,968	36,907	37,093
Antelope UGB	51	51	51	51	51	51	51	51	51	51	51	51
Dufur UGB	611	613	615	617	618	619	619	620	620	620	620	620
Maupin UGB	428	435	442	450	459	466	475	483	492	500	509	511
Mosier UGB	456	486	511	536	561	586	611	636	661	686	711	716
Shaniko UGB	36	34	33	31	30	29	28	27	26	26	25	25
The Dalles UGB	16,823	17,541	18,437	19,329	20,208	21,071	21,891	22,671	23,429	24,183	24,950	25,103
Outside UGB Area	8,147	8,336	8,563	8,783	9,000	9,207	9,400	9,579	9,745	9,901	10,041	10,066

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