

# Oregon Population Forecast Program

Proposed Coordinated Forecasts for Polk County, its Urban Growth Boundaries (UGBs), and the Area Outside UGBs

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# Project Team

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The primary purpose of today's meeting is to present progress and plans for future revisions related to the population forecasts, as well as gather additional data from comments or in response to today's Q&A.

## Presentation Contents:

- Preliminary proposed forecasts of Region 4 counties and their sub-areas.
- Historical data (2000-2019) and forecast results(2020–2070) for the counties, as well as the Urban Growth Boundary (UGB) areas within each county.
- Approximately 30-40 minutes for each county, including 10-15 minutes for Q&A.

## Cohort Component Model ("Demographic Balancing Equation"):

$$Population_{t_2} = Population_{t_1} + Births_{t_1 \text{ to } t_2} - Deaths_{t_1 \text{ to } t_2} + NM_{t_1 \text{ to } t_2}$$

t1: Starting year

t2: Ending year

NM: Net migration (difference between in/out migration)

## Housing Unit Method:

$$Population = HU \times Occ \times PPH + GQ$$

HU: housing unit stock

Occ: Occupancy rate

PPH: Persons per household

GQ: Group quarters population

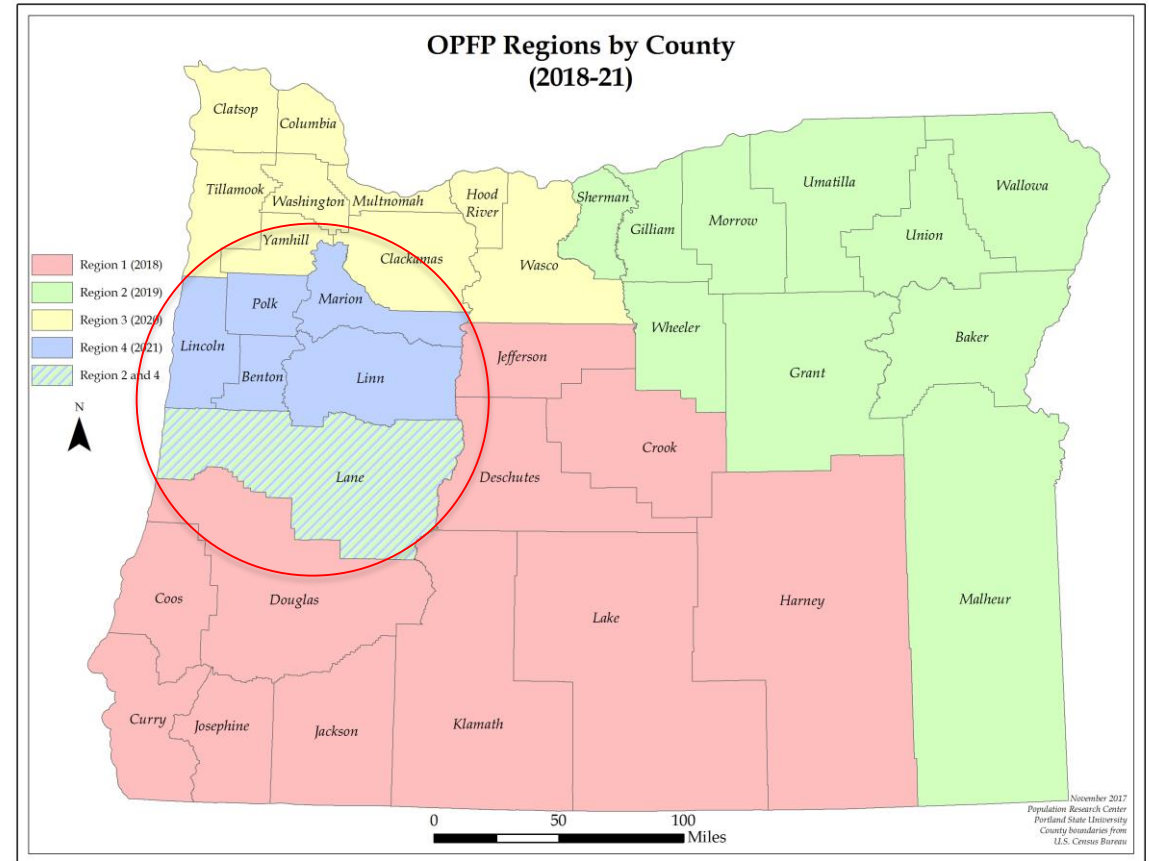
## Modified Methodology (50 Year Period)

### Forecast Methods (2020-45)

- Cohort-Component and Housing Unit Model

### Modified Method (2045-70):

- County: AAGR of the last forecast period (2044-45) is extrapolated out for the remaining 25 years.
- Sub-areas: Trend the sub-area share of the County for the remaining 25 years.



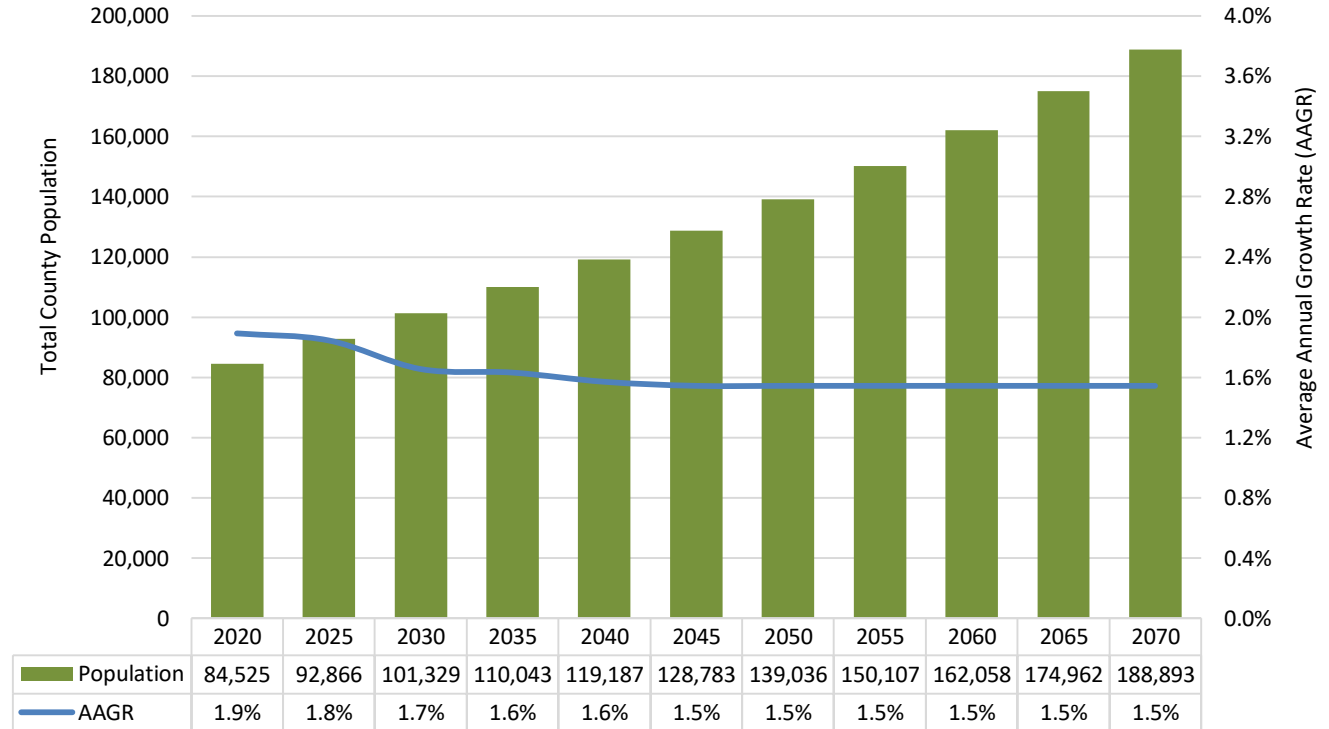
1. We incorporate the following assumptions for fertility and mortality.
  - a) Deaths and survival rates were projected based on historical trends (2000-2019) and based on the methodology published by Clark and Sharrow 2011 ([link](#)). Mortality rates for the 85+ age group were further divided into 5-year age groups up to 100+.
  - b) We applied some constrains to ensure the number of deaths maintain in a reasonable range as the elderly populations grow, accounting for positive factors associated with life expectancy (e.g., advanced medical treatments, life-style changes).
  - c) Fertility rates were projected based on historical trend up to 2030 and remain constant afterwards.
2. Net migration rates were based on the data published by the University of Wisconsin-Madison for 2000-2010, with minor adjustments made based on the following assumptions:
  - a) In/out migration would gradually approach zero for populations over 65, assuming there is minimal moving for people as they approach the age of 85+.
  - b) Considered and mitigated the uncertainties of in/out migration among college students.
3. Populations in sub-areas were forecasted using the housing unit method based on survey responses and historical pattern.

# Proposed Forecast Results

*Population of Polk County is projected to grow from nearly 85,000 in 2020 to nearly 189,000 by 2070, if assuming the AAGR remains at the projected level of 1.5%.*

*Overall, Polk County shows a relatively fast population growth rate, maintaining at least a 1.5% AAGR throughout the forecast period.*

**Polk County - Total Population Point Estimates (2020-2070)**

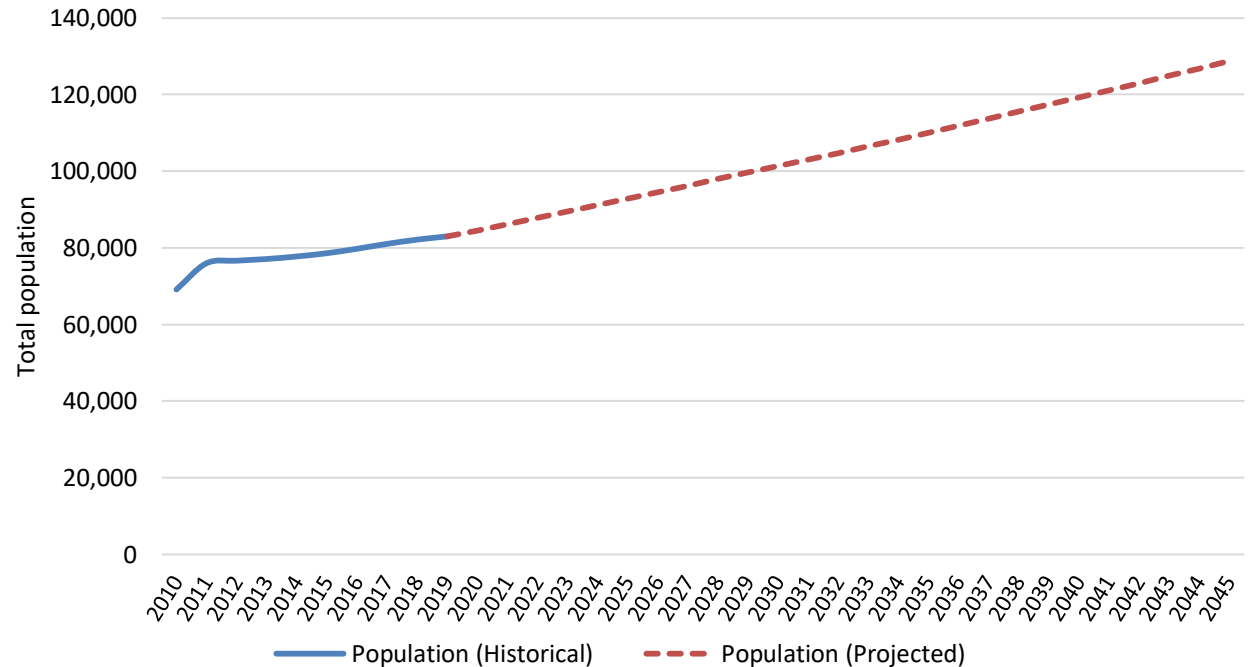


Source: Forecast by Population Research Center (PRC).  
[Historical trend](#)

# Proposed Forecast Results

*Historical trend shows that total population reached 82,940 in 2019 and continues to grow throughout the forecast period, reaching 128,783 by 2045. The total county population shows a 44% growth between 2019 and 2045.*

Polk County – Total Population Trend (2010-2045)



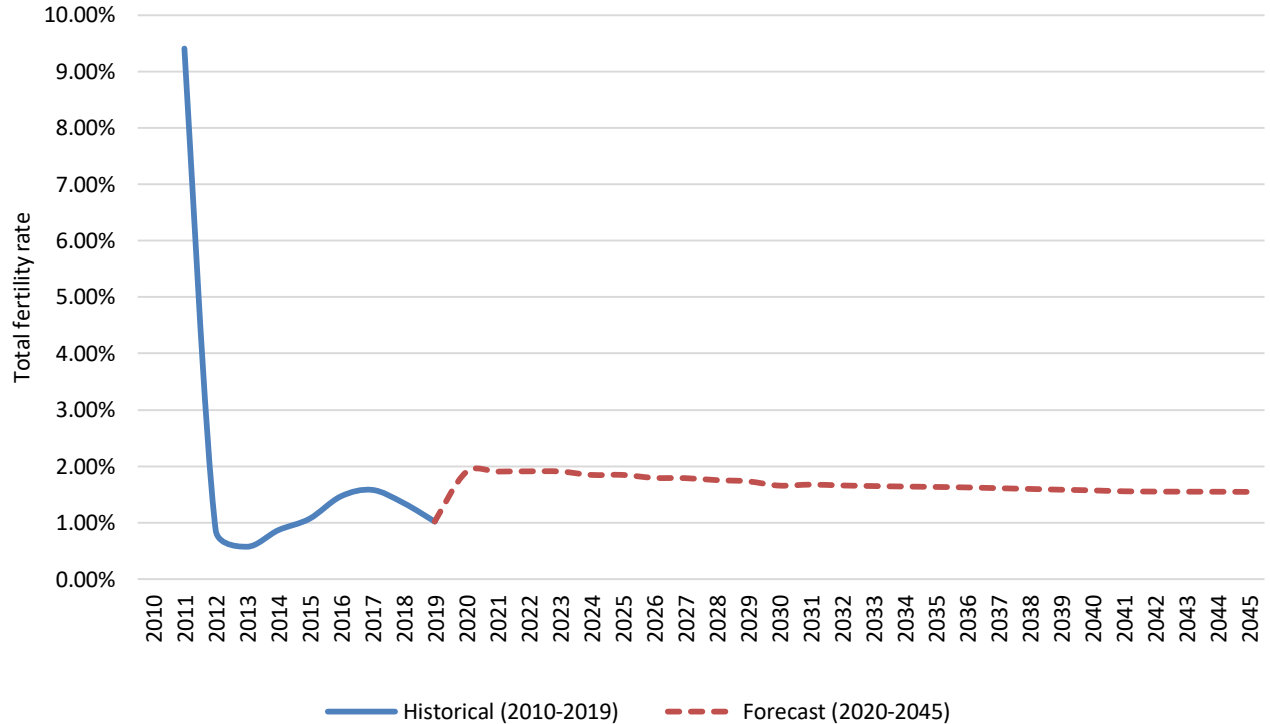
Source: U.S. Census Bureau. PRC Estimates. Forecast by Population Research Center (PRC).



# Proposed Forecast Results

*The average annual growth rate of the total population has varied throughout the historical time period, reaching nearly 10% from 2010-2011, and as low as 0.6% in 2012-2013. AAGR has remained well above 1% over the last several years and will maintain at 1.5% or higher through 2045.*

**Polk County – Average Annual Growth Rate (2010-2045)**

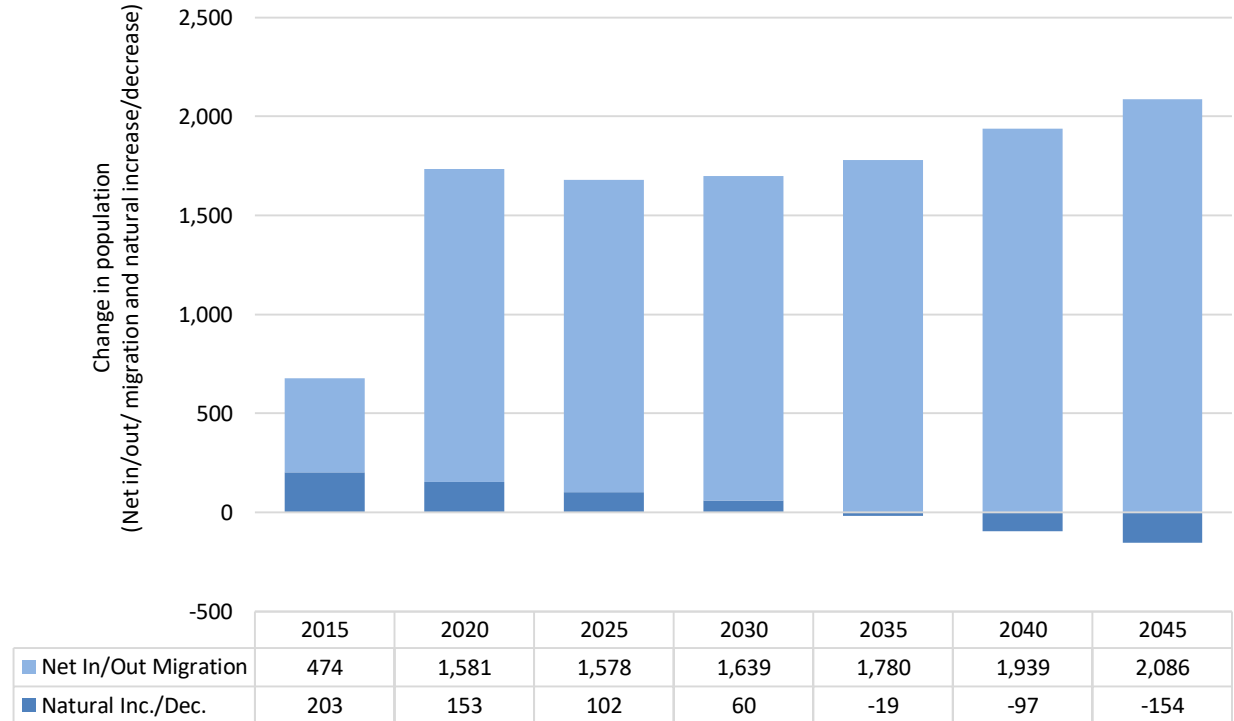


Source: U.S. Census Bureau. PRC Estimates. Forecast by Population Research Center (PRC).

# Proposed Forecast Results

*The overall natural increase of population in Polk County remains relatively strong throughout the forecast. In comparison, the average annual net migration plays an important role in county-wide population growth. On average, the county will add over 2,000 people annually through migration by 2045.*

**Polk County - Components of Population Change by Five-Year Intervals (2015-2045)**



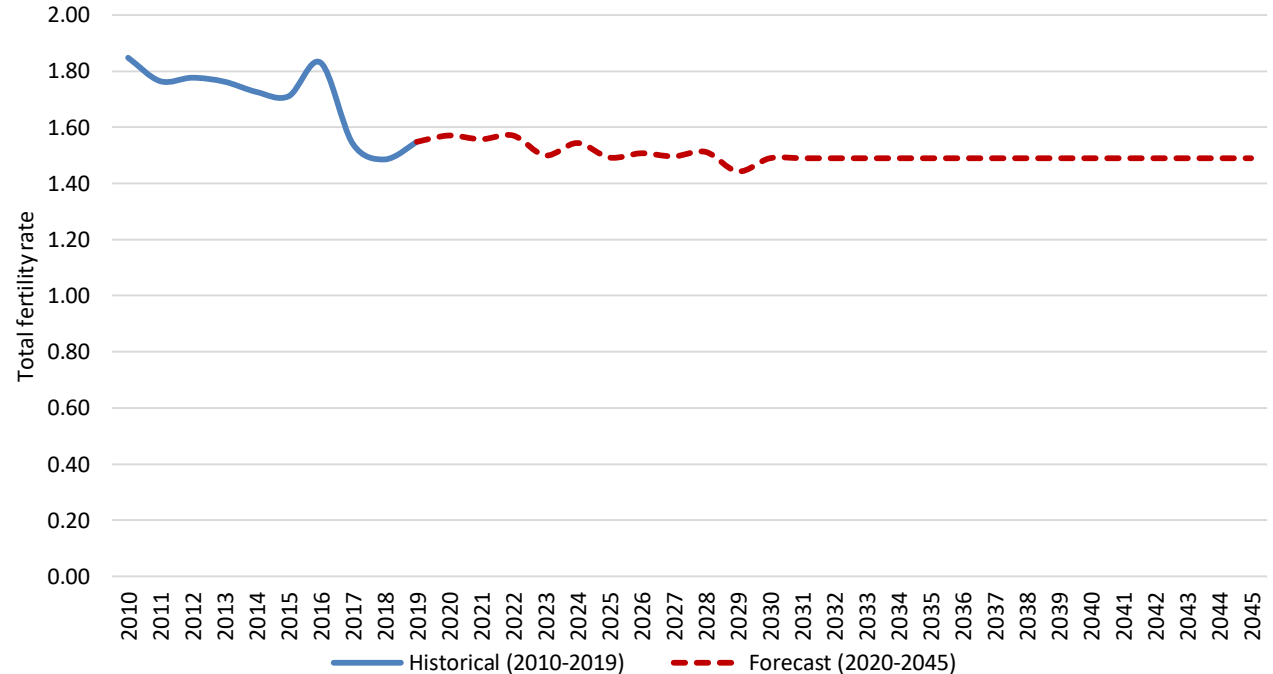
Source: Forecast by Population Research Center (PRC)

[Historical trend](#)

# Historical and Forecast Trends

*The total fertility rate for women age 15-44 showed a declining trend since 2015 and remains at a relatively lower rate compared with historical trend. The TFR remains under 1.60 throughout the forecast period.*

Polk County – Total Fertility Rate for Women Age 15-44 (2010-2045)

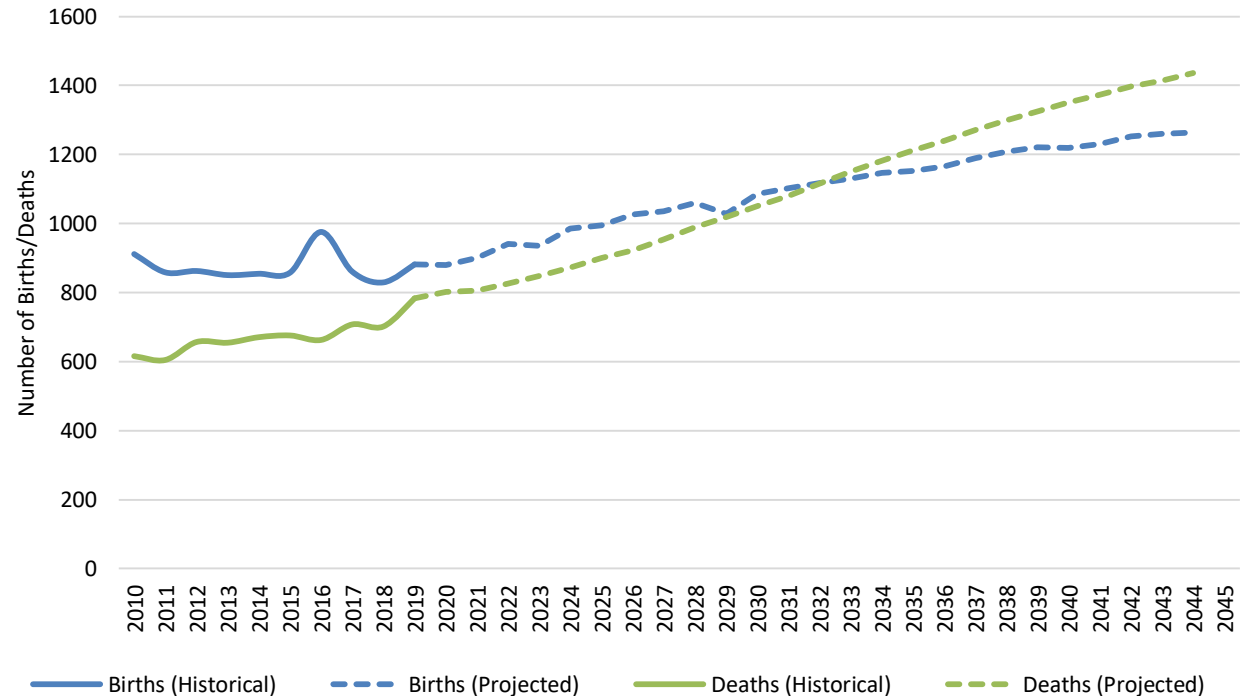


Sources: Oregon Health Authority, Center for Health Statistics. Calculations and forecast by Population Research Center (PRC).

# Historical and Forecast Trends

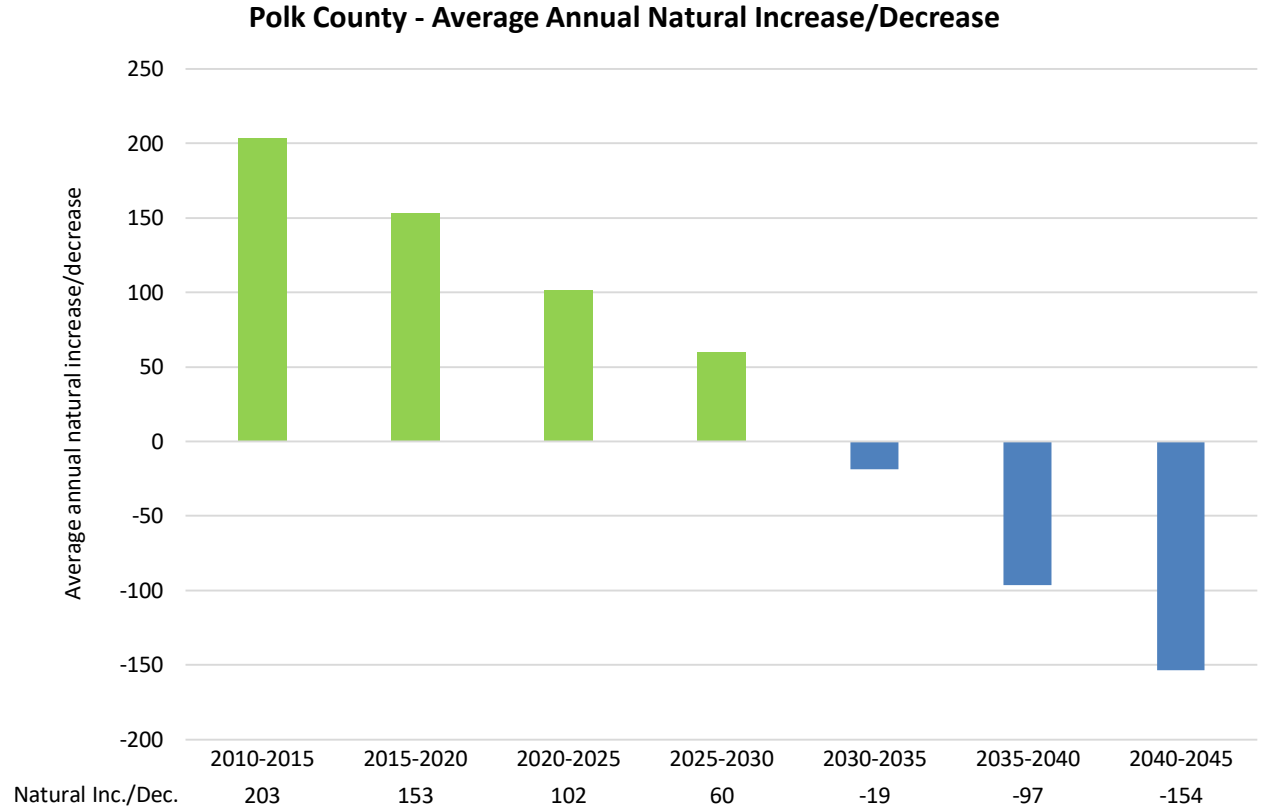
*The number of births and deaths both increase through 2045. Although the number of deaths surpasses the number of birth around 2032, births remains at an inclining trend. The projected births will be 1,220 by 2040 while deaths will be 1,350.*

**Polk County – Annual Births/Deaths (2010 – 2045)**



Source: Oregon Health Authority, Center for Health Statistics. Forecast by Population Research Center (PRC)

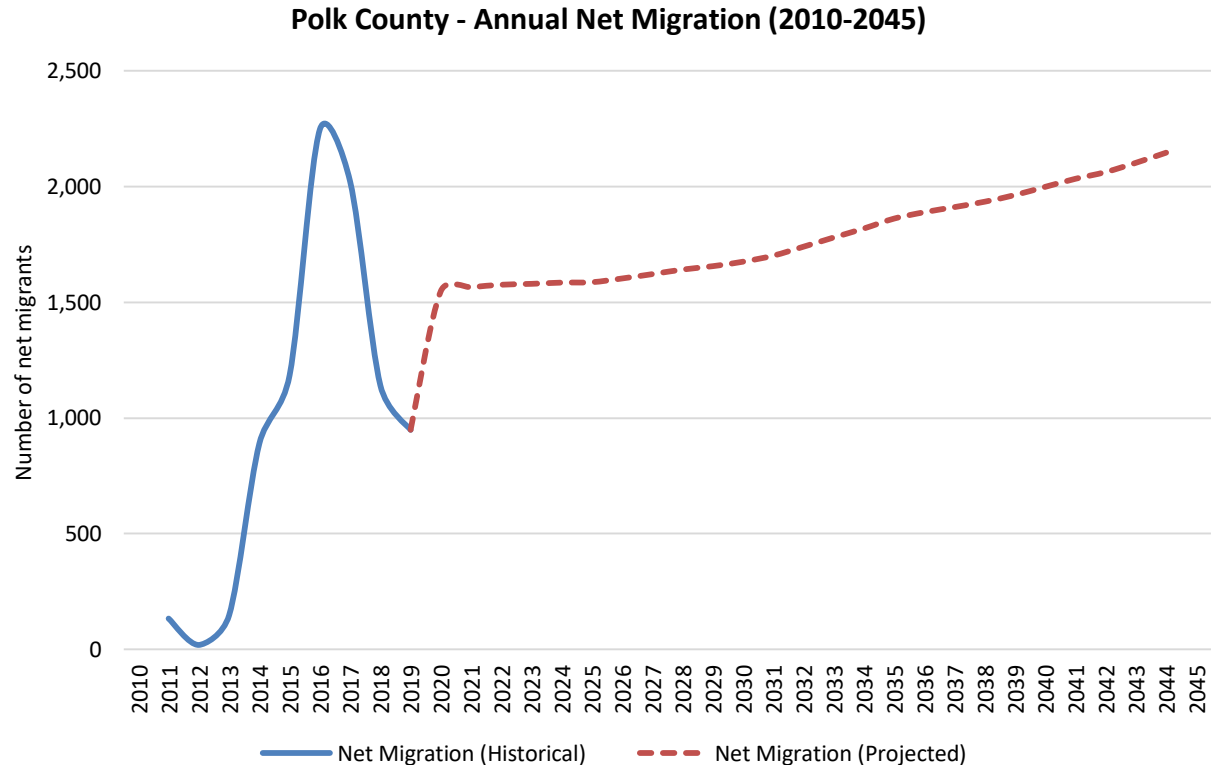
*Natural increase has decreased in the past years. In the future, low fertility and population aging are expected to combine to generate natural decrease.*



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

# Historical and Forecast Trends

*The annual net migration remains relatively constant with no major variations over the next 24 years. The net migration has been increasing most of the years after 2012. The total county net migration remains around 1,300 and increased to over 1,400 by 2038.*

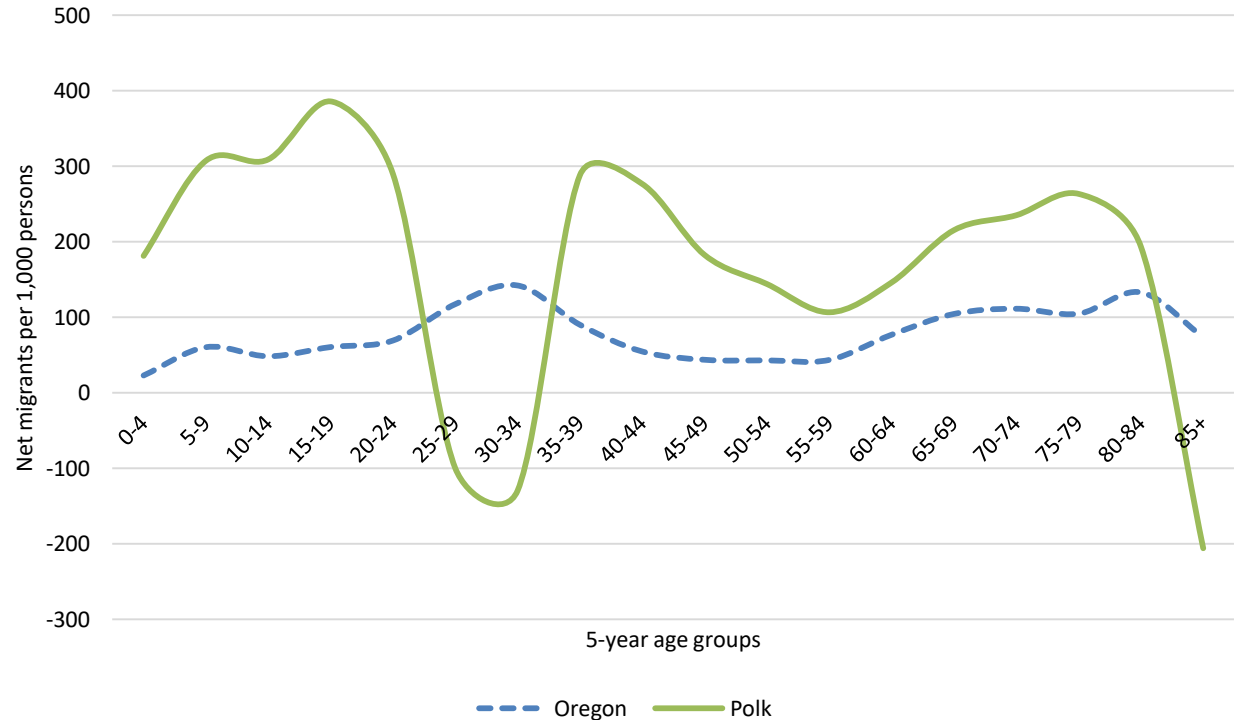


Sources: Center for Demography and Ecology, University of Wisconsin-Madison. Calculated by Population Research Center (PRC).

# Additional Historical Trends

*This figure presents the historical 10-year net migration rates for Oregon and Polk County from 2000 to 2010. Compared to Oregon, Polk County has a higher in-migration rate for the people under 25 years old, but lower in-migration rate for the 30-34 age group. The net migration is also lower for people 85+. The overall net migration rates are higher for Polk County compared to those of the state.*

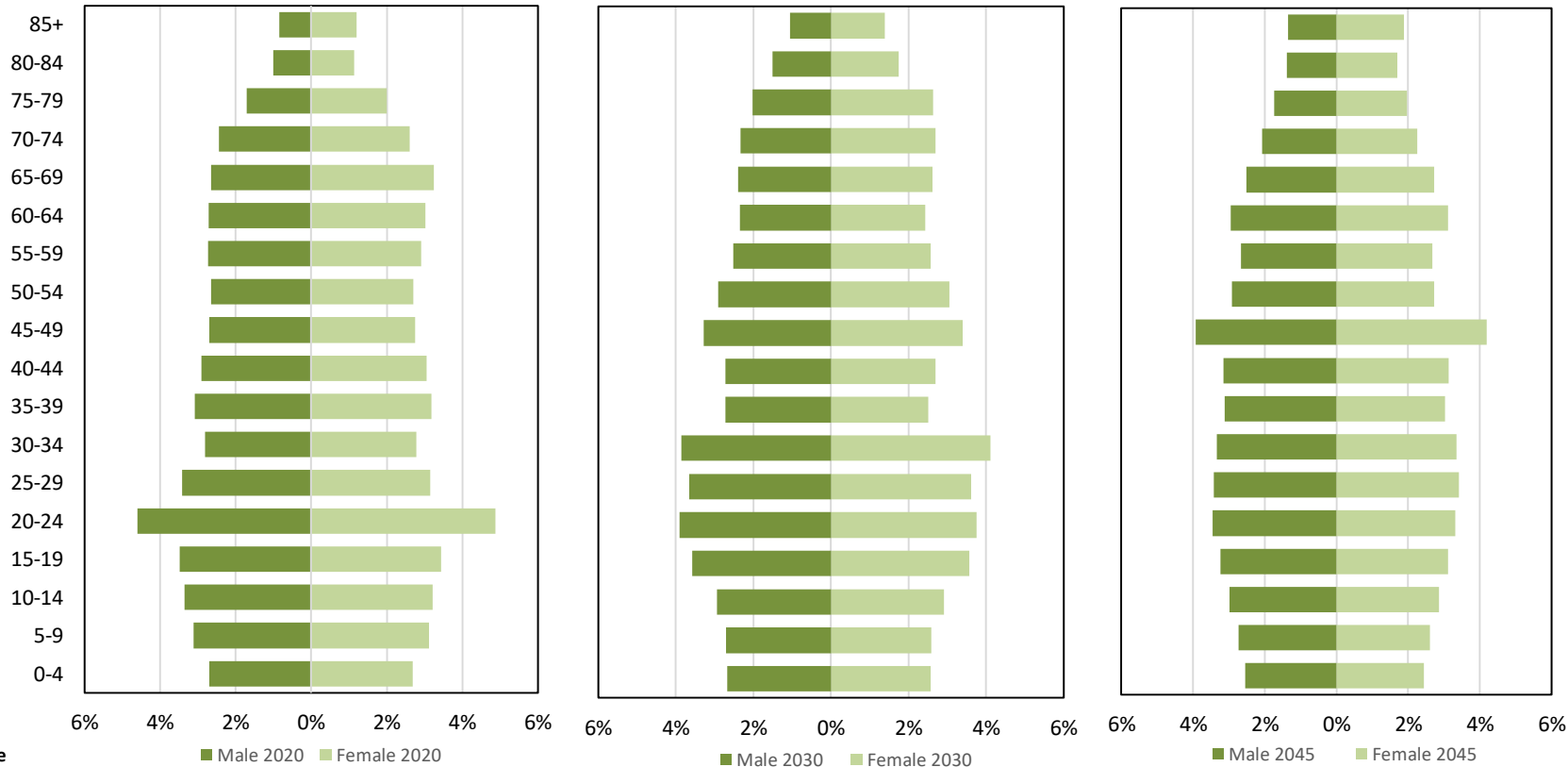
**Polk County and Oregon - Ten-year Migration Rates (2000-2010)**



# Historical and Forecast Trends

## Polk County—Age Structure of the Population

*These figures show the age and sex distribution of Polk County. The oldest ages are at the top of the age pyramid and increase as a share of the population over time. The share of older populations increases as we move toward 2045.*



Source: Forecast by Population Research Center  
[Historical trend](#)

These numbers represent *Proposed* Forecast Results



1. All sub-area forecasts use a housing unit method rather than a cohort-component model for consistency.
2. If planned housing units were reported in the surveys, we expect that they will be built within roughly 5 years, followed by a return to long range historic patterns.
3. If the reported housing development plans does not lead to significant differences to the observed pattern over most recent decade (2010-2019), the 2010-2019 housing development pattern was used.
4. If no planned housing units were reported, we assume future housing construction will follow historic patterns.
5. Where population has historically declined or stayed flat and there is no planned housing construction, we do not expect major losses of housing stock. Household turnover will create opportunities for new households, preventing significant decline in population.
6. We expect persons per household (PPH) to stay relatively constant over time with no major changes. Although the median age tend to increase slightly for many areas, aggressive increases in median age are not expected in the short term to post significant impact in the forecast.

# Historical and Forecast Trends

## Polk County – Historical and Forecast Population for Polk County and its Sub-Areas

	Historical			Forecast				
	2000	2010	AAGR (2000-2010)	2020	2045	2070	AAGR (2020-2045)	AAGR (2045-2070)
<b>Polk County</b>	62,675	69,145	1.0%	84,525	128,783	188,893	2.1%	1.5%
<b>Outside UGBs</b>	13,872	12,889	-0.7%	15,305	19,368	23,030	1.2%	0.7%
<b>Larger Sub-Areas</b>								
Dallas	13,323	14,151	0.6%	17,131	26,058	38,353	2.1%	1.5%
Independence	6,383	8,131	2.4%	9,477	17,479	26,897	3.1%	1.7%
Monmouth	7,244	7,771	0.7%	10,728	15,191	20,686	1.7%	1.2%
Salem (part)*	20,108	24,499	2.0%	29,912	47,979	76,338	2.4%	1.9%
<b>Smaller Sub-Areas</b>								
Falls City	1,003	891	-1.2%	1,074	1,445	1,824	1.5%	0.9%
Willamina (part)*	743	814	0.9%	899	1,262	1,764	1.7%	1.3%

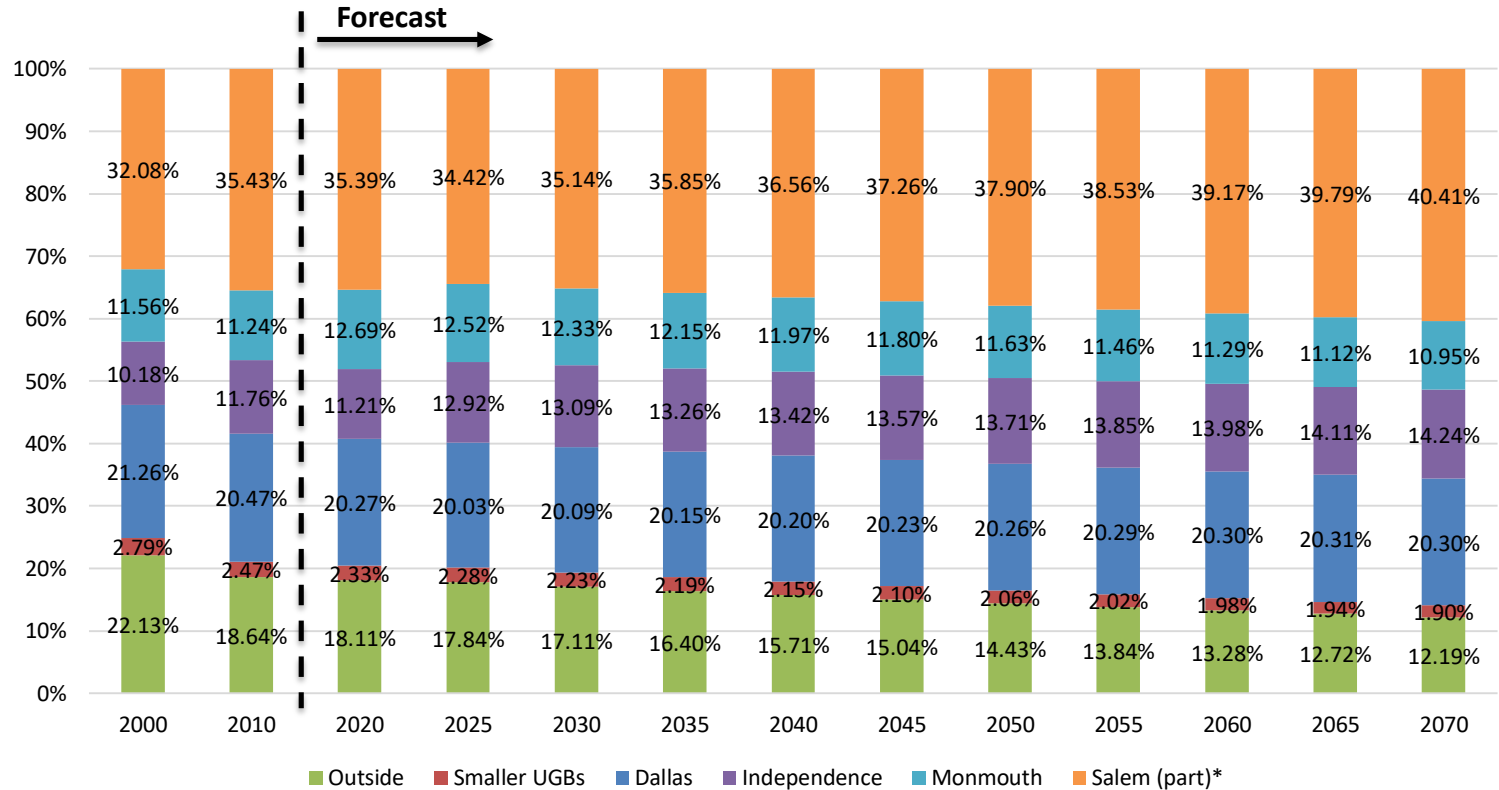
Sources: U.S. Census Bureau; Forecast by Population Research Center (PRC)

[Historical trend](#)

# Proposed Forecast Results

Polk County – Population Shares of Sub-Areas and Outside UGBs

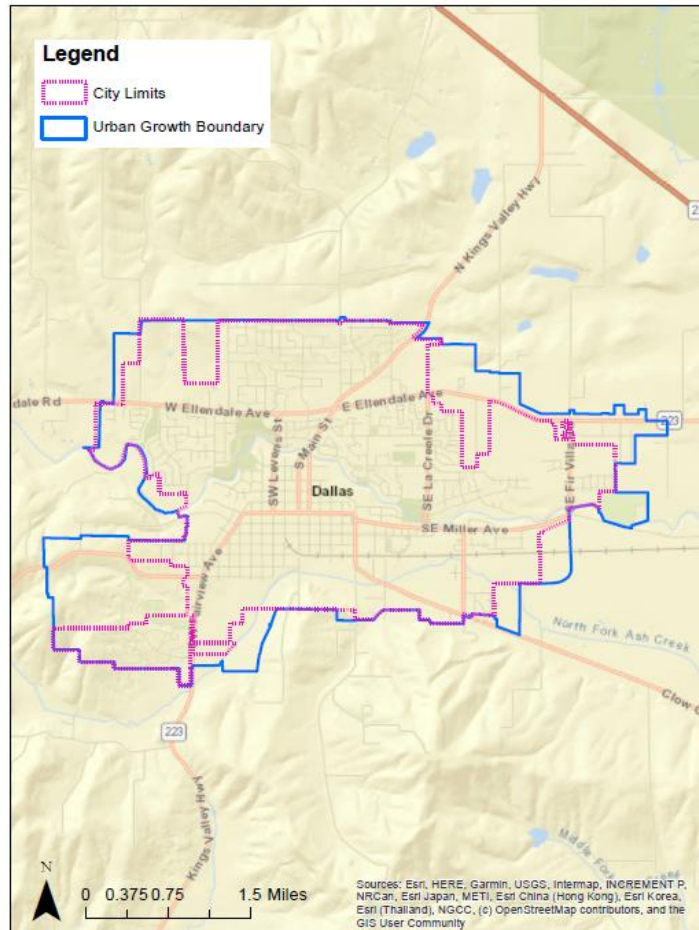
*This figure shows the percentage of the county population that is in each large UGB, or smaller UGBs, or in the rest of the county. Over time, the share of the population living inside UGBs increases, while the population share outside of the UGBs decreases.*



Sources: U.S. Census Bureau; Forecast by Population Research Center (PRC).

Note: Sub-areas with populations under 8,000 by 2010 were considered smaller UGBs

# Proposed Forecast Results



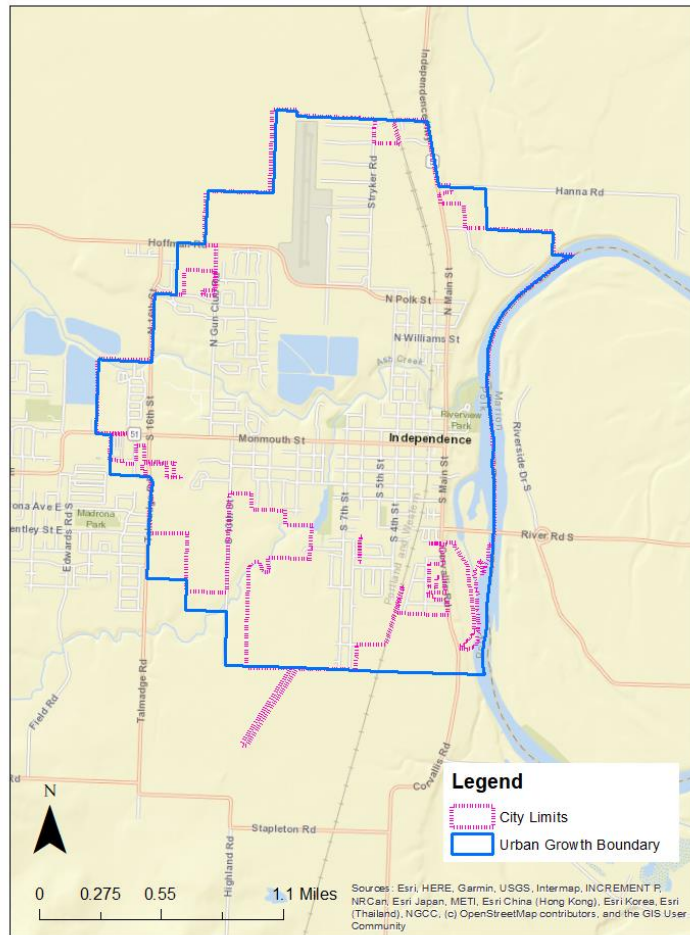
## Dallas – Population Forecast

Year	Population	Share of County
2020	17,131	20.3 %
2045	26,058	20.2%
2070	38,353	20.3%

Sources: Forecast by Population Research Center (PRC)

*Note: Larger sub-areas refer to areas with populations over 8,000 by 2010.*

# Proposed Forecast Results



## Independence – Population Forecast

Year	Population	Share of County
2020	9,477	11.2%
2045	17,479	13.6%
2070	26,897	14.2%

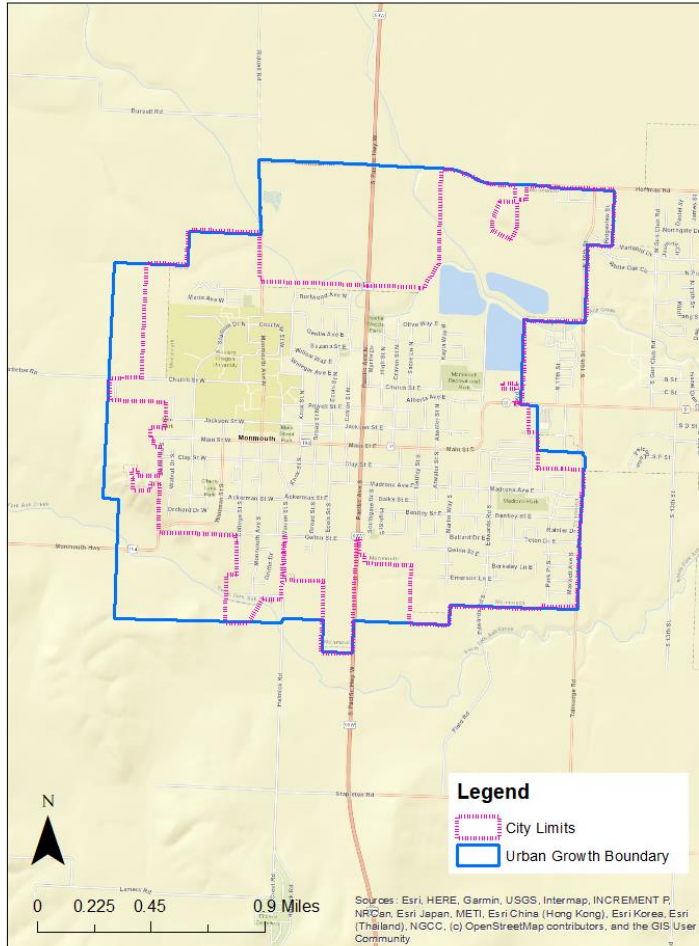
\*Annual housing unit growth rate of 2.6% in the 5-yr pipeline based on survey

Sources: Forecast by Population Research Center (PRC)

Note: Larger sub-areas refer to areas with populations over 8,000 by 2010.



# Proposed Forecast Results



## Monmouth – Population Forecast

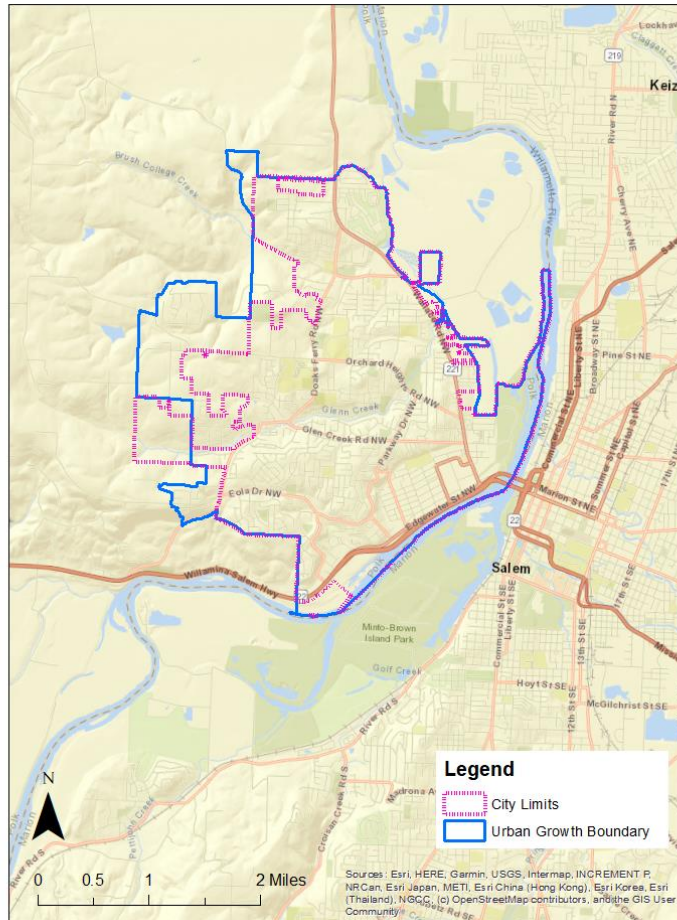
Year	Population	Share of County
2020	10,728	12.7%
2045	15,191	11.8%
2070	20,686	11.0%

\*Annual housing unit growth rate of 1.0% in the 5-yr pipeline based on survey

Sources: Forecast by Population Research Center (PRC)

*Note: Larger sub-areas refer to areas with populations over 8,000 by 2010.*

# Proposed Forecast Results



## Salem (Part) – Population Forecast

Year	Population	Share of County
2020	29,912	35.4%
2045	47,979	37.3%
2070	76,338	40.4%

\*Annual housing unit growth rate of 0.6% in the 5-yr pipeline based on survey

Sources: Forecast by Population Research Center (PRC)

*Note: Larger sub-areas refer to areas with populations over 8,000 by 2010.*

# Proposed Forecast Results

## Polk County – Population Distribution in Smaller Sub-Areas

	Population			Share of County Population		
	2020	2045	2070	2020	2045	2070
<b>Polk County</b>	84,525	128,783	188,893			
Outside UGBs	15,305	19,368	23,030	18.0%	15.0%	12.2%
Falls City	1,074	1,445	1,824	1.3%	1.1%	1.0%
Willamina (part)*	889	1,262	1,764	1.1%	1.0%	0.9%

Sources: Forecast by Population Research Center (PRC)

*Note: Smaller sub-areas refer to areas with populations under 8,000 by 2010.*

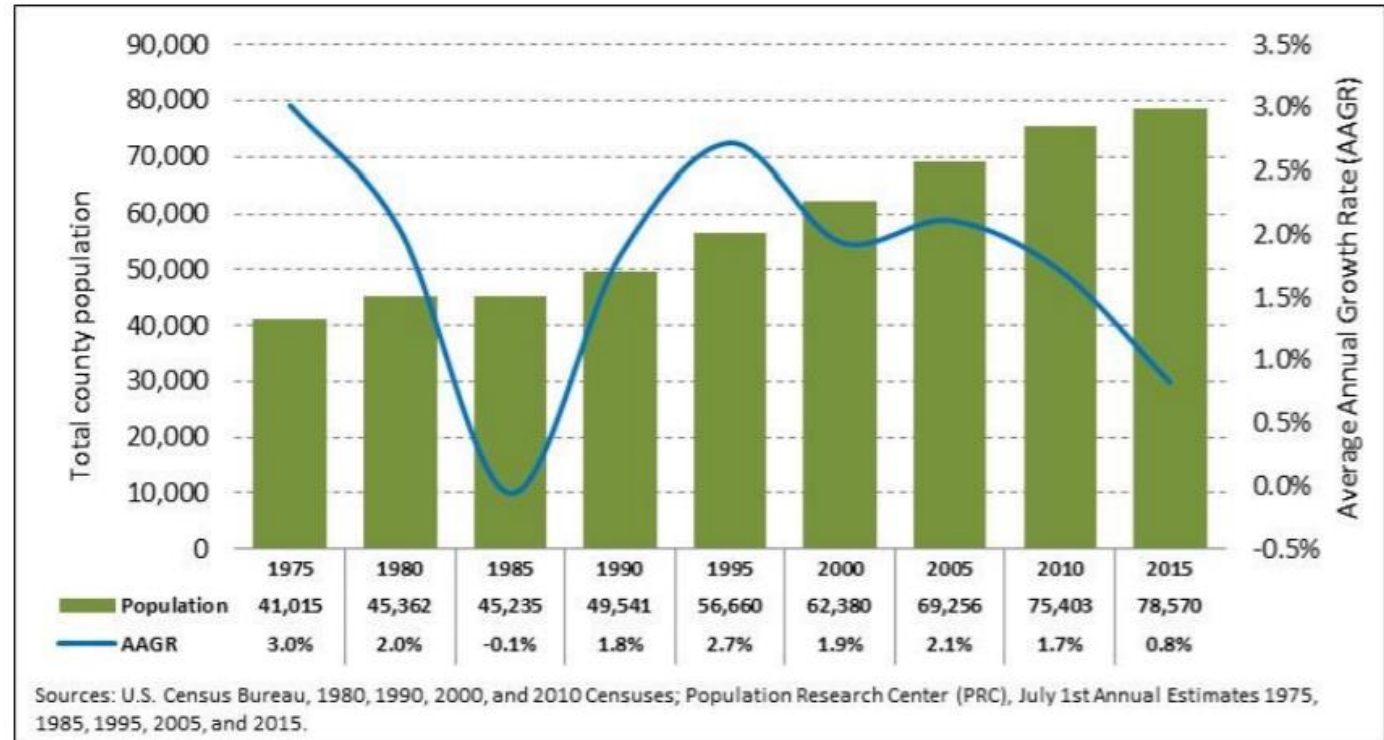


1. We expect Polk County to experience relatively high growth rate through 2045. The overall AAGR remains at 1.5% from 2045-2070, which is a continuation of the AAGR from 2044 to 2045.
2. Net migration is likely to remain positive and increase.
3. Deaths surpasses births due to an aging population and lower fertility rate.
4. There is high in-migration rate in the younger age groups, which contributed to the higher population growth rate, even though the TFR remain under 1.60. Current age pyramid shows relatively larger share in younger age groups, which also contributed to higher number of births in the next 10 years.
5. All sub-areas will continue to experience population growth, while areas outside of the UGBs will decline. Larger sub-areas with populations over 8,000 will continue to account for a significant share of county population, while the share of smaller sub-areas slightly decreased.
6. Salem is showing relatively strong growth in UGB population.
7. Covid-19 and wildfires implications.



# Additional Historical Trends

*This figure shows total population growth for Polk County during 1975-2015. The annual growth rate has been relatively high for most the years since 1975.*



*This table shows the growth rate of Polk County and its urban areas during 2000-2010.*

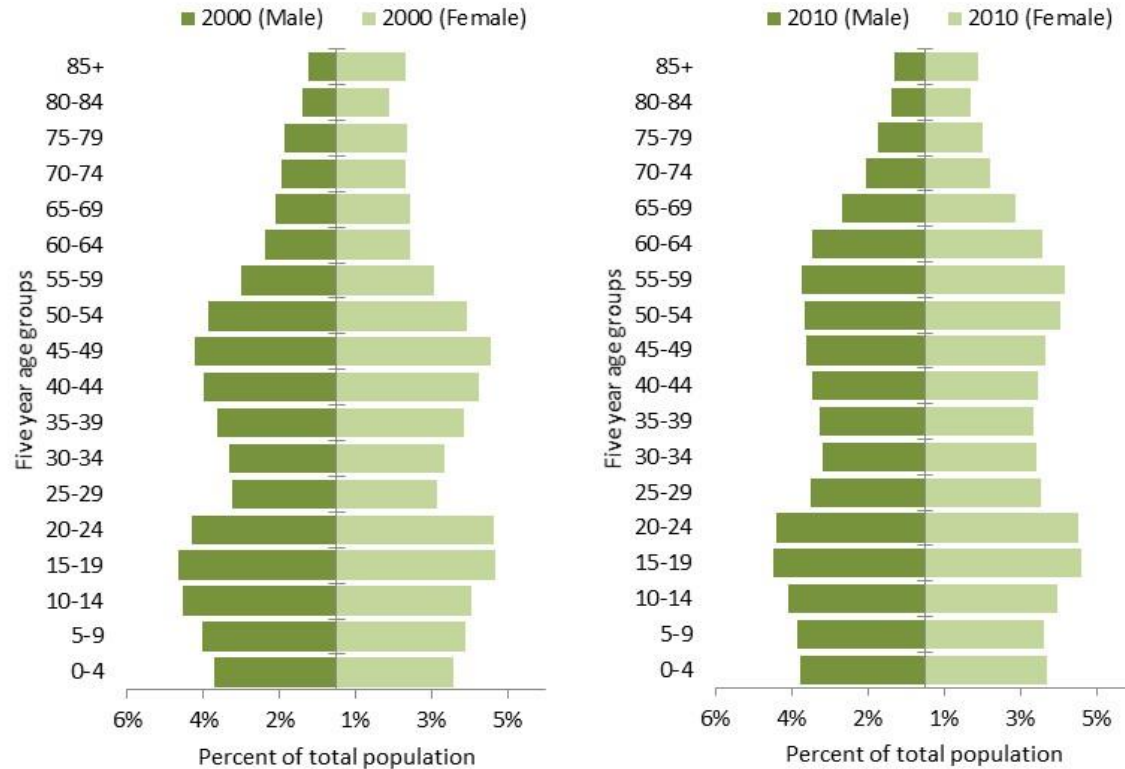
	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
<i>Polk County</i>	62,380	75,403	1.9%	100.0%	100.0%
Dallas UGB	13,277	15,356	1.5%	21.3%	20.4%
Falls City UGB	966	947	-0.2%	1.5%	1.3%
Independence UGB	6,248	8,696	3.4%	10.0%	11.5%
Monmouth UGB	7,834	9,598	2.1%	12.6%	12.7%
Salem/Keizer UGB (Polk)	19,919	26,139	2.8%	31.9%	34.7%
Willamina UGB (Polk)	731	866	1.7%	1.2%	1.1%
Outside UGBs	13,405	13,801	0.3%	21.5%	18.3%

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

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

# Additional Historical Trends

*These two age pyramids show the population at the time of the 2000 and 2010 census. The 2010 age pyramid showed the population aging forward from the 2000 census.*



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

# Additional Historical Trends

*This table shows the race and ethnicity breakdown for Polk County in 2000 and 2010. Asian, Hispanic, and Black populations showed the largest positive change between 2000 and 2010.*

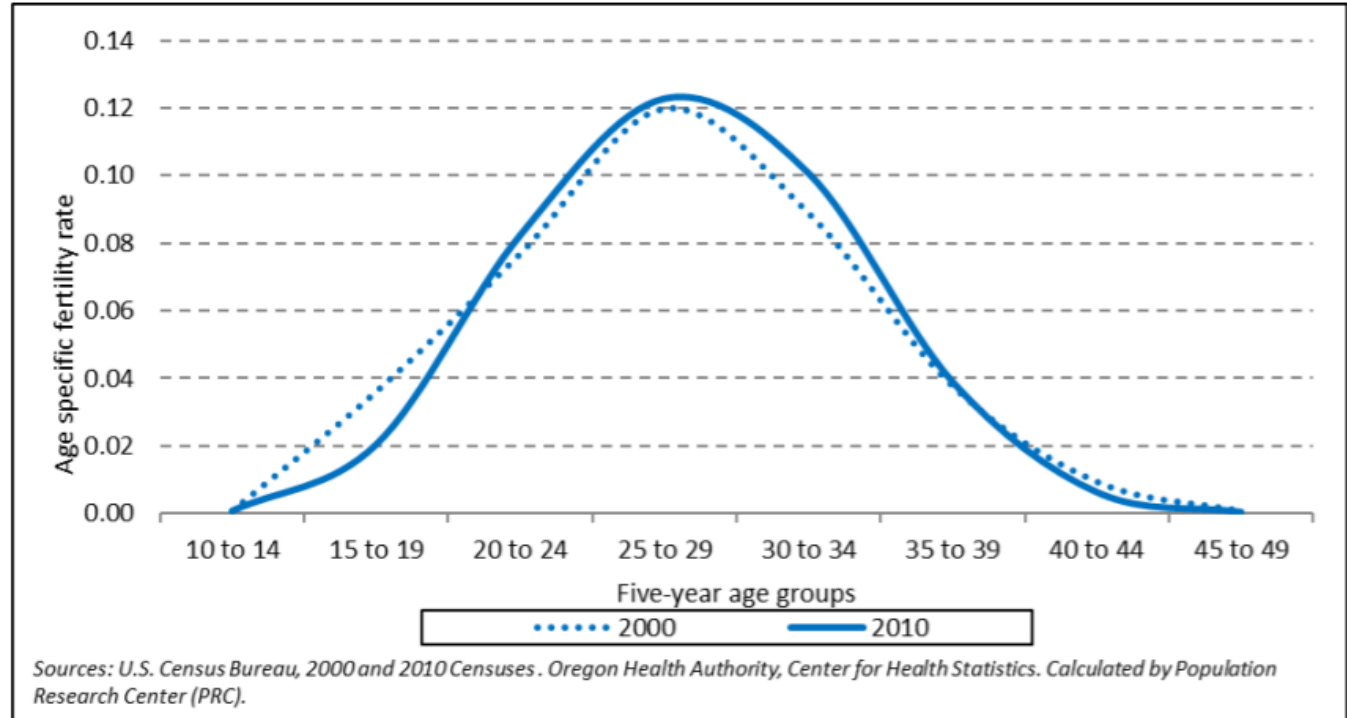
Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
<i>Total population</i>	62,380	100.0%	75,403	100.0%	13,023	20.9%
Hispanic or Latino	5,480	8.8%	9,088	12.1%	3,608	65.8%
Not Hispanic or Latino	56,900	91.2%	66,315	87.9%	9,415	16.5%
White alone	53,394	85.6%	60,702	80.5%	7,308	13.7%
Black or African American alone	229	0.4%	394	0.5%	165	72.1%
American Indian and Alaska Native alone	1,078	1.7%	1,380	1.8%	302	28.0%
Asian alone	671	1.1%	1,403	1.9%	732	109.1%
Native Hawaiian and Other Pacific Islander alone	152	0.2%	201	0.3%	49	32.2%
Some Other Race alone	57	0.1%	79	0.1%	22	38.6%
Two or More Races	1,319	2.1%	2,156	2.9%	837	63.5%

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



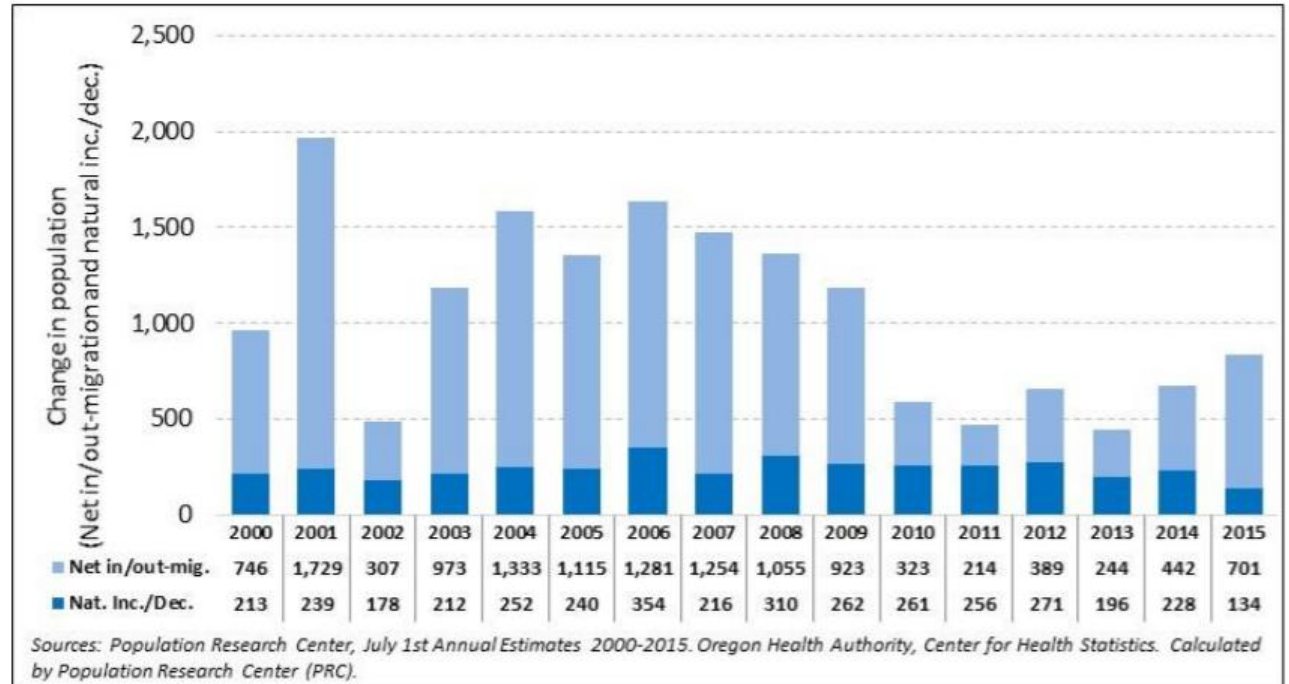
# Additional Historical Trends

*This figure shows age specific fertility rates for Polk County in 2000 and 2010. The fertility rate for the 15-19 age group decreased in 2010. The curve shifted slightly right in 2010, meaning births are more likely to occur later.*



# Additional Historical Trends

*These figures showed the components of change (births, deaths, and net migrants) for Polk County during 2000-2015. Net migration was at the highest number in 2001. The net migration has been higher than the natural increase for most of the years from 2000 to 2015.*





# Additional Historical Trends

*This table shows the total housing units for Polk County and each UGB during 2000 and 2010. Housing growth was fastest in the larger UGBs.*

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
<i>Polk County</i>	24,461	30,302	2.2%	100.0%	100.0%
Dallas	5,233	6,449	2.1%	21.4%	21.3%
Falls City	373	395	0.6%	1.5%	1.3%
Independence	2,212	3,215	3.8%	9.0%	10.6%
Monmouth	2,966	3,484	1.6%	12.1%	11.5%
Salem/Keizer (Polk)	8,260	10,818	2.7%	33.8%	35.7%
Willamina (Polk)	280	347	2.2%	1.1%	1.1%
Outside UGBs	5,137	5,594	0.9%	21.0%	18.5%

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

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

# Additional Historical Trends

*This table shows average household size and occupancy rate in 2000 and 2010. Household size either decreased or remain unchanged between 2000 and 2010 for most UGBs. Falls City showed the highest decrease in PPH.*

	Persons Per Household (PPH)			Occupancy Rate		
	2000	2010	Change 2000-2010	2000	2010	Change 2000-2010
<i>Polk County</i>	2.6	2.6	0.0	94.3%	93.4%	-0.9%
Dallas	2.6	2.5	-0.1	95.3%	93.8%	-1.5%
Falls City	2.9	2.6	-0.3	90.6%	92.7%	2.0%
Independence	3.0	3.0	0.0	93.6%	90.3%	-3.3%
Monmouth	2.5	2.5	0.0	94.0%	94.1%	0.1%
Salem/Keizer (Polk)	2.5	2.6	0.1	94.5%	94.0%	-0.5%
Willamina (Polk)	2.8	2.8	0.0	94.3%	89.6%	-4.7%
Outside UGBs	2.8	2.6	-0.1	93.6%	93.1%	-0.5%

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

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