

Oregon Population Forecast Program

Regional Forecast Meeting - March 6, 2018

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

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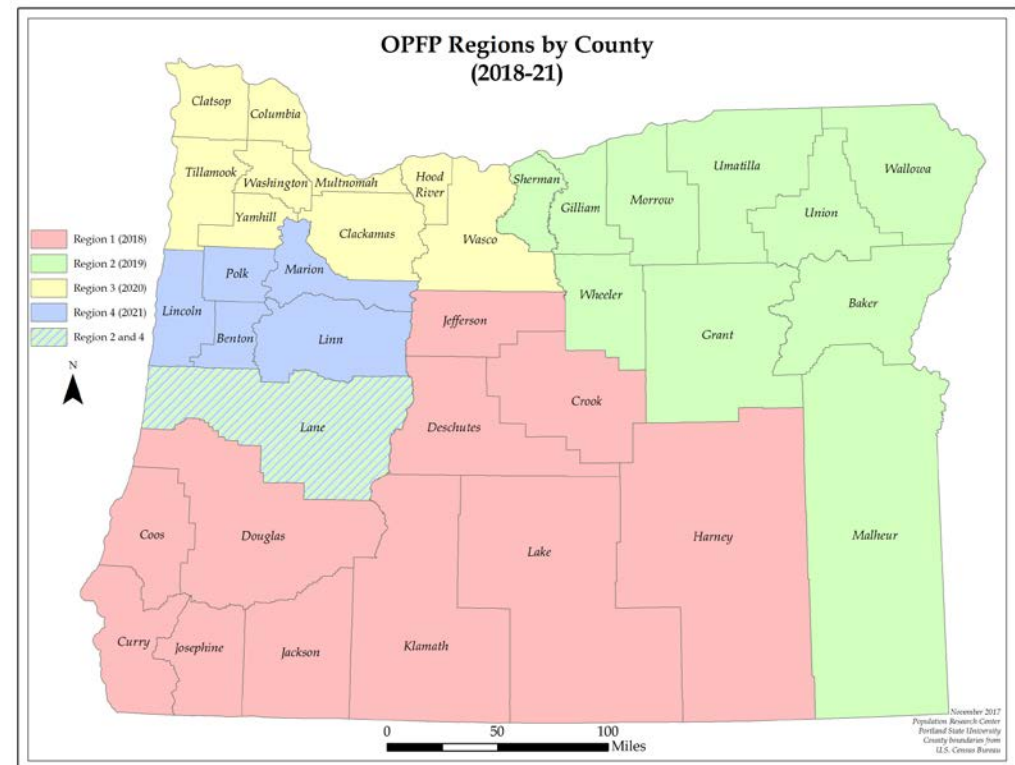
Charles Rynerson,
Research Consultant

Agenda

- Present and discuss preliminary forecast results
 - Proposed Forecasts by March 31st, 2018; To be posted on Oregon Population Forecast Program (OPFP) website:
<http://www.pdx.edu/prc/opfp>
- Explain our assumptions for future change
- Obtain your feedback

2018-2021 Update

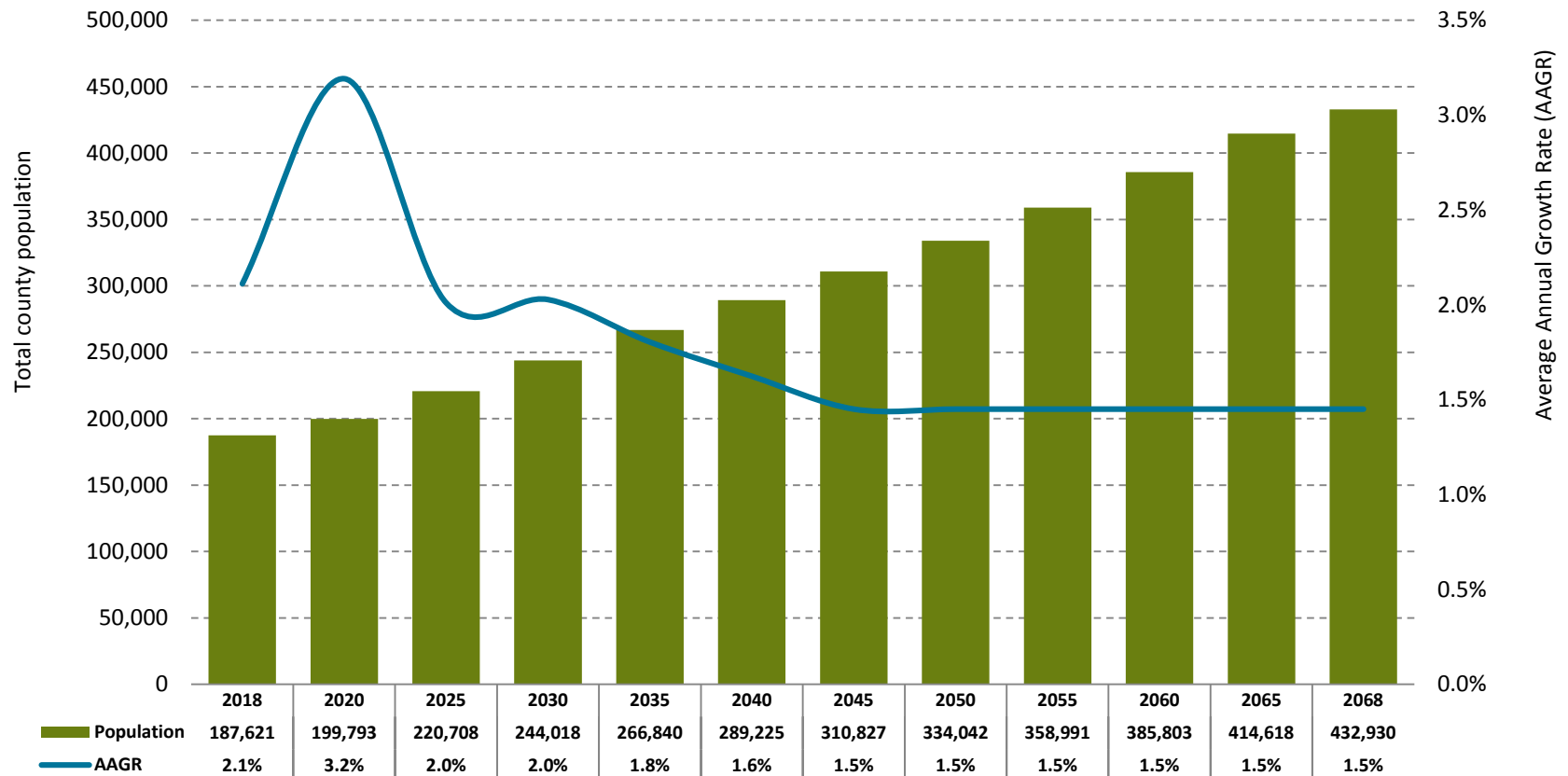
- Modified Methodology (50 Year Period)
- Forecast Methods (2018-43)
 - Cohort-Component and Housing Unit Model
- Modified Method (2043-68):
 - County: AAGR of the last 5 year period (2040-45) is extrapolated out for the remaining 25 years.
 - Sub-areas: Trend the sub-area share of the County for the remaining 25 years.



Assumptions for Deschutes County and Larger Sub-Area Forecasts

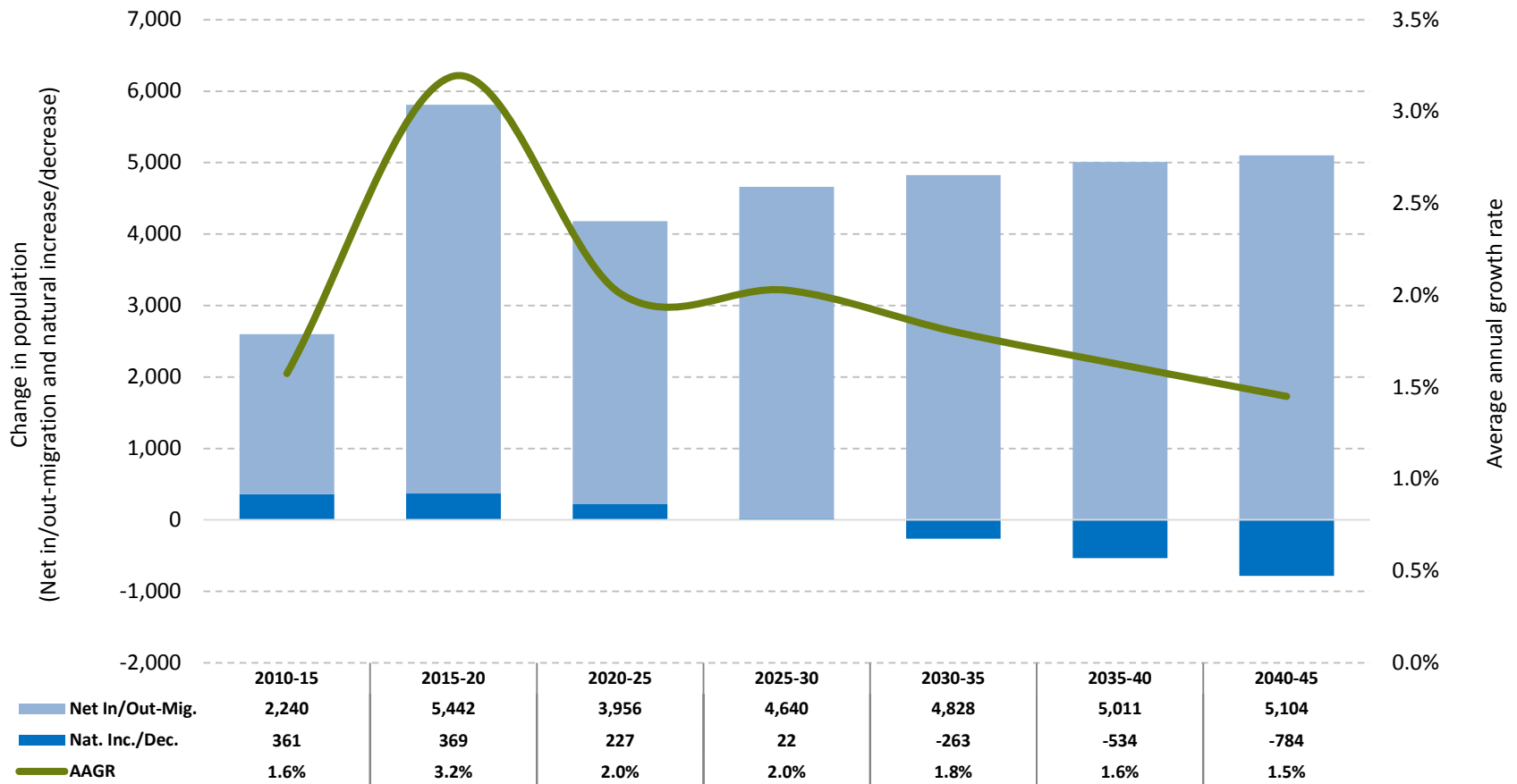
1. As the economy strengthens and Oregon's population ages, we assume net in-migration and housing construction to increase into the 2010-20 decade.
 - a) Despite the recent influx of net in-migration over the last few years, we expect growth to regress during early 2020's as the economy contracts.
 - b) Net in-migration will occur over the entire forecast horizon.
2. We incorporate state and local trends into our assumptions for fertility and mortality.
 - a) As a result of aging Baby Boomers, deaths increase and peak in the 2040's.
 - b) Total fertility rates decline throughout the forecast period.
 - c) As a result, we expect the County will experience a growing natural decrease.
3. Population growth is expected to slow over time as natural decrease magnifies and net in-migration tapers.

Deschutes County—Total Population by Five-year Intervals (2018-2068)



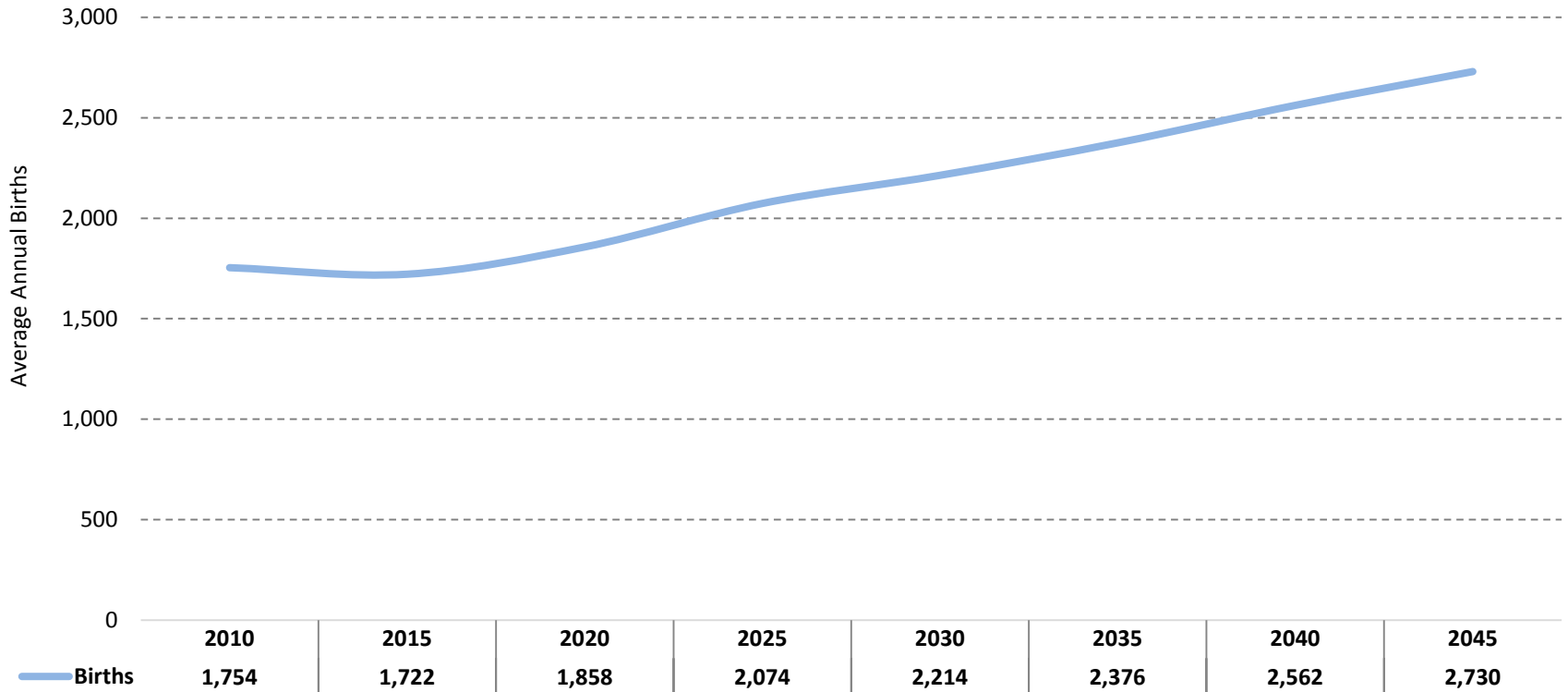
Source: Forecast by Population Research Center (PRC).

Deschutes County—Components of Population Change by Five-year Intervals (2015-2045)



Source: Forecast by Population Research Center (PRC)

Deschutes County—Average Annual Births



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

Note: The years signify the end of the period for which average annual numbers were calculated. The average annual numbers for "2010" were calculated for the 2000-2010 period, with the remaining years calculated for their preceding five-year periods.

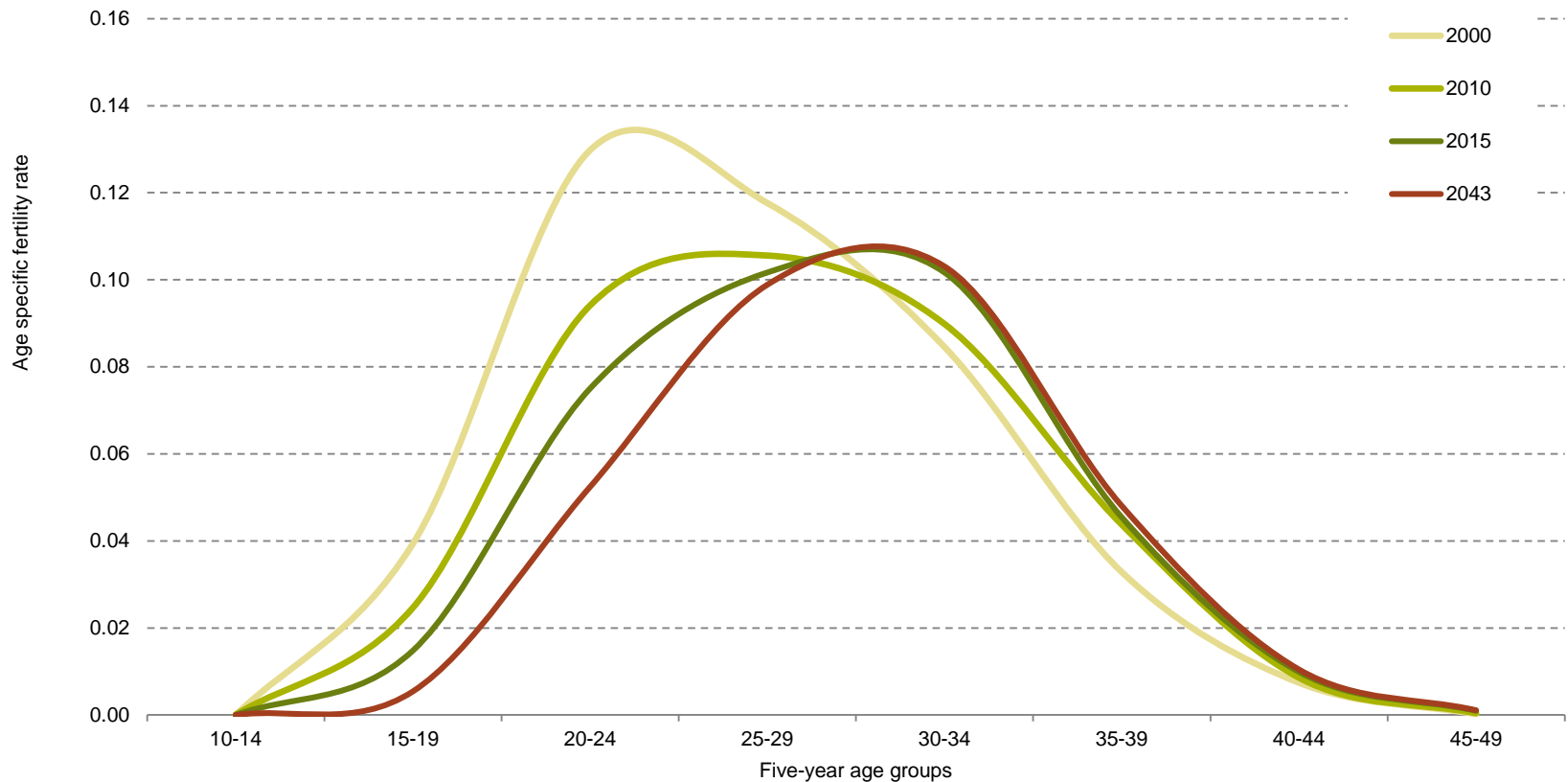
Total Fertility Rate (TFR)

	2000	2010	2015	2043
Deschutes County	2.06	1.84	1.75	1.60
Oregon	1.98	1.81	1.72	--

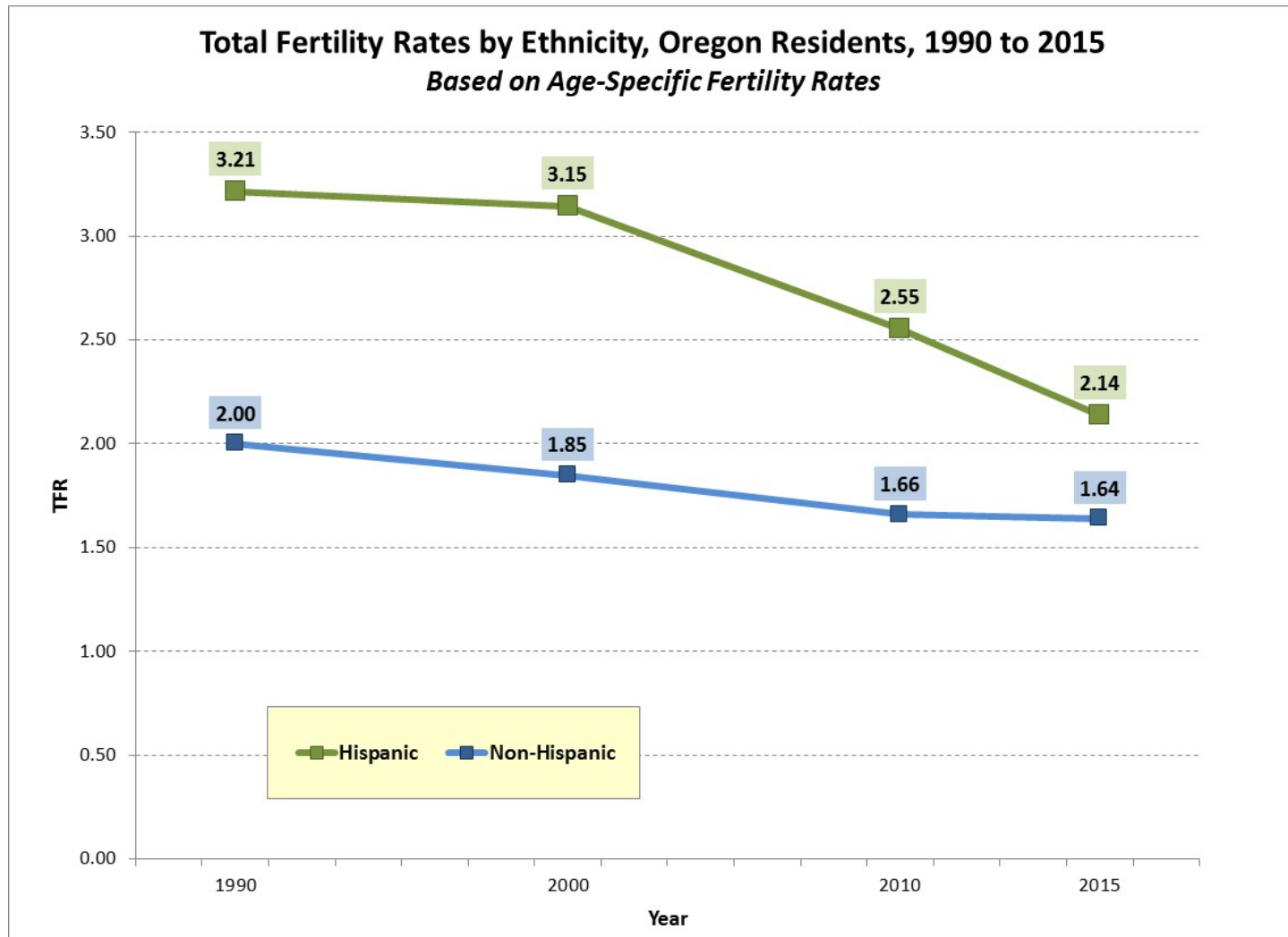
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. PRC Estimates. Oregon Health Authority, Center for Health Statistics. Calculations and Forecast by Population Research Center (PRC).

Note: 2000, 2010 and 2015 are annual TFRs, whereas the TFR for 2043 is for the preceding five-year forecast period. In other words the TFR for 2043 is calculated for the 2040 to 2045 forecast period.

Deschutes County—Age Specific Fertility Rate (2000, 2010, 2015 and 2043)



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

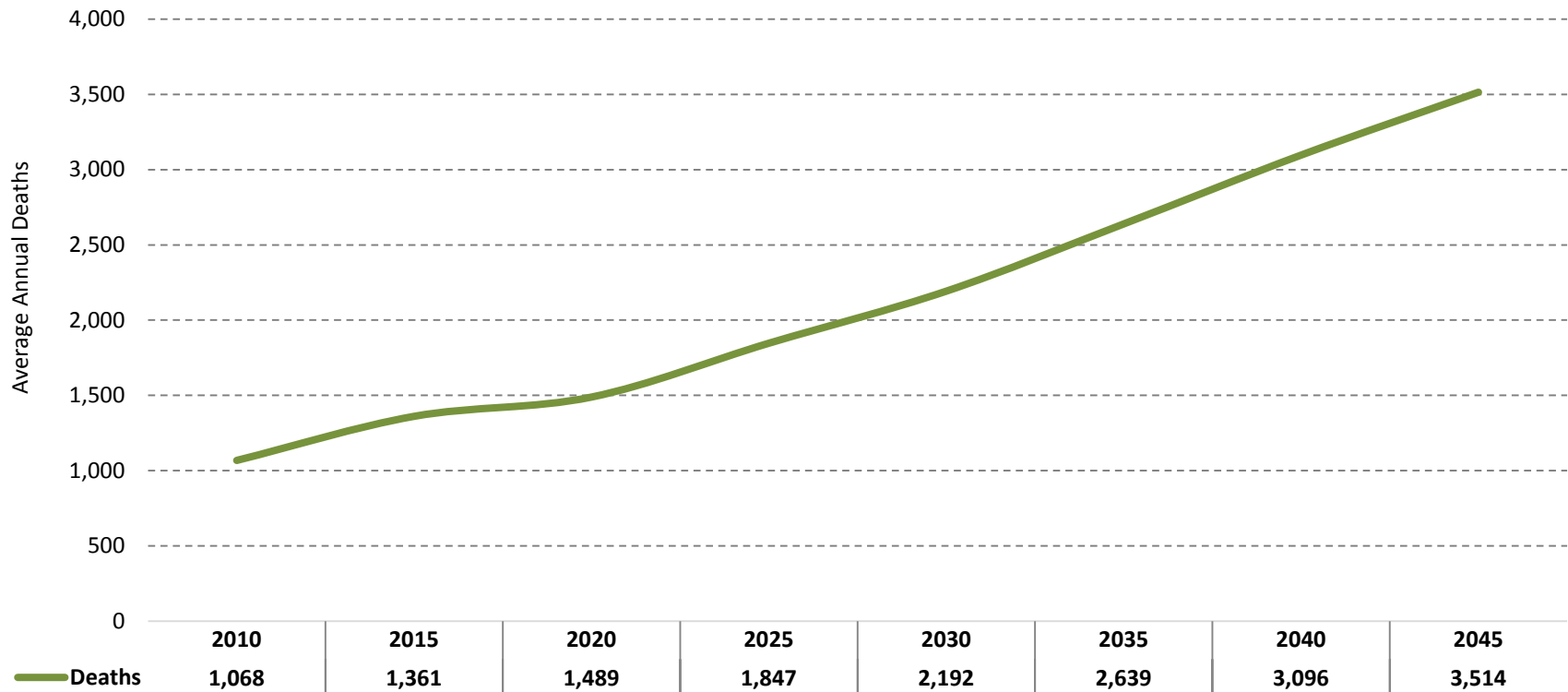


Sources: PEPASR6H-Geography-OregonYear-July 1, 2015 and July 1, 2010

Hispanic Origin-Hispanic: Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2015
Population Research Center (PRC): 2015 Population Estimates

These numbers represent **Preliminary** Forecast Results

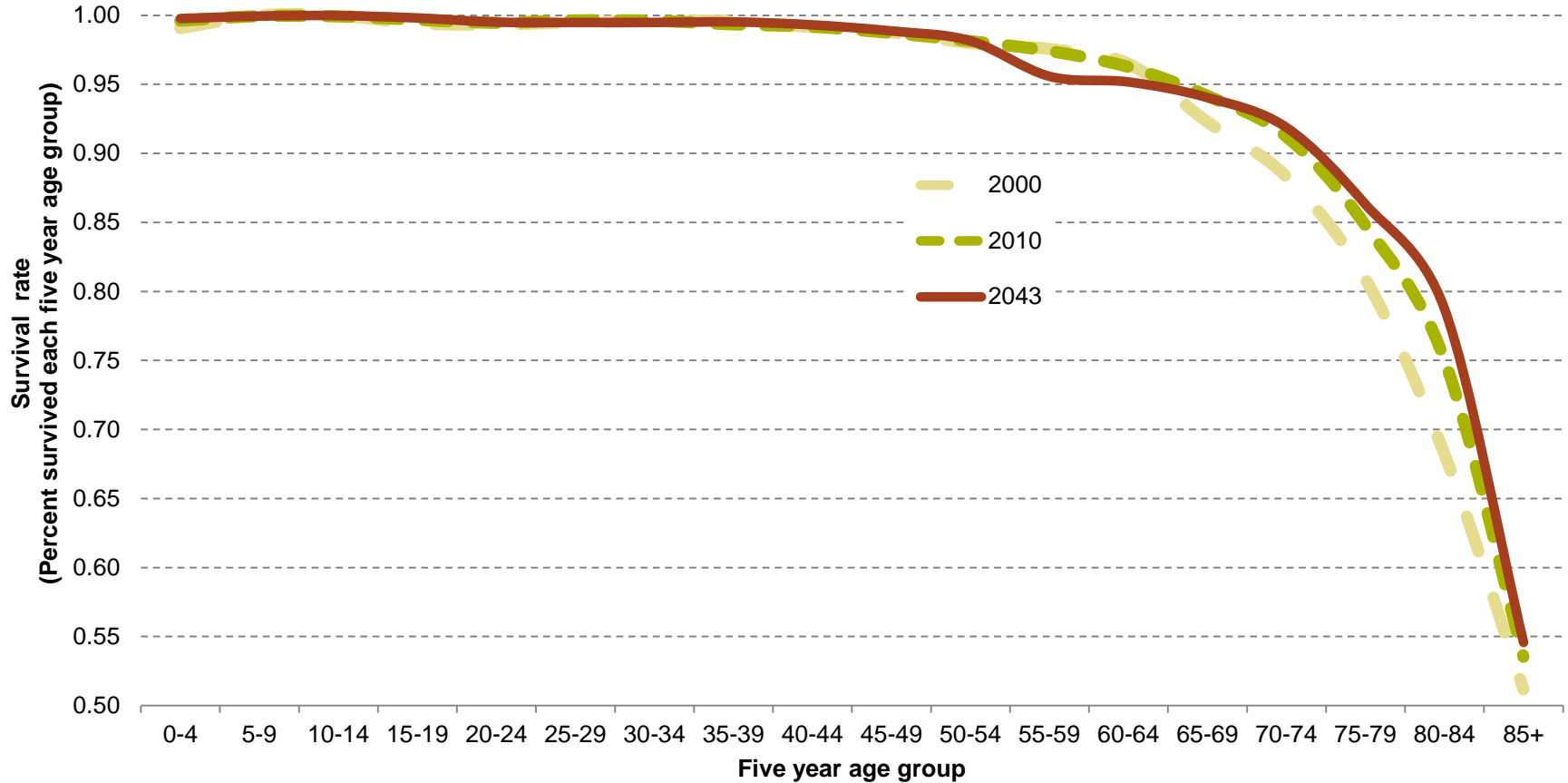
Deschutes County—Average Annual Deaths



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

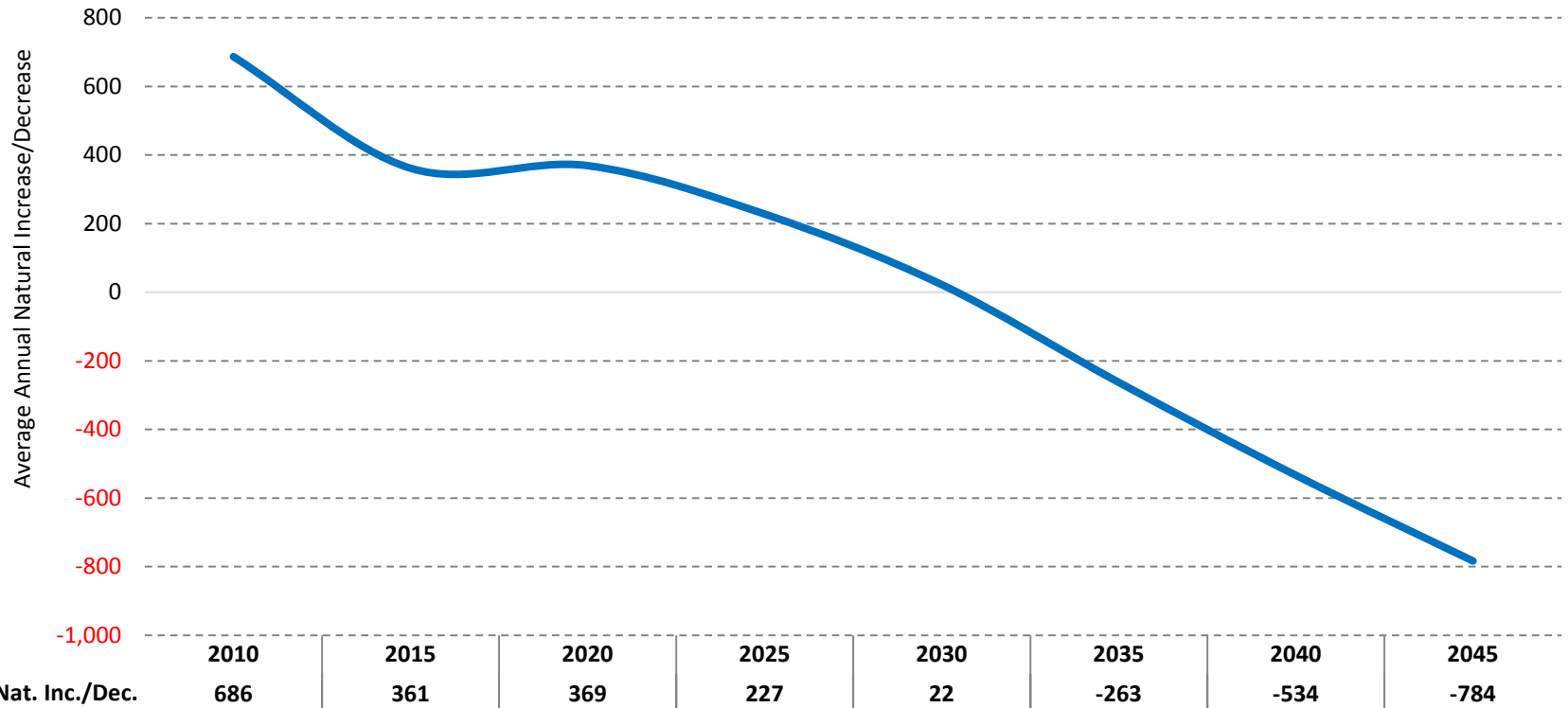
Note: The years signify the end of the period for which average annual numbers were calculated. The average annual numbers for "2010" were calculated for the 2000-2010 period, with the remaining years calculated for their preceding five-year periods.

Deschutes County – Age Specific Survival Rates



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

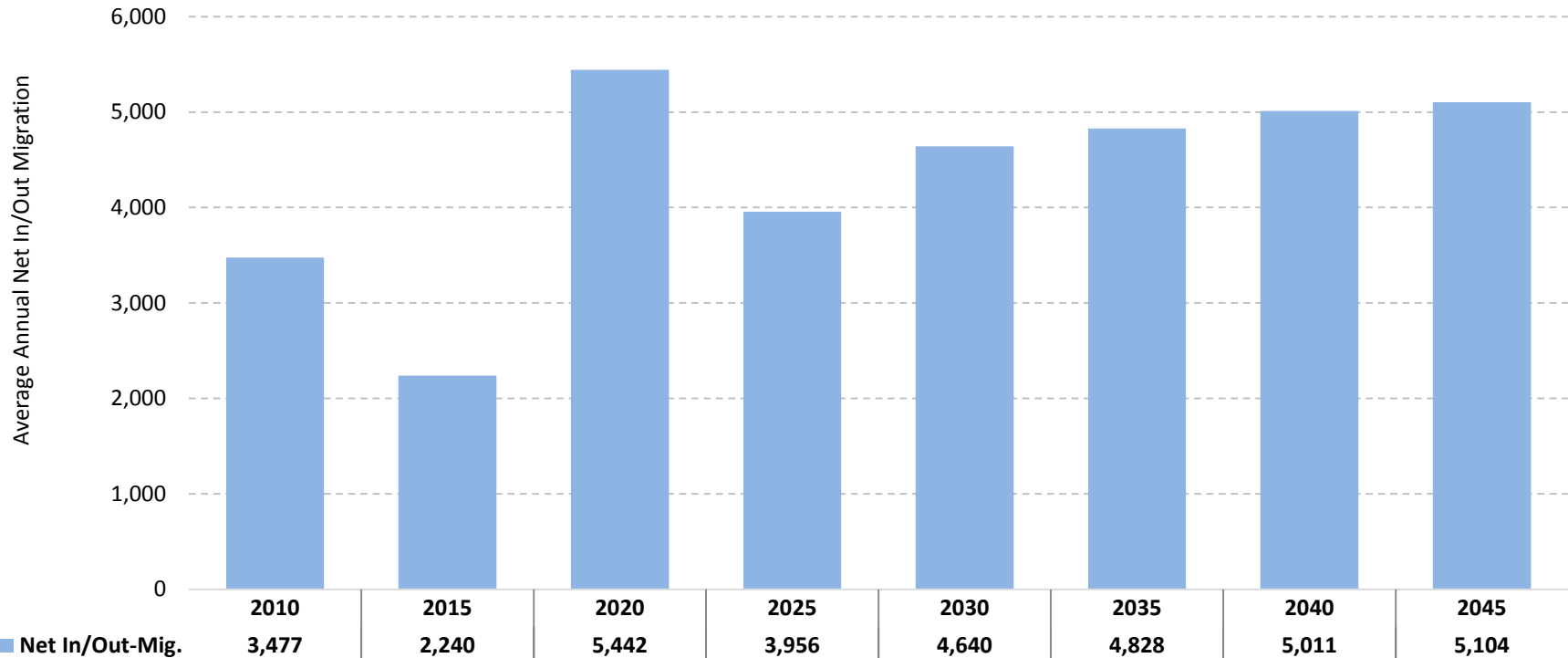
Deschutes County—Average Annual Natural Increase/Decrease



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

Note: The years signify the end of the period for which average annual numbers were calculated. The average annual numbers for "2010" were calculated for the 2000-2010 period, with the remaining years calculated for their preceding five-year periods.

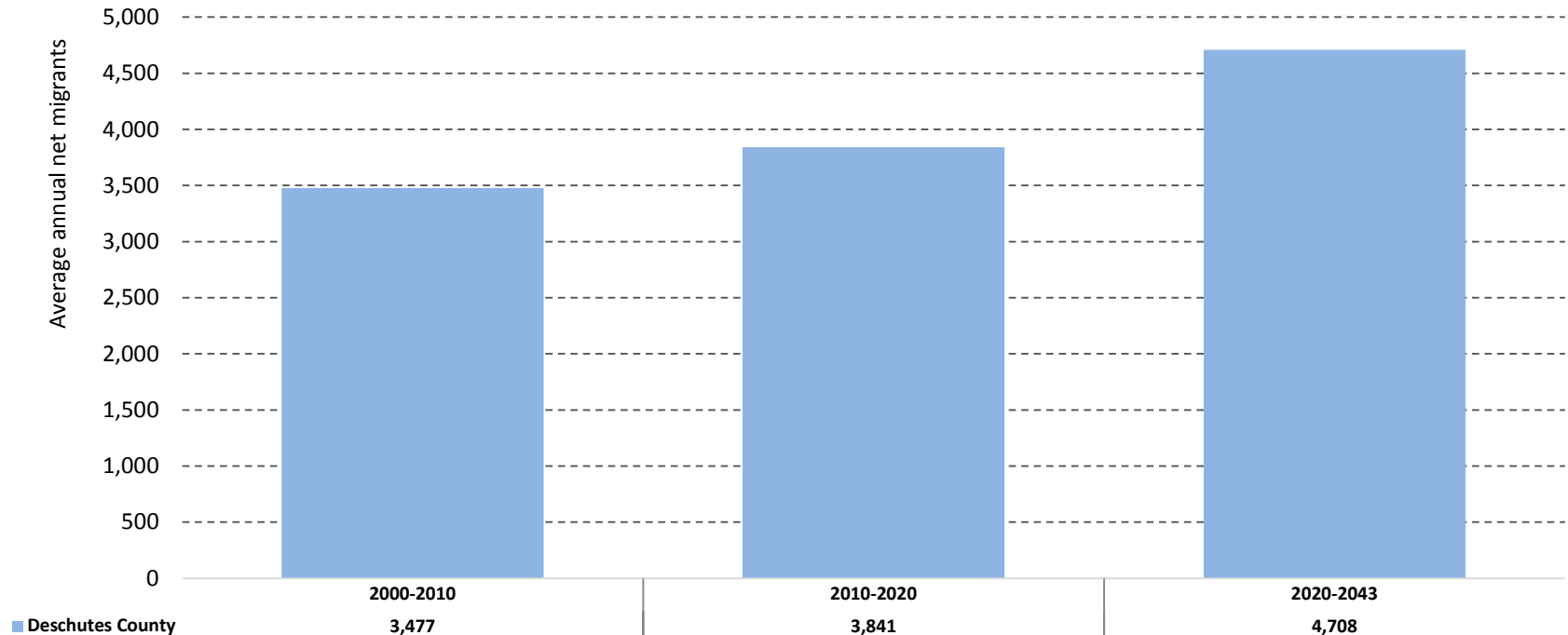
Deschutes County—Average Annual Net In/Out-Migration



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

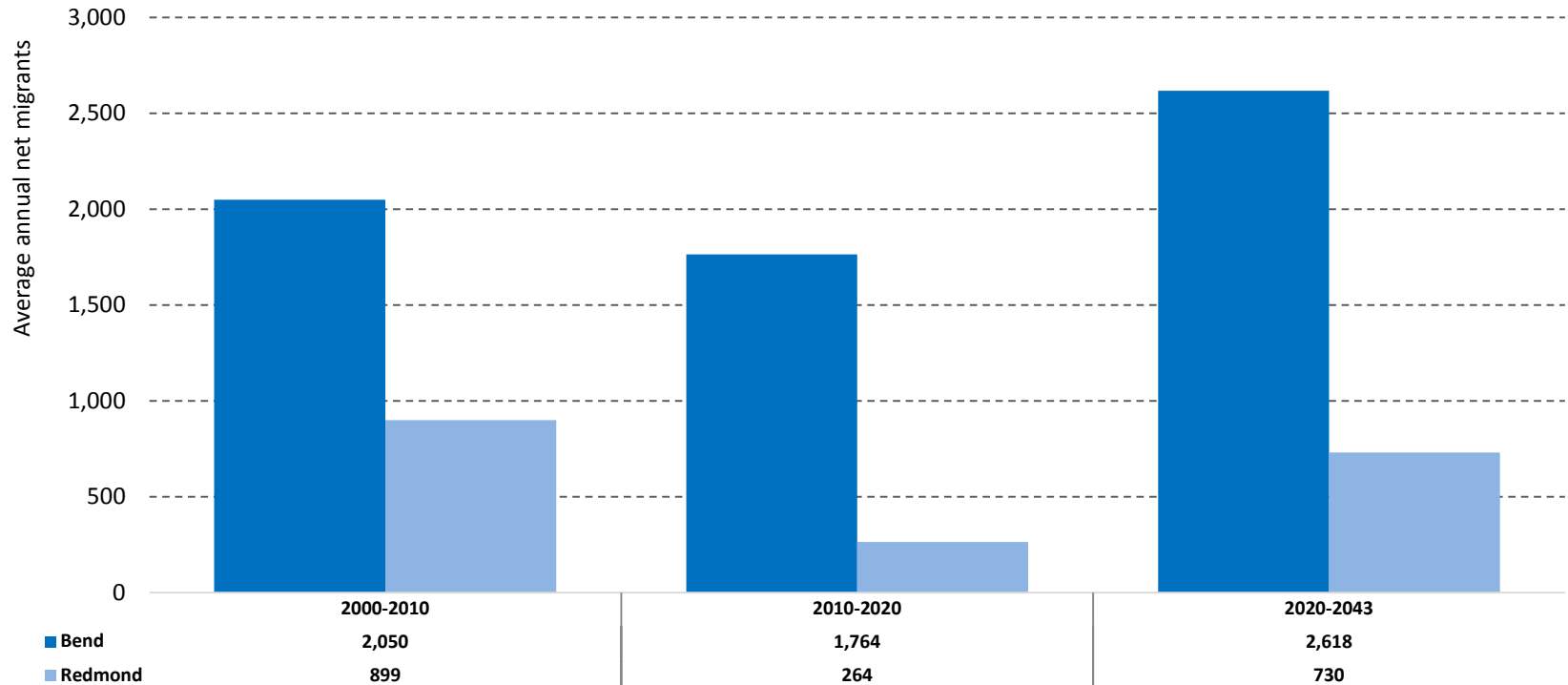
Note: The years signify the end of the period for which average annual numbers were calculated. The average annual numbers for "2010" were calculated for the 2000-2010 period, with the remaining years calculated for their preceding five-year periods.

Deschutes County—Average Annual Net In/Out-Migration



Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculations and Forecast by Population Research Center (PRC).
Note: The average annual numbers were calculated for the 10 year periods (2000-2010 and 2010-2020) and the 23 year period (2020-2043).

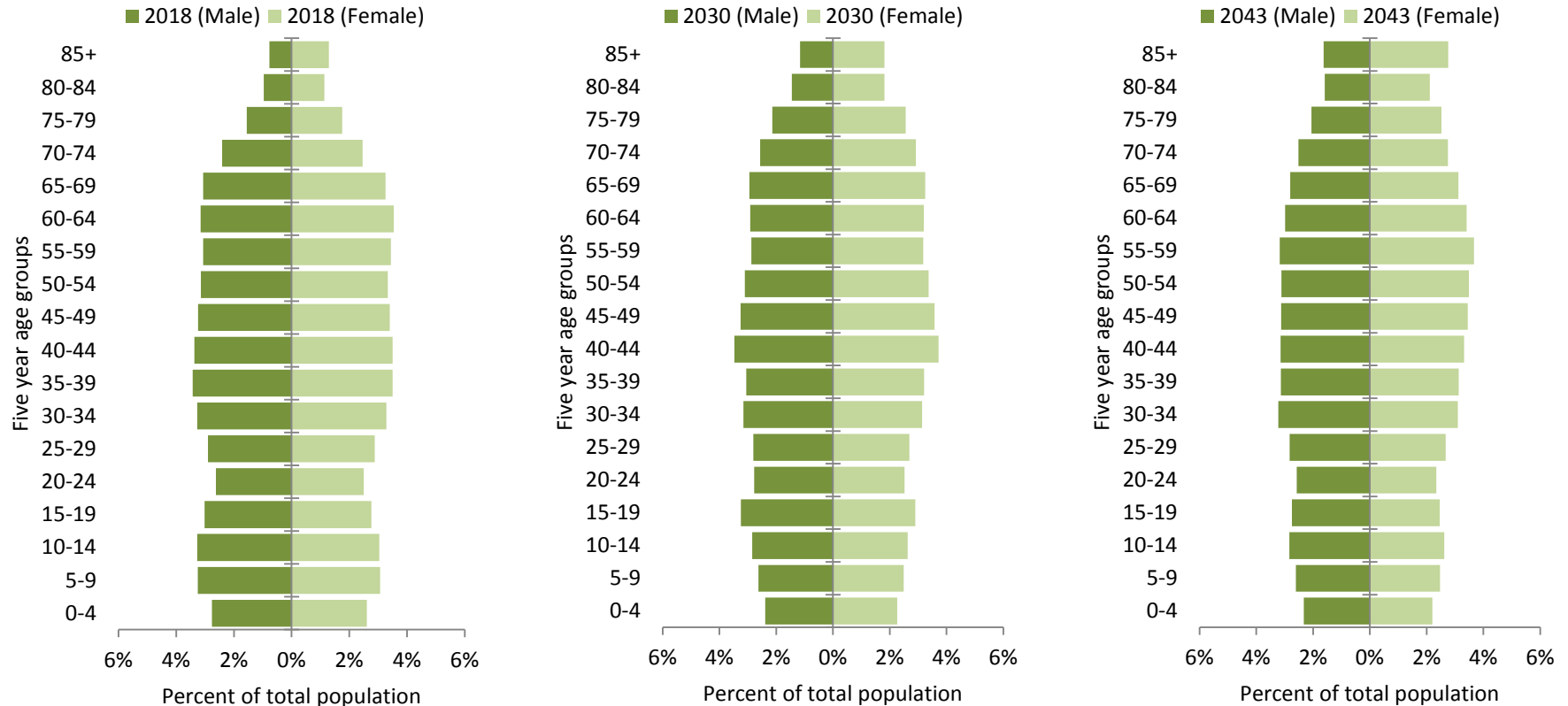
Deschutes County's Larger Sub-Areas—Average Annual Net In/Out-Migration



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

Note: The average annual numbers were calculated for the 10 year periods (2000-2010 and 2010-2020) and the 23 year period (2020-2043).

Deschutes County—Age Structure of the Population



Source: Forecast by Population Research Center (PRC)

Historical and Forecast Populations for Deschutes County and its Sub-Areas

	Historical			Forecast					
	2000	2010	AAGR (2000-2010)	2018	2043	2068	AAGR (2010-2018)	AAGR (2018-2043)	AAGR (2043-2068)
<i>Deschutes County</i>	116,277	157,905	3.1%	187,621	301,999	432,930	2.1%	1.9%	0.7%
Bend	52,163	77,010	4.0%	91,373	162,362	255,291	2.1%	2.3%	1.8%
La Pine	899	1,653	6.3%	1,833	3,594	5,894	1.3%	2.7%	2.0%
Redmond	15,524	26,508	5.5%	29,364	51,625	82,575	1.2%	2.3%	1.9%
Sisters	961	2,038	7.8%	2,691	5,169	8,431	3.4%	2.6%	2.0%
Outside UGBs	45,820	50,524	1.0%	62,360	79,248	80,739	2.6%	1.0%	0.1%

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

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

County and Larger Sub-Areas—Population and Average Annual Growth Rate (AAGR) (2018, 2043 and 2068)

	2018	2043	2068	AAGR (2018-2043)	AAGR (2043-2068)	Share of County 2018	Share of County 2043	Share of County 2068
<i>Deschutes County</i>	187,621	301,999	432,930	1.9%	1.5%	--	--	--
Bend	91,373	162,362	255,291	2.3%	1.8%	48.7%	53.8%	59.0%
Redmond	29,364	51,625	82,575	2.3%	1.9%	15.7%	17.1%	19.1%
Outside UGBs	62,360	79,248	80,739	1.0%	0.1%	33.2%	26.2%	18.6%

Source: Forecast by Population Research Center (PRC)

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

Assumptions for Smaller Sub-Area Forecasts

1. For UGBs experiencing population growth, we assume a higher growth rate in the near-term, with growth stabilizing over the remainder of the forecast period.
2. If planned housing units were reported in the surveys, then we account for them being constructed over the next 5-10 years.
3. For county sub-areas where population growth has been flat or declined, and there is no planned housing construction, we tend to temper losses over the forecast period.

County and Smaller Sub-Areas—Population and AAGR (2018, 2043 and 2068)

	2018	2043	2068	AAGR (2018-2043)	AAGR (2043-2068)	Share of County 2018	Share of County 2043	Share of County 2068
<i>Deschutes County</i>	187,621	301,999	432,930	1.9%	1.5%	--	--	--
La Pine	1,833	3,594	5,894	2.7%	2.0%	1.0%	1.2%	1.4%
Sisters	2,691	5,169	8,431	2.6%	2.0%	1.4%	1.7%	1.9%
Outside UGBs	62,360	79,248	80,739	1.0%	0.1%	33.2%	26.2%	18.6%

Source: Forecast by Population Research Center (PRC)

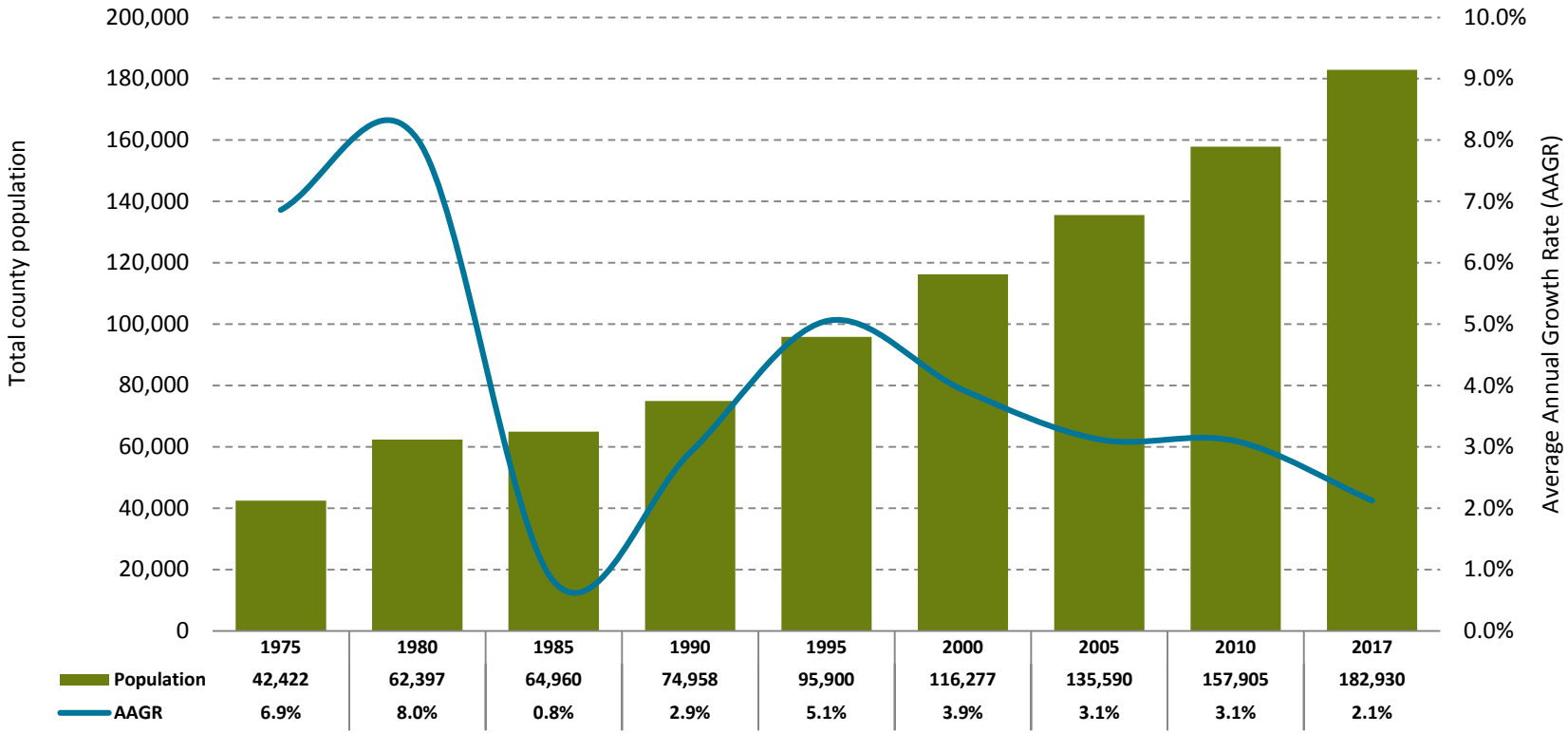
Note: For simplicity each UGB is referred to by its primary city's name.

Local Input and Additional Information

- Questions?
- Discussion time

Additional Historical Trends: Deschutes County

Deschutes County—Total Population by Five-year Intervals (1975-2017)



Sources: U.S. Census Bureau, 1980, 1990, 2000, and 2010 Censuses; Population Research Center (PRC), July 1st Annual Estimates 1975, 1985, 1995, 2005 and 2017.

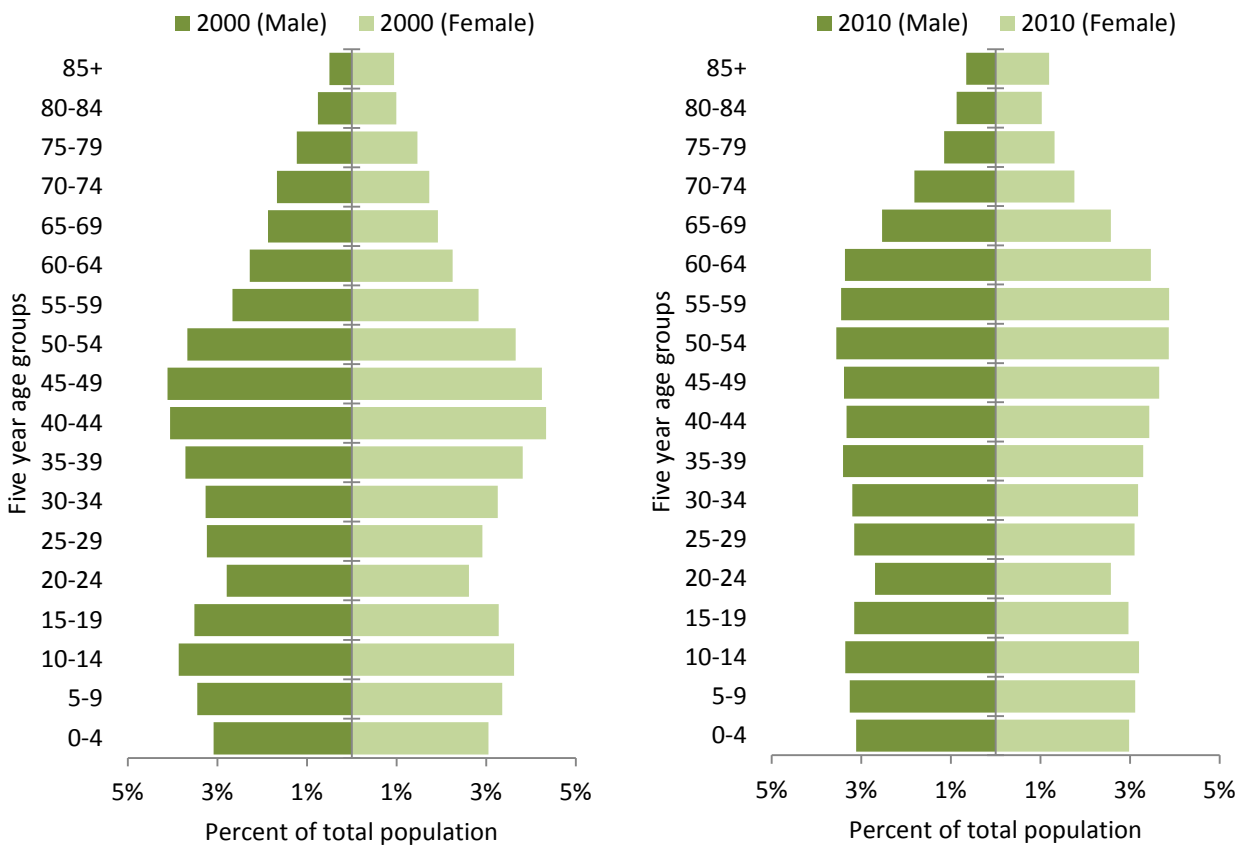
County and Sub-Areas—Population and Average Annual Growth Rate (AAGR) (2000-2010)

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
<i>Deschutes Count.</i>	116,277	157,905	3.1%	99.2%	99.9%	0.7%
Bend	52,163	77,010	4.0%	44.9%	48.8%	3.9%
La Pine	899	1,653	6.3%	0.8%	1.0%	0.3%
Redmond	15,524	26,508	5.5%	13.4%	16.8%	3.4%
Sisters	961	2,038	7.8%	0.8%	1.3%	0.5%
Outside UGBs	45,820	50,524	1.0%	39.4%	32.0%	-7.4%

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

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

Deschutes County—Age Structure of the Population (2000 and 2010)

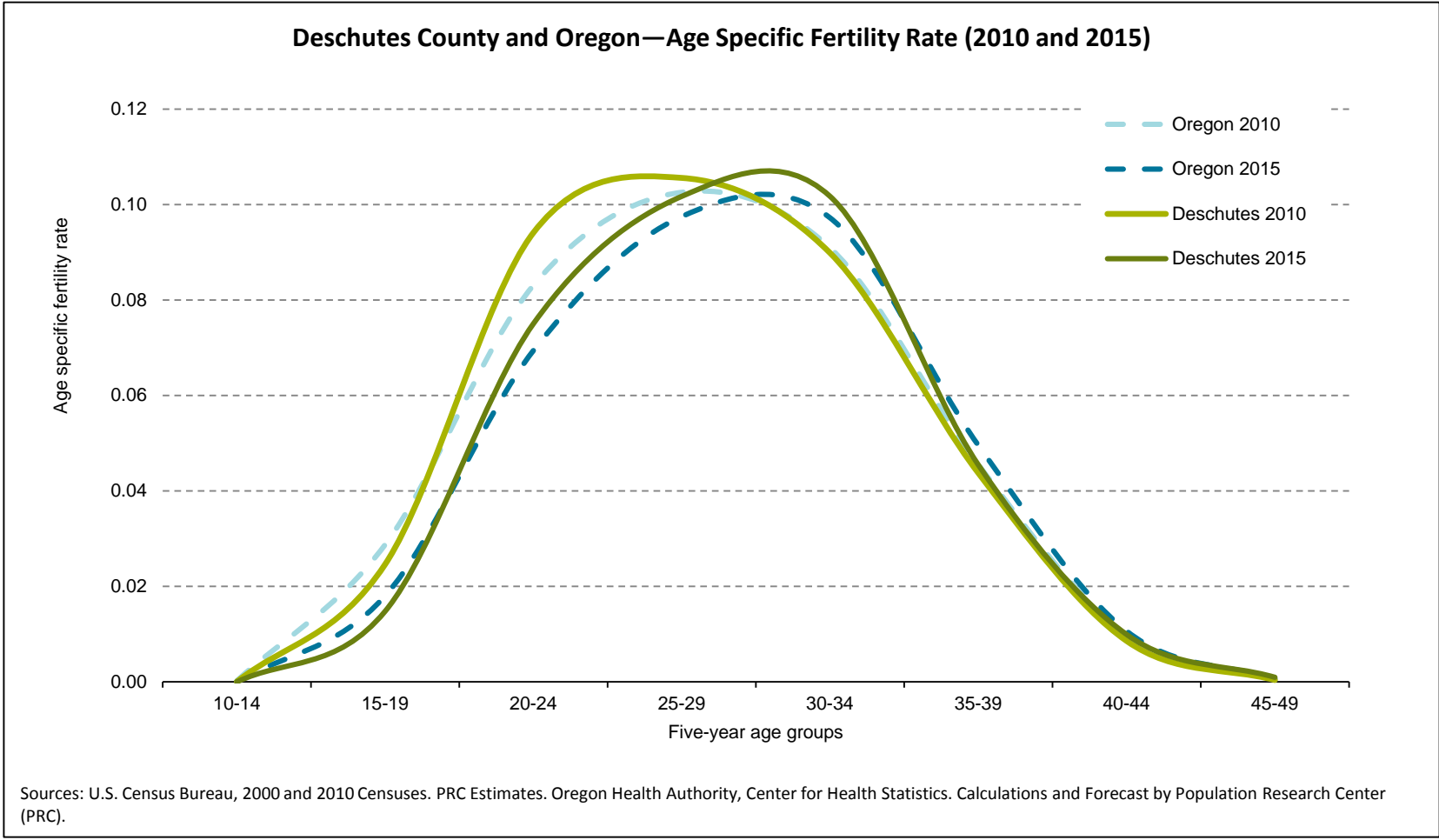


Sources: U.S. Census Bureau, 2000 and 2010 Censuses

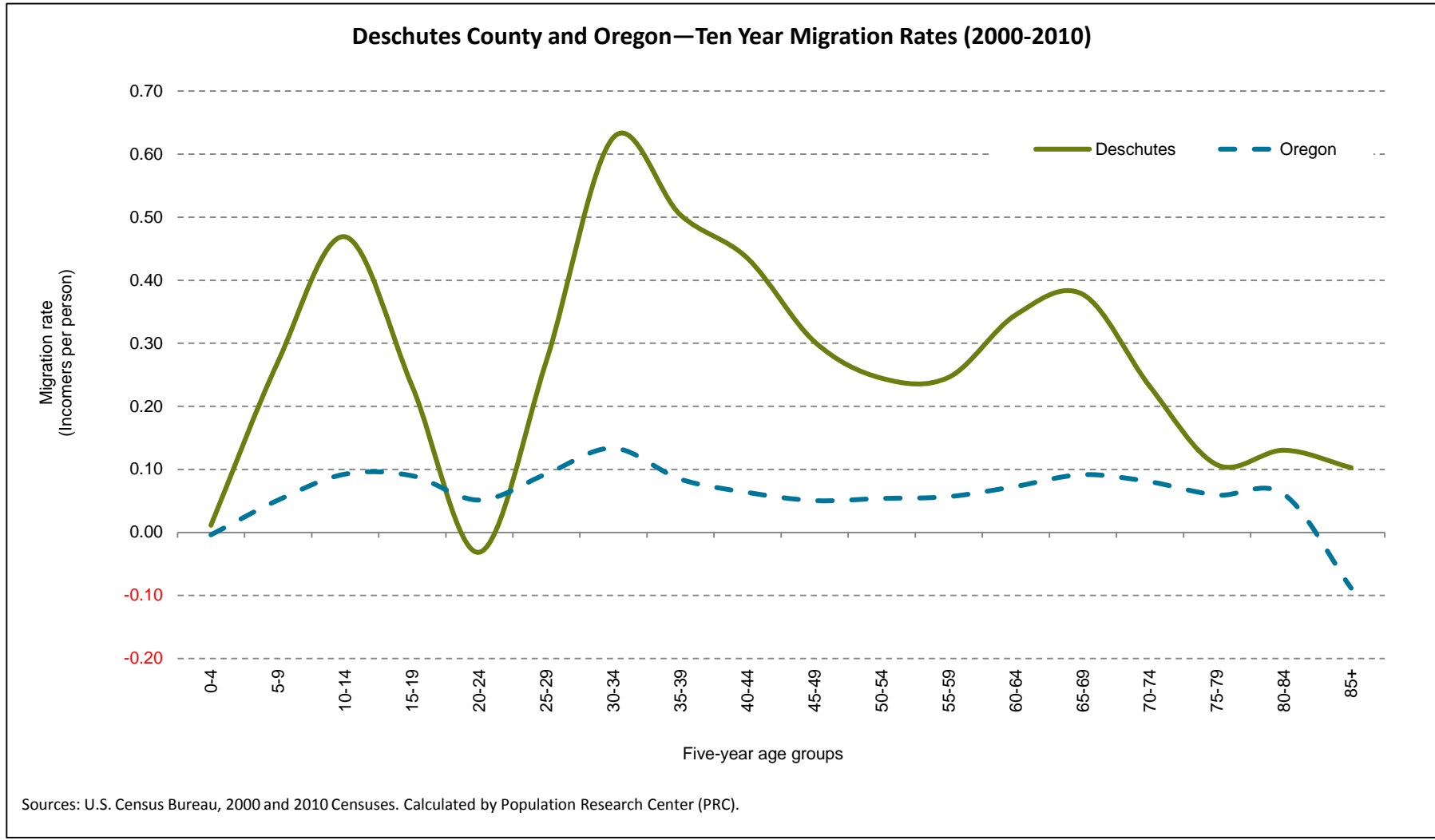
Deschutes County—Hispanic or Latino and Race (2000 and 2010)

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
	Count	Percentage	Count	Percentage		
<i>Total population</i>	115,367	100.0%	157,733	100.0%	42,366	36.7%
Hispanic or Latino	4,304	3.7%	11,718	7.4%	7,414	172.3%
Not Hispanic or Latino	111,063	96.3%	146,015	92.6%	34,952	31.5%
White alone	107,177	92.9%	139,470	88.4%	32,293	30.1%
Black or African American alone	207	0.2%	524	0.3%	317	153.1%
American Indian and Alaska Native alone	875	0.8%	1,197	0.8%	322	36.8%
Asian alone	831	0.7%	1,412	0.9%	581	69.9%
Native Hawaiian and Other Pacific Islander alone	81	0.1%	183	0.1%	102	125.9%
Some Other Race alone	77	0.1%	141	0.1%	64	83.1%
Two or More Races	1,815	1.6%	3,088	2.0%	1,273	70.1%

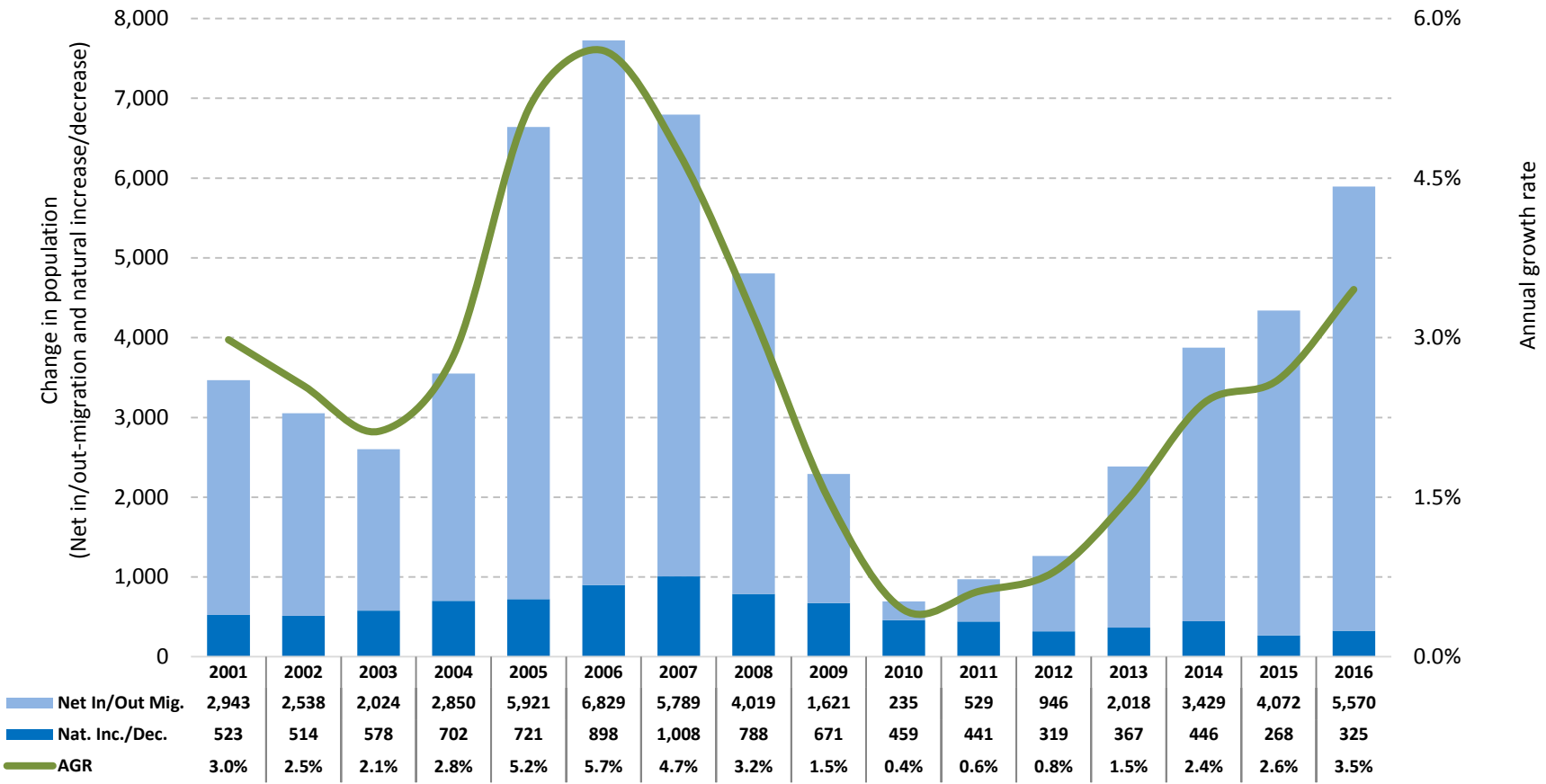
Sources: U.S. Census Bureau, 2000 and 2010 Censuses.



Total Fertility Rate (TFR)		
	2000	2010
Deschutes County	2.06	1.84
Oregon	1.98	1.81



Deschutes County—Components of Population Change (2001-2016)



Sources: Population Research Center, July 1st Annual Estimates 2001-2016 Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

Deschutes County and Sub-Areas—Total Housing Units (2000 and 2010)

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
<i>Deschutes County</i>	54,583	80,139	3.9%	100.0%	100.0%	0.0%
Bend	22,565	36,185	4.8%	41.3%	45.2%	3.8%
La Pine	523	942	6.1%	1.0%	1.2%	0.2%
Redmond	6,373	11,092	5.7%	11.7%	13.8%	2.2%
Sisters	483	1,109	8.7%	0.9%	1.4%	0.5%
Outside UGBs	24,639	30,811	2.3%	45.1%	38.4%	-6.7%

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

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

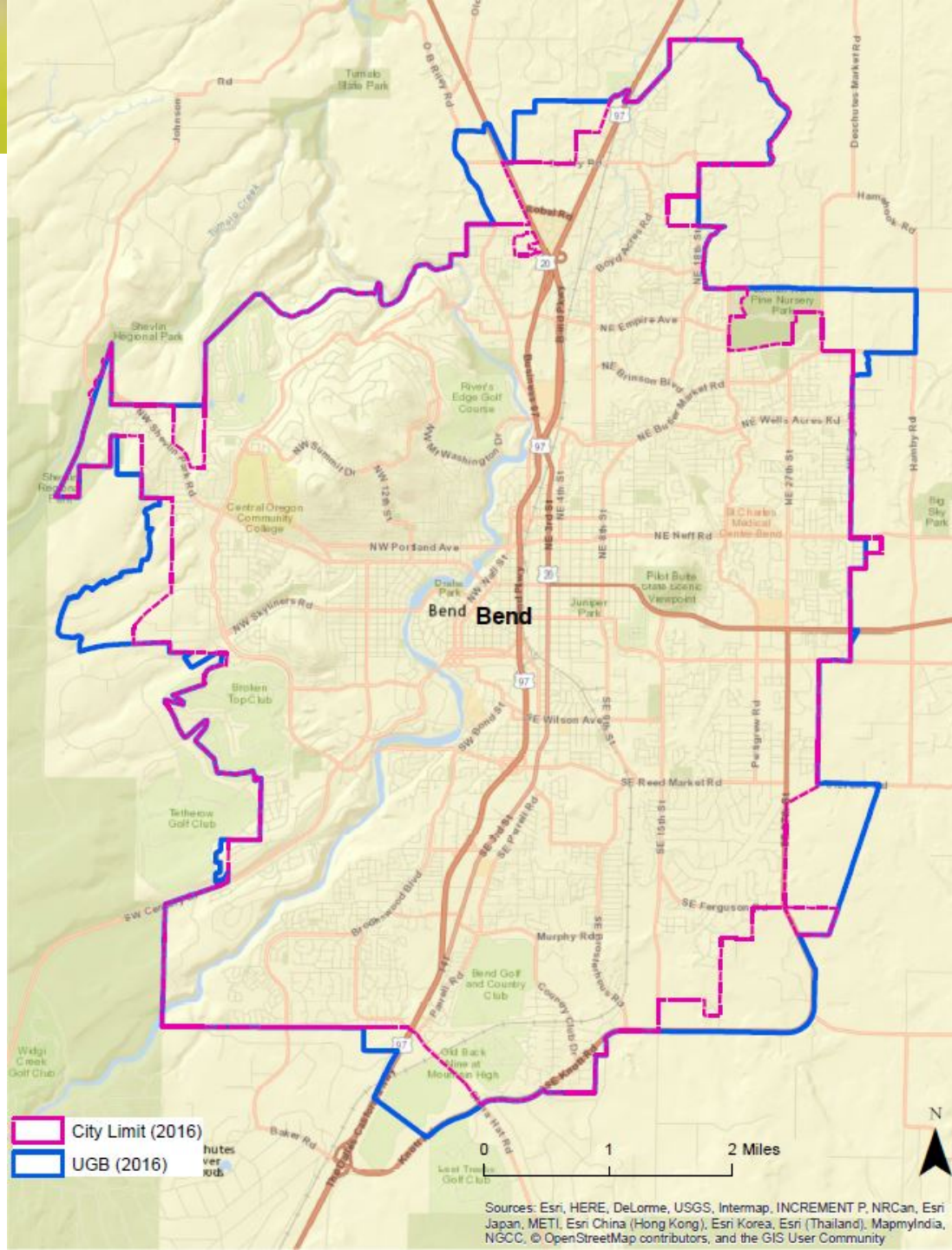
Deschutes County and Sub-Areas—Persons Per Household (PPH) and Occupancy Rate (2000 and 2010)

	Persons Per Household (PPH)			Occupancy Rate		
	2000	2010	Change 2000-2010	2000	2010	Change 2000-2010
<i>Deschutes County</i>	2.5	2.4	-2.5%	83.53%	79.97%	-3.6%
Bend	2.5	2.4	-4.4%	93.59%	88.05%	-5.5%
La Pine	2.4	2.3	-5.0%	76.67%	74.10%	-2.6%
Redmond	2.2	2.6	20.1%	94.27%	90.67%	-3.6%
Sisters	2.6	2.4	-6.6%	82.40%	76.38%	-6.0%
Outside UGBs	2.4	2.4	1.6%	71.72%	66.95%	-4.8%

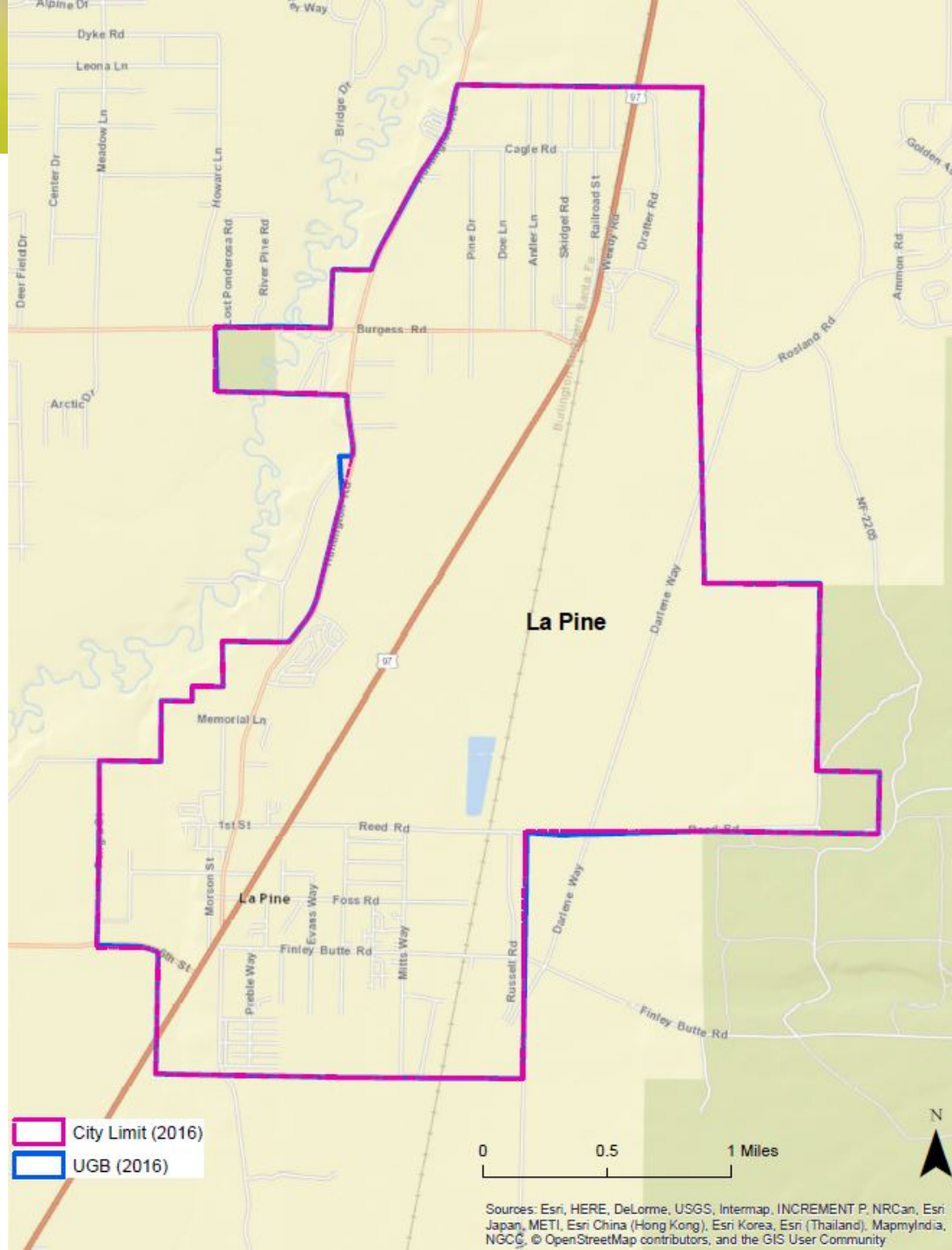
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC)

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

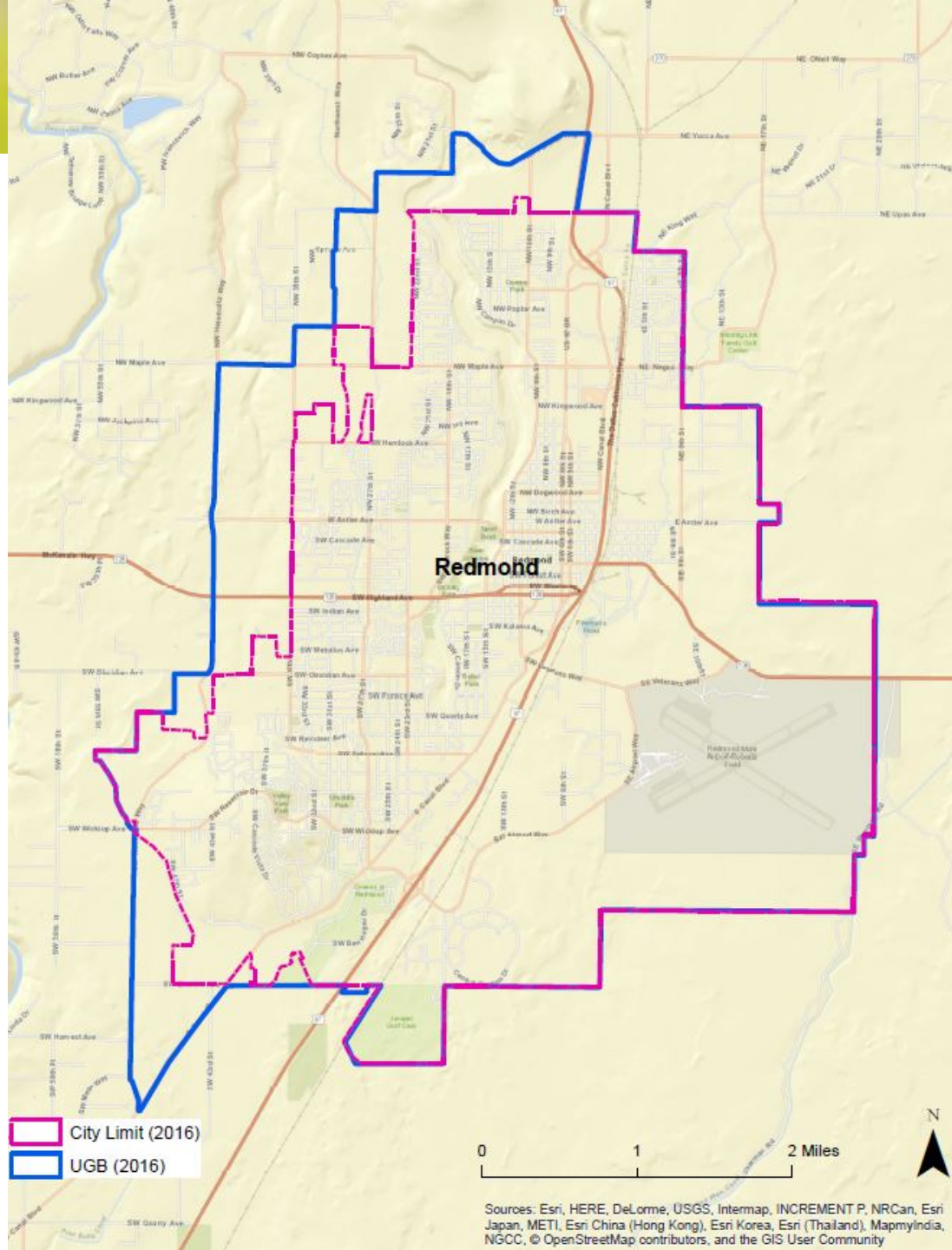
Deschutes County UGBs



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community



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