Oregon Population Forecast Program

Oregon Population Forecast Program
Regional Forecast Meeting – Region 1

December 2021

Project Team

Portland State UNIVERSITY

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Population Forecast Program Manager

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Administrative Assistant

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Oregon State Data Center Coordinator

Ethan Sharygin,
Director

Meisha Whyte,
Graduate Research Assistant

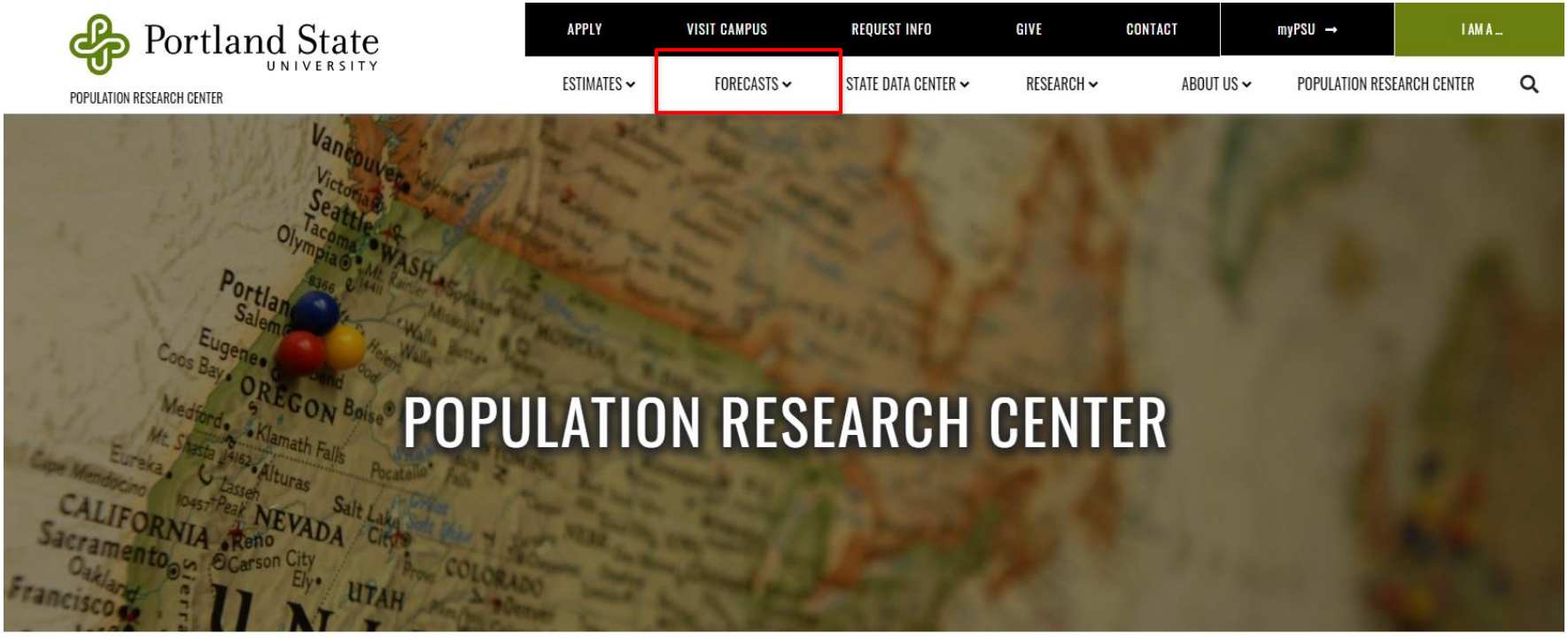
Purpose and Contents

The primary purpose of today's meeting is to provide a brief overview of the forecast program, explain data and method updates, share preliminary county level results in Region 1, and gather feedback from counties and cities.

Contents:

- Overview of the 2022-2025 forecast cycle
- Methodology and updates
- Preliminary county level forecast
- Preparation for UGB forecasts
- Approximately 20 minutes for each county, including 5-8 minutes for comments.

Forecast Program Overview



PRC Website: https://www.pdx.edu/population-research/

Forecast Program Overview

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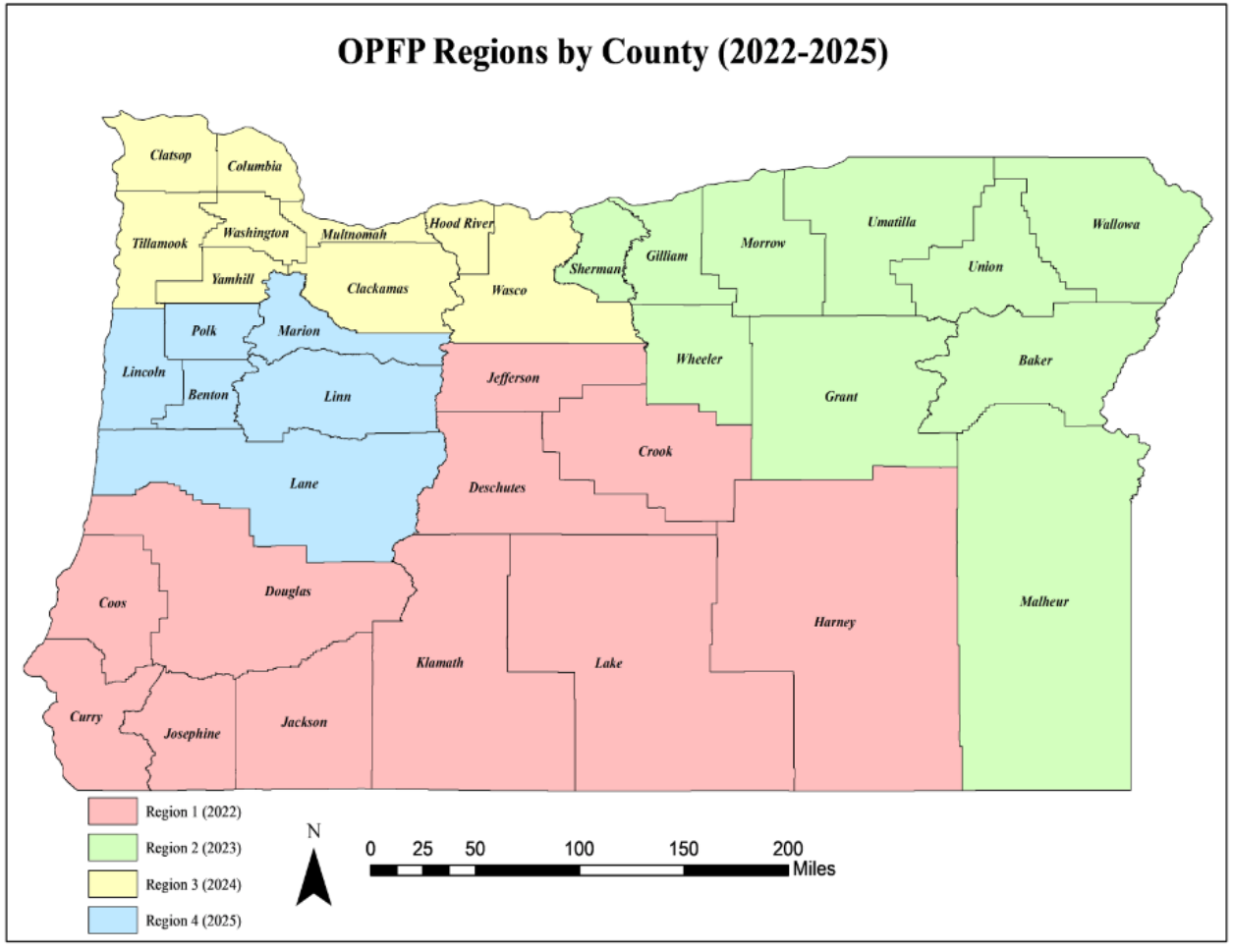
Cycle 3 Forecast:



Forecast Program Overview

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4-Year Cycle

2022	2023	2024	2025
Update R1 County-Level Forecasts	Update R2 County-Level Forecasts	Update R3 County-Level Forecasts	Update R4 County-Level Forecasts
1st Set of Coordinated UGB/County Forecasts	2nd Set of Coordinated UGB/County Forecasts	3rd Set of Coordinated UGB/County Forecasts	4th Set of Coordinated UGB/County Forecasts

Forecast Program Overview

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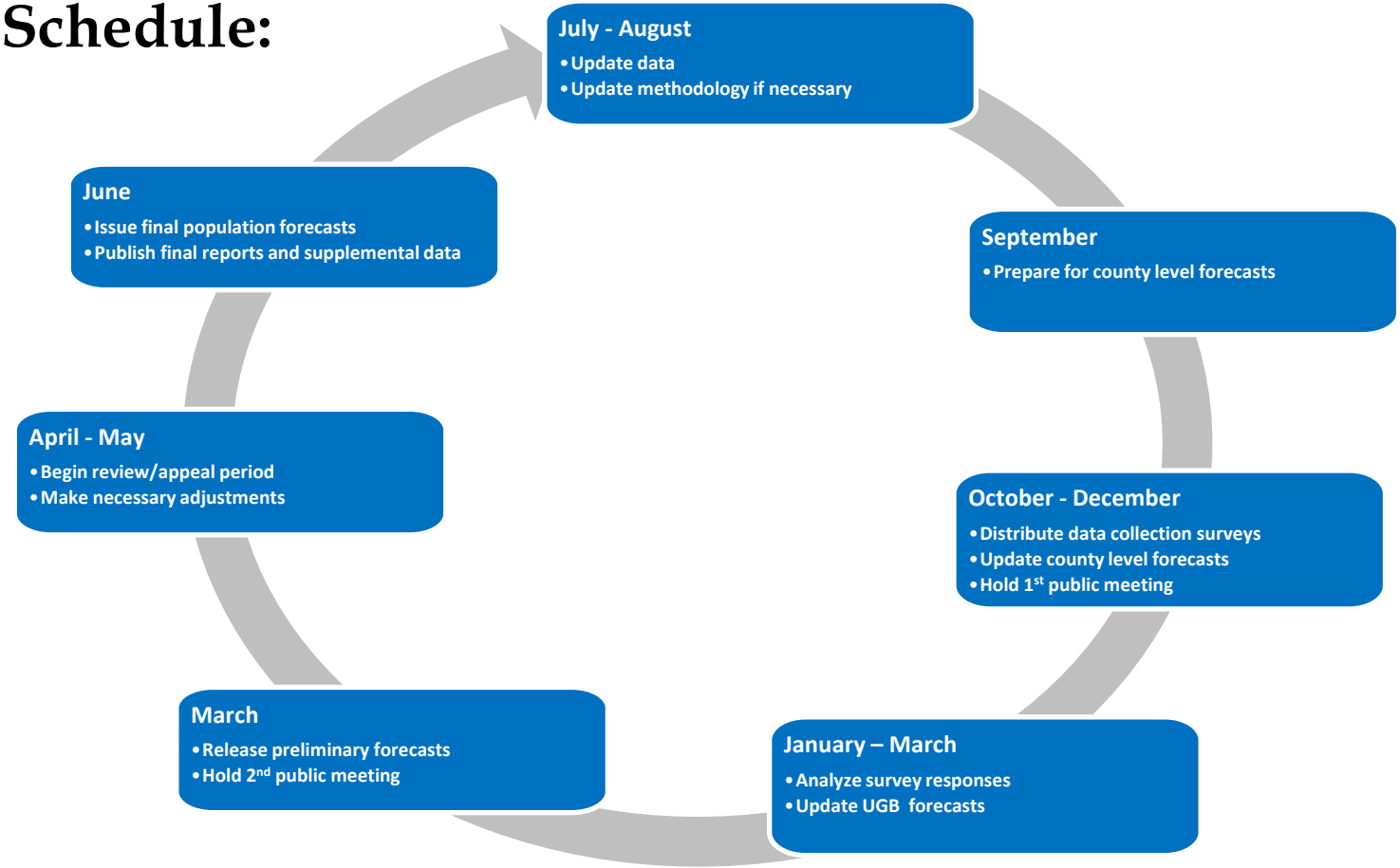
Annual Schedule:



Forecast Program Overview

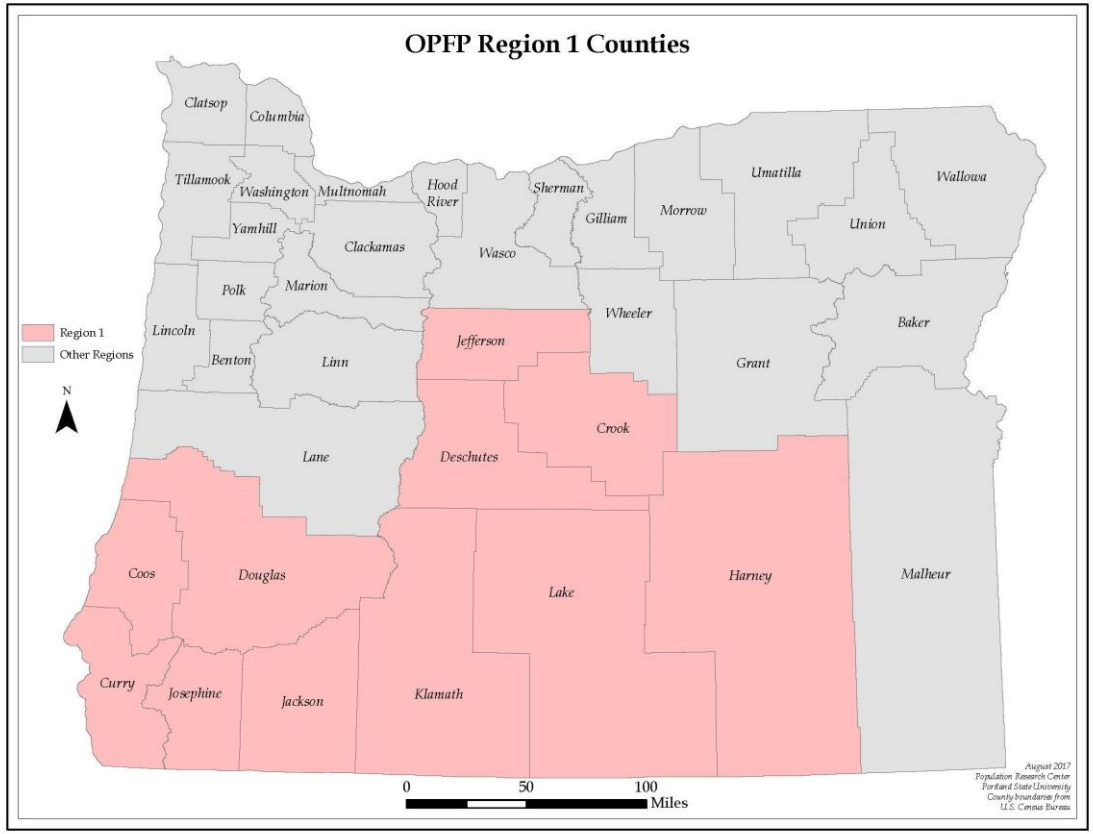
Modified Methodology (50 Year Period)

Forecast Methods (2022-47)

- Cohort-Component and Housing Unit Model

Modified Method (2048-72):

- County: AAGR of the last forecast period (2046-47) is extrapolated out for the remaining 25 years.
- Sub-areas: Trend the sub-area share of the County for the remaining 25 years.



Forecast Program Overview

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- County-level forecasts
  - 50-year horizon
  - 5-year age cohorts by sex
- Coordinated city-level forecasts
  - UGB forecasts
  - Total population

[redacted]

Lane County Population by Age Group / Year	2020	2021	2025	2030	2035	2040	2045
00-04	17,197	17,013	16,889	18,131	19,428	20,064	20,163
05-09	17,904	19,344	17,697	17,109	18,369	19,685	20,331
10-14	18,955	19,708	19,972	18,321	17,710	19,013	20,377
15-19	24,070	23,894	24,571	24,922	23,260	22,640	24,096
20-24	31,759	36,815	36,672	37,881	38,522	36,809	36,201
25-29	26,571	27,959	32,845	33,017	34,153	34,739	32,505
30-34	25,175	22,776	23,092	28,311	28,367	29,376	29,904
35-39	23,072	23,389	21,887	22,073	26,979	27,078	28,049
40-44	21,733	23,952	24,503	22,544	22,741	27,794	27,897
45-49	21,494	20,886	23,847	25,307	23,292	23,497	28,719
50-54	22,255	21,357	21,512	24,505	26,018	23,945	24,156
55-59	24,514	22,431	21,381	21,988	25,068	26,611	24,488
60-64	26,081	24,920	23,224	21,546	22,167	25,282	26,827
65-69	26,813	25,855	24,963	23,041	21,376	21,988	25,082
70-74	21,531	23,225	24,946	24,143	22,268	20,674	21,247
75-79	13,908	14,533	19,571	22,395	21,690	20,013	18,638
80-84	8,914	8,927	11,299	15,723	17,947	17,389	16,038
85+	9,418	8,245	8,869	11,086	15,069	18,250	19,029
Total	381,365	385,230	397,742	412,045	424,423	434,846	443,747

Total Population Area / Year	2020	2025	2030	2035	2040
Lane County	381,365	397,742	412,045	424,423	434,846
Coburg	1,375	1,559	1,689	1,818	1,947
Cottage Grove	10,660	10,605	10,921	11,177	11,374
Creswell	5,913	5,983	6,642	7,328	8,040
Dunes City	1,365	1,359	1,423	1,481	1,533
Eugene	193,768	206,740	215,637	223,575	230,512
Florence	11,182	11,145	11,904	12,641	13,350
Junction City	6,954	7,444	7,895	8,323	8,726
Lowell	1,090	1,171	1,249	1,324	1,394
Oakridge	3,458	3,727	3,904	4,062	4,200
Springfield	70,337	72,103	73,838	75,149	76,042
Veneta	4,845	4,915	5,337	5,759	6,180
Westfir	275	282	303	324	345
Outside UGB Area	70,144	70,709	71,304	71,460	71,203

						4,322	4,444	4,569	4,695	4,824	4,955	4,982
						76,604	77,198	77,772	78,325	78,856	79,311	79,399
						6,602	7,030	7,482	7,961	8,468	9,025	9,140
						365	386	407	430	454	479	485
						70,631	70,122	69,595	69,050	68,486	67,834	67,702

Proposed Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2021.

Note: All UGBs are referred using their city names.

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Process for Population Forecasts

- Gather information about existing and planned future housing, and about population change
  - Population, migration, births, and deaths going back at least 20 year
  - Accounting for impactful events (e.g., COVID-19, economic recession)
  - General and housing surveys
  - Housing developments: current status and future plans
  - Construction of new GQ facilities
- Develop demographic models
- Make assumptions about future housing and population change
- Regularly revise forecasts

Methodology

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Cohort Component Model ("Demographic Balancing Equation"):

$$Population_{t2} = Population_{t1} + Births_{t1\ to\ t2} - Deaths_{t1\ to\ t2} + NM_{t1\ to\ t2}$$

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

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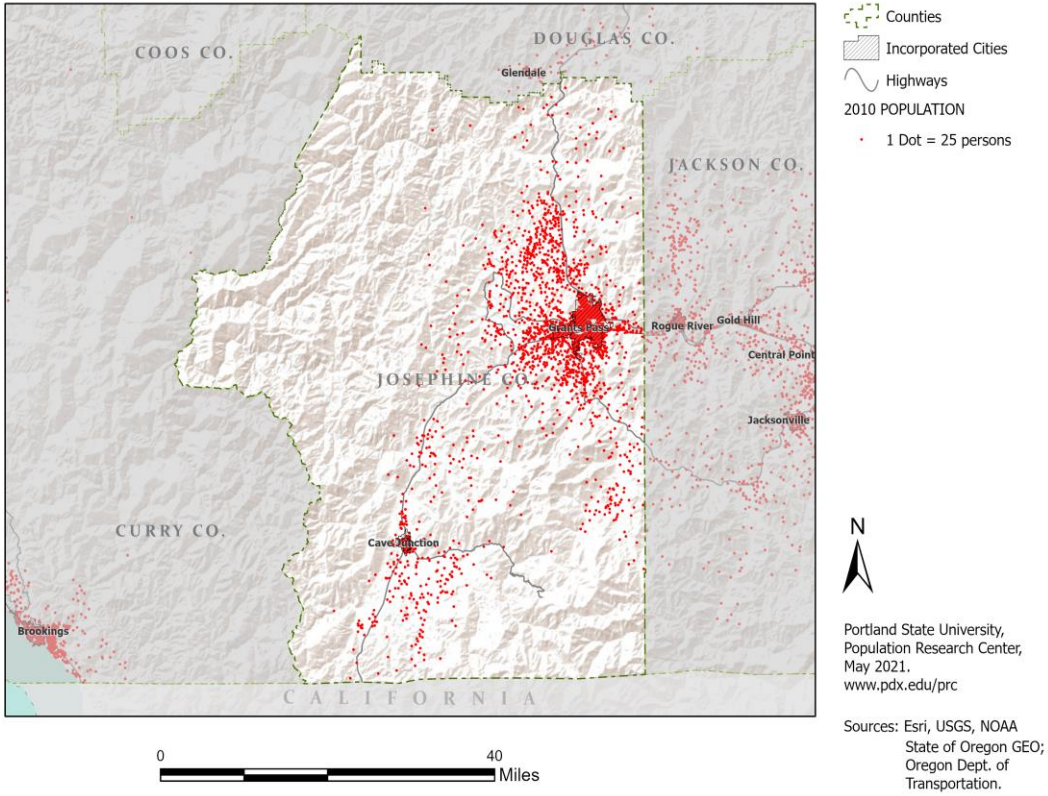
County Forecasts:

1. We incorporate the following assumptions for fertility and mortality.
   a) Deaths and survival rates are projected based on historical trends (2000-2020) and based on the methodology published by Clark and Sharrow 2011 (link). Mortality rates for the 85+ age group are further divided into 5-year age groups up to 100+.
   b) Fertility rates are projected based on historical trend up to 2035 and remain constant afterwards.

2. Net migrations are calculated based on published data gathered from the IRS and the U.S. Census Bureau's American Community Survey (ACS) Public Use Microdata Sample (PUMS) and Population Estimates Program (PEP):
   a) Historical county level in-, out-, and net migration (domestic and foreign) are obtained from IRS and PEP (1991 – 2019). IRS provides domestic in- and out- while PEP provides domestic foreign net.
   b) Age-specific rates (domestic in- and out- and foreign in-migration) are calculated using ACS's data for Public Use Microdata Areas (PUMA). PUMA level rates are assigned to counties within the same PUMA.
   c) Future total net migrations are projected by applying an ARIMA model appropriate for each individual counties.

3. Populations in sub-areas will use the housing unit method based on survey responses and historical pattern.
   – Recent developments will be considered as likely trend in the next 5-10 years of forecast, while historic trend and additional assumptions are considered for forecasts further into the future.

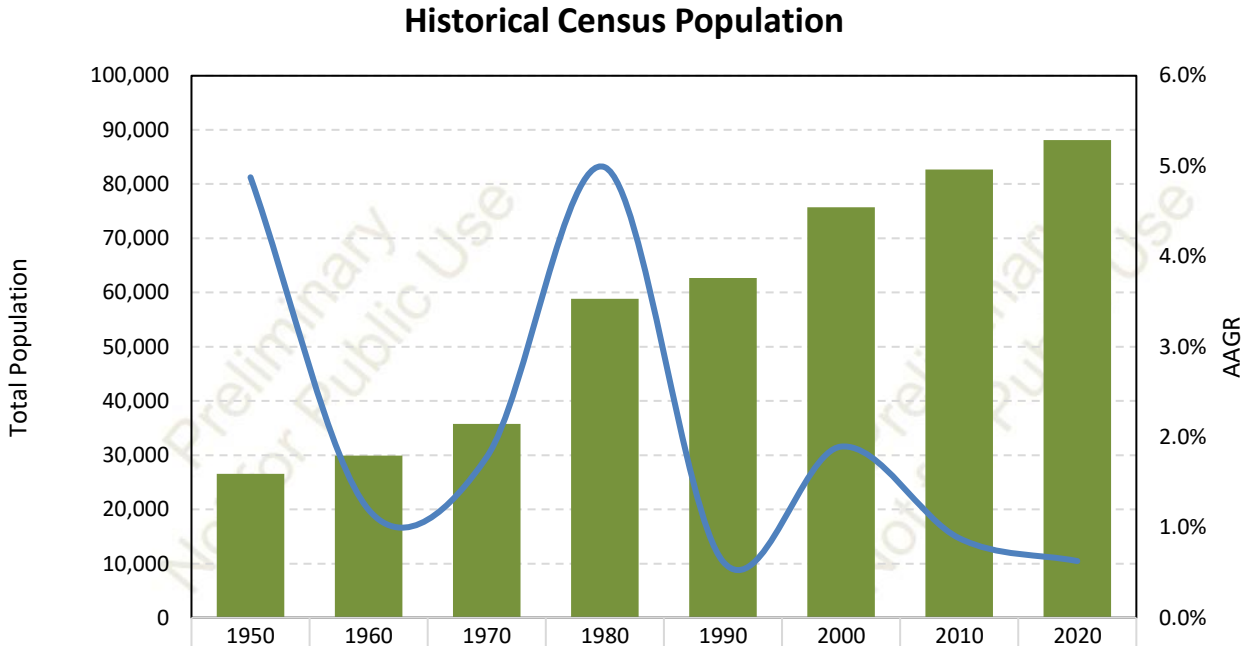
Population: Josephine County



Josephine County

Historical and Forecast Trends

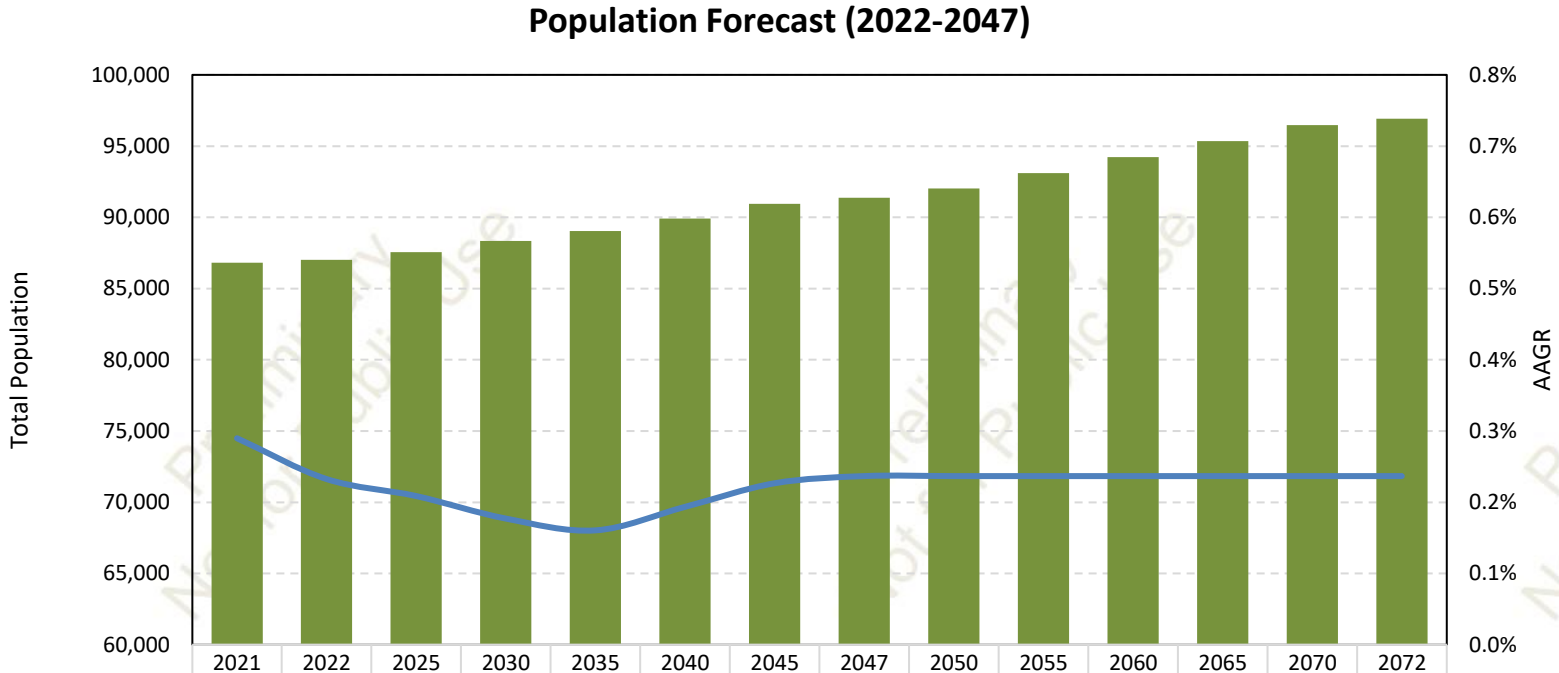
Josephine County experienced the highest population growth in the 1980 Census, where the county showed an AAGR of 5% between 1970 and 1980. Growth varies between 0.6% and 1.9 % between 1990 and 2020. The 2020 Census showed an AAGR of 0.6 % between 2010 and 2020.



	1950	1960	1970	1980	1990	2000	2010	2020
Population	26,542	29,917	35,746	58,855	62,649	75,726	82,713	88,090
AAGR	4.9%	1.2%	1.8%	5.0%	0.6%	1.9%	0.9%	0.6%

Source: US Census Bureau Decennial Census. Calculated by Population Research Center (PRC).
Historical trend

Proposed Forecast Results



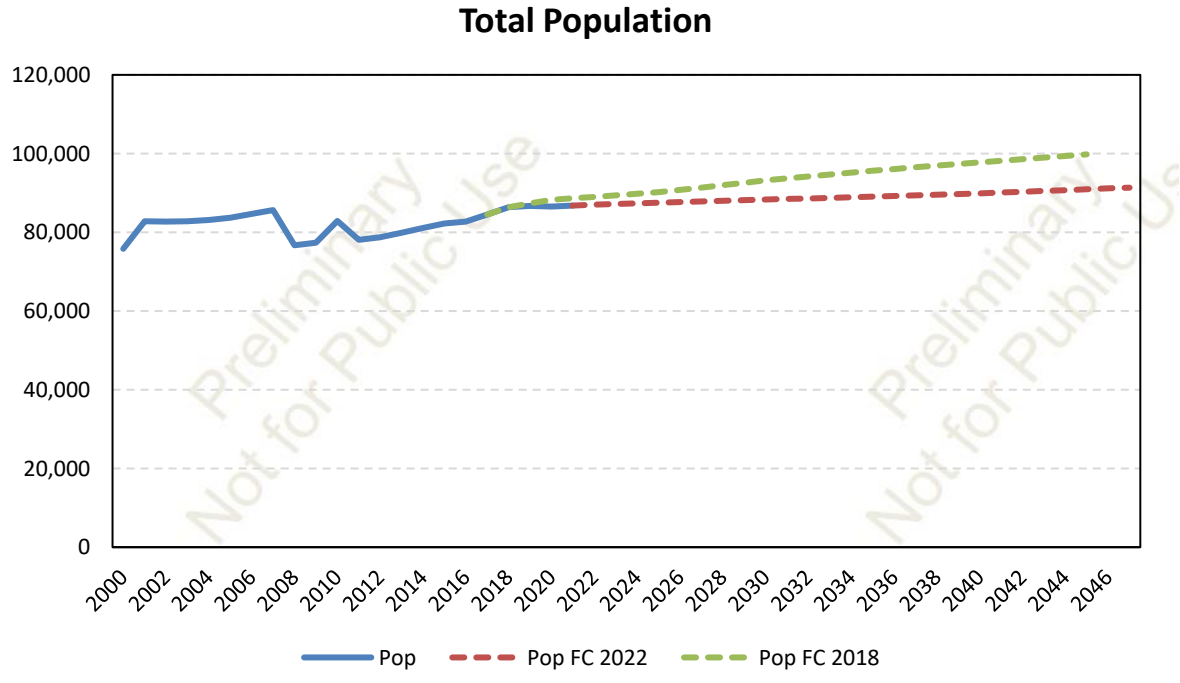
	2021	2022	2025	2030	2035	2040	2045	2047	2050	2055	2060	2065	2070	2072
Population	86,811	87,013	87,560	88,338	89,050	89,915	90,940	91,371	92,022	93,116	94,223	95,343	96,477	96,934
AAGR	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%

These numbers represent ***Preliminary*** Forecast Results

Historical and Forecast Trends

The current preliminary forecast reflects a lower trend compared to the 2018 forecast. Population showed a relatively "flat" line over the past few years, which may be associated with factors such as lower fertility rate and net migration.

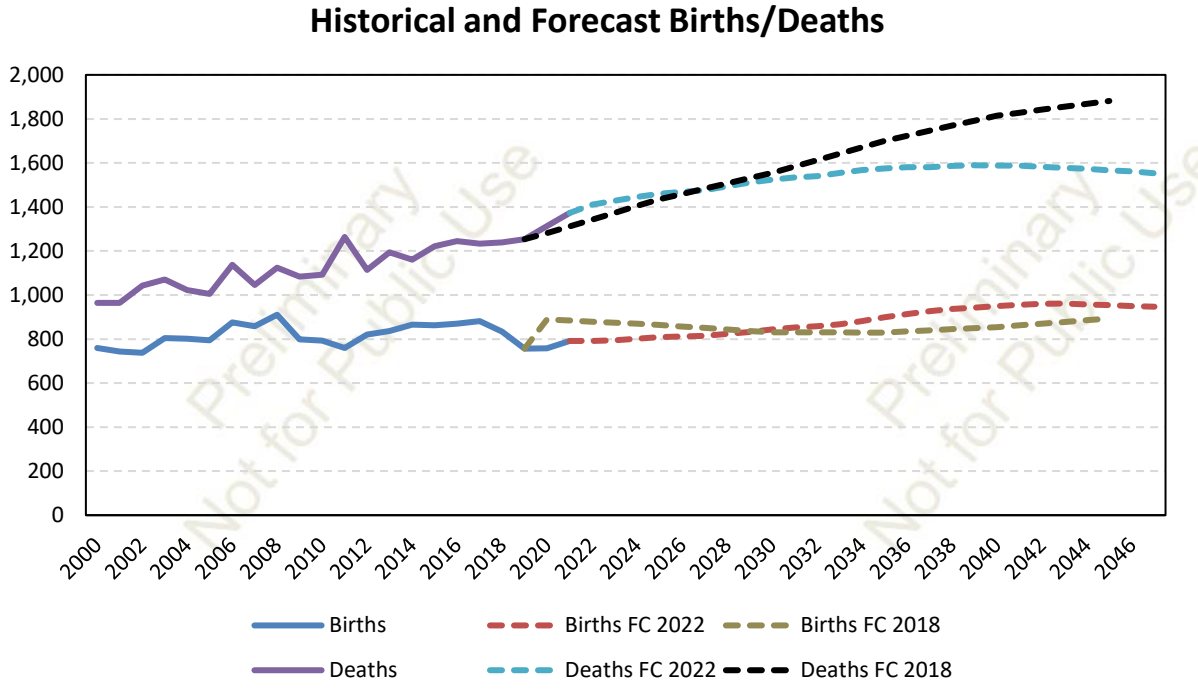
2045 forecast: 99,811 (2018) vs. 91,371 (2022)



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

Historical and Forecast Trends

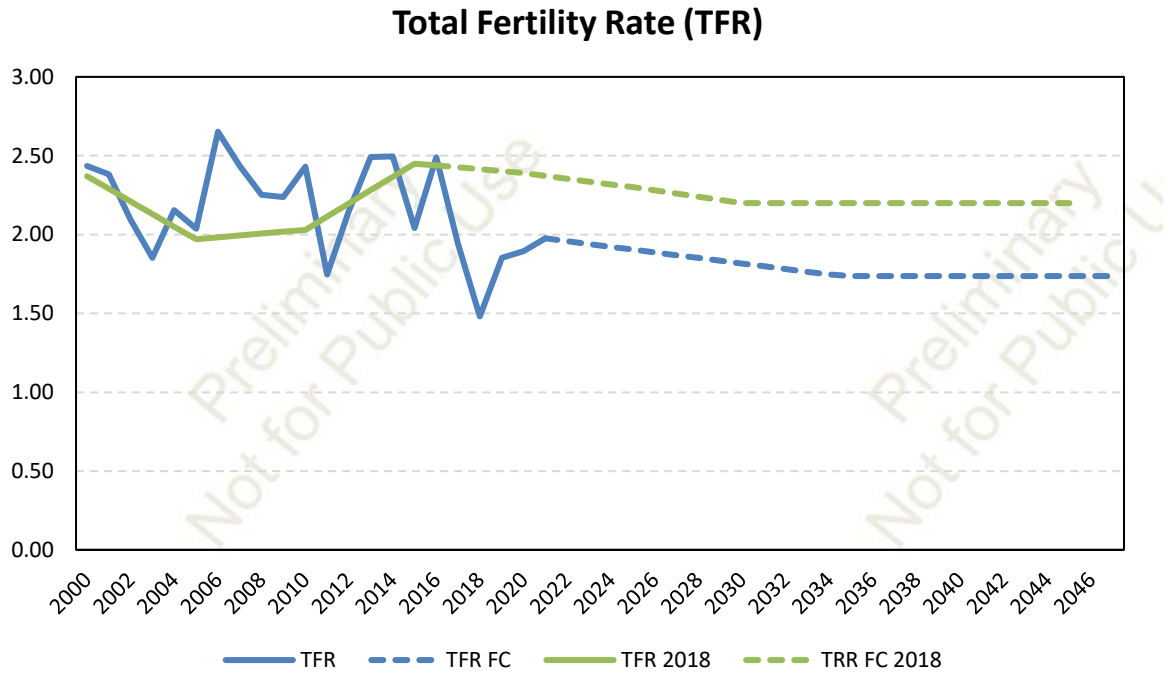
Deaths will continue to outnumber births throughout the forecast period. Compare to the previous forecast, deaths are projected to increase at a slower rate. Births are expected to increase slightly after 2033.



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

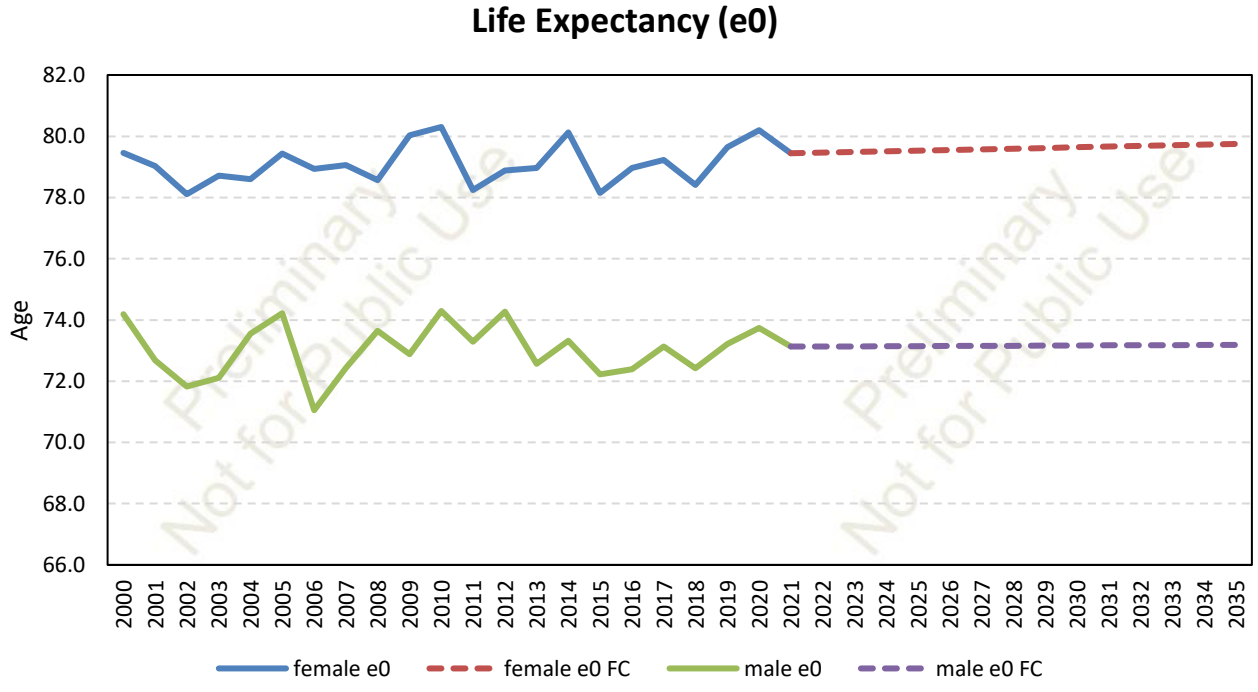
Historical and Forecast Trends

The projected TFR in the current forecast is lower than that of the previous cycle. TFR decreased dramatically since 2017, which played a role in the lower fertility forecast.



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

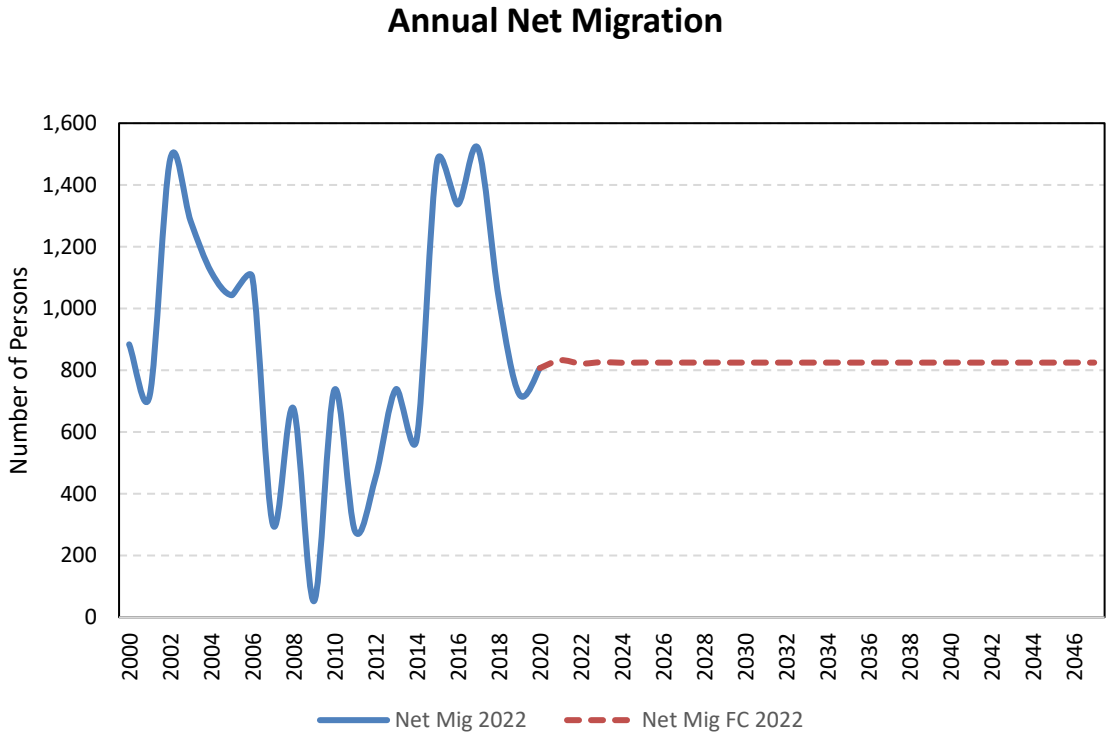
Historical and Forecast Trends



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

Historical and Forecast Trends

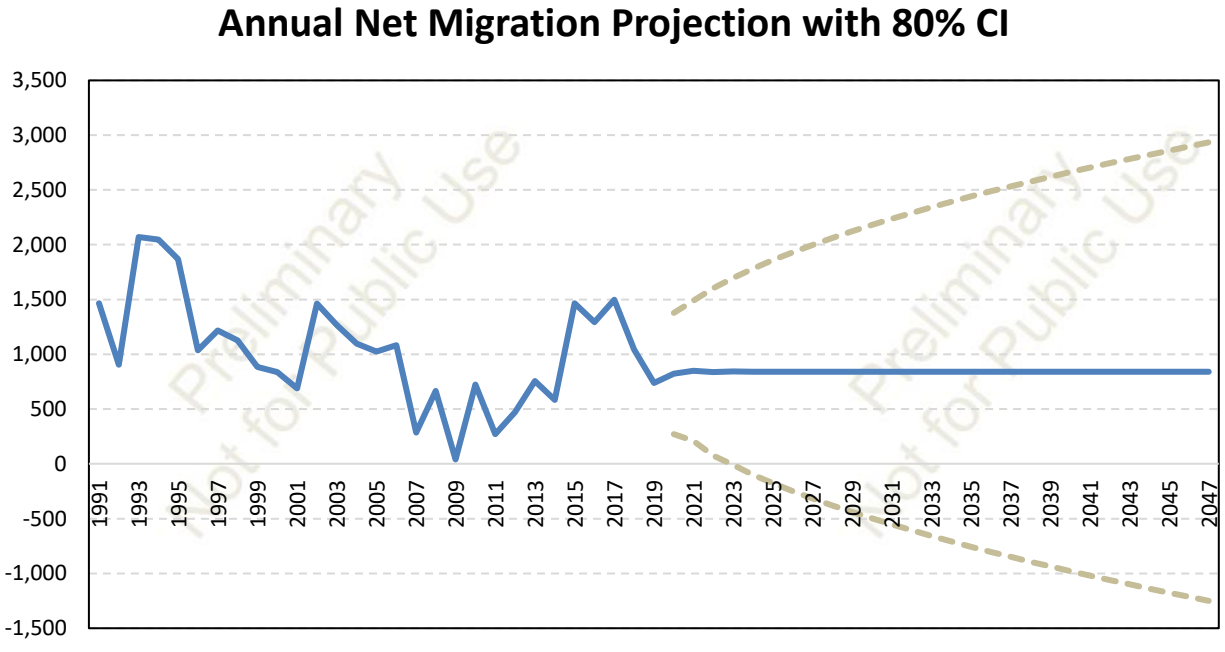
Net migration is expected to remain relatively stable at slightly over 800 per year, which is at the mid-range of the historical data.



Sources: IRS County Migration 2000-2019, American Community Survey (ACS), Population Estimates Program (PEP). Calculations and forecast by Population Research Center (PRC).

Historical and Forecast Trends

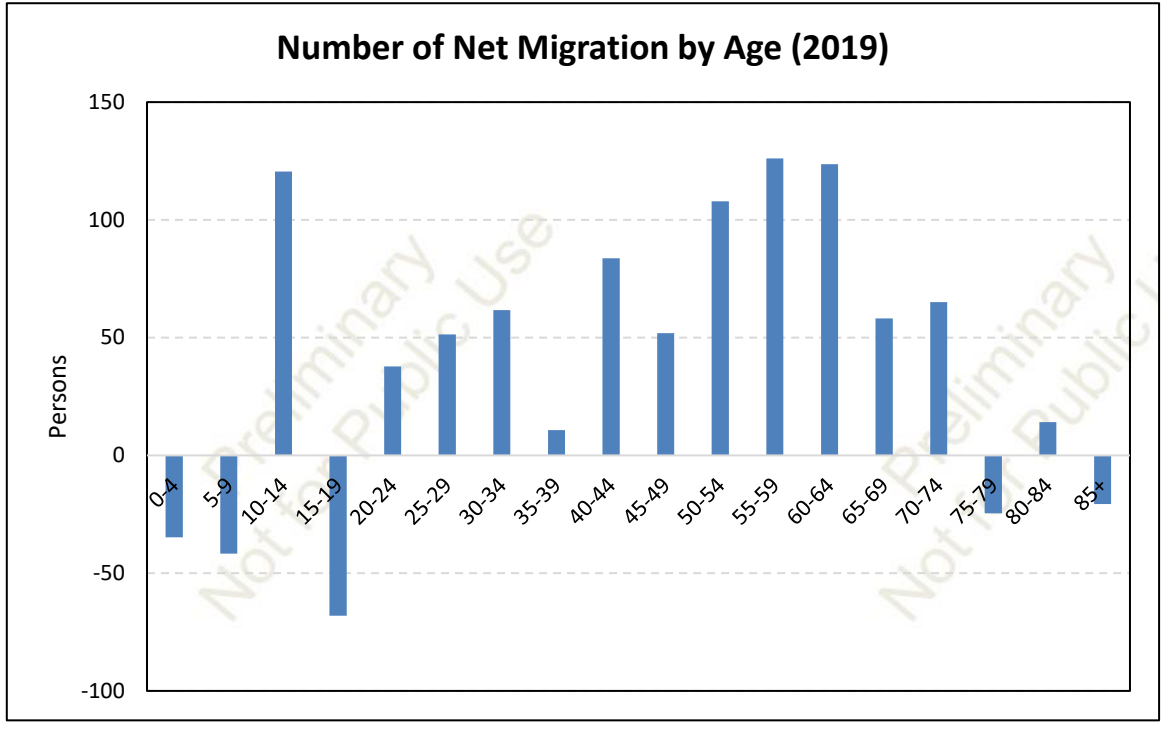
Migration Projection based on Historical Data (Domestic Only)



Sources: IRS County Migration 2000-2019, American Community Survey (ACS), Population Estimates Program (PEP). Calculations and forecast by Population Research Center (PRC).

Historical and Forecast Trends

*The chart shows the **number** of net migration each age groups accounts for among the total county net migration. Most age groups indicate positive net migration, with the middle-age and older age populations showed the most positive net migration.*

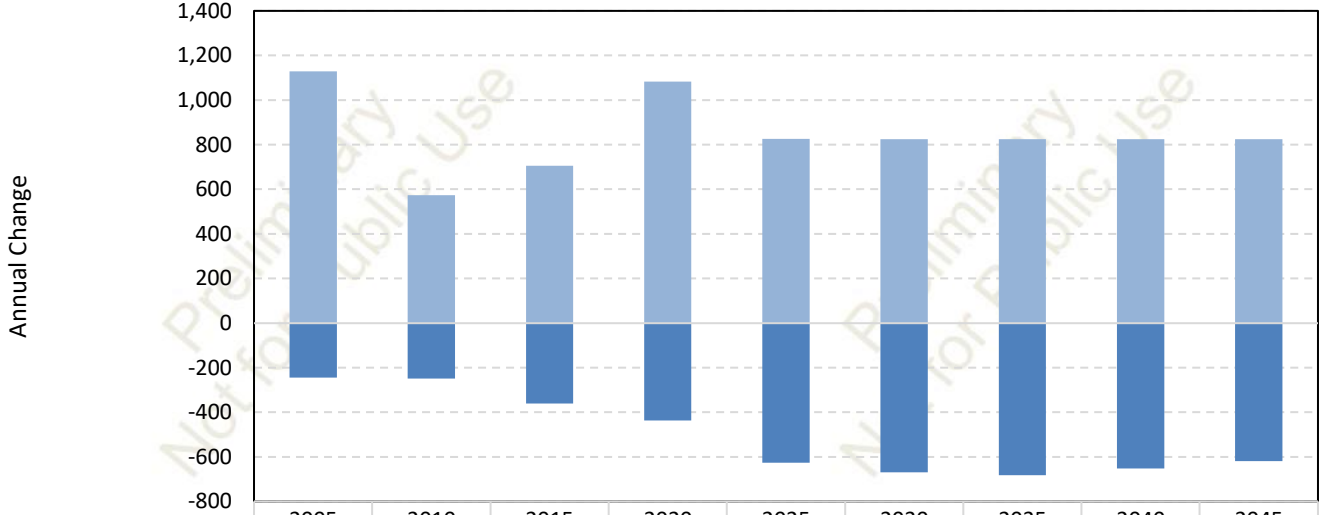


Sources: Calculated by Population Research Center (PRC).

Historical and Forecast Trends

As deaths outpace births, natural decrease occurs. Annual average net migration experienced a peak in 2015-2020, but we project it to remain at around 800 throughout the forecast period.

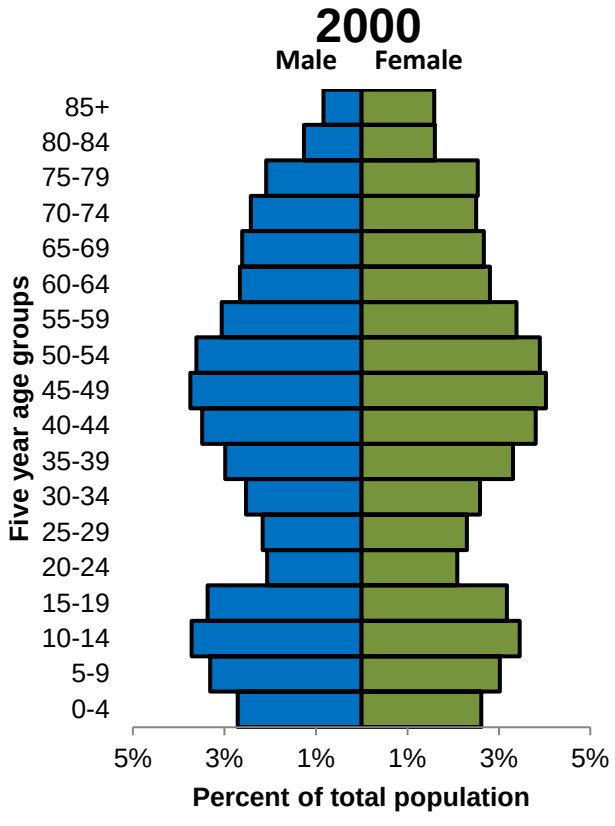
Average Components of Change by 5-Year Interval

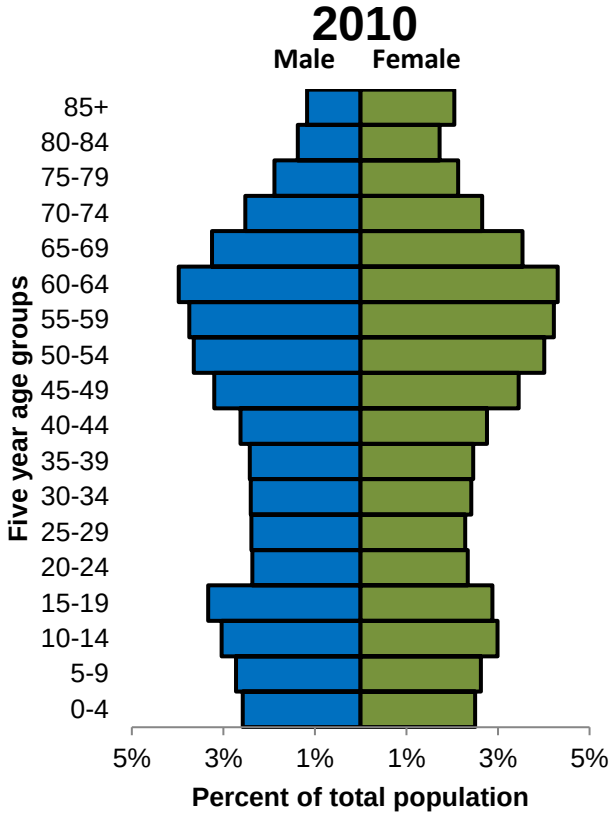


	2005	2010	2015	2020	2025	2030	2035	2040	2045
Net In/Out Migration	1,129	573	705	1,084	826	825	825	825	825
Natural Inc/Dec	-245	-250	-362	-437	-626	-669	-683	-652	-620

Sources: Calculations and forecast by Population Research Center (PRC).

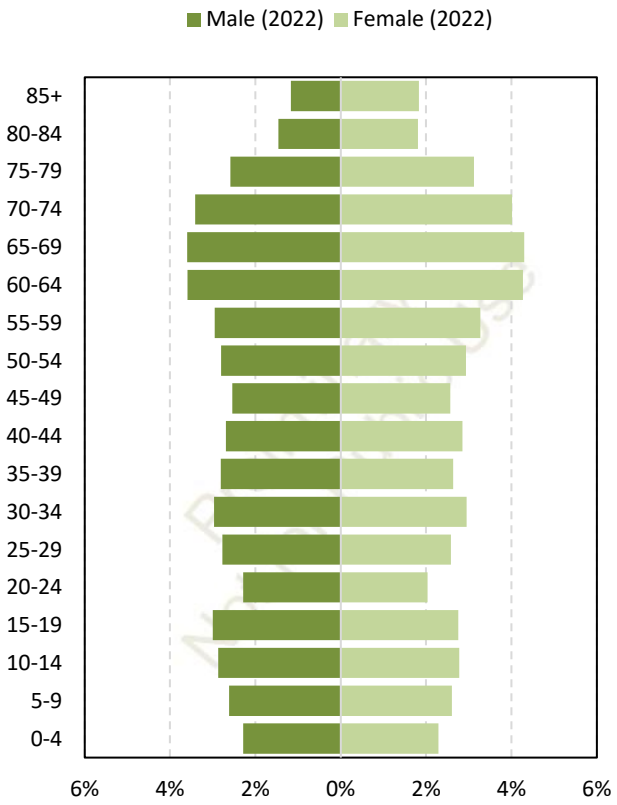
Historical and Forecast Trends

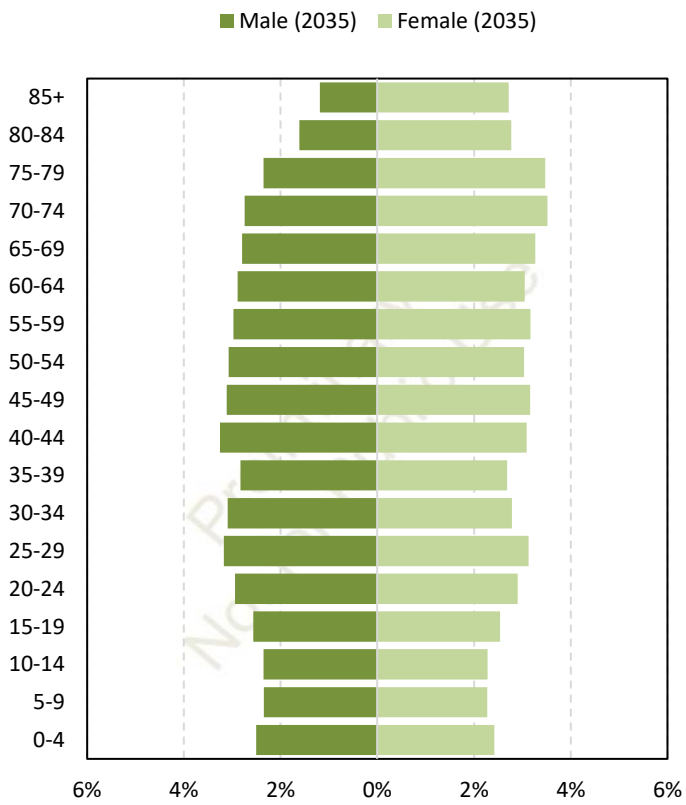


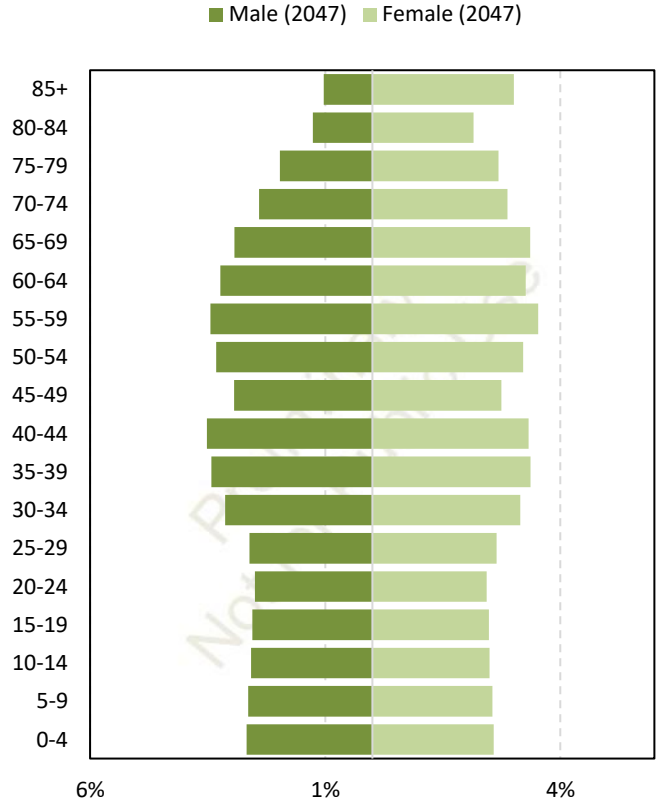


Sources: US Census Bureau, 2000 and 2010 Decennial Census

Historical and Forecast Trends







Source: Forecast by Population Research Center (PRC)
Historical trend

These numbers represent ***Preliminary*** Forecast Results

Historical and Forecast Trends

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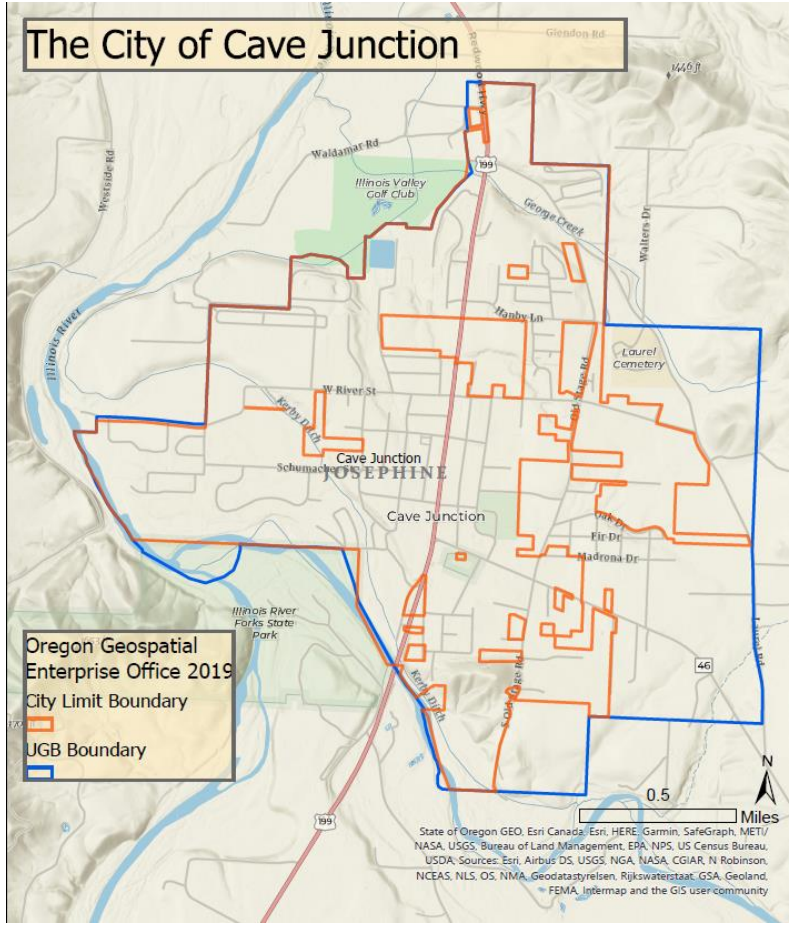
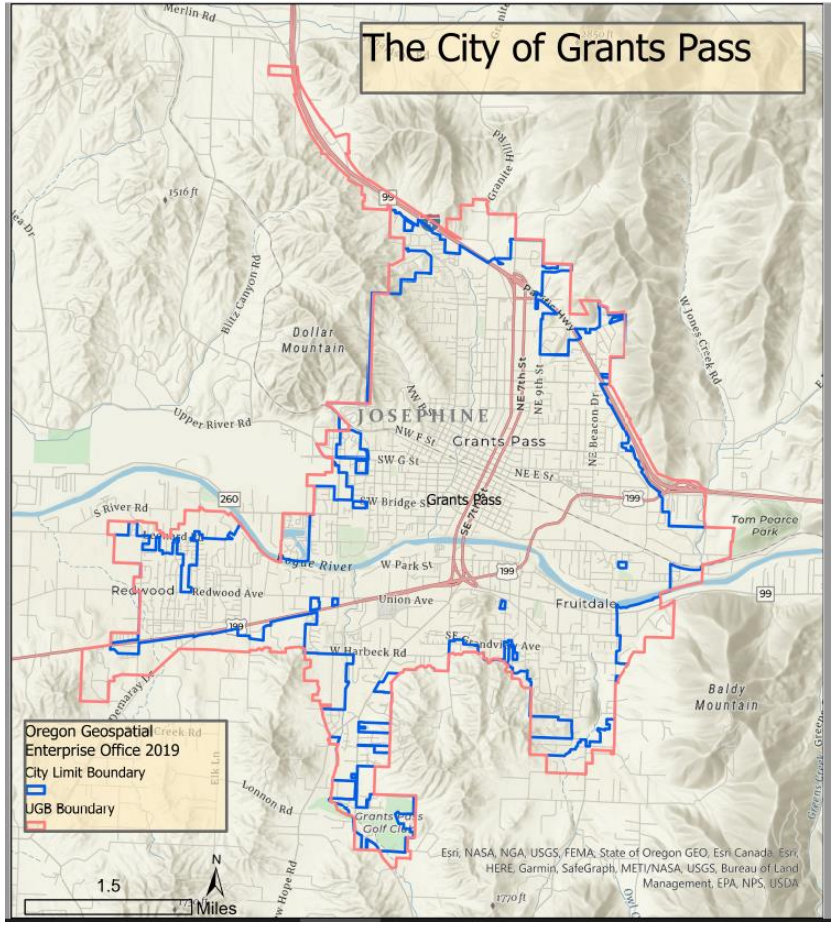
	Persons Per Household (PPH)		Occupancy Rate		Percent Group Quarters		Total Housing Units		
	2010	2020	2010	2020	2010	2020	2010	2020	2010-2020
Oregon	2.47	2.48	90.7%	92.2%	2.3%	2.3%	1,675,562	1,813,747	0.8%
Josephine County	2.34	2.40	91.2%	93.0%	1.3%	1.7%	38,001	38,748	0.2%
Cave Junction	2.30	2.36	89.0%	90.7%	0.0%	0.0%	916	968	0.6%
Grants Pass	2.34	2.38	92.0%	95.1%	3.6%	3.6%	15,561	16,681	0.7%
Outside City Limits	2.34	2.42	90.7%	91.4%	0.3%	0.2%	21,524	21,099	-0.2%

Source: US Census Bureau, 2010 and 2020 Census. Calculated by Population Research Center (PRC)

Josephine County UGBs


The City of Cave Junction
Oregon Geospatial Enterprise Office 2019
City Limit Boundary
UGB Boundary
Cave Junction
JOSEPHINE
Illinois Valley Golf Club
Laurel Cemetery
Illinois River Forks State Park
0.5
Miles
N
State of Oregon GEO, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA. Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community


The City of Grants Pass
Oregon Geospatial Enterprise Office 2019
City Limit Boundary
UGB Boundary
JOSEPHINE
Grants Pass
Dollar Mountain
Baldy Mountain
Fruitdale
Redwood
Tom Pearce Park
1.5
Miles
N
Esri, NASA, NGA, USGS, FEMA, State of Oregon GEO, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA