

Oregon Population Forecast Program

Linn County

Regional Forecast Meeting – October 4, 2016

Presentation by

Population Forecast Program Team

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Agenda

- Population Research Center (PRC)
- Forecast Program overview
 - Forecast regions
 - Schedule
 - Deliverables
 - Forecasting methods and data sources
 - Process for local input
- Demographic and economic trends
- Discussion

PRC Research areas:

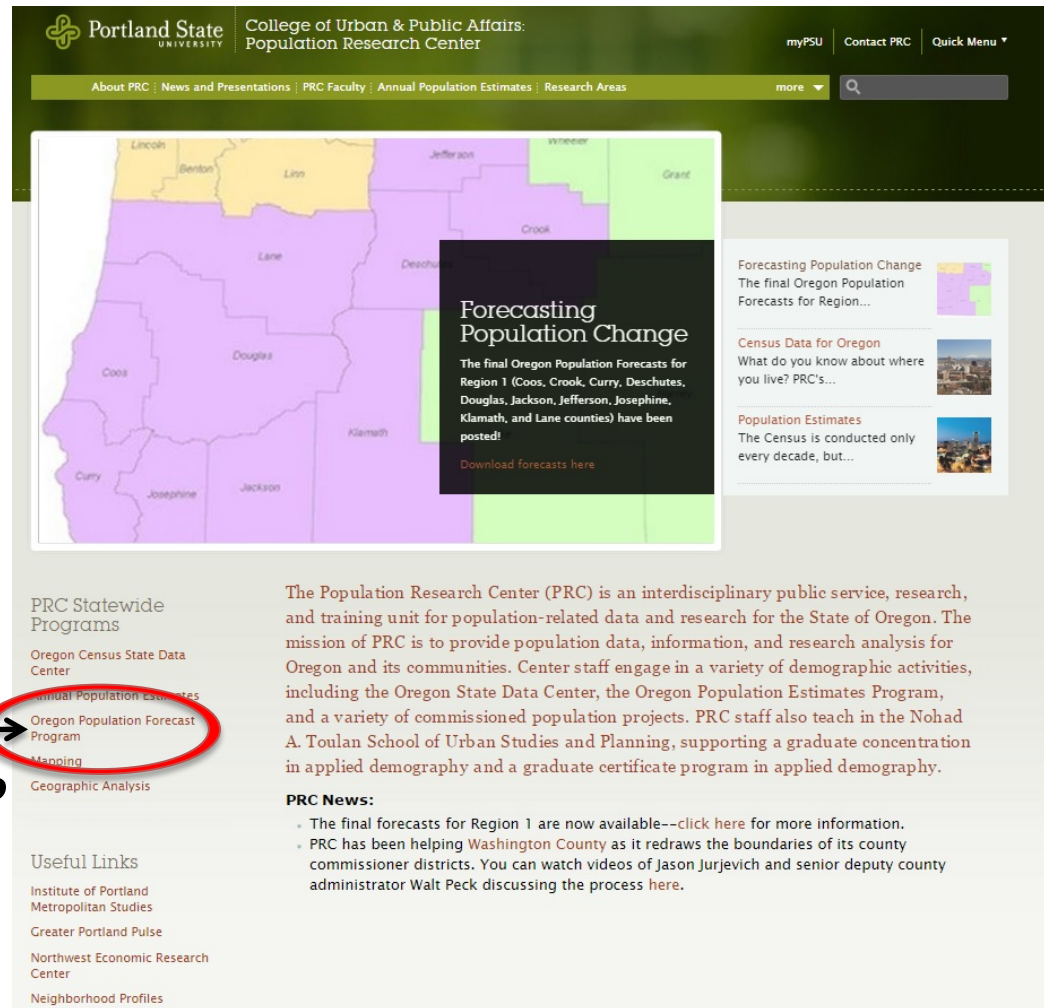
- Oregon Census State Data Center (SDC)
- Demographic Research and Advisory Services
- Demography Instruction
- Oregon Population Estimates Program
- **Oregon Population Forecast Program (OPFP)**

Forecast Program Overview

PRC Website:

<http://www.pdx.edu/prc>

Click here for  more information on OPFP



The screenshot shows the website of the Portland State University Population Research Center. The header includes the university logo, the center's name, and navigation links like 'myPSU', 'Contact PRC', and 'Quick Menu'. A main banner features a map of Oregon counties with a text box titled 'Forecasting Population Change' that states: 'The final Oregon Population Forecasts for Region 1 (Coos, Crook, Curry, Deschutes, Douglas, Jackson, Jefferson, Josephine, Klamath, and Lane counties) have been posted!' and includes a 'Download forecasts here' link. To the right of the map are three featured articles: 'Forecasting Population Change', 'Census Data for Oregon', and 'Population Estimates'. A sidebar on the left lists 'PRC Statewide Programs' including 'Oregon Census State Data Center', 'Annual Population Estimates', 'Oregon Population Forecast Program' (which is circled in red), 'Mapping', and 'Geographic Analysis'. Below this is a 'Useful Links' section with links to the 'Institute of Portland Metropolitan Studies', 'Greater Portland Pulse', 'Northwest Economic Research Center', and 'Neighborhood Profiles'. A main text block on the right describes the PRC's mission and lists recent news items, such as the availability of final forecasts for Region 1 and assistance with Washington County's redistricting.

Portland State University
College of Urban & Public Affairs:
Population Research Center

myPSU | Contact PRC | Quick Menu

About PRC | News and Presentations | PRC Faculty | Annual Population Estimates | Research Areas

more

Forecasting Population Change
The final Oregon Population Forecasts for Region 1 (Coos, Crook, Curry, Deschutes, Douglas, Jackson, Jefferson, Josephine, Klamath, and Lane counties) have been posted!
Download forecasts here

Forecasting Population Change
The final Oregon Population Forecasts for Region 1 (Coos, Crook, Curry, Deschutes, Douglas, Jackson, Jefferson, Josephine, Klamath, and Lane counties) have been posted!

Census Data for Oregon
What do you know about where you live? PRC's...

Population Estimates
The Census is conducted only every decade, but...

PRC Statewide Programs

- Oregon Census State Data Center
- Annual Population Estimates
- Oregon Population Forecast Program**
- Mapping
- Geographic Analysis

Useful Links

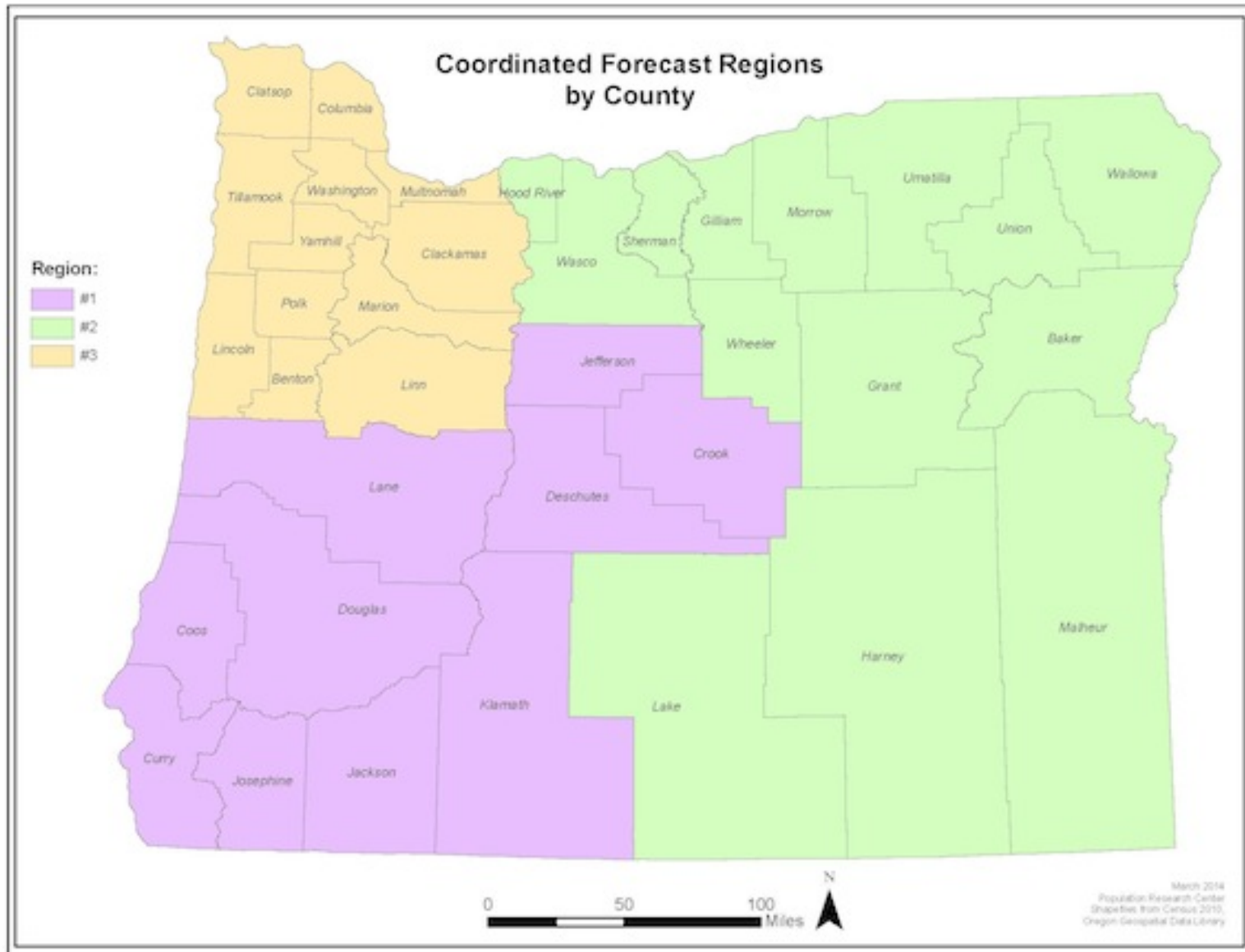
- Institute of Portland Metropolitan Studies
- Greater Portland Pulse
- Northwest Economic Research Center
- Neighborhood Profiles

The Population Research Center (PRC) is an interdisciplinary public service, research, and training unit for population-related data and research for the State of Oregon. The mission of PRC is to provide population data, information, and research analysis for Oregon and its communities. Center staff engage in a variety of demographic activities, including the Oregon State Data Center, the Oregon Population Estimates Program, and a variety of commissioned population projects. PRC staff also teach in the Nohad A. Toulan School of Urban Studies and Planning, supporting a graduate concentration in applied demography and a graduate certificate program in applied demography.

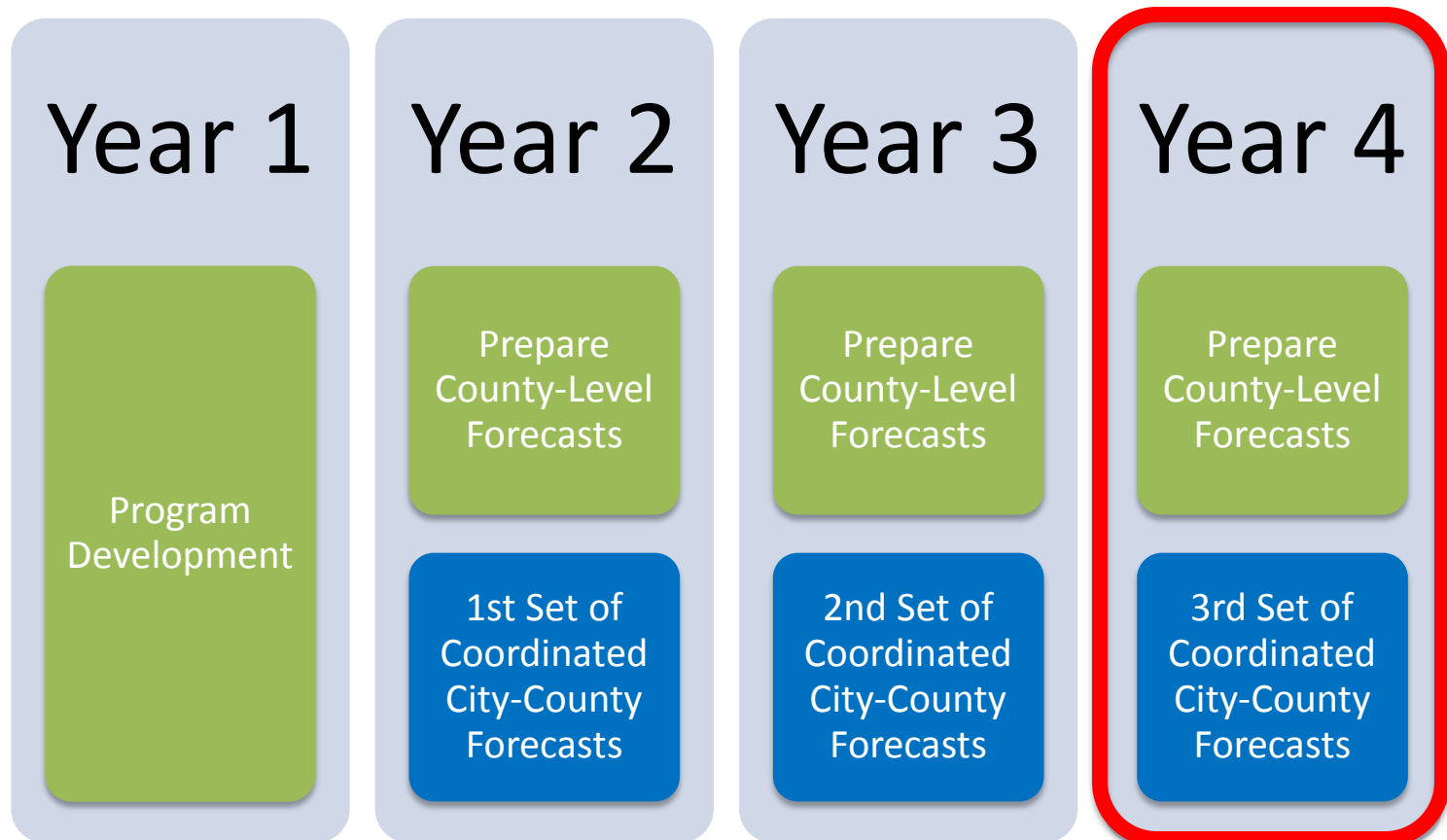
PRC News:

- The final forecasts for Region 1 are now available--click here for more information.
- PRC has been helping Washington County as it redraws the boundaries of its county commissioner districts. You can watch videos of Jason Jurjevich and senior deputy county administrator Walt Peck discussing the process here.

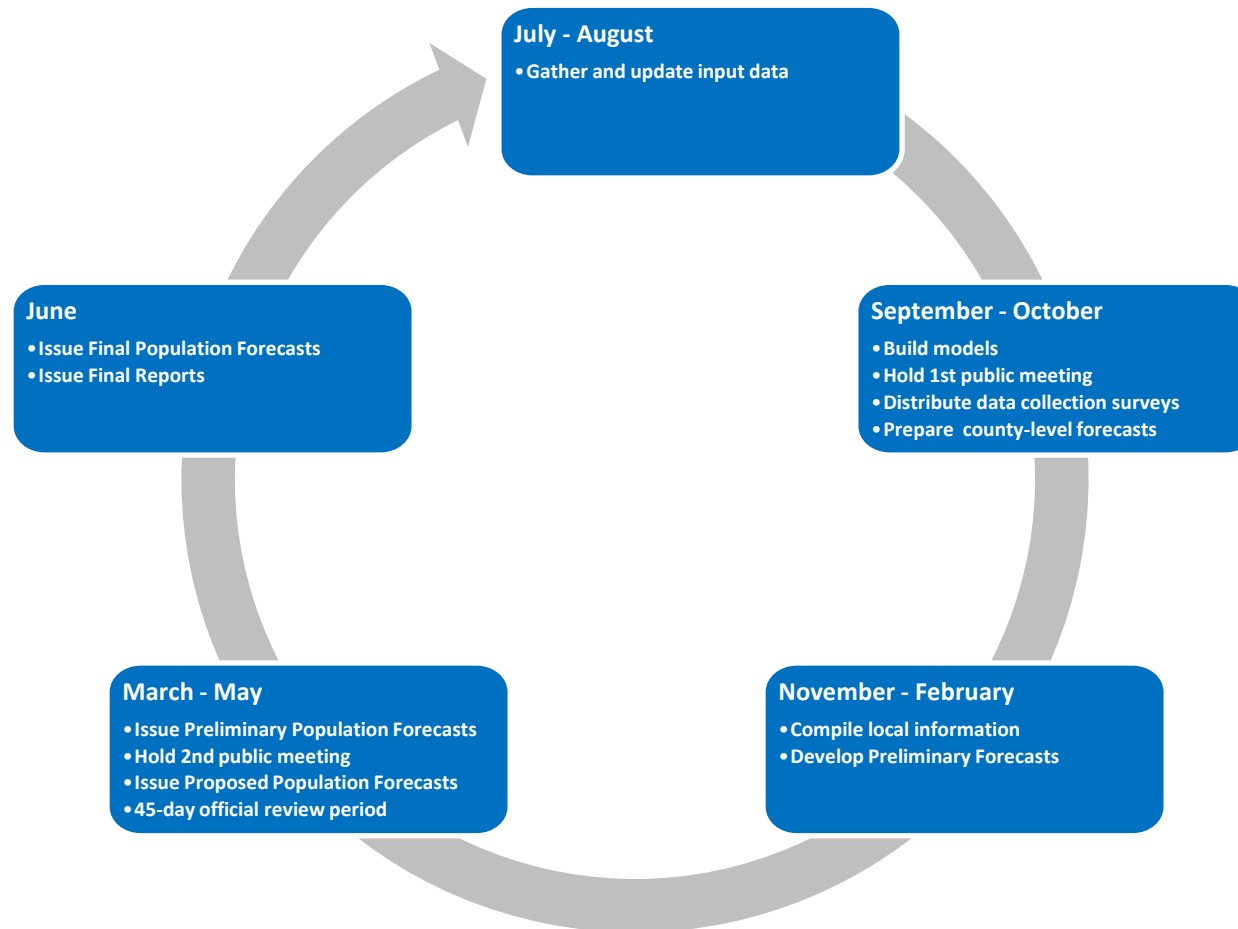
Forecast Program Overview



Forecast Program: 4-Year Schedule



Coordinated Forecast: Annual Schedule



Deliverables

- Forecasts (50 year horizon, 5-year time intervals)
 - County-level forecasts (5-year age groups)
 - Coordinated UGB-level forecasts (Total population)
- Report containing:
 - Summaries of historic and future demographic trends, assumptions about future growth, and a compilation of information collected from city and county officials and the public
 - Short technical description of methods employed to produce the forecast

Process for Population Forecasts

- Develop demographic models using historic and recent data
- Analyze past and current population trends
 - Reasons for change, continuous or short-term?
- Gather information about existing and planned future housing, and about population change
 - Housing developments
 - Construction of new group quarters facilities
 - New employers
- Make assumptions about future housing and population change
- Revise forecasts on a regular basis

Population Forecast Methods

Primary Models for this Forecast

- Cohort-Component Method
 - Based on age-sex structure
 - Survival rates – Fairly constant over time
 - Fertility – Slightly more variable than survival rates
 - Migration Rates – Subject to greater fluctuation than mortality and fertility and more unpredictable
 - Generally works better for areas with larger populations

Population Forecast Methods

Primary Models for this Forecast

- Housing Unit Method
 - Generally works better for areas with smaller populations
 - Housing unit growth
 - Housing unit type
 - Persons Per Household (PPH)
 - Occupancy Rates
 - Add Group Quarters Population

Population Forecast Methods Other Models/Methods to Consider

- For comparison and to serve as a check
- Ratio Methods
- Trend Extrapolation
- Employment Conversion Model

Population Forecast Data Sources

Primary Sources:

- U.S. Census Bureau, Decennial Censuses
- Population Research Center (PRC), Oregon Population Estimates Program
- Oregon Health Authority, Center for Health Statistics
- Counties, Assessors Office
- Incorporated cities, Community Development/Planning Department
- Oregon Geospatial Enterprise Office (GEO), Spatial Data Library

Secondary Sources:

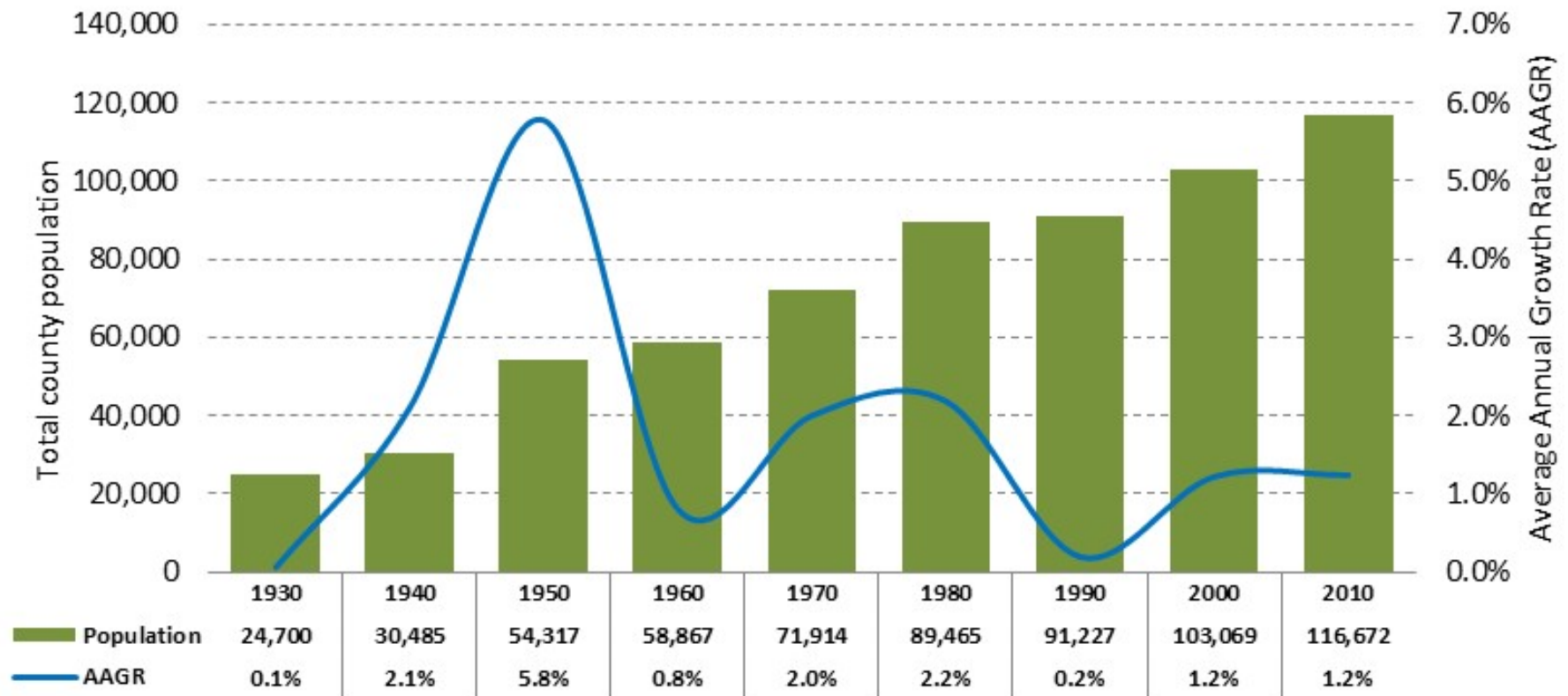
- State of Oregon, Office of Economic Analysis
- U.S. Census Bureau, American Community Survey (ACS)
- U.S., Internal Revenue Service
- State of Oregon, Department of Revenue
- Oregon Department of Education
- U.S., Centers for Medicare and Medicaid Services
- State of Oregon, Employment Department

Process for Local Input

- Hold regional meetings
 - Receive input on:
 - Historical and current demographic and economic trends
 - Plans for future growth
 - Receive feed back on Preliminary Forecasts
- Local survey
 - Collect local observations
 - Population composition; recent change
 - Planned housing development plus group quarters facilities
 - Future employers
 - Infrastructure
 - Anything that might promote or hinder population growth
 - Survey will be posted on website and emailed to each jurisdiction
 - Issued in October, 2016
- Official review period for Proposed Forecasts

Linn County

Linn County—Total Population by Ten-year Intervals (1930-2010)

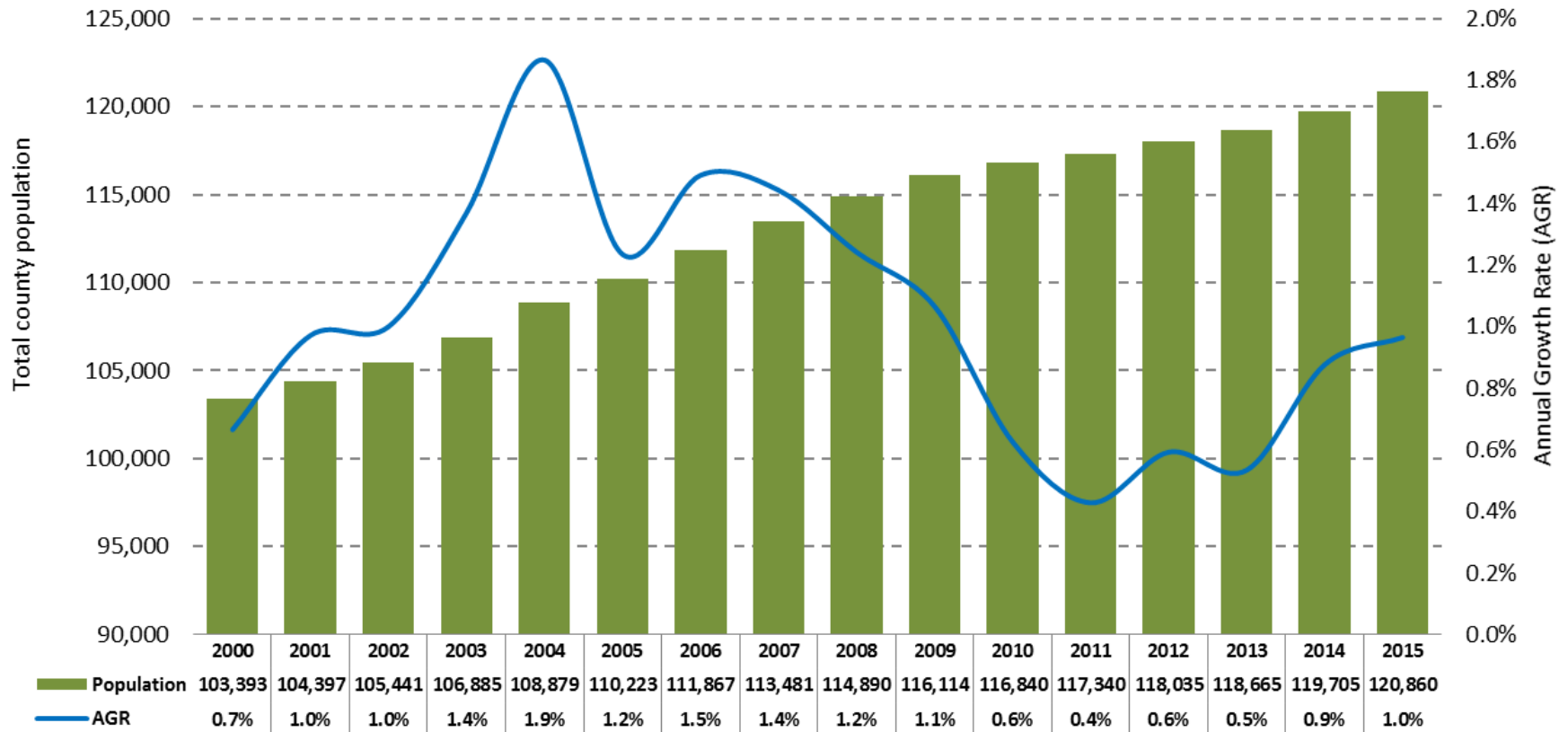


Sources: U.S. Census Bureau, 1930 to 2010 Censuses. Calculated by Population Research Center (PRC).

Note 1: Average annual growth rate is used for simplicity. In actuality the rate is an annualized rate calculated with this formula: $[LN(Year1/Year2)/10]$

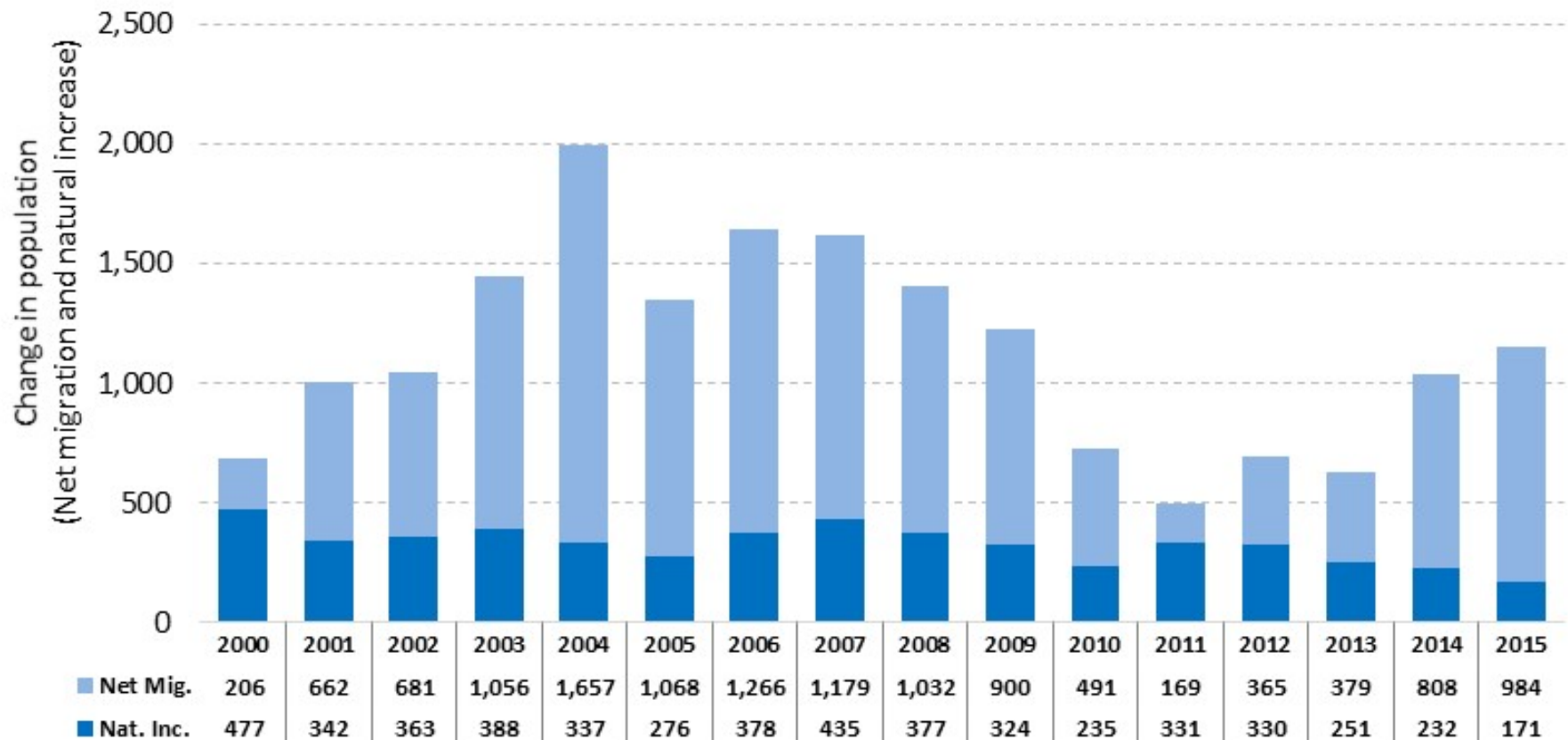
Note 2: The 2000 total population does not reflect Count Question Resolution (CQR) revisions made by the U.S. Census Bureau. Revised total population numbers are used for the "County and Incorporated City Population" table.

Linn County—Annual Total Population Trend (2000-2015)



Sources: Population Research Center (PRC), July 1st Annual Estimates 2000 to 2015.

Linn County—Components of Population Change (2000-2015)



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

Linn County and Incorporated Cities—Population and Average Annual Growth Rate (AAGR) (2000-2010 and 2010-2015)

| | 2000 | 2010 | 2015 | AAGR (2000-2010) | AAGR (2010-2015) | Share of County 2000 | Share of County 2010 | Share of County 2015 |
|------------------|---------|---------|---------|---------------------|---------------------|-------------------------|-------------------------|-------------------------|
| Linn County | 103,069 | 116,672 | 120,860 | 1.2% | 0.7% | 100.0% | 100.0% | 100.0% |
| Albany (part) | 35,748 | 43,695 | 44,403 | 2.0% | 0.3% | 34.7% | 37.5% | 36.7% |
| Brownsville | 1,449 | 1,668 | 1,690 | 1.4% | 0.3% | 1.4% | 1.4% | 1.4% |
| Gates (part) | 42 | 40 | 43 | -0.5% | 1.3% | 0.0% | 0.0% | 0.0% |
| Halsey | 724 | 904 | 915 | 2.2% | 0.2% | 0.7% | 0.8% | 0.8% |
| Harrisburg | 2,795 | 3,567 | 3,645 | 2.4% | 0.4% | 2.7% | 3.1% | 3.0% |
| Idanha (part) | 85 | 57 | 62 | -4.0% | 1.8% | 0.1% | 0.0% | 0.1% |
| Lebanon | 12,950 | 15,518 | 15,740 | 1.8% | 0.3% | 12.6% | 13.3% | 13.0% |
| Lyons | 1,008 | 1,161 | 1,160 | 1.4% | 0.0% | 1.0% | 1.0% | 1.0% |
| Mill City (part) | 1,225 | 1,531 | 1,556 | 2.2% | 0.3% | 1.2% | 1.3% | 1.3% |
| Millersburg | 651 | 1,329 | 1,620 | 7.1% | 4.0% | 0.6% | 1.1% | 1.3% |
| Scio | 695 | 838 | 850 | 1.9% | 0.3% | 0.7% | 0.7% | 0.7% |
| Sodaville | 290 | 308 | 325 | 0.6% | 1.1% | 0.3% | 0.3% | 0.3% |
| Sweet Home | 8,016 | 8,925 | 9,090 | 1.1% | 0.4% | 7.8% | 7.6% | 7.5% |
| Tangent | 933 | 1,164 | 1,200 | 2.2% | 0.6% | 0.9% | 1.0% | 1.0% |
| Waterloo | 239 | 229 | 230 | -0.4% | 0.1% | 0.2% | 0.2% | 0.2% |
| Unincorporated | 36,219 | 35,738 | 38,330 | -0.1% | 1.4% | 35.1% | 30.6% | 31.7% |

Sources: U.S. Census Bureau, April 1, 2000 and 2010 Censuses. Population Research Center, July 1, 2015 Annual Intercensal Estimate. Calculated by Population Research Center (PRC).

Note: The 2000 total population reflects Count Question Resolution (CQR) revisions made by the U.S. Census Bureau.

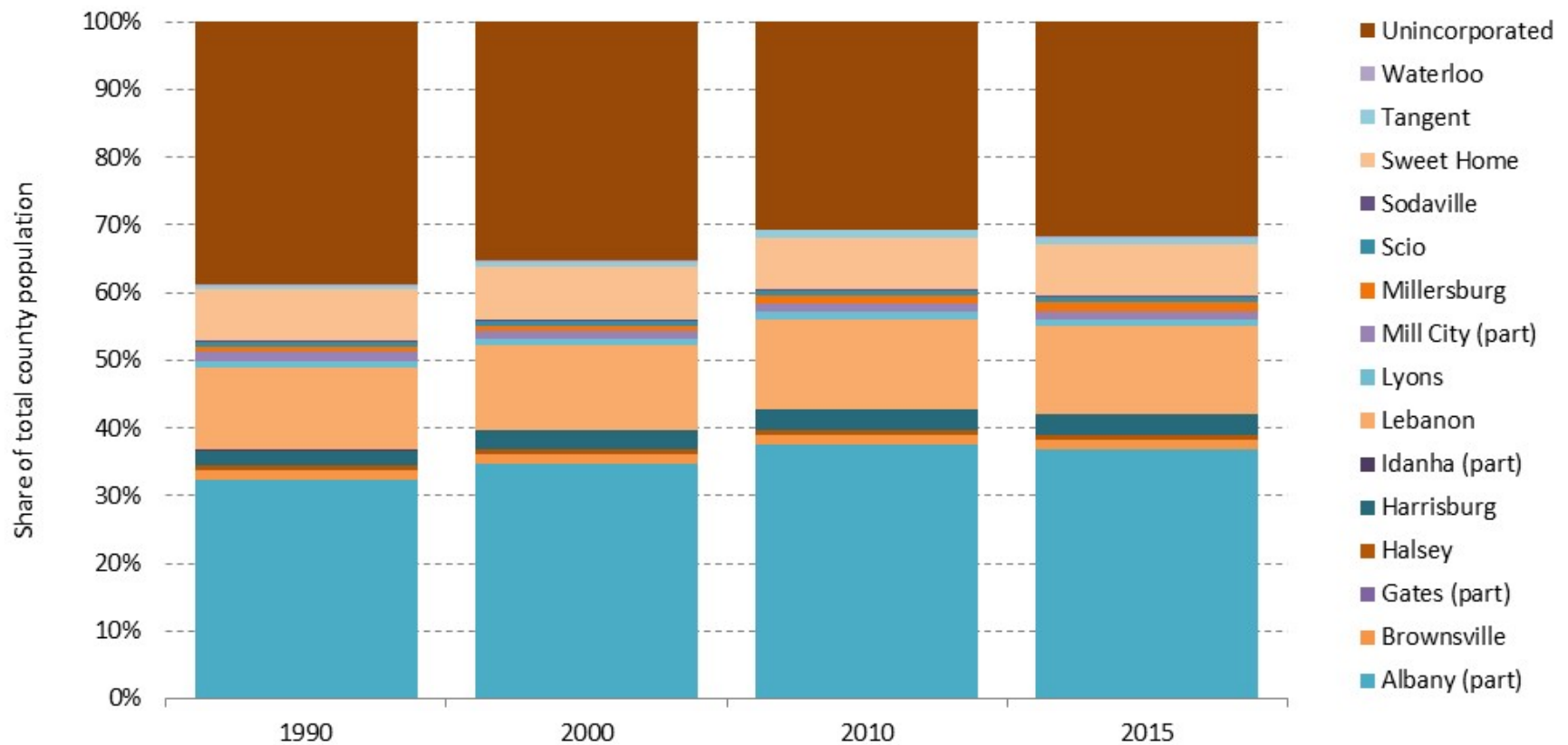
Note: Albany's population in Linn County is 87% of Albany's total population in 2010 and 86% in 2015.

Note: Gates' population in Linn County is 8% of Gates' total population in 2010 and 9% in 2015.

Note: Idanha's population in Linn County is 42% of Idanha's total population in 2010 and 45% in 2015.

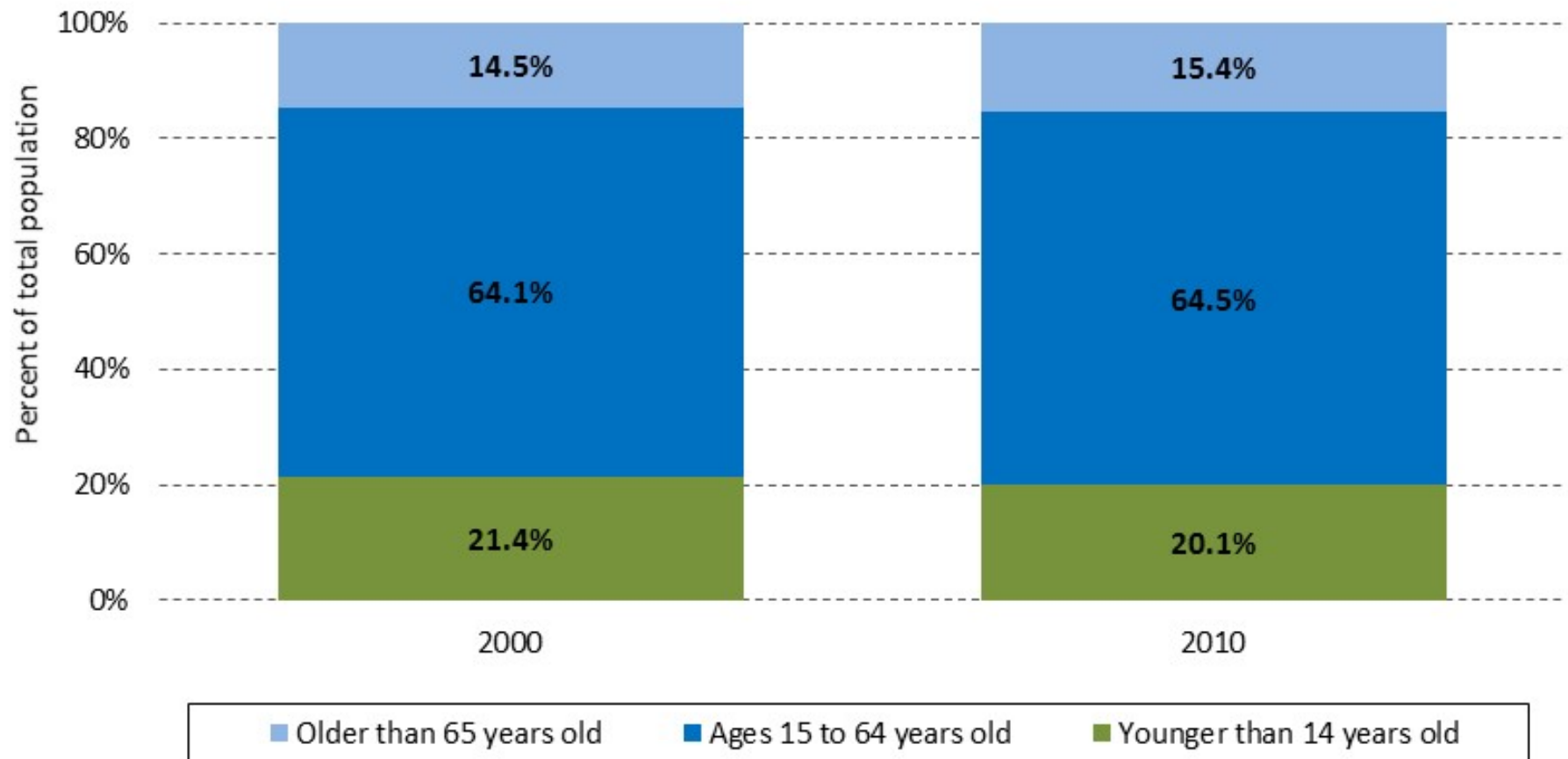
Note: Mill City's population in Linn County is 83% of Mill City's total population in 2010 and 84% in 2015.

Linn County—City Share of Population



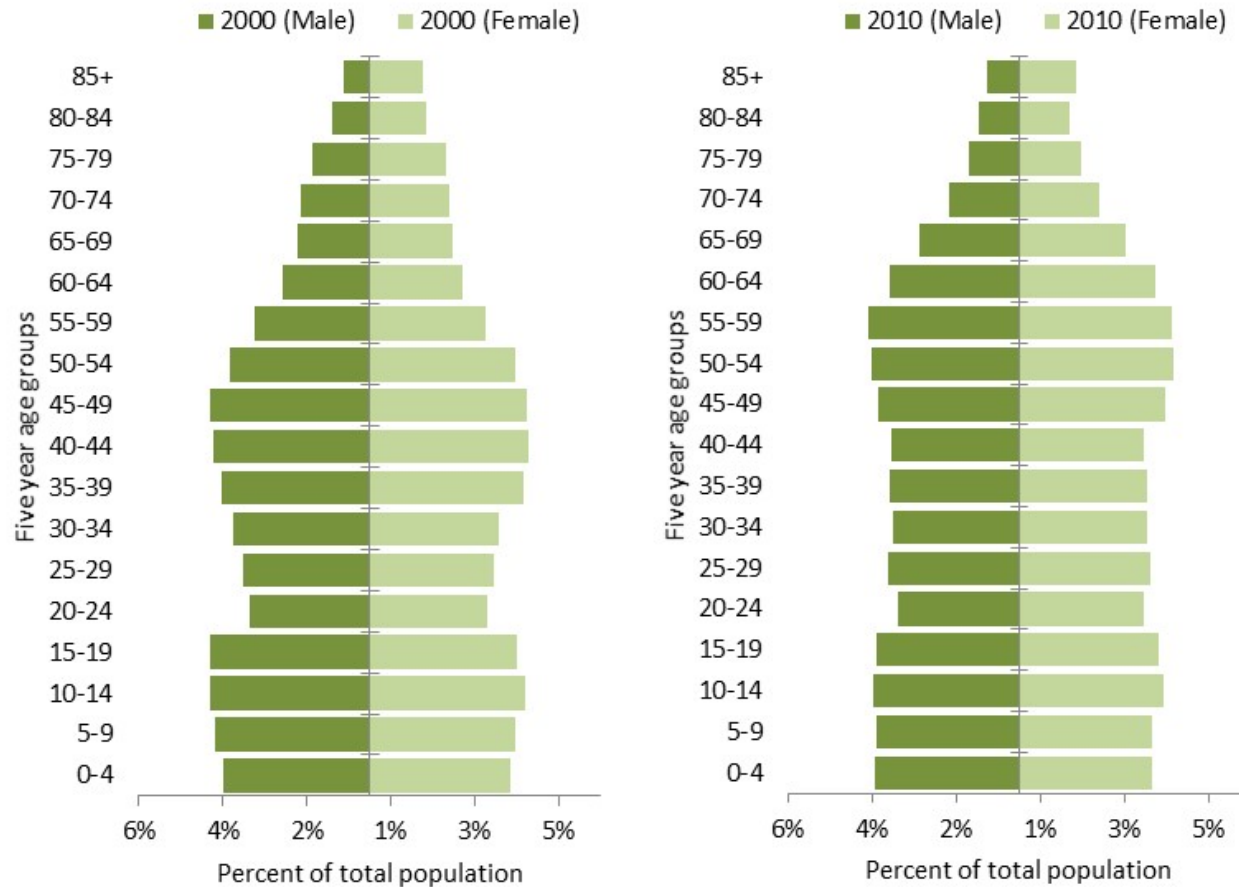
Sources: U.S. Census Bureau, April 1, 1990, 2000, and 2010 Decennial Censuses. Population Research Center, July 1, 2015 Annual Certified Population Estimate. Calculated by Population Research Center (PRC).

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



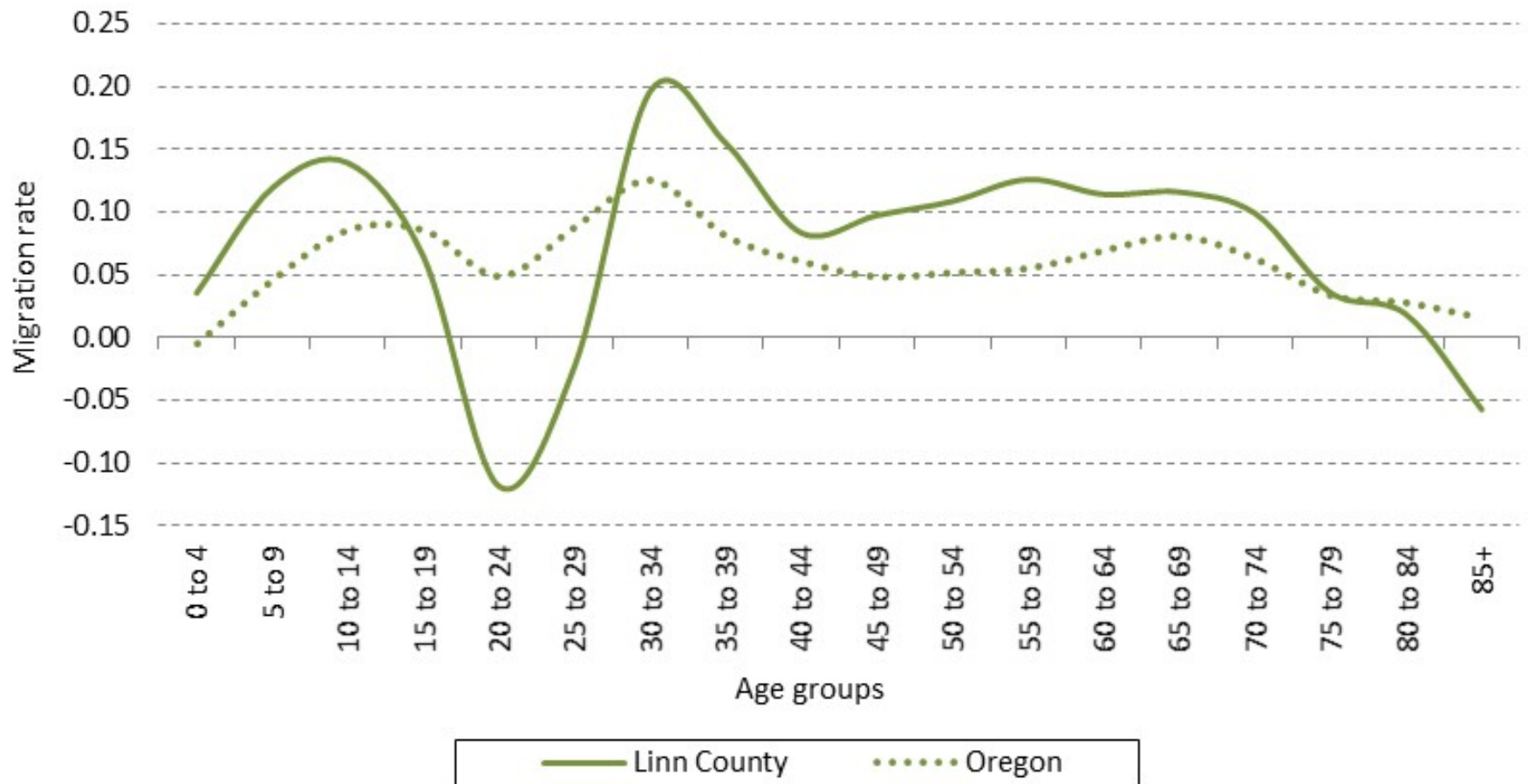
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

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



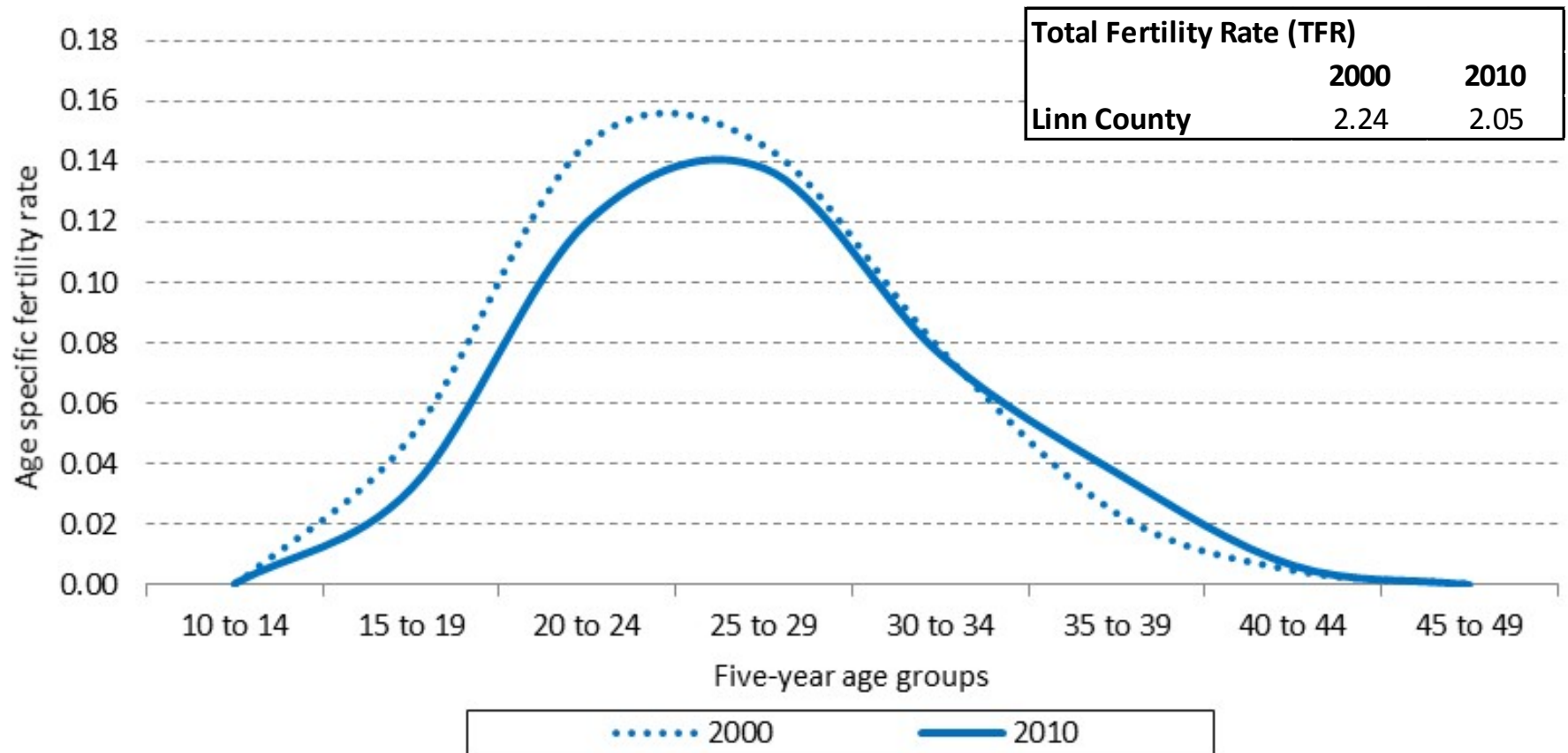
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

Linn County and Oregon—Age Specific Migration Rates (2000 to 2010)



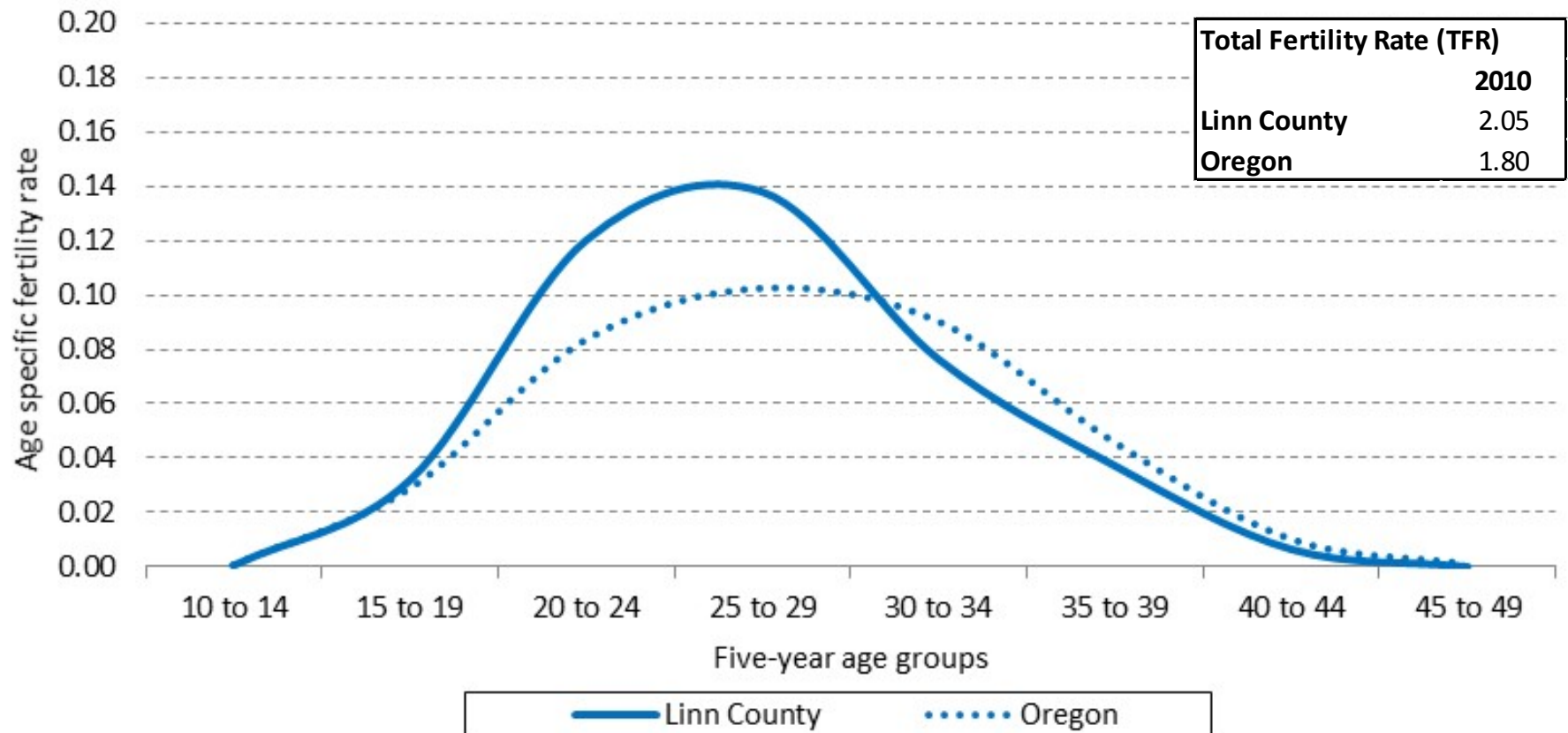
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

Linn County—Age Specific Fertility Rates (2000 and 2010)



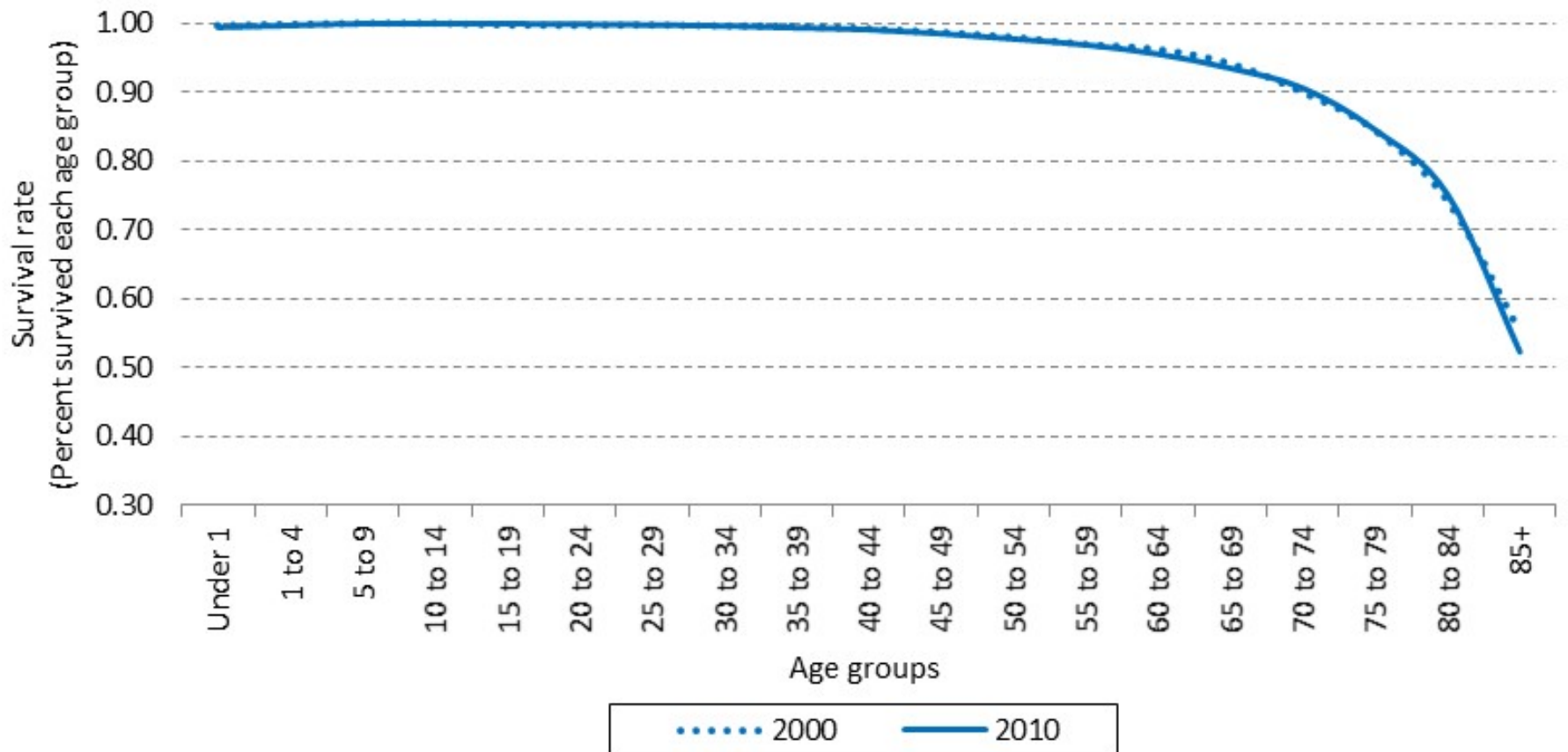
Sources: U.S. Census Bureau, 2000 and 2010 Censuses . Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

Linn County and Oregon—Age Specific Fertility Rates (2010)



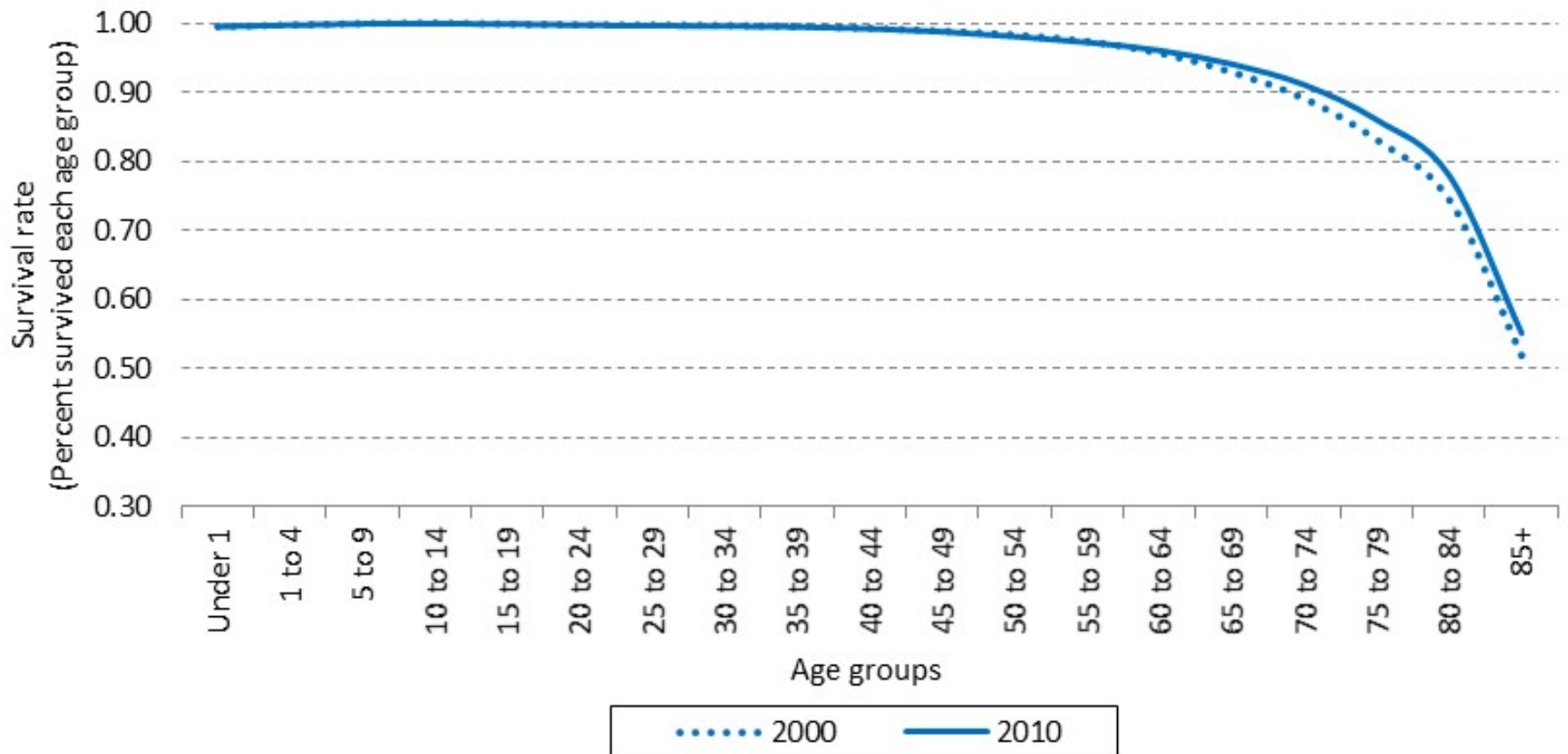
Sources: U.S. Census Bureau, 2010 Census. Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

Linn County—Age Specific Survival Rates (2000 to 2010)



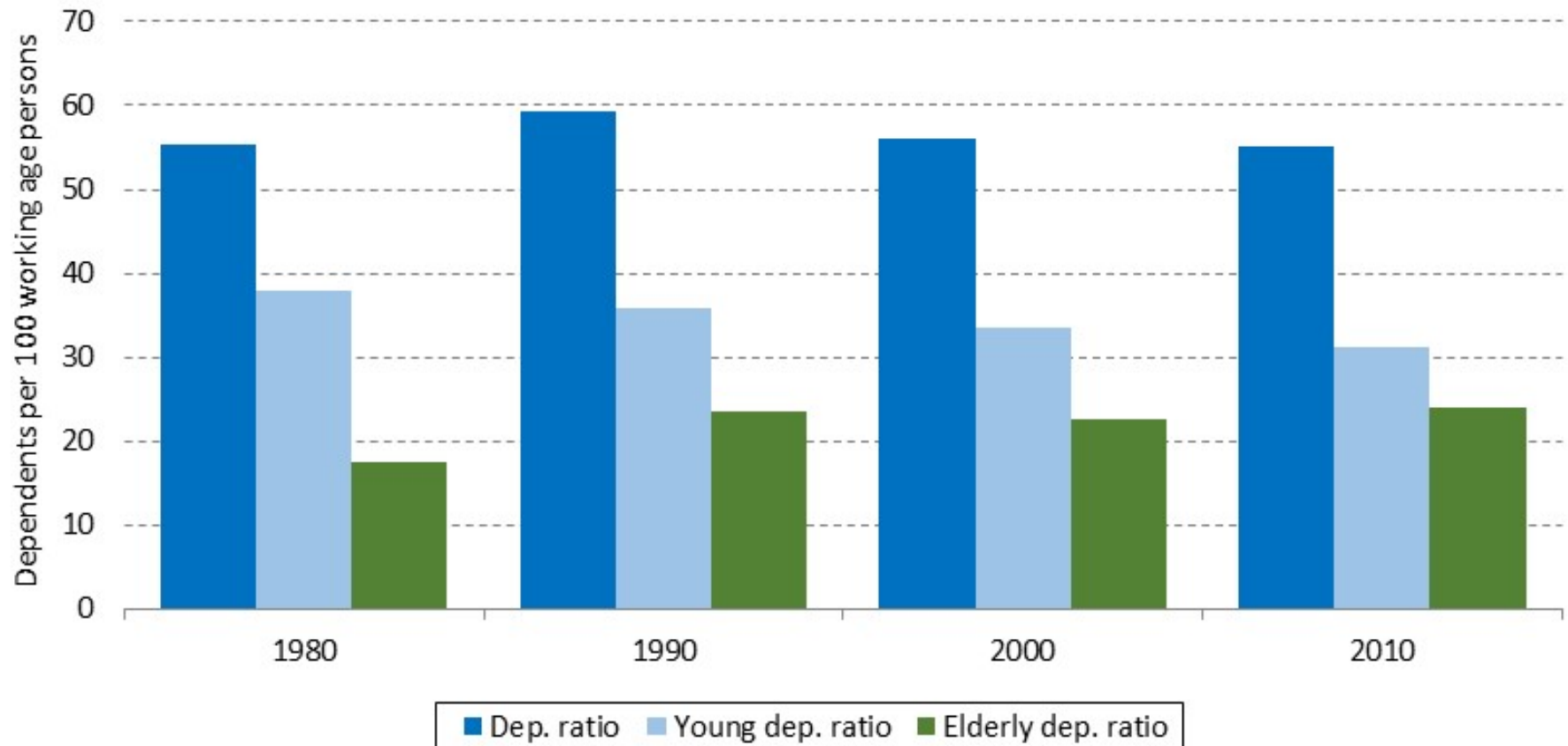
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

Oregon—Age Specific Survival Rates (2000 to 2010)



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

Linn County—Dependency Ratio



Sources: U.S. Census Bureau, 1980, 1990, 2000, and 2010 Censuses. Calculated by Population Research Center (PRC).

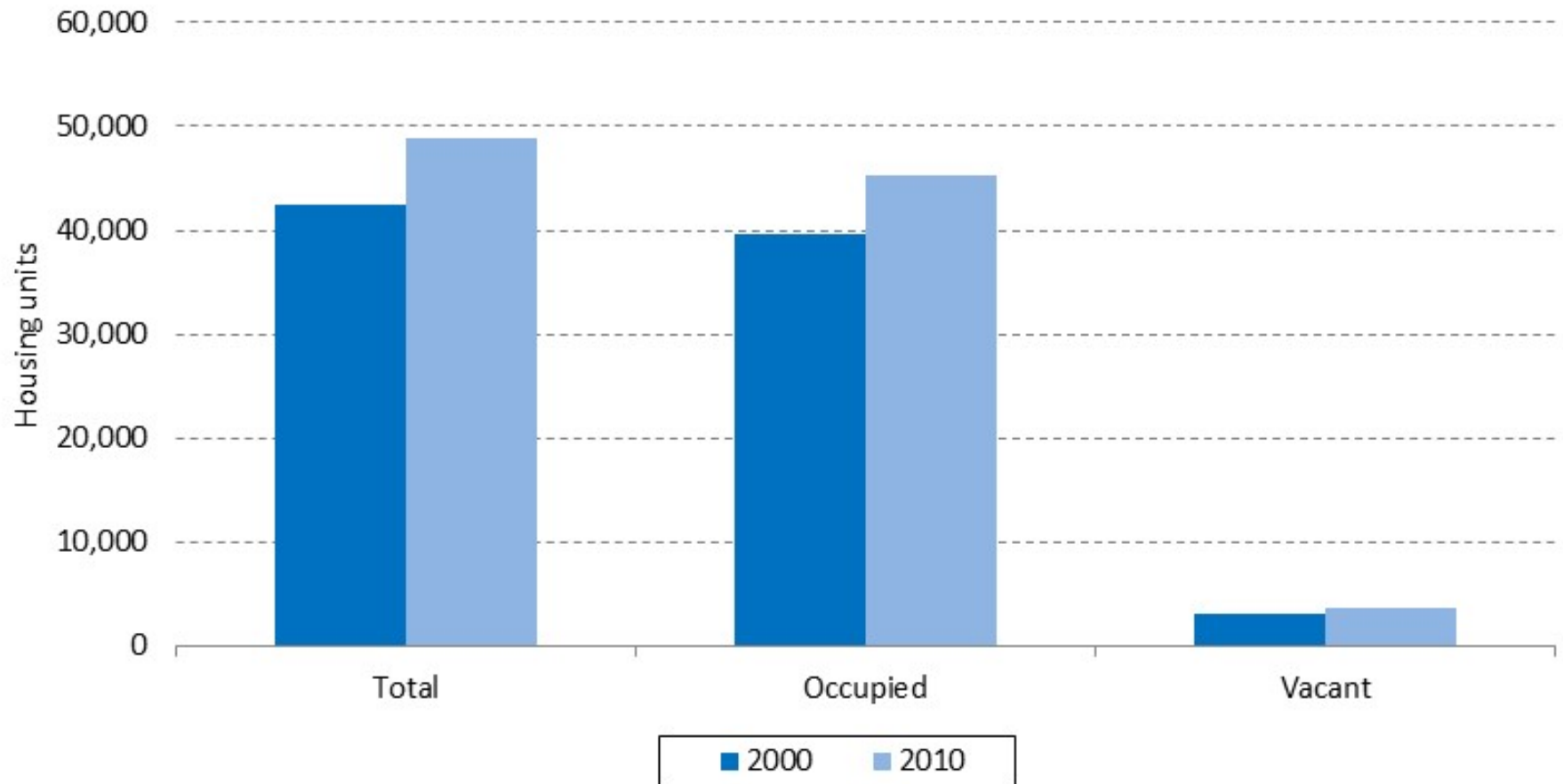
Note: Dependency Ratio = $\frac{[(\text{Population Age 0-14}) + (\text{Population Age 65 or older})]}{(\text{Population Age 15-64})} \times 100$

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

| Hispanic or Latino and Race | 2000 | | 2010 | | Absolute Change | Relative Change |
|--|---------|--------|---------|--------|-----------------|-----------------|
| <i>Total population</i> | 103,069 | 100.0% | 116,672 | 100.0% | 13,603 | 13.2% |
| Hispanic or Latino | 4,514 | 4.4% | 9,127 | 7.8% | 4,613 | 102.2% |
| Not Hispanic or Latino | 98,555 | 95.6% | 107,545 | 92.2% | 8,990 | 9.1% |
| White alone | 94,012 | 91.2% | 101,579 | 87.1% | 7,567 | 8.0% |
| Black or African American alone | 285 | 0.3% | 456 | 0.4% | 171 | 60.0% |
| American Indian and Alaska Native alone | 1,192 | 1.2% | 1,268 | 1.1% | 76 | 6.4% |
| Asian alone | 789 | 0.8% | 1,078 | 0.9% | 289 | 36.6% |
| Native Hawaiian and Other Pacific Islander alone | 125 | 0.1% | 150 | 0.1% | 25 | 20.0% |
| Some Other Race alone | 92 | 0.1% | 126 | 0.1% | 34 | 37.0% |
| Two or More Races | 2,060 | 2.0% | 2,888 | 2.5% | 828 | 40.2% |

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

Linn County—Housing Units (2000 and 2010)



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

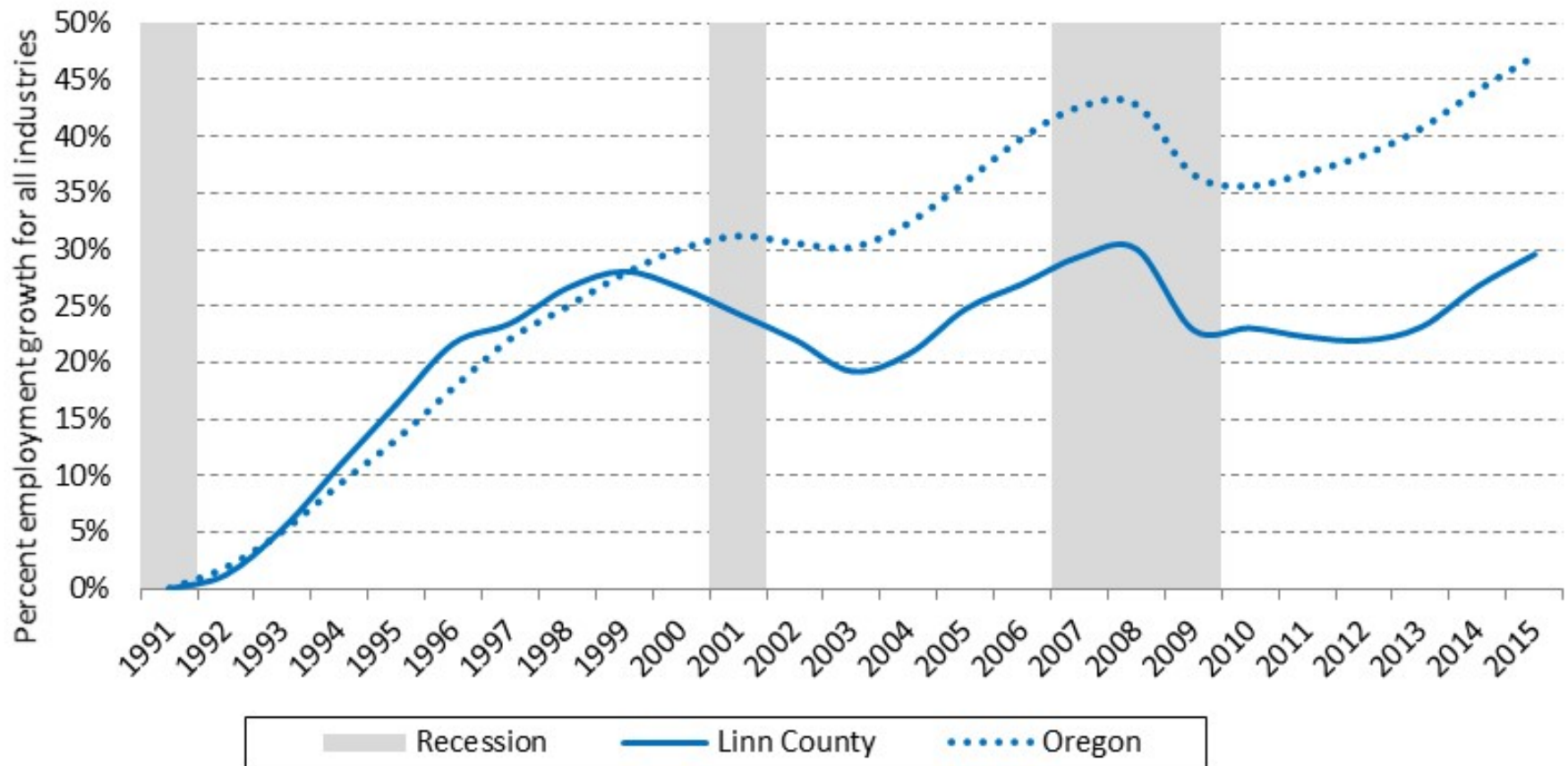
Linn and Incorporated Cities—Persons Per Household (PPH), Occupancy Rate, Percent Group Quarters, and Percent Seasonal Housing (2000 and 2010)

| | Persons Per Household (PPH) | | Occupancy Rate | | Percent Seasonal Housing | | Percent Group Quarters | |
|--------------------|-----------------------------|------|----------------|-------|--------------------------|-------|------------------------|------|
| | 2000 | 2010 | 2000 | 2010 | 2000 | 2010 | 2000 | 2010 |
| <i>Linn County</i> | 2.6 | 2.6 | 93.0% | 92.6% | 0.7% | 0.9% | 1.0% | 1.1% |
| Albany city (part) | 2.5 | 2.5 | 92.2% | 93.7% | 0.3% | 0.3% | 1.9% | 1.9% |
| Brownsville city | 2.7 | 2.6 | 92.4% | 93.3% | 0.0% | 1.2% | 0.0% | 0.0% |
| Gates city (part) | 2.1 | 2.1 | 83.3% | 82.6% | 16.7% | 8.7% | 0.0% | 0.0% |
| Halsey city | 2.9 | 3.0 | 94.4% | 91.3% | 0.0% | 0.6% | 0.0% | 0.0% |
| Harrisburg city | 2.8 | 2.9 | 95.3% | 93.9% | 0.1% | 0.3% | 0.0% | 0.0% |
| Idanha city (part) | 2.9 | 1.9 | 58.0% | 76.9% | 18.0% | 10.3% | 0.0% | 0.0% |
| Lebanon city | 2.5 | 2.5 | 93.1% | 89.7% | 0.3% | 0.3% | 1.7% | 1.3% |
| Lyons city | 2.7 | 2.6 | 94.2% | 93.5% | 0.0% | 1.7% | 0.0% | 0.0% |
| Mill city (part) | 2.7 | 2.7 | 92.5% | 93.3% | 0.8% | 1.0% | 0.0% | 0.0% |
| Millersburg city | 2.5 | 2.6 | 91.3% | 93.7% | 0.7% | 0.6% | 0.0% | 0.2% |
| Scio city | 2.6 | 2.7 | 95.3% | 94.4% | 0.0% | 0.3% | 0.6% | 0.0% |
| Sodaville city | 2.8 | 2.7 | 91.3% | 95.9% | 0.9% | 0.0% | 0.0% | 0.0% |
| Sweet Home city | 2.6 | 2.6 | 91.5% | 91.3% | 0.4% | 0.8% | 0.9% | 0.8% |
| Tangent city | 2.8 | 2.8 | 92.6% | 94.7% | 0.3% | 0.2% | 0.0% | 0.3% |
| Waterloo town | 2.9 | 2.9 | 91.2% | 90.8% | 0.0% | 2.3% | 0.0% | 0.0% |
| Unincorporated | 2.7 | 2.6 | 93.6% | 92.4% | 1.2% | 1.6% | 0.2% | 0.4% |

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

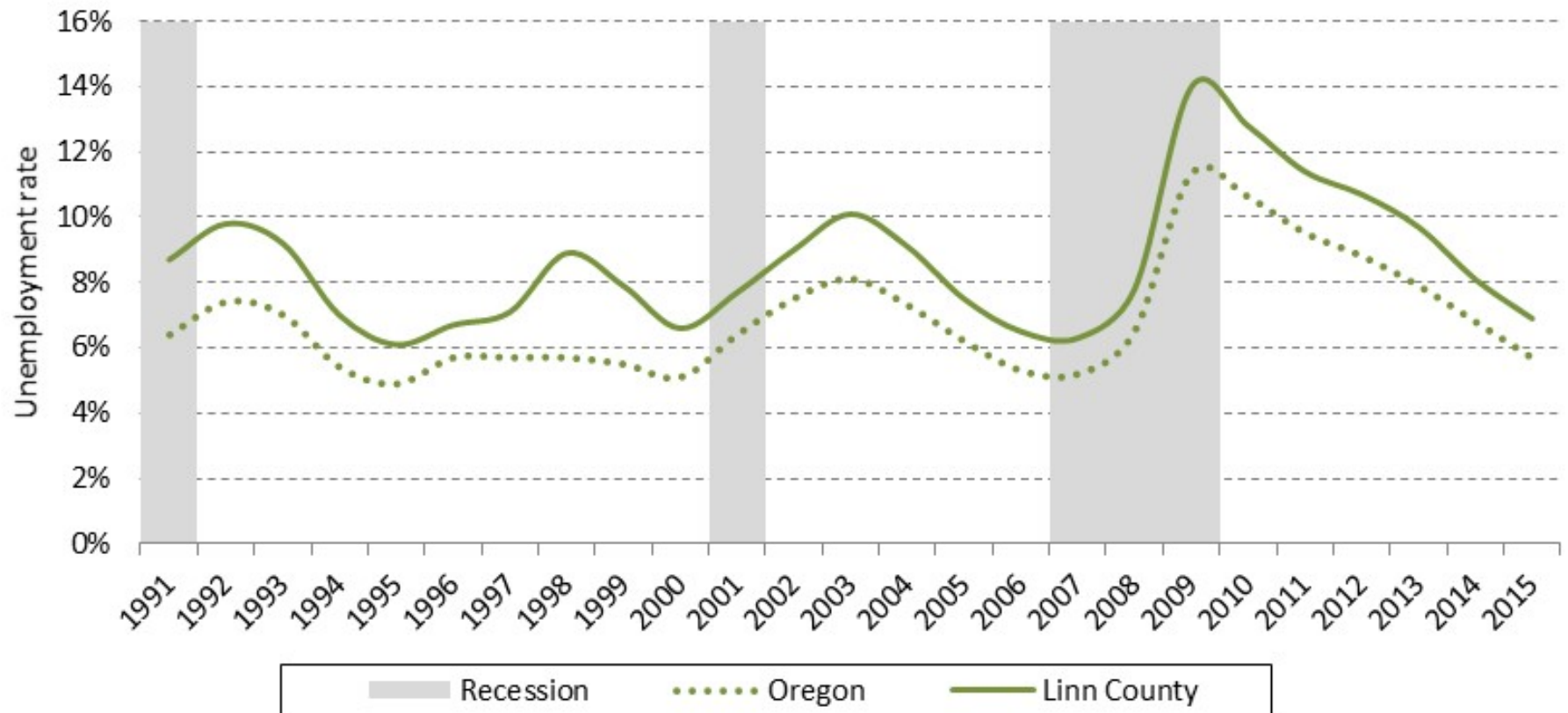
Note: Percent Seasonal Housing is the proportion of total housing units in 2000 and 2010 that are identified as vacant “for seasonal, recreational, or occasional use.”

Linn County—Employment Growth since 1991

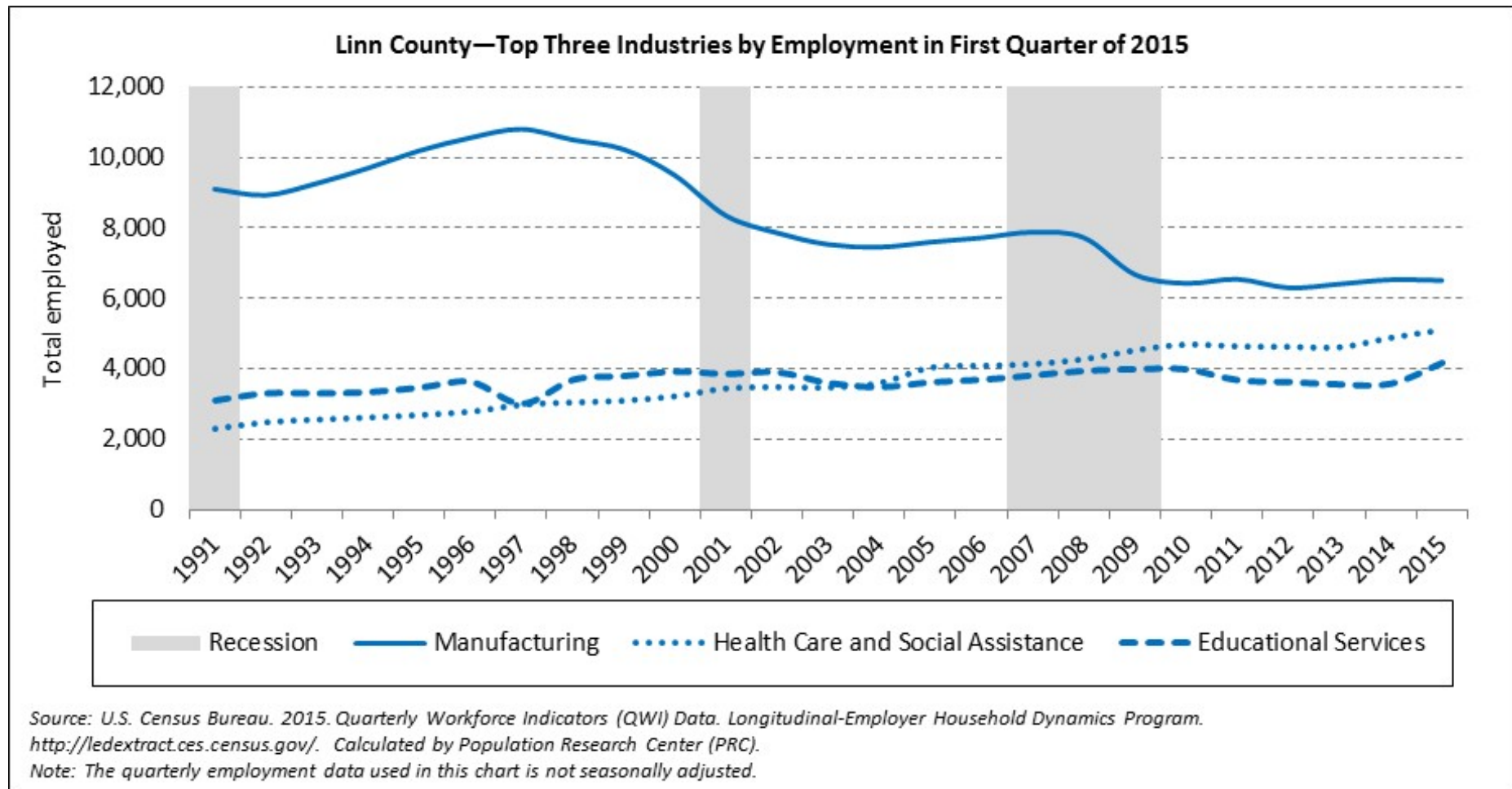


Source: U.S. Census Bureau. 2015. Quarterly Workforce Indicators (QWI) Data. Longitudinal-Employer Household Dynamics Program. <http://ledextract.ces.census.gov/>. Calculated by Population Research Center (PRC).

Linn County and Oregon—Annual Unemployment Rate (1991 to 2015)



Source: Oregon Employment Department. Local Area Unemployment Statistics (LAUS).
<https://www.qualityinfo.org/ed-uesti/?at=1&t1=4101000000~unemprate~y~2000~2015>.
Note: The rate represents the percent of the labor force seeking work but not employed.

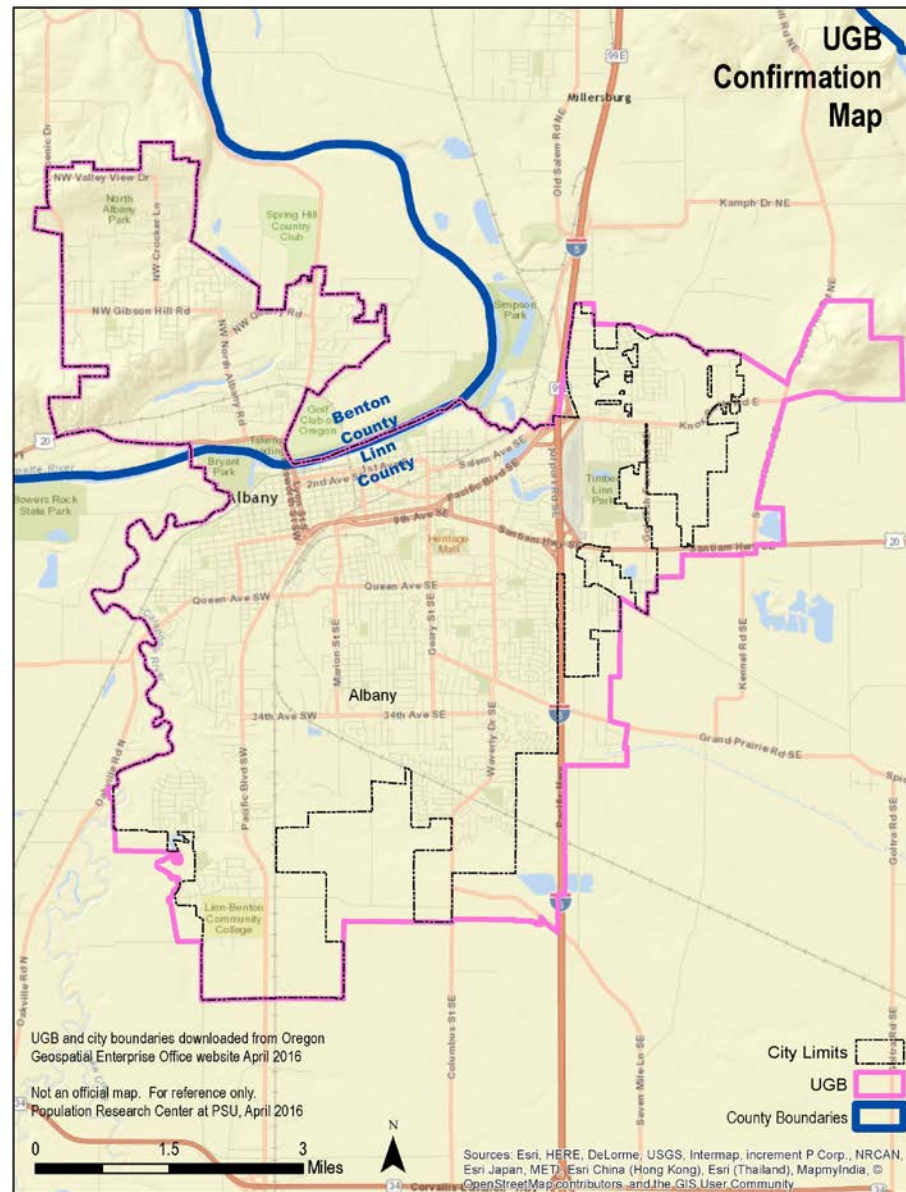


Local Input and Additional Information

- Questions?
- Discussion time

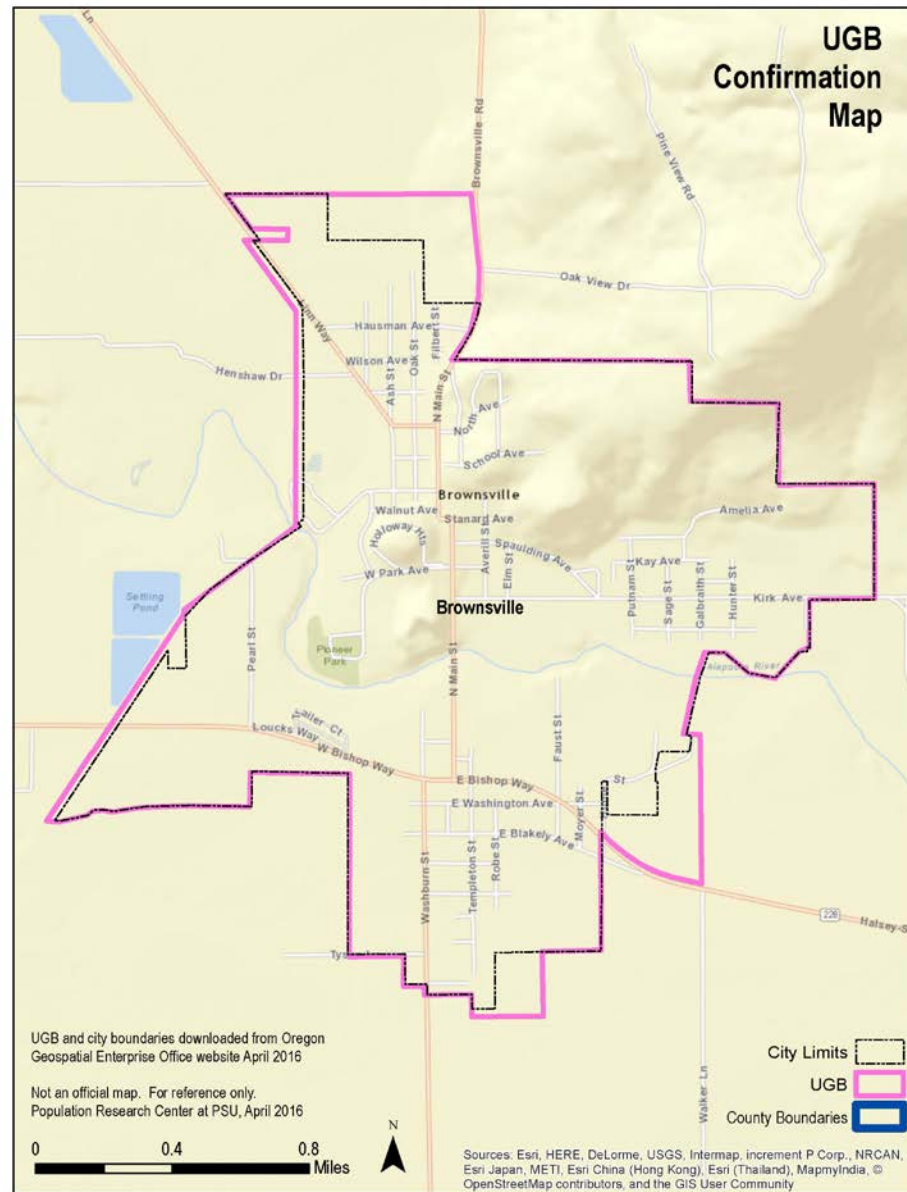
Linn County UGBs

ALBANY



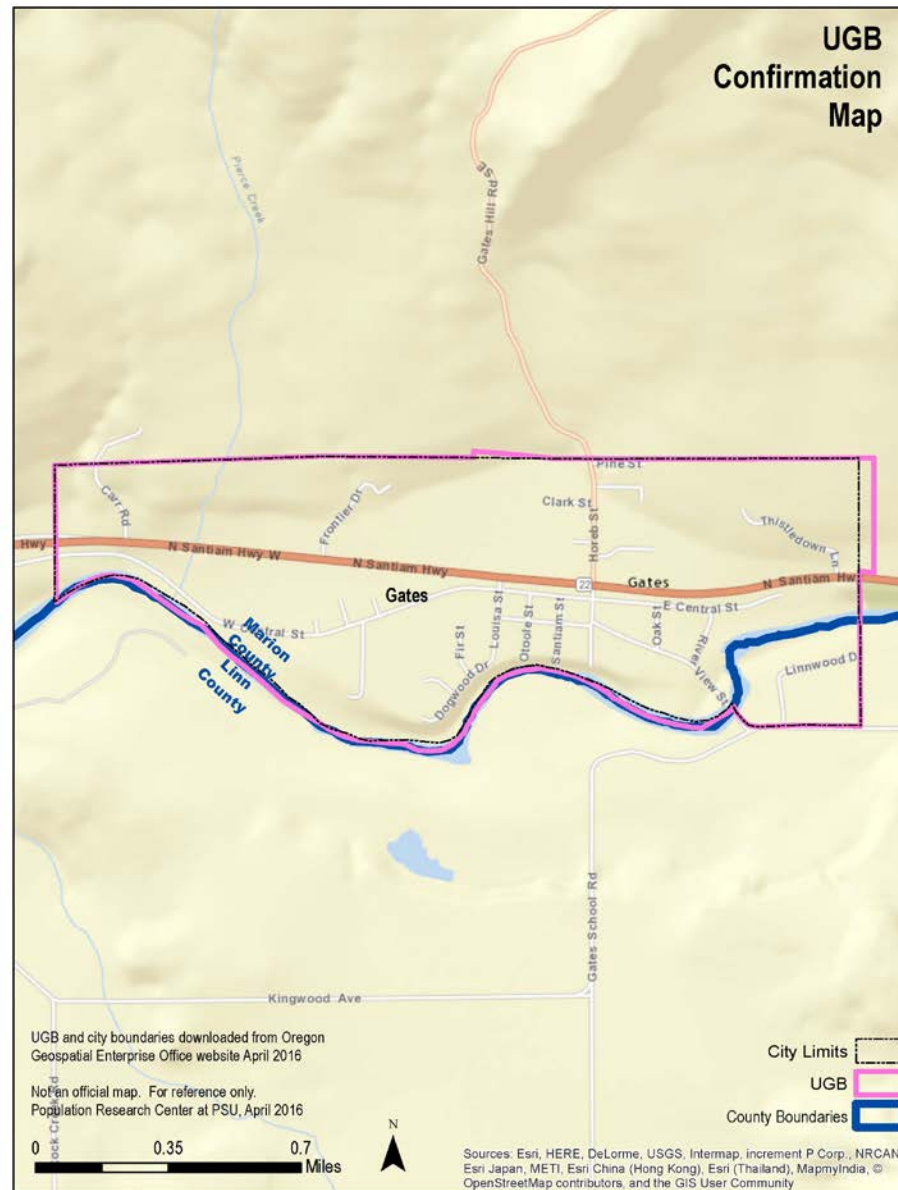
Confirmed by City

BROWNSVILLE



Confirmed by City

GATES



Confirmed by City

Confirmed by City

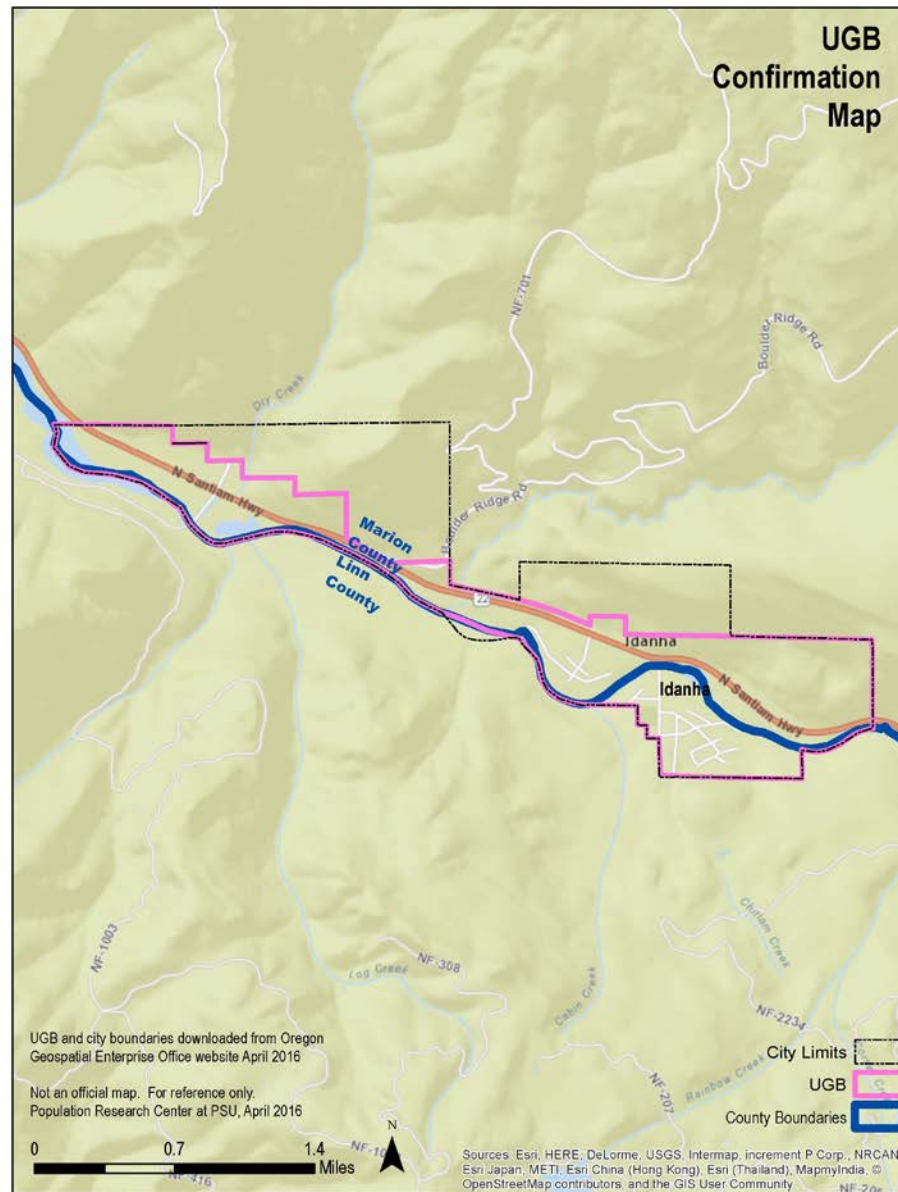


HARRISBURG



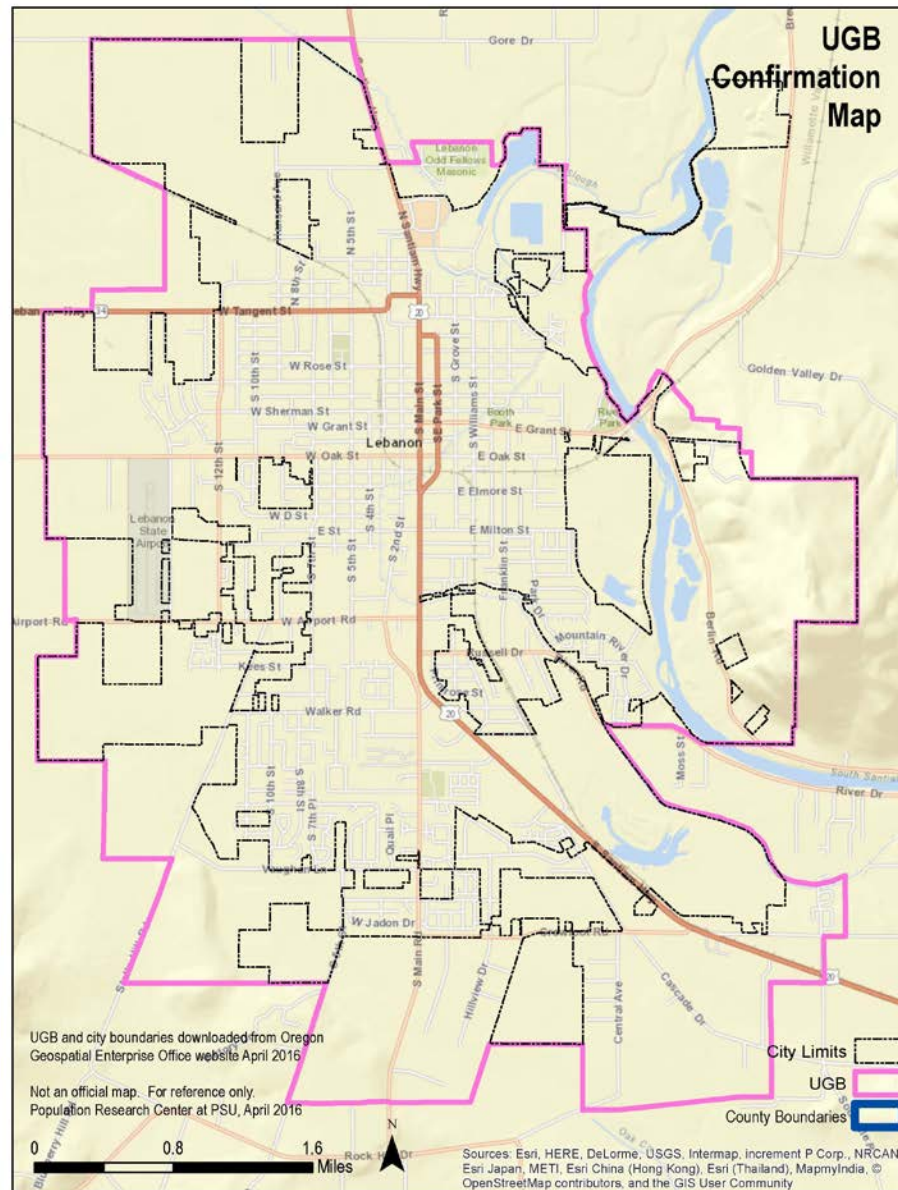
Confirmed by City

IDANHA



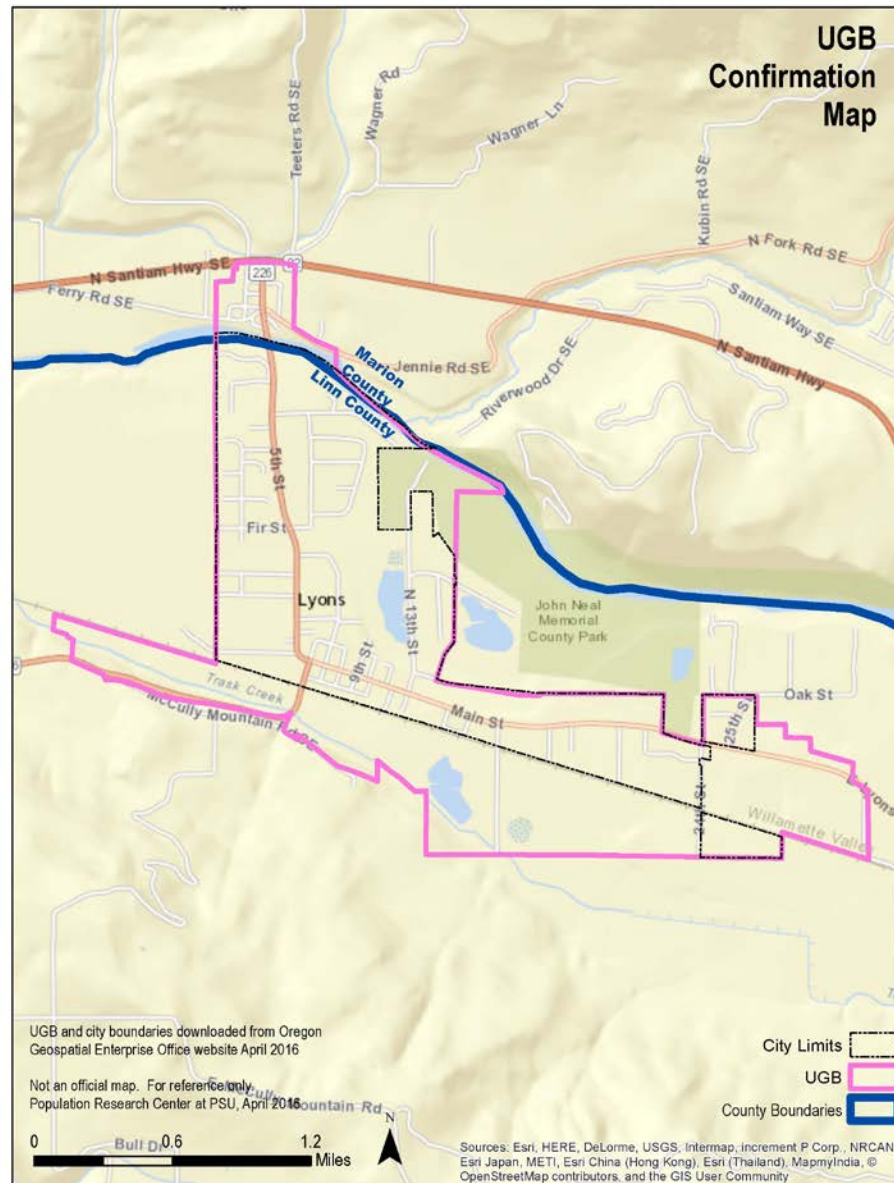
Not Confirmed by City

LEBANON



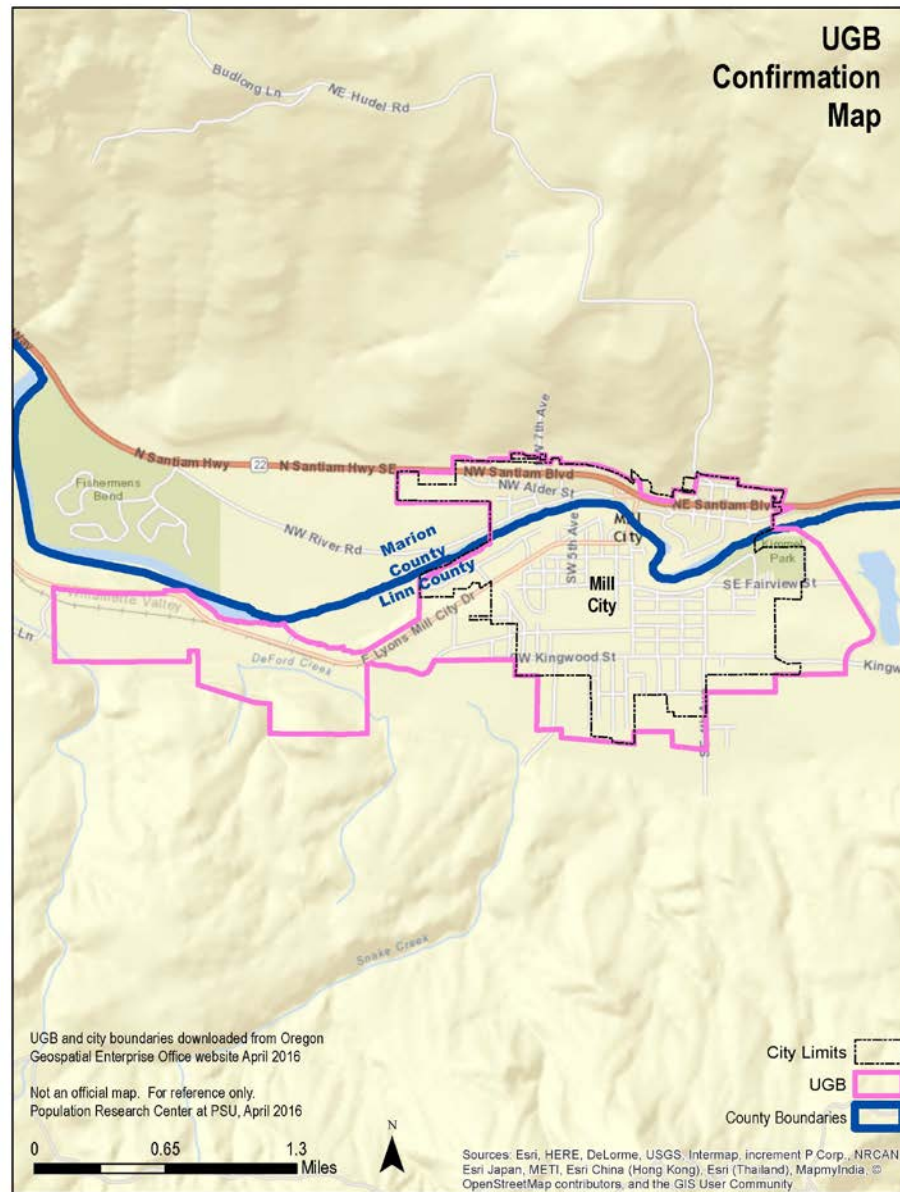
Confirmed by City

LYONS



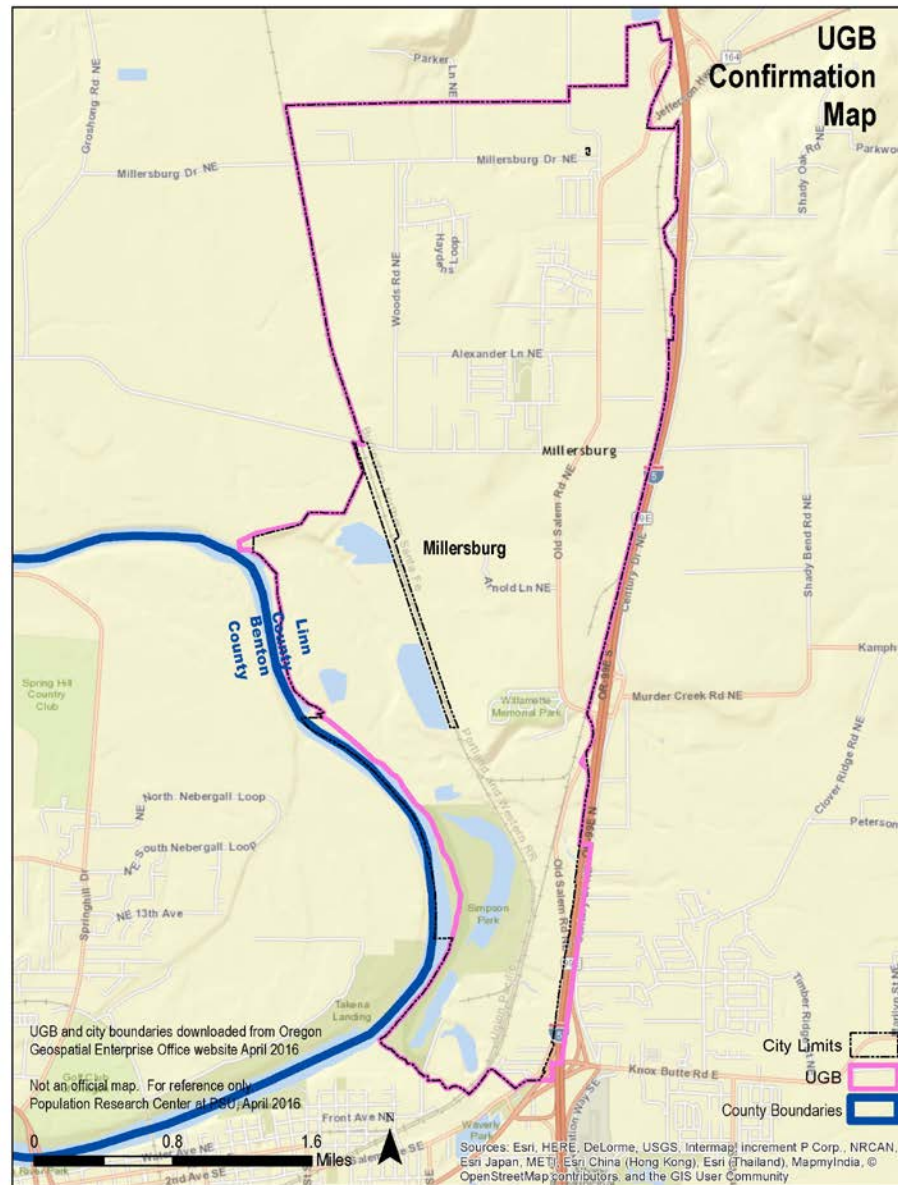
Confirmed by City

MILL CITY

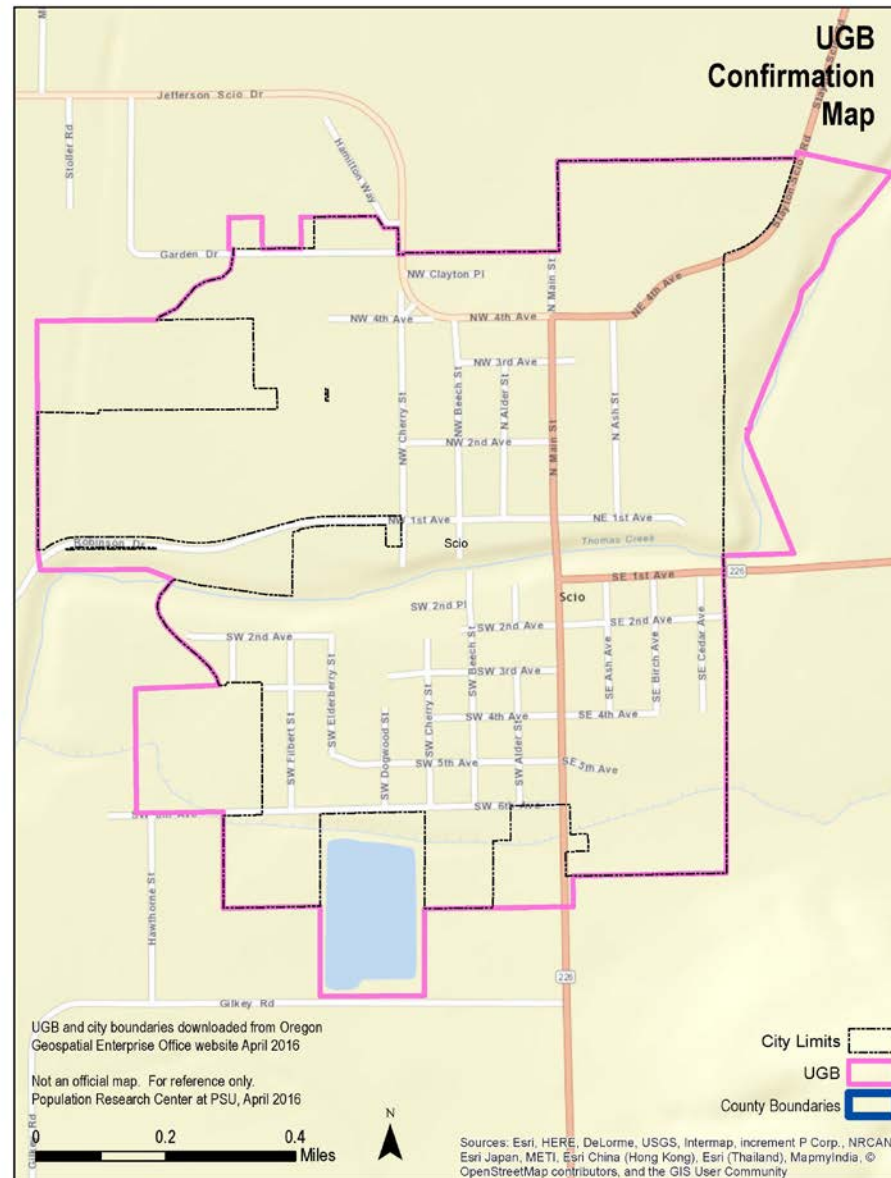


Confirmed by City

MILLERSBURG

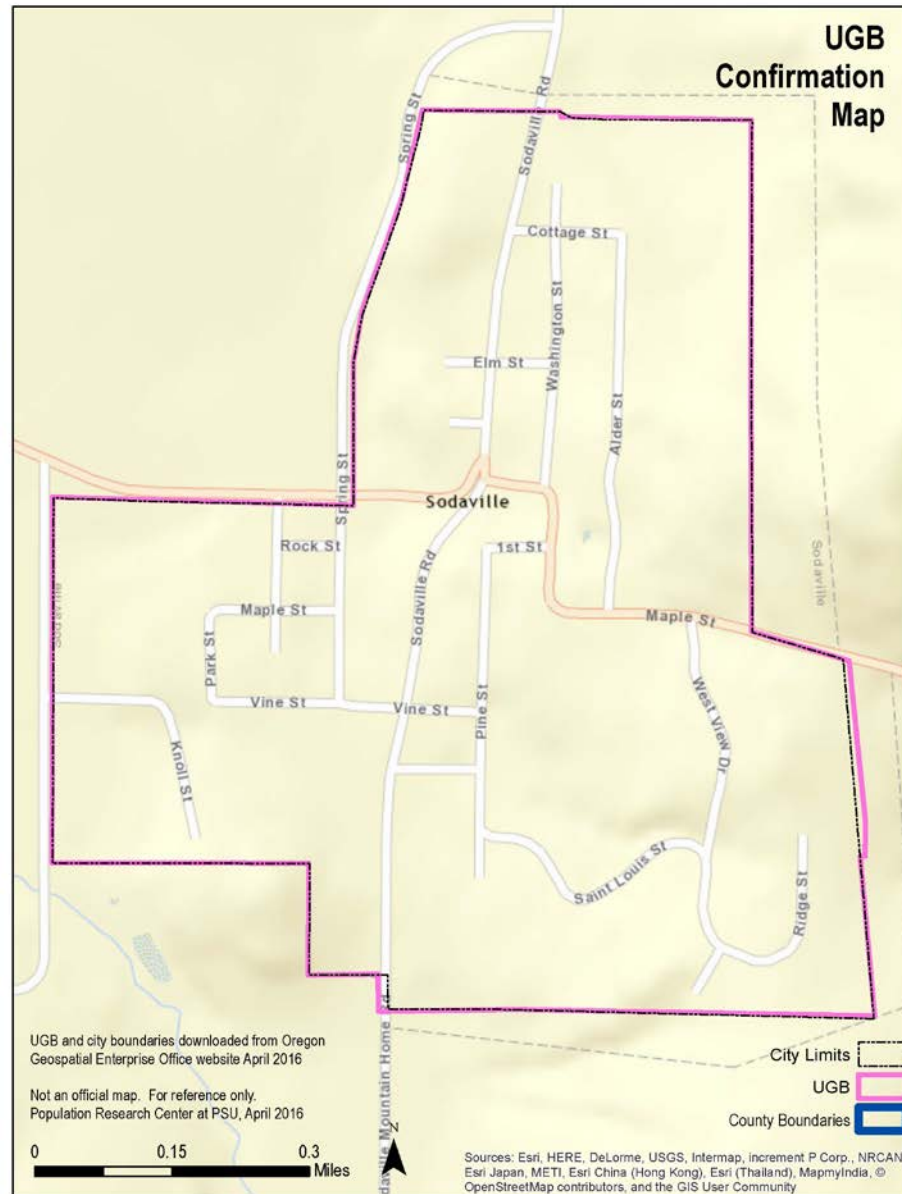


Confirmed by City

SCIO

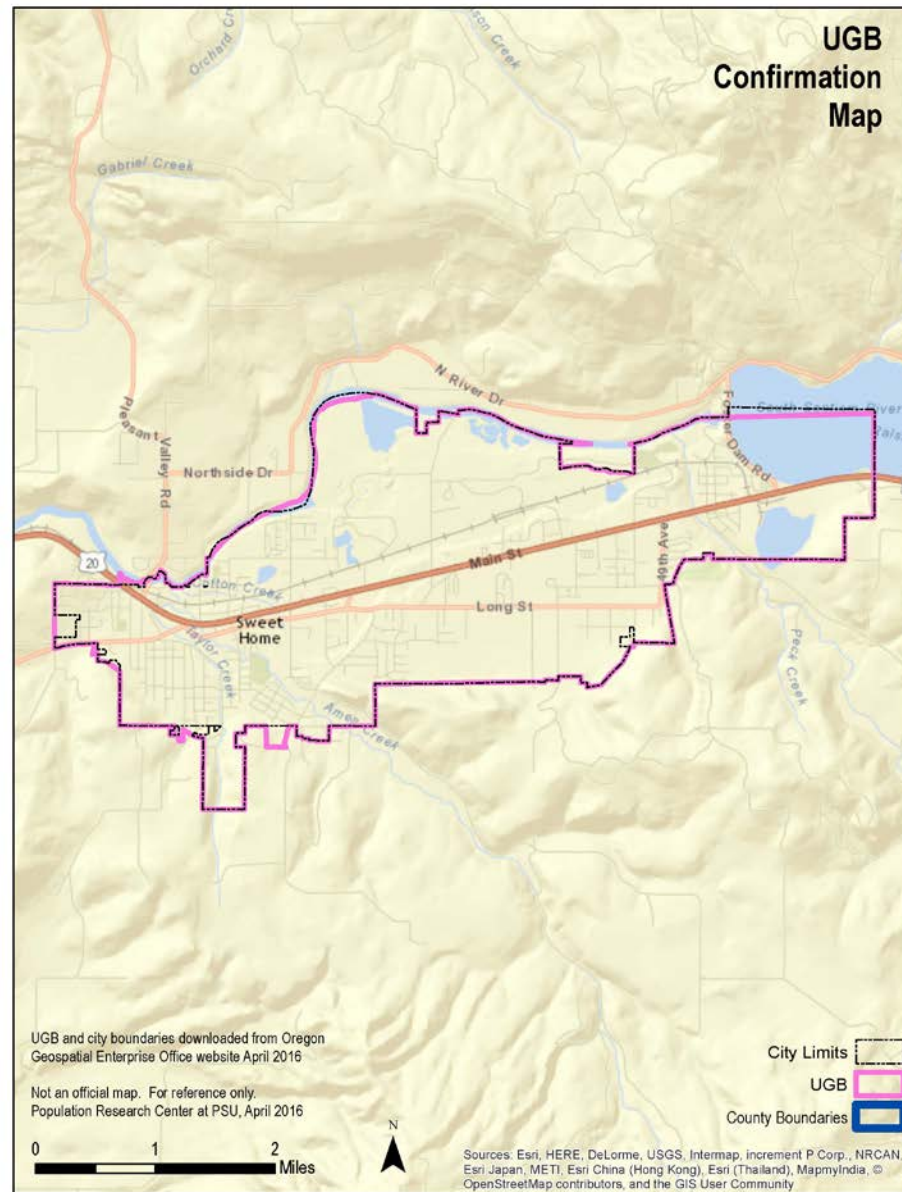
Confirmed by City

SODAVILLE



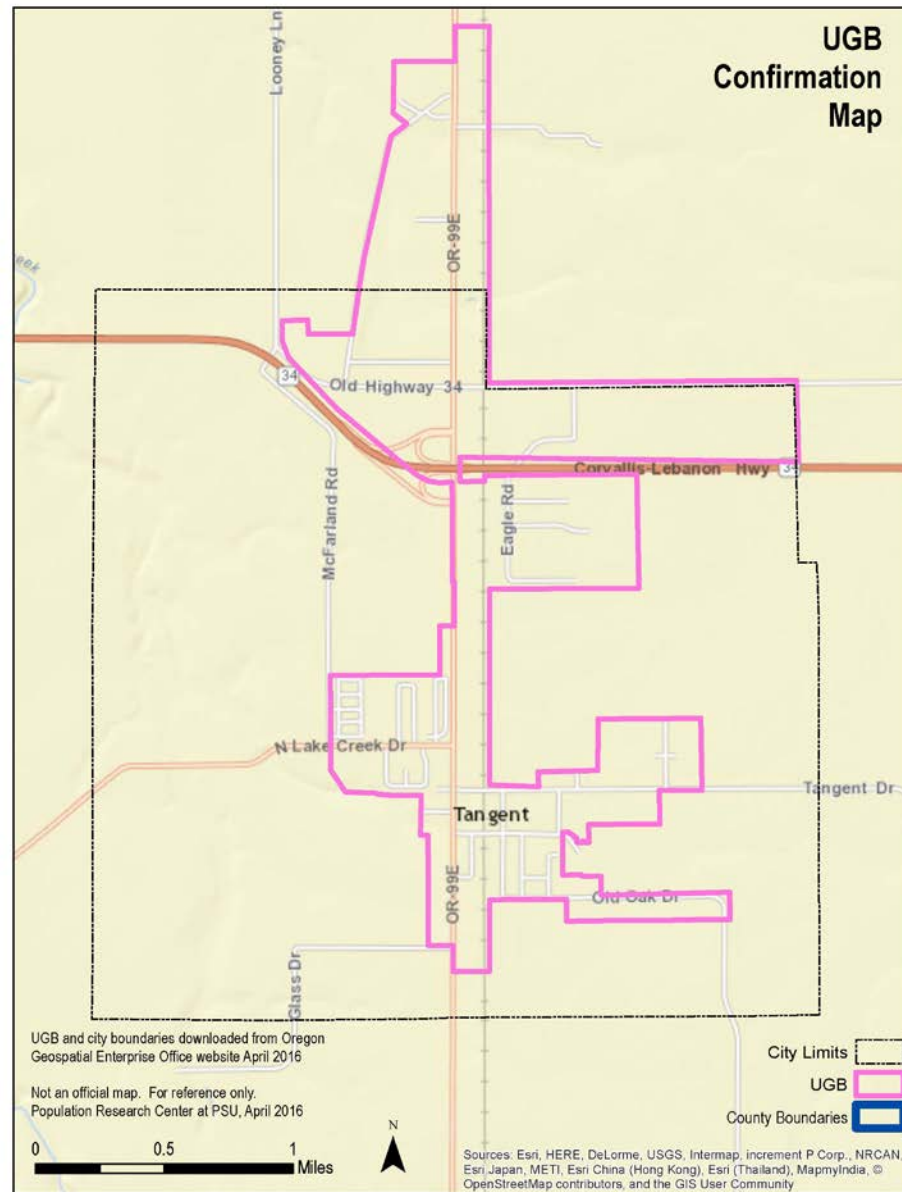
Confirmed by City

SWEET HOME



Confirmed by City

TANGENT



Confirmed by City

Confirmed by City



“Parking Lot”

Selection of Forecast Regions

- Looked at regions used by other agencies
 - Workforce
 - Small City Network
 - Etc.
- Counted counties and cities in each region
 - Balance workload
- Prioritized certain jurisdictions based on preference

Population Estimates vs. Forecasts

- Population Estimates
 - Refers to a point in time estimate of population in the present or in the past
- Population Forecasts
 - An estimation of future population based on historic and current trends, and assumptions about likely future events