

# Oregon Population Forecast Program **Tillamook County**

Regional Forecast Meeting – September 26, 2016

**Presentation by**

**Population Forecast Program Team**

# Oregon Population Forecast Program Project 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:

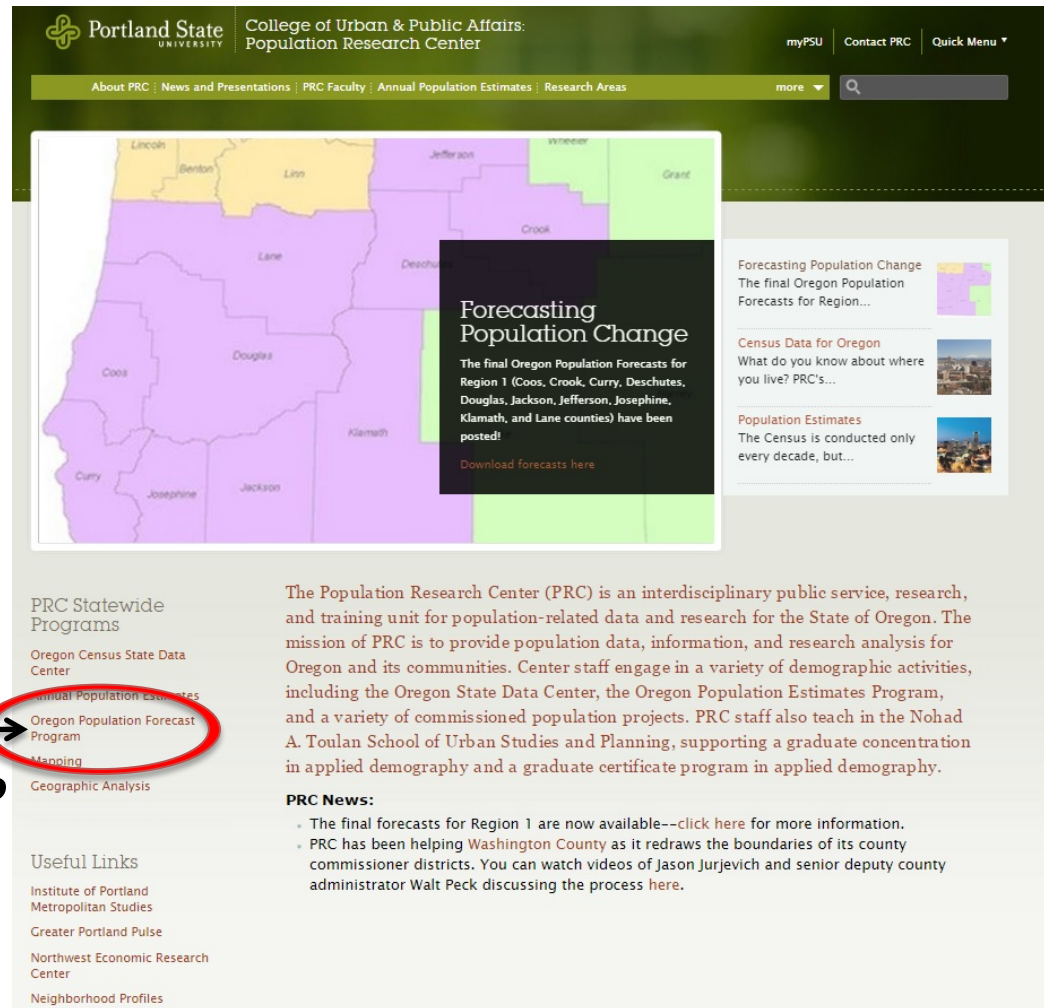
- Oregon Census State Data Center (SDC)
- Demographic Research and Advisory Services
- Demography Instruction
- Oregon Population Estimates Program
- **Oregon Population Forecast Program (OPFP)**

# Forecast Program Overview

PRC Website:

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

Click here for  more information on OPFP



The screenshot shows the Portland State University Population Research Center website. 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 'PRC News' items, including the availability of final forecasts for Region 1 and assistance with Washington County's redistricting process.

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

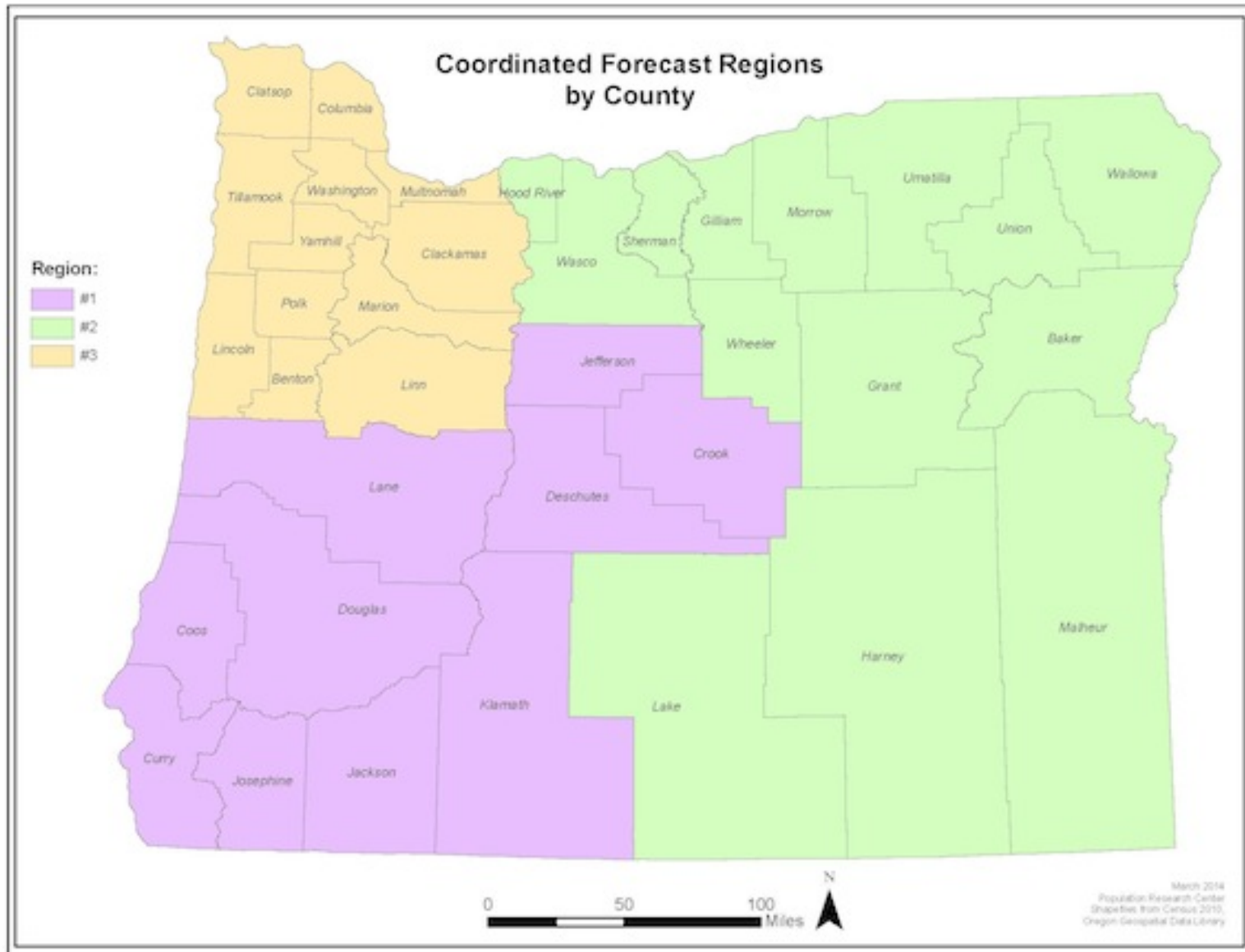
Useful Links

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

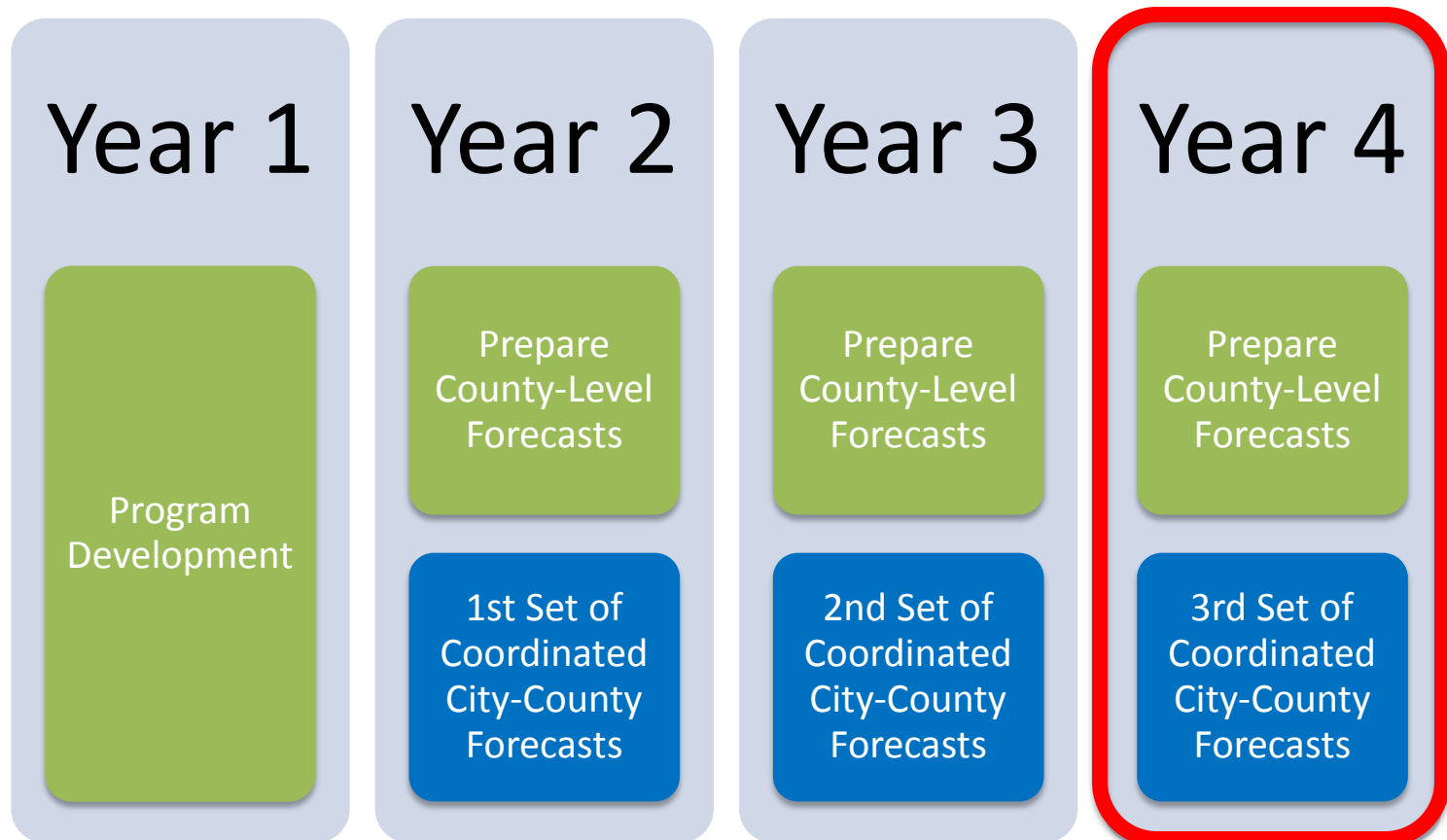
The Population Research Center (PRC) is an interdisciplinary public service, research, and training unit for population-related data and research for the State of Oregon. The mission of PRC is to provide population data, information, and research analysis for Oregon and its communities. Center staff 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.

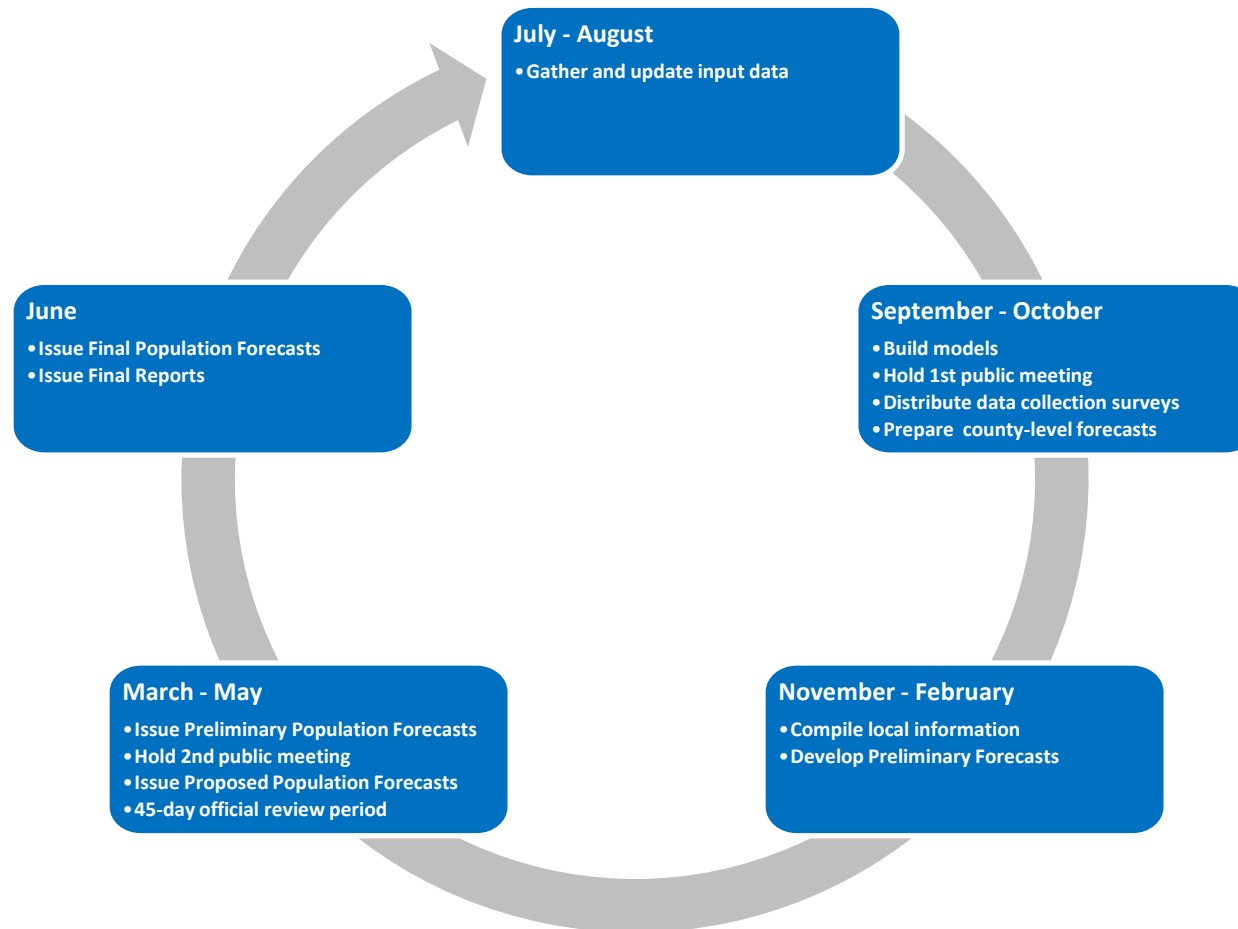


## Forecast Program: 4-Year Schedule





## 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

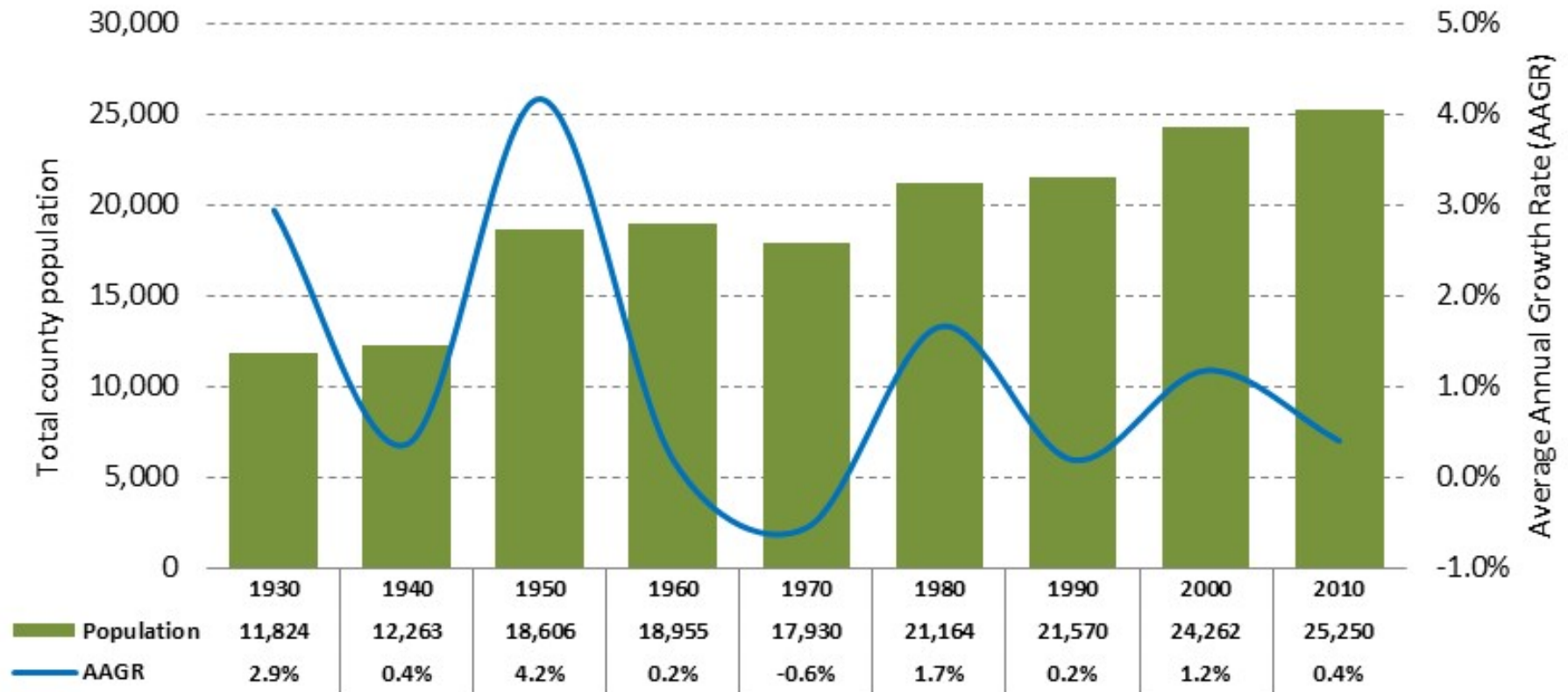
## Process for Local Input

- 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



## Tillamook County

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

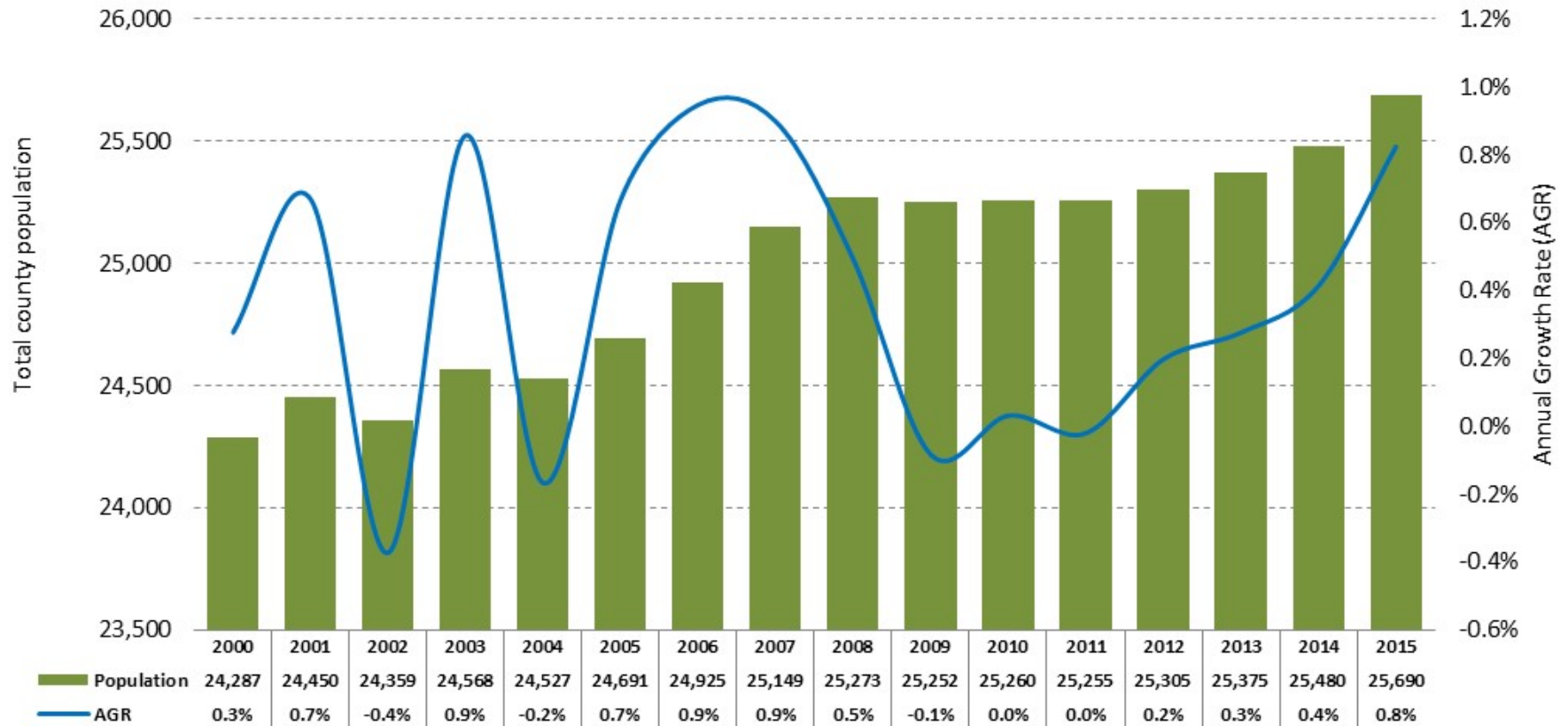


Sources: U.S. Census Bureau, 1930 to 2010 Censuses. Calculated by Population Research Center (PRC).

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

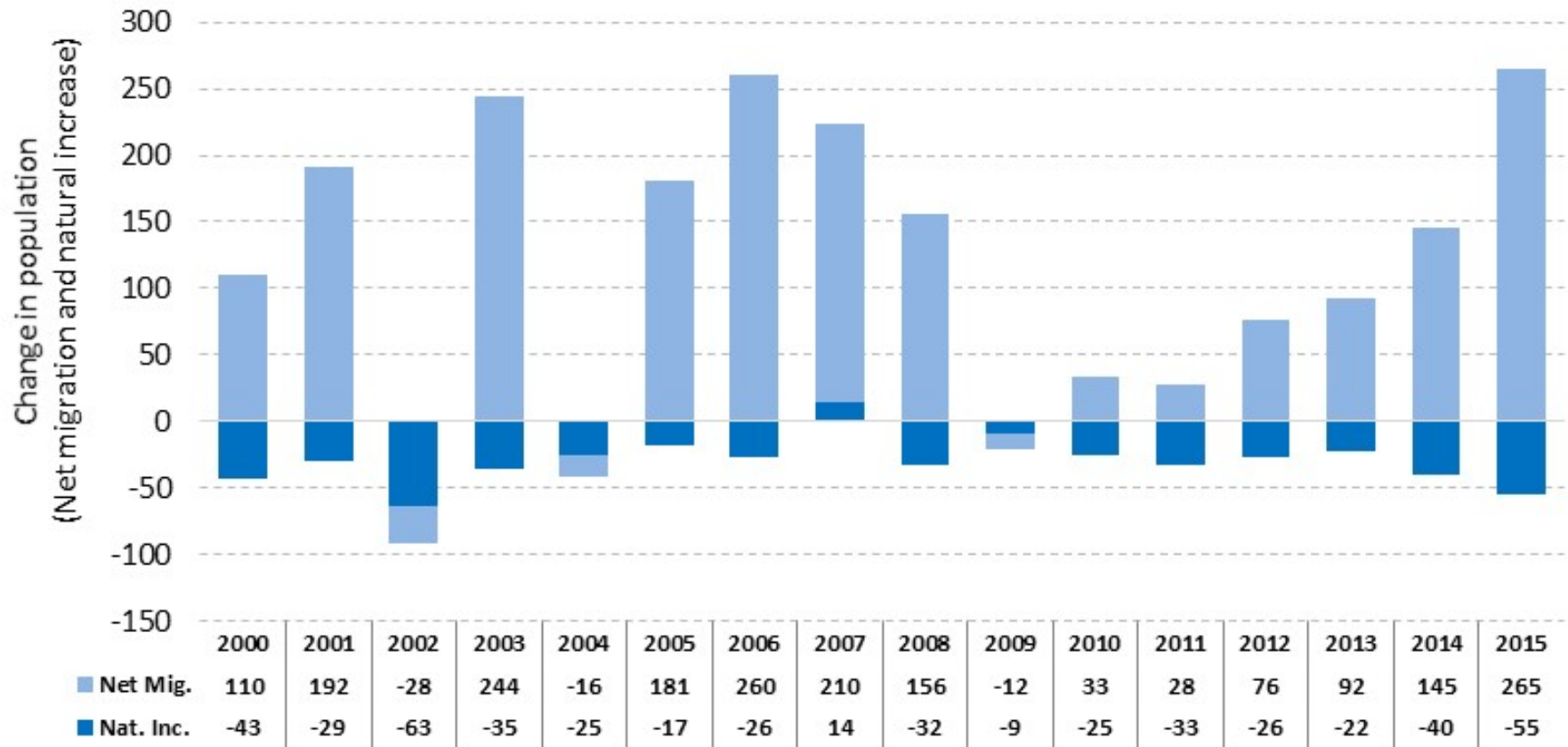
Note 2: The 2000 total population does not reflect Count Question Resolution (CQR) revisions made by the U.S. Census Bureau. Revised total population numbers are used for the "County and Incorporated City Population" table.

**Tillamook County—Annual Total Population Trend (2000-2015)**



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

**Tillamook County—Components of Population Change (2000-2015)**



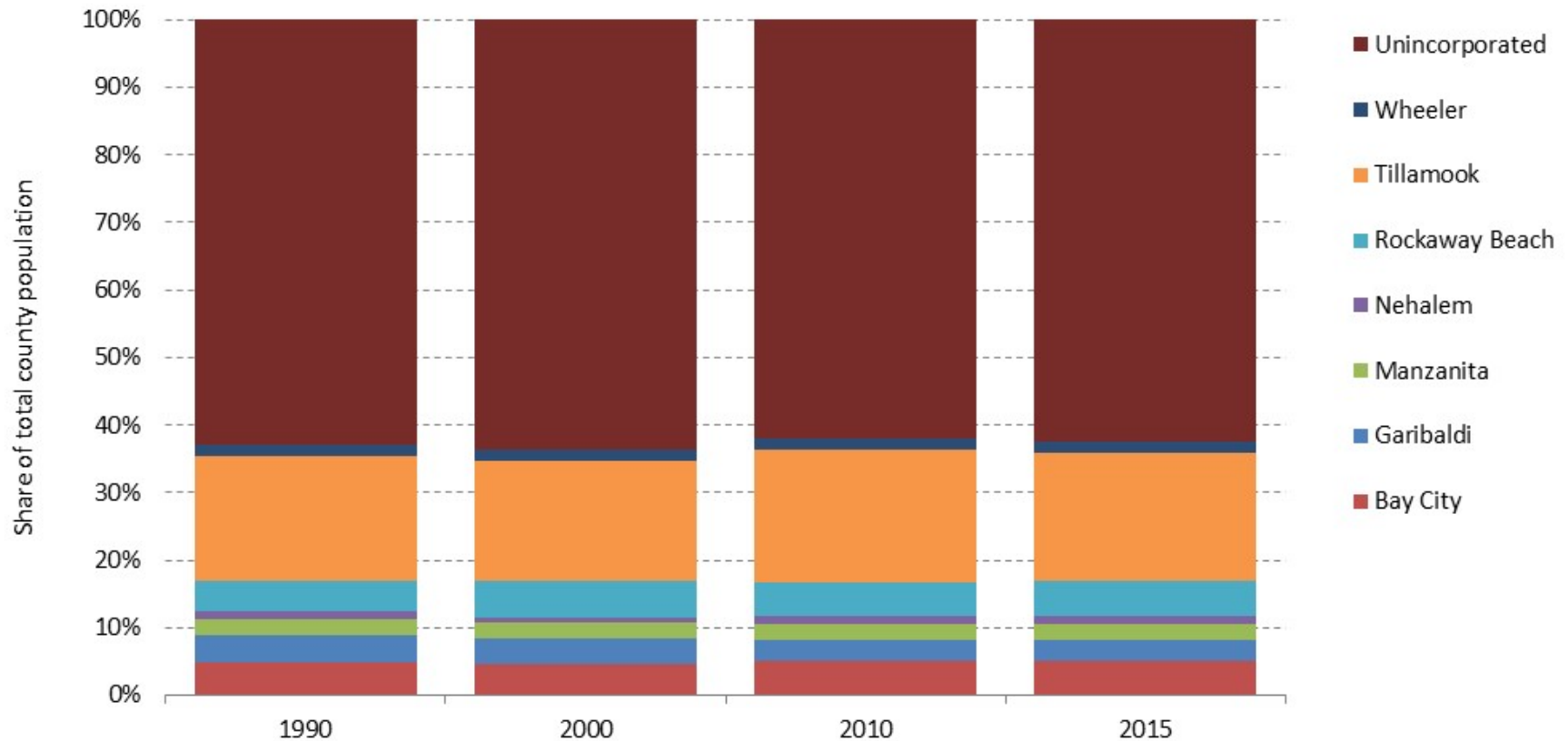
Sources: Population Research Center, July 1st Annual Estimates 2000-2015. Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

Tillamook 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
<i>Tillamook County</i>	<i>24,262</i>	<i>25,250</i>	<i>25,690</i>	<i>0.4%</i>	<i>0.3%</i>	<i>100.0%</i>	<i>100.0%</i>	<i>100.0%</i>
Bay City	1,149	1,286	1,320	1.1%	0.5%	4.7%	5.1%	5.1%
Garibaldi	899	779	790	-1.4%	0.3%	3.7%	3.1%	3.1%
Manzanita	564	598	620	0.6%	0.7%	2.3%	2.4%	2.4%
Nehalem	203	271	280	2.9%	0.7%	0.8%	1.1%	1.1%
Rockaway Beach	1,267	1,312	1,335	0.3%	0.3%	5.2%	5.2%	5.2%
Tillamook	4,352	4,935	4,900	1.3%	-0.1%	17.9%	19.5%	19.1%
Wheeler	391	414	405	0.6%	-0.4%	1.6%	1.6%	1.6%
Unincorporated	15,437	15,655	16,040	0.1%	0.5%	63.6%	62.0%	62.4%

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.

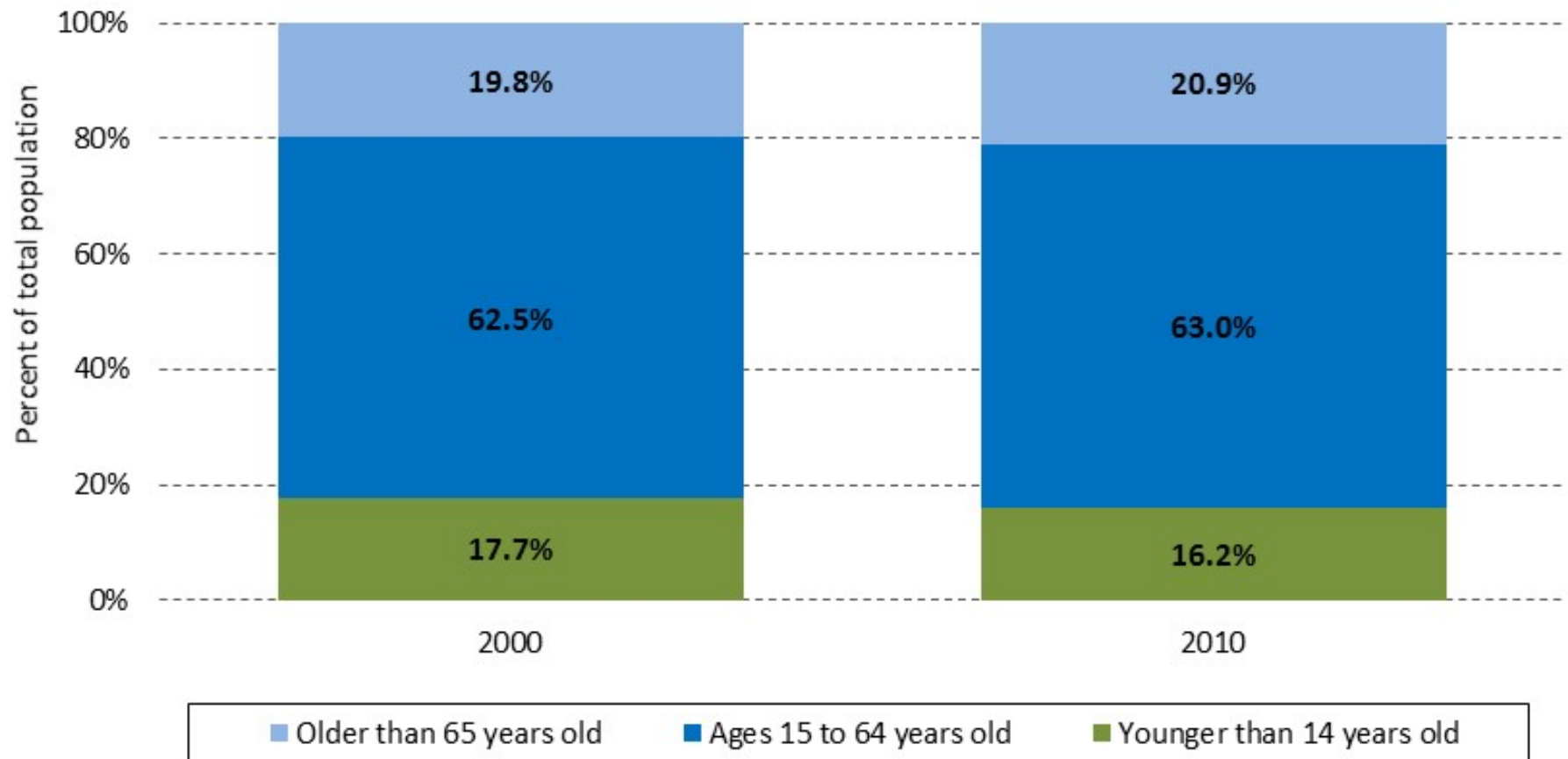
**Tillamook County—City Share of Population**



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).



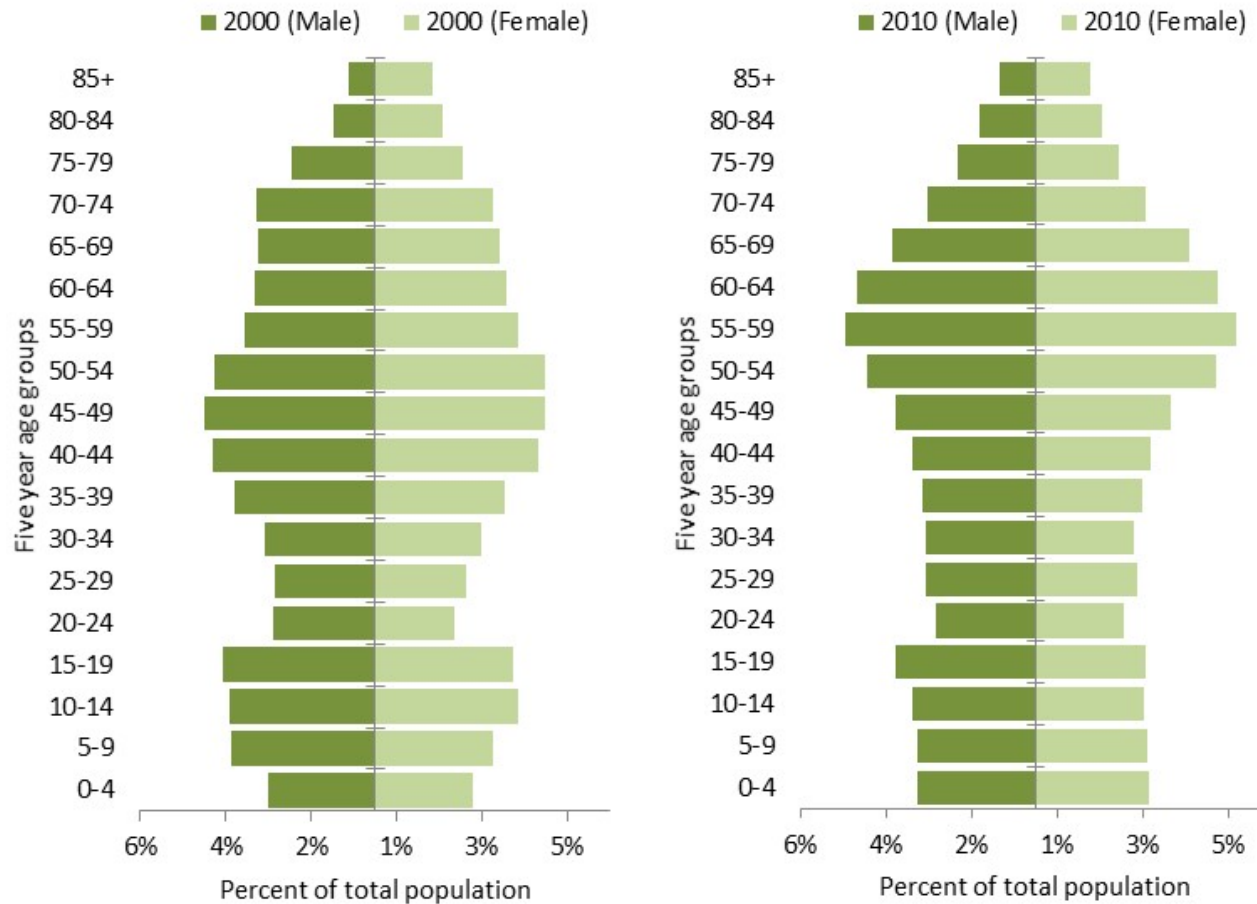
**Tillamook County—Age Structure of the Population (2000 and 2010)**



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

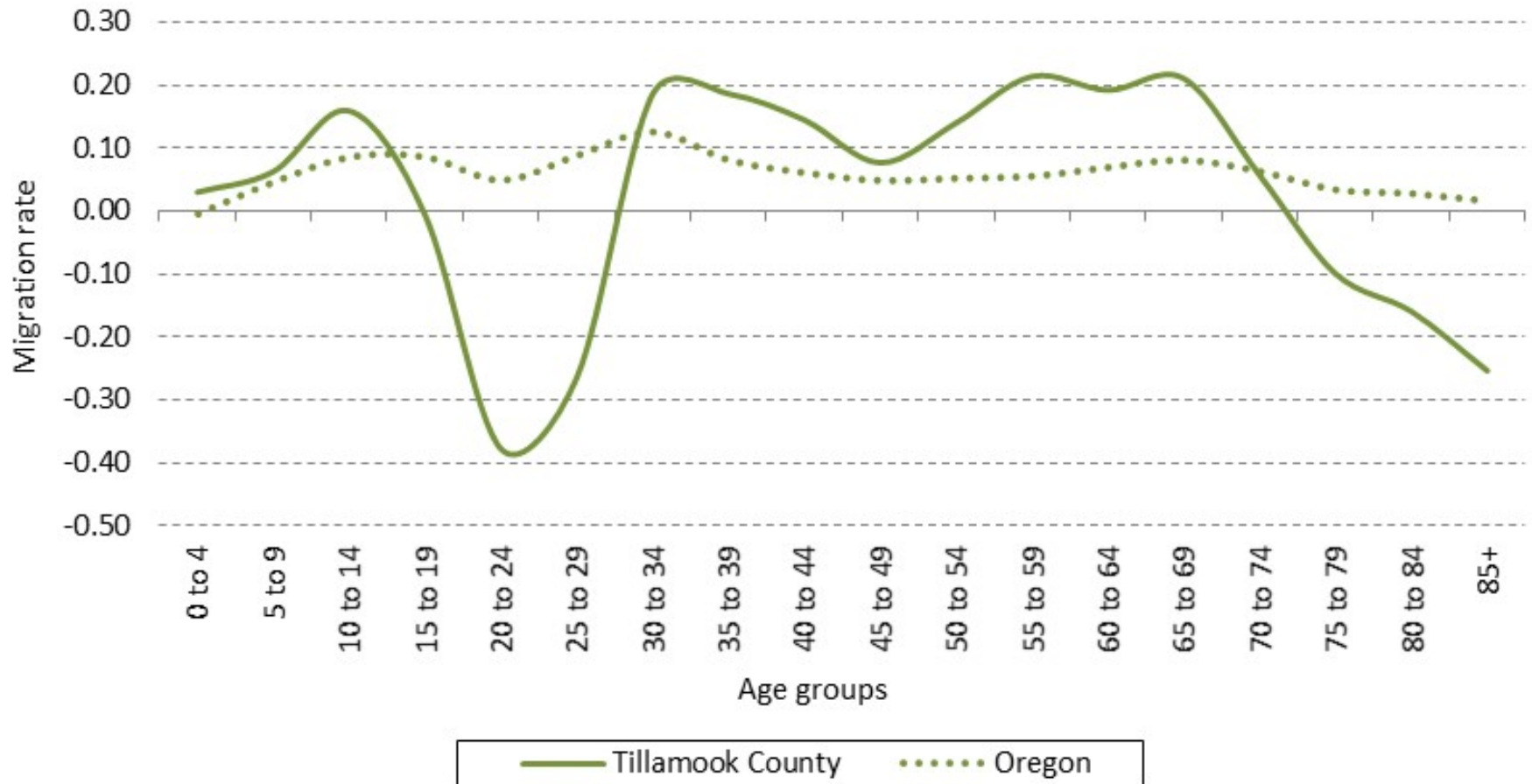


**Tillamook County—Age Structure of the Population (2000 and 2010)**



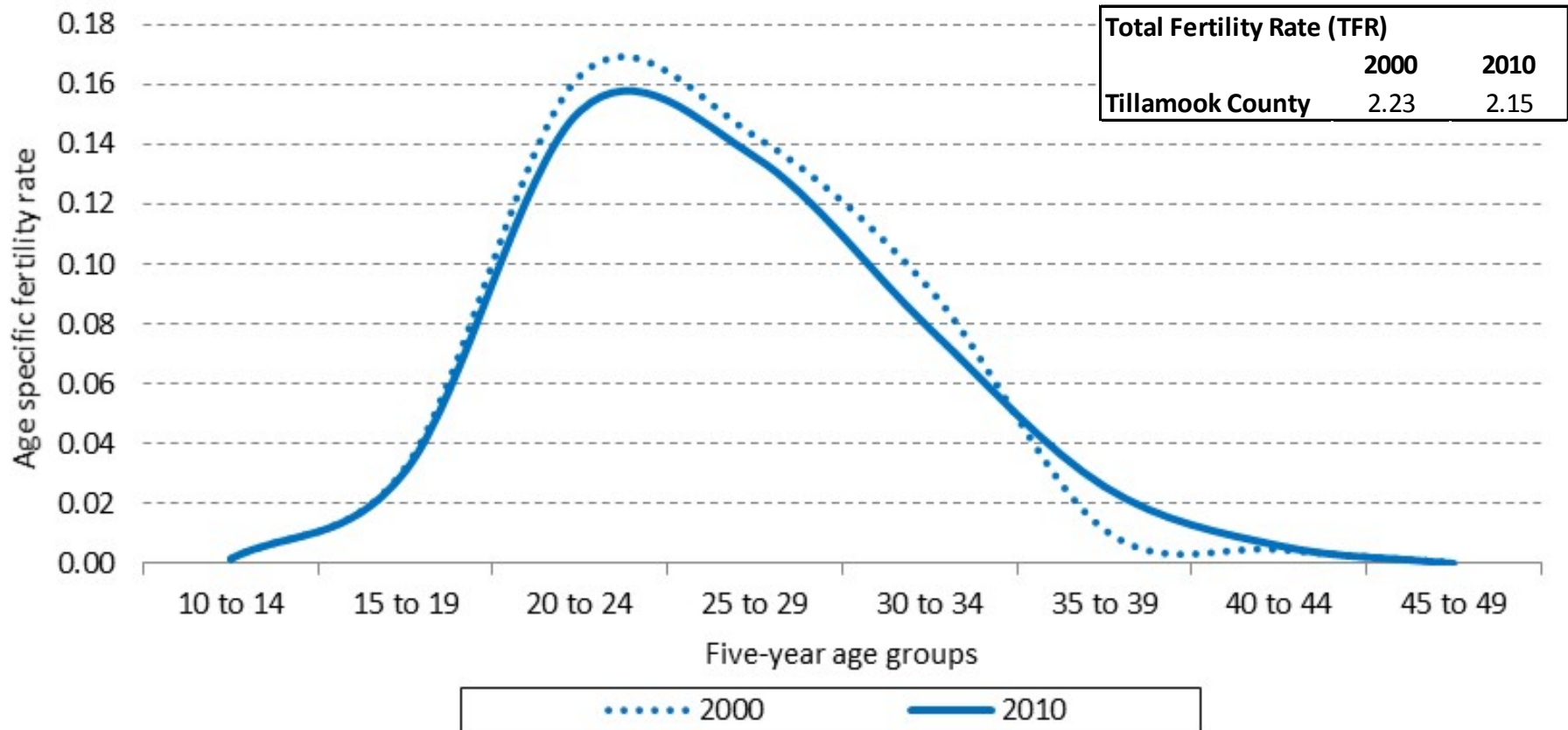
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

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



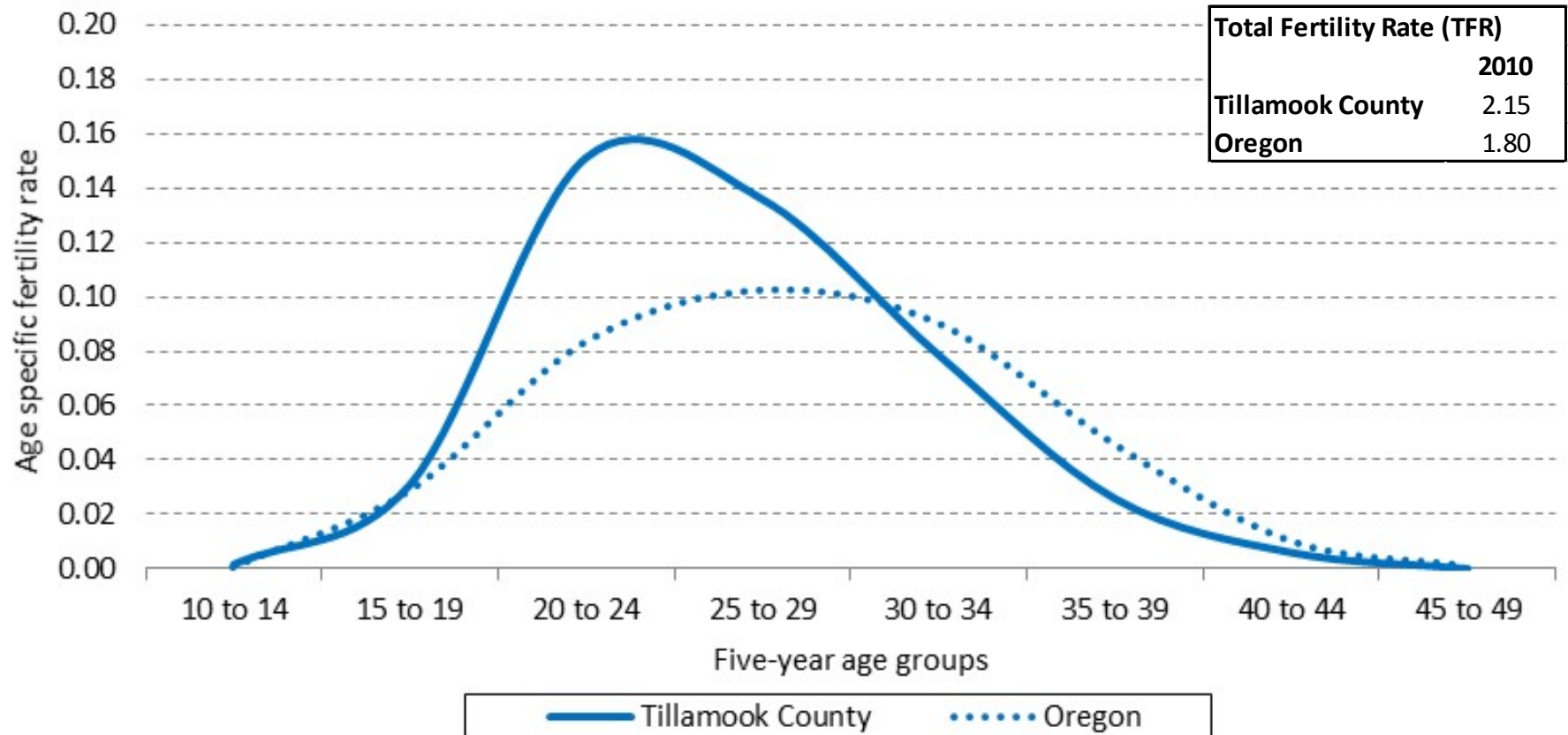
Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

**Tillamook County—Age Specific Fertility Rates (2000 and 2010)**



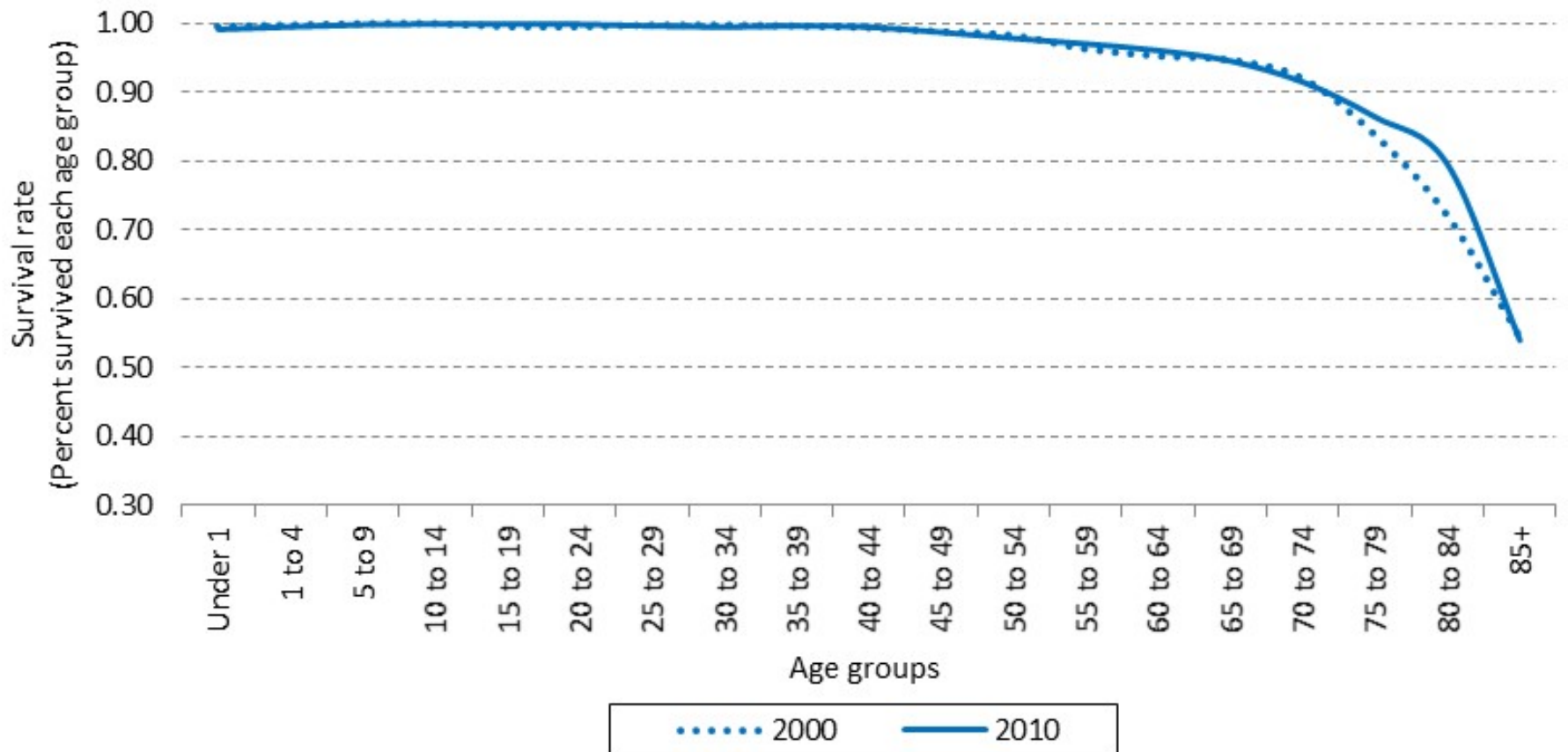
Sources: U.S. Census Bureau, 2000 and 2010 Censuses . Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

**Tillamook 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).

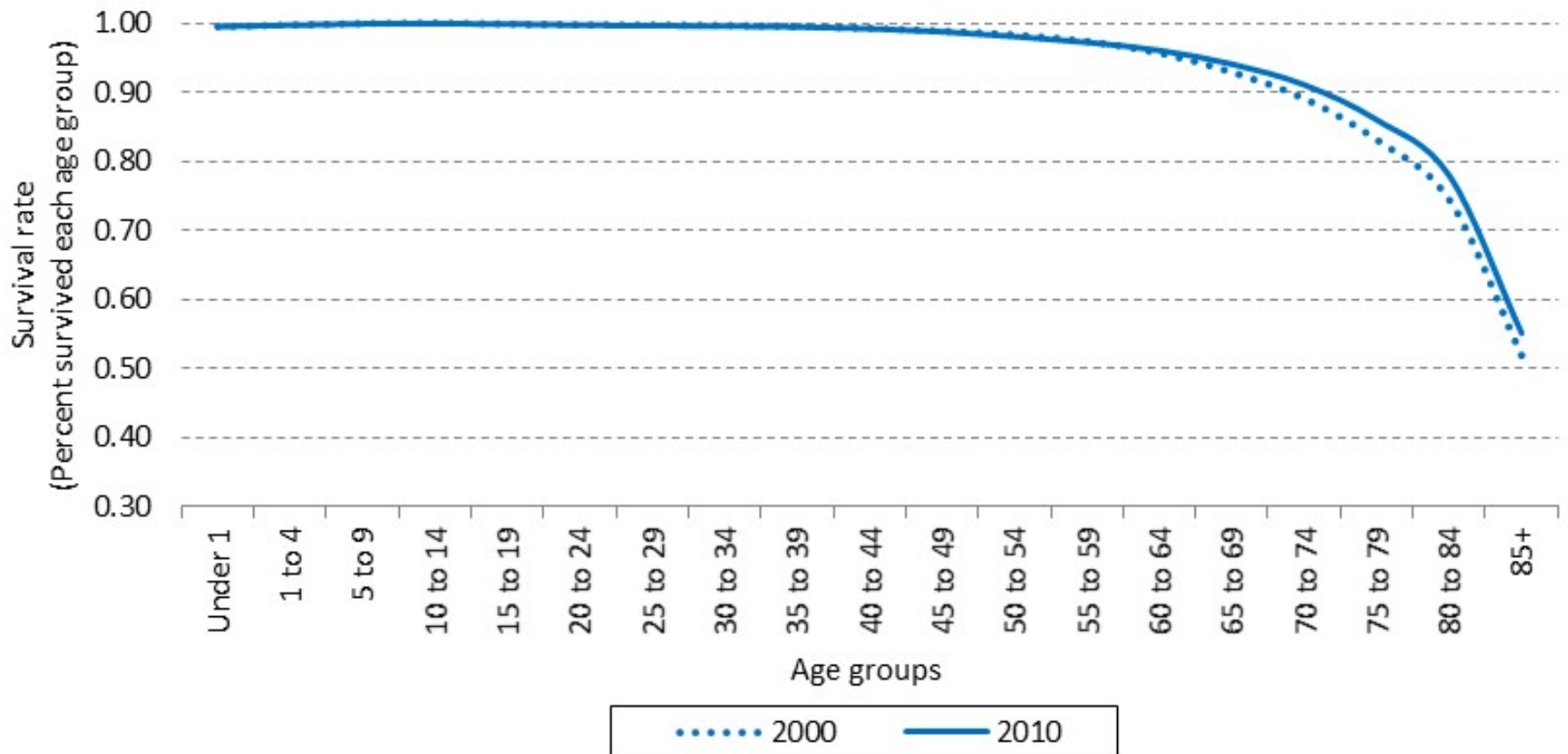
**Tillamook County—Age Specific Survival Rates (2000 to 2010)**



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

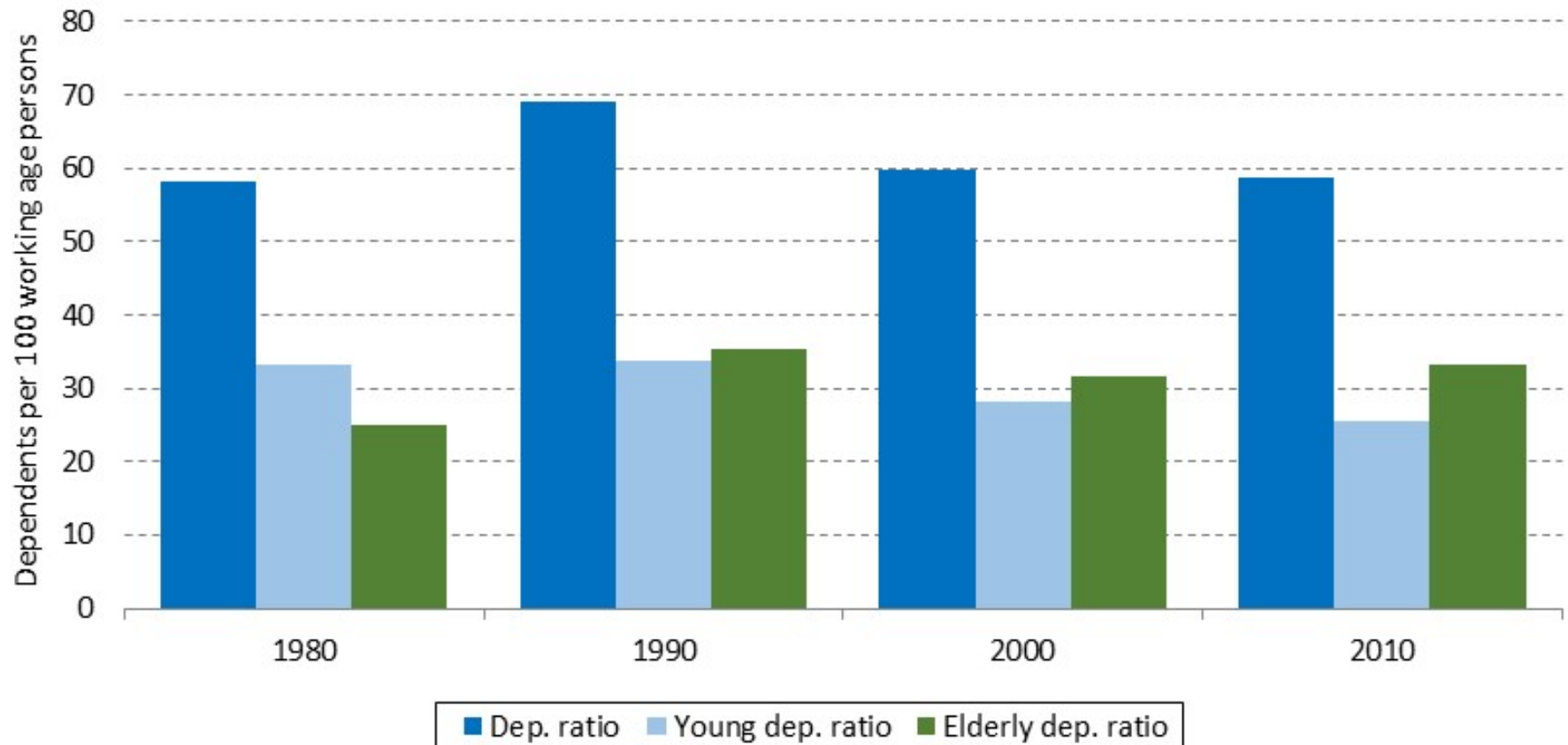


**Oregon—Age Specific Survival Rates (2000 to 2010)**



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

**Tillamook County—Dependency Ratio**



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

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

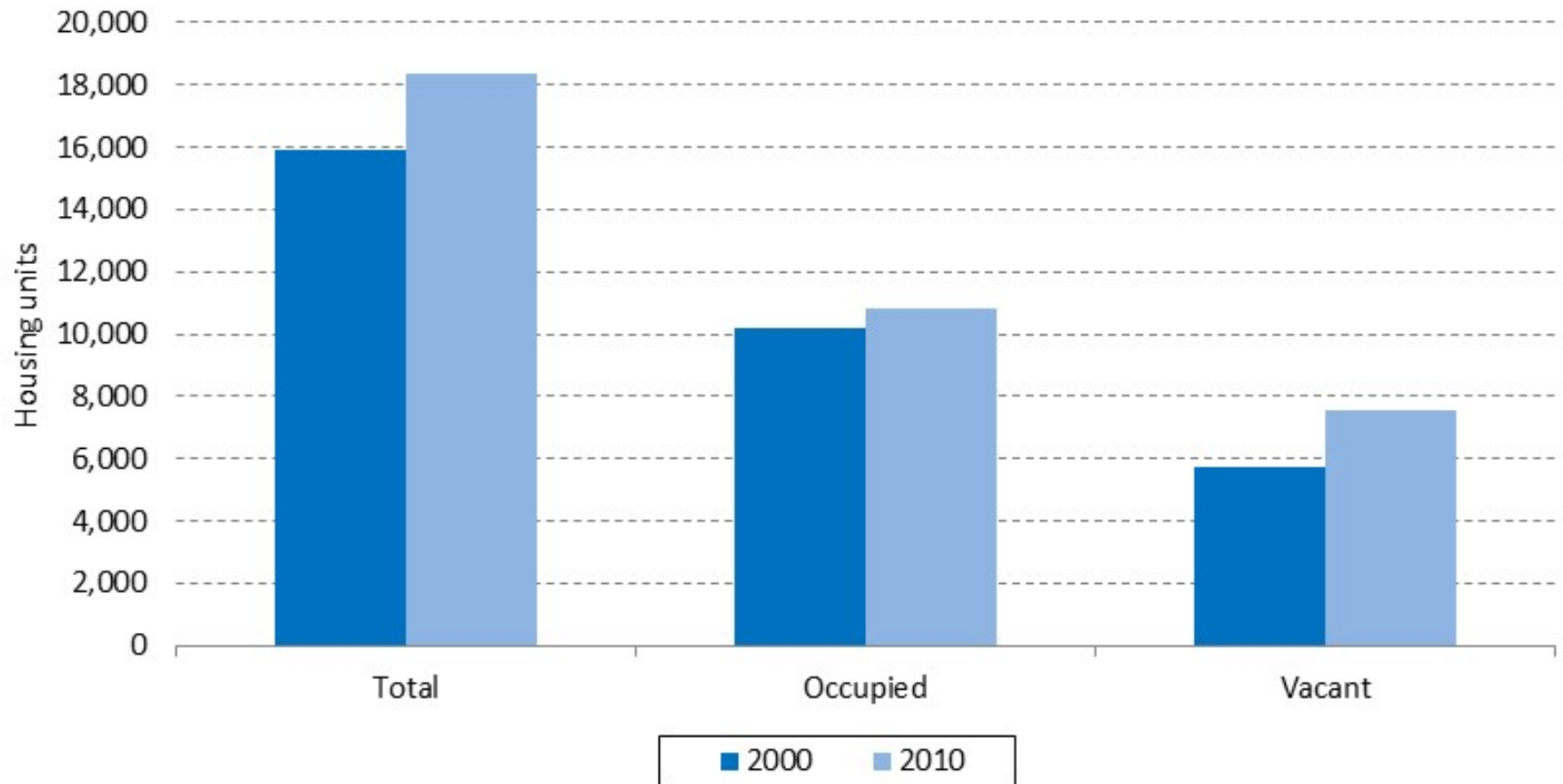


## Tillamook County—Hispanic or Latino and Race (2000 and 2010)

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
<i>Total population</i>	24,262	100.0%	25,250	100.0%	988	4.1%
Hispanic or Latino	1,244	5.1%	2,284	9.0%	1,040	83.6%
Not Hispanic or Latino	23,018	94.9%	22,966	91.0%	-52	-0.2%
White alone	22,086	91.0%	21,902	86.7%	-184	-0.8%
Black or African American alone	42	0.2%	62	0.2%	20	47.6%
American Indian and Alaska Native alone	273	1.1%	220	0.9%	-53	-19.4%
Asian alone	154	0.6%	223	0.9%	69	44.8%
Native Hawaiian and Other Pacific Islander alone	50	0.2%	56	0.2%	6	12.0%
Some Other Race alone	9	0.0%	25	0.1%	16	177.8%
Two or More Races	404	1.7%	478	1.9%	74	18.3%

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

**Tillamook County—Housing Units (2000 and 2010)**



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

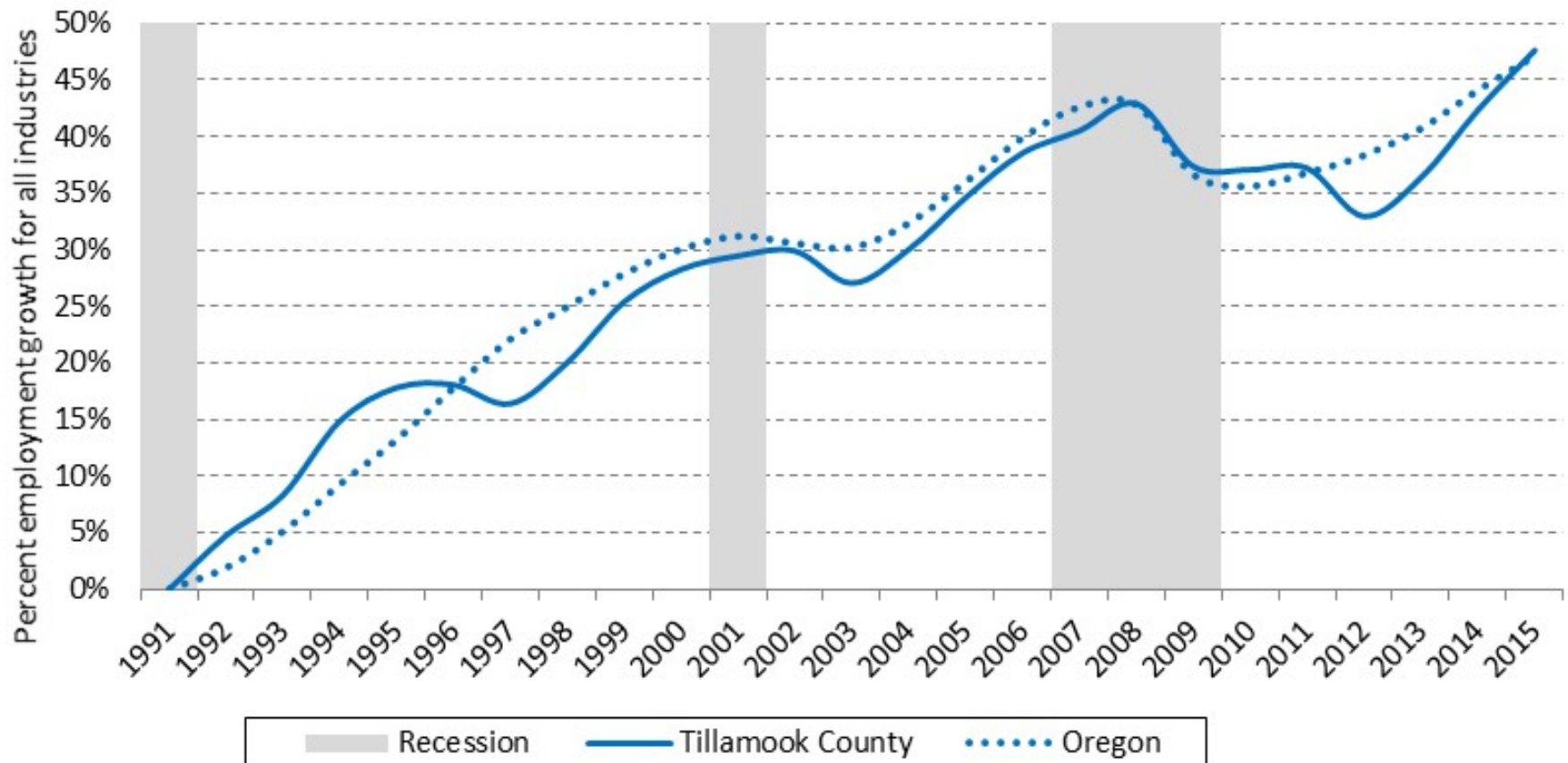
## Tillamook and Incorporated Cities—Persons Per Household (PPH), Occupancy Rate, Percent Group Quarters, and Percent Seasonal Housing (2000 and 2010)

	Persons Per Household (PPH)		Occupancy Rate		Percent Seasonal Housing		Percent Group Quarters	
	2000	2010	2000	2010	2000	2010	2000	2010
<i>Tillamook County</i>	2.3	2.3	64.1%	59.0%	28.9%	33.8%	1.9%	1.9%
Bay City city	2.3	2.4	85.1%	84.0%	8.5%	10.8%	0.0%	0.0%
Garibaldi city	2.0	2.0	74.7%	73.3%	17.5%	19.5%	1.1%	1.9%
Manzanita city	1.8	1.9	28.5%	24.5%	67.1%	72.0%	0.0%	0.3%
Nehalem city	2.4	2.3	69.4%	74.8%	19.8%	20.0%	0.0%	0.0%
Rockaway Beach city	2.0	2.0	40.4%	35.6%	51.0%	56.4%	0.2%	0.0%
Tillamook city	2.5	2.4	92.6%	90.6%	0.7%	0.8%	0.4%	0.6%
Wheeler city	2.0	1.9	72.1%	68.2%	21.3%	20.8%	10.7%	10.9%
Unincorporated	2.4	2.4	65.6%	60.2%	27.3%	32.3%	2.1%	2.1%

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

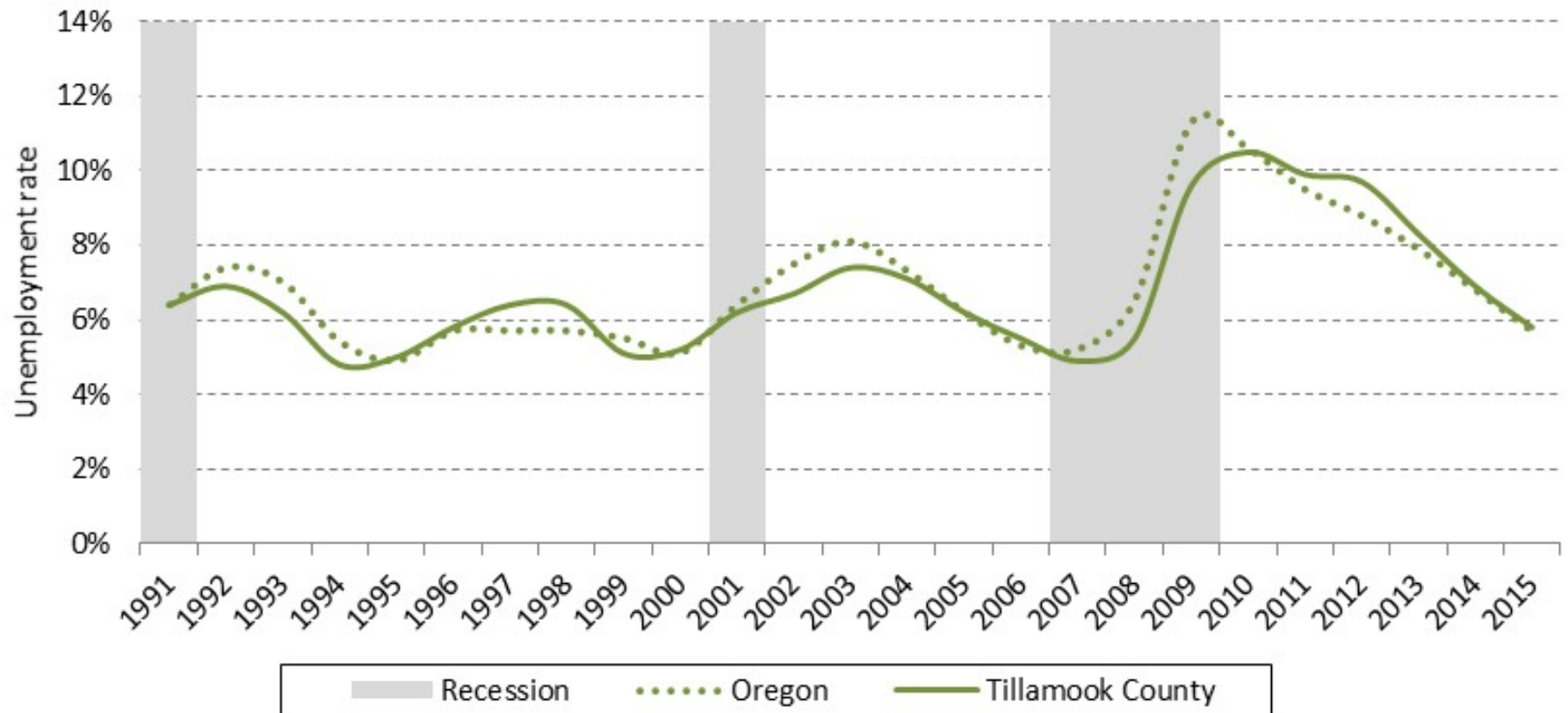
Note: Percent Seasonal Housing is the proportion of total housing units in 2000 and 2010 that are identified as vacant “for seasonal, recreational, or occasional use.”

**Tillamook 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).

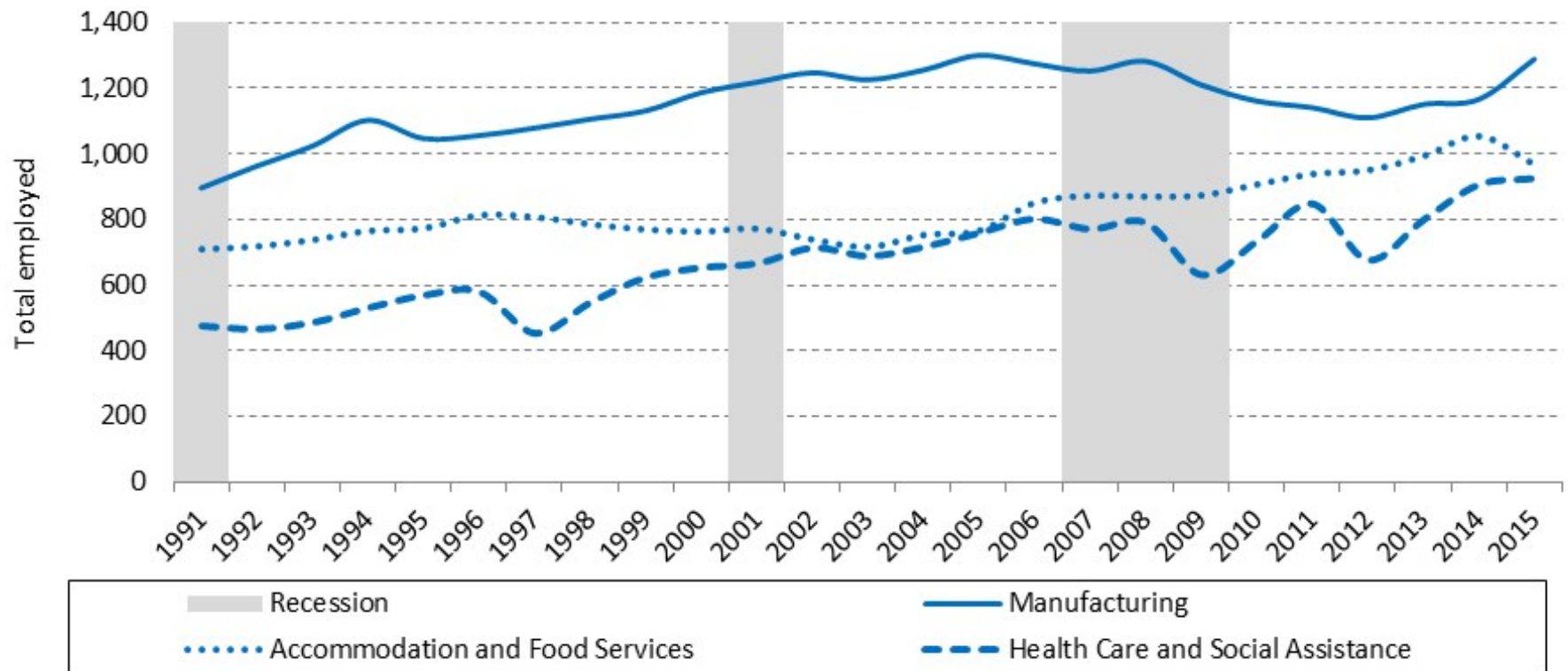
**Tillamook County and Oregon—Annual Unemployment Rate (1991 to 2015)**



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.



**Tillamook County—Top Three Industries by Employment in First Quarter of 2015**



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).  
Note: The quarterly employment data used in this chart is not seasonally adjusted.

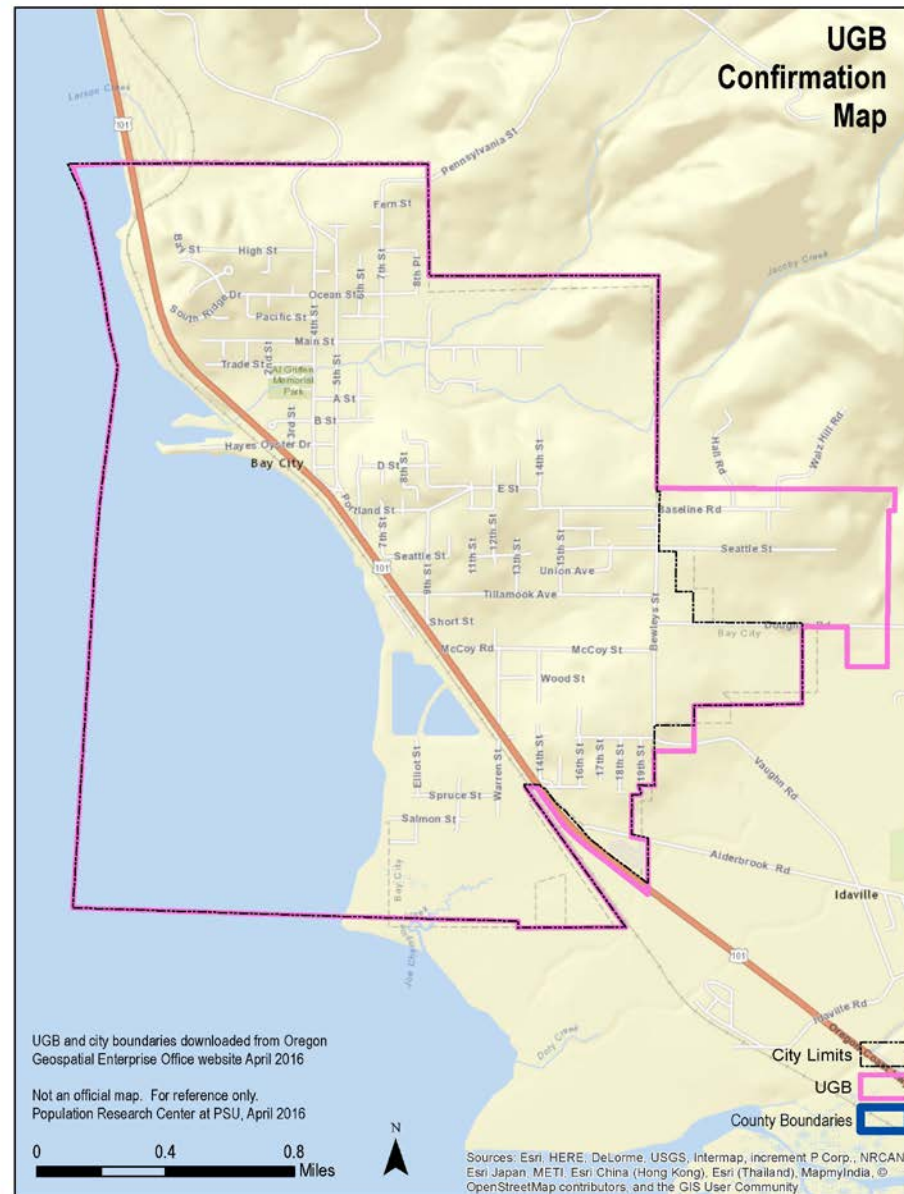
# Local Input and Additional Information

- Questions?
- Discussion time



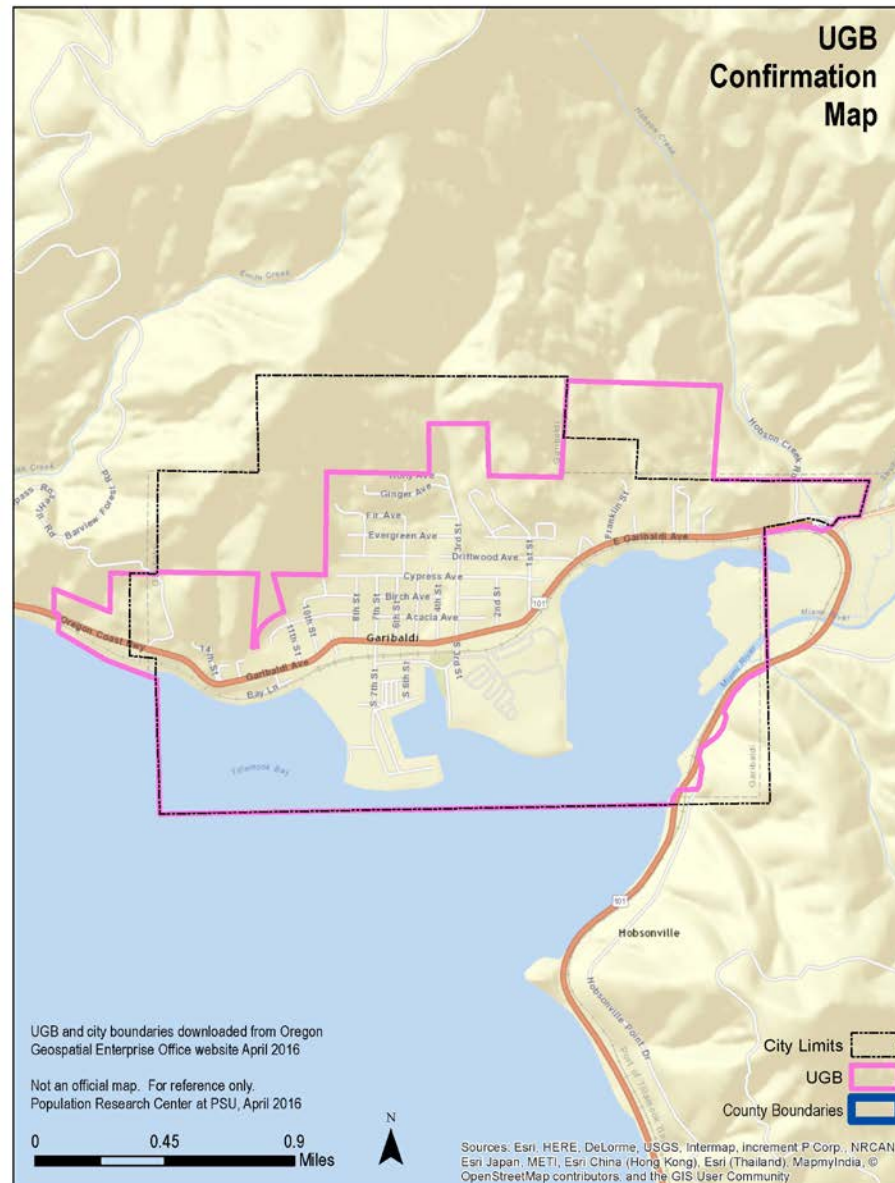
# Tillamook County UGBs

## BAY CITY



Confirmed by City

## GARIBALDI



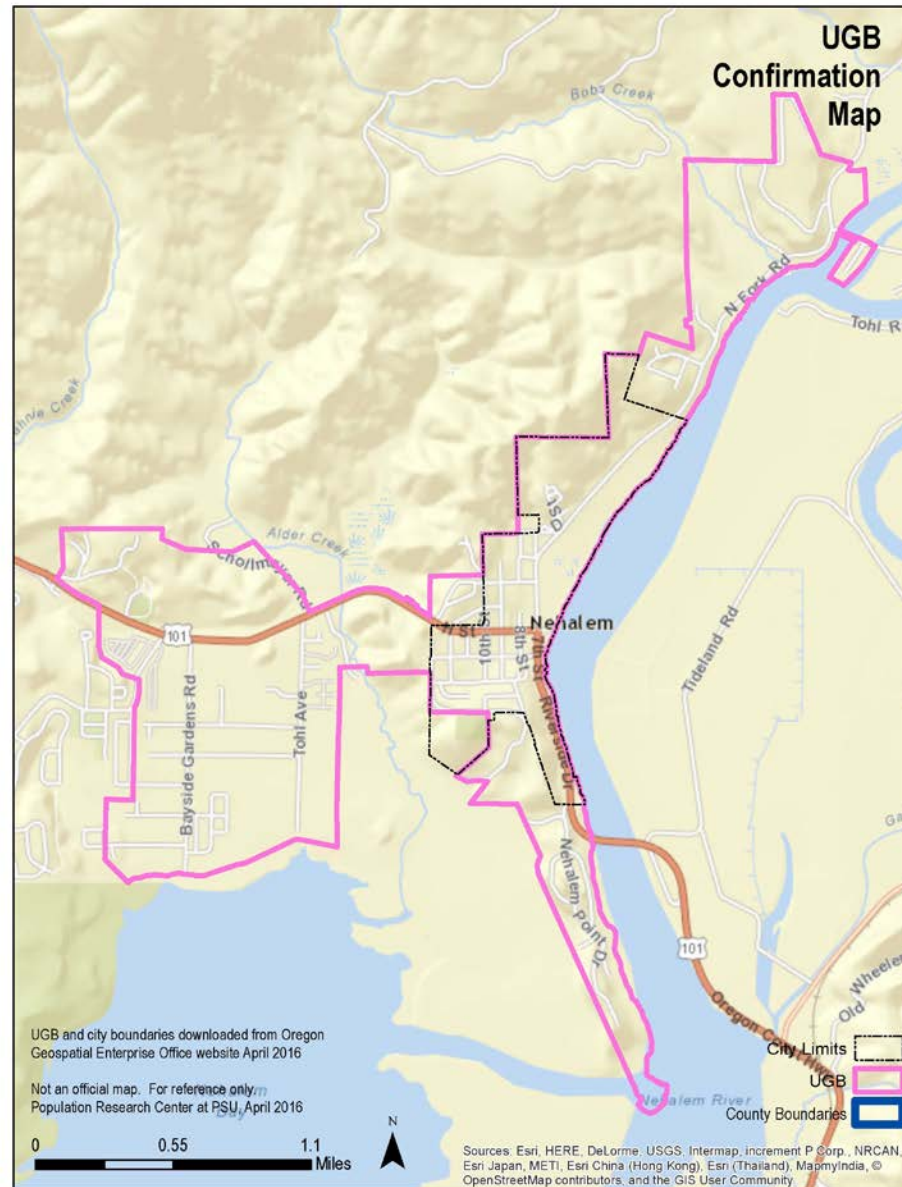
Confirmed by City

**MANZANITA**



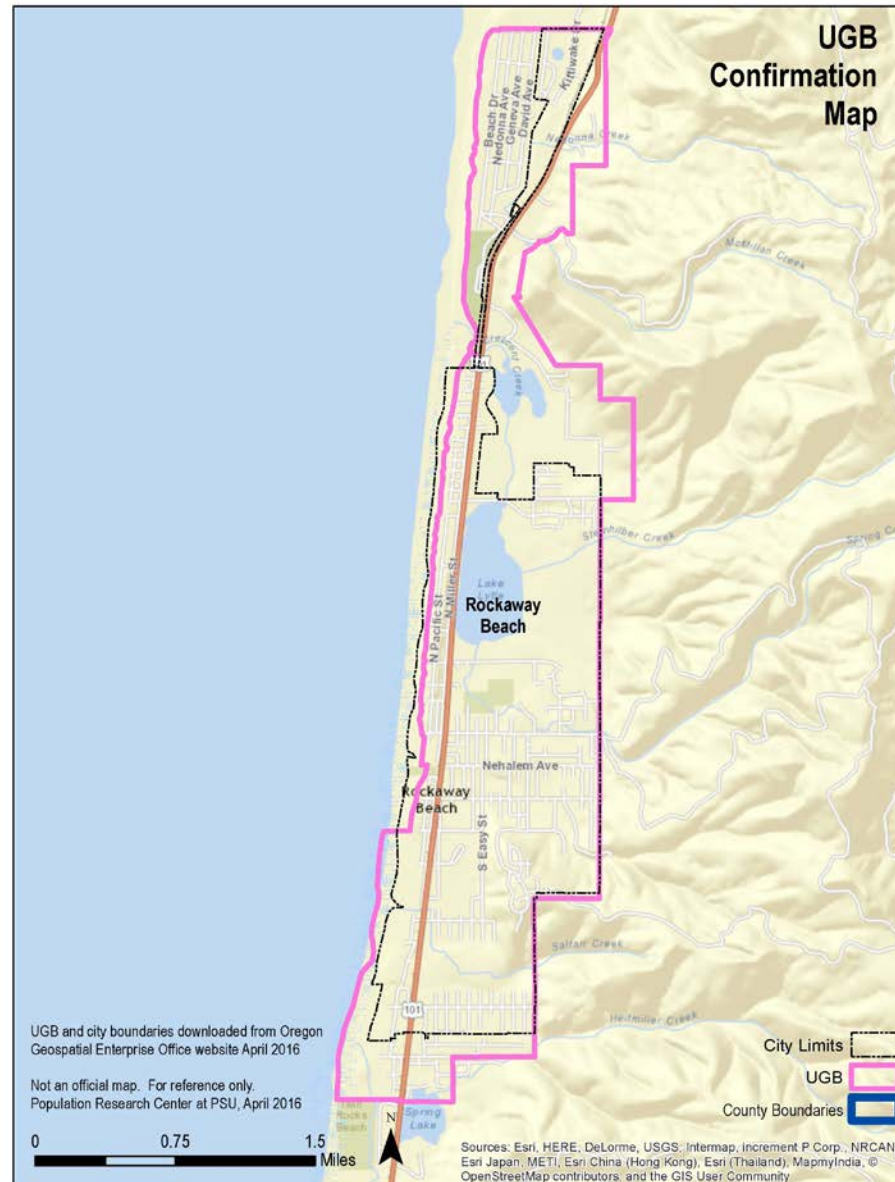


## NEHALEM



Confirmed by City

## ROCKAWAY BEACH

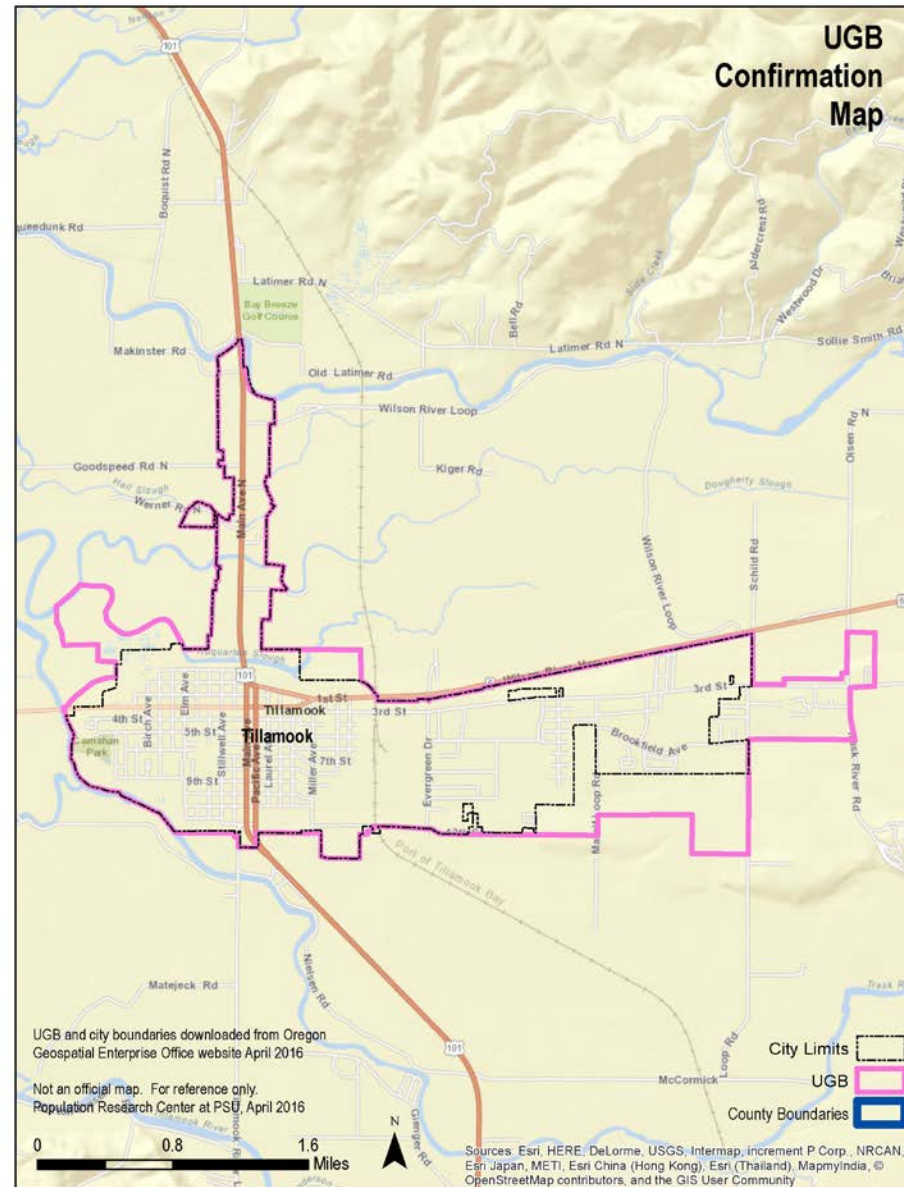


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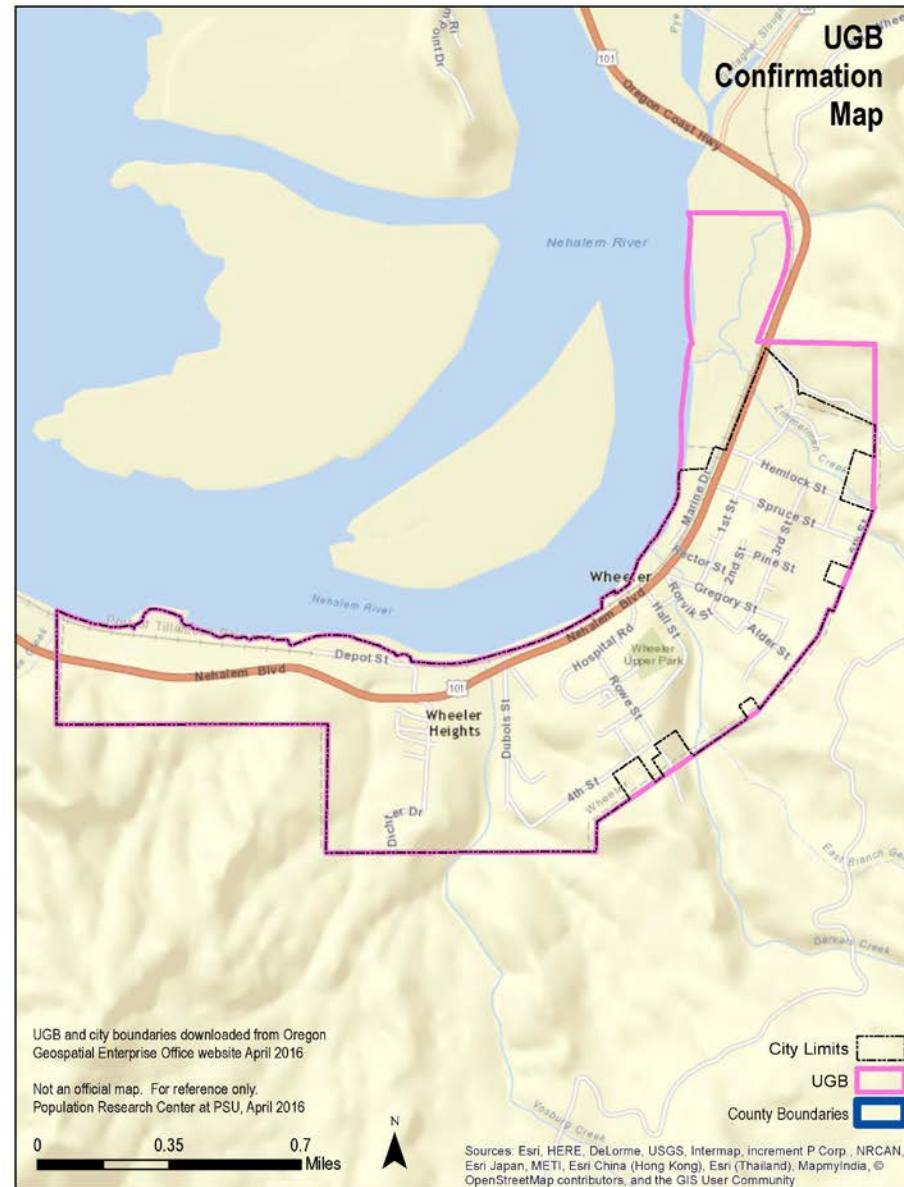


## TILLAMOOK

Confirmed by City



## WHEELER



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