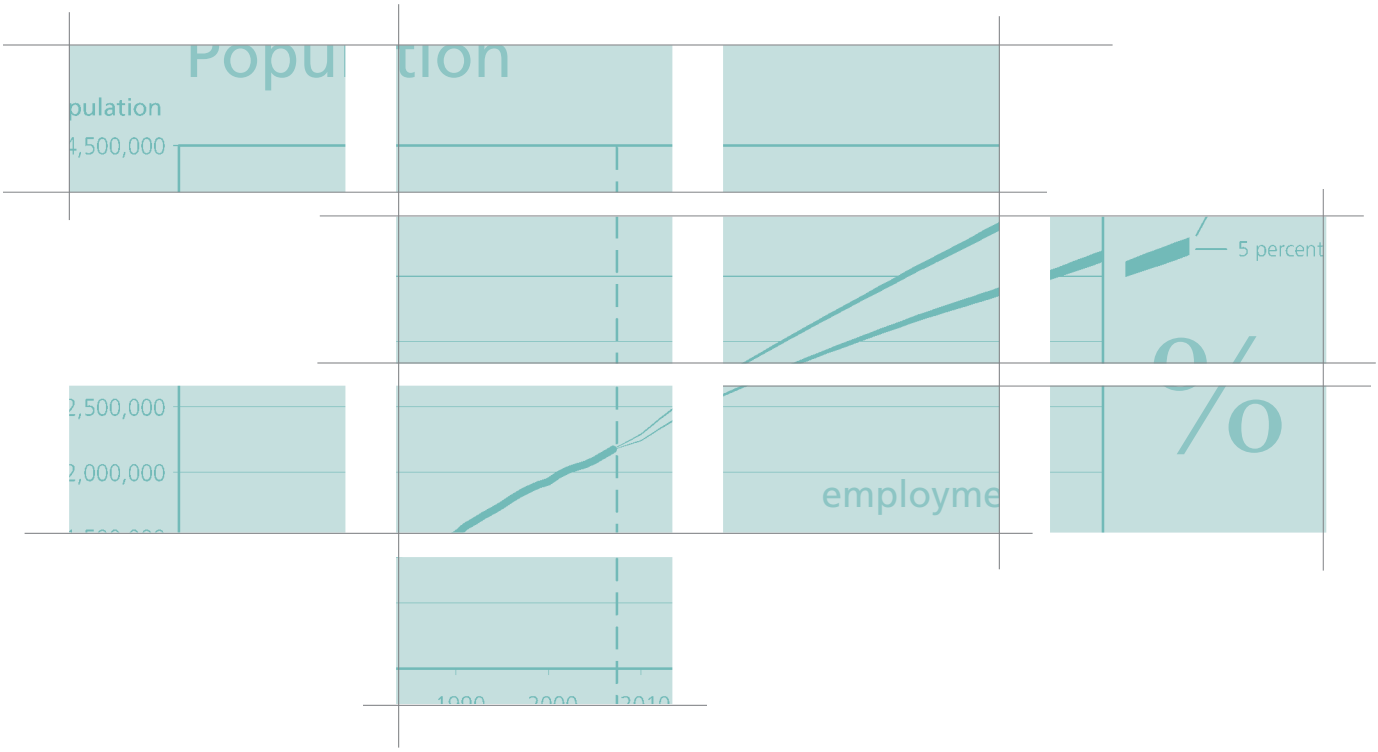



EXECUTIVE SUMMARY

# 20 and 50 year

## Regional population and employment range forecasts

**March 2009 draft**

Metro | *People places. Open spaces.*

## PURPOSE OF THE 2030 FORECASTS

Oregon land use laws require that Metro maintain a supply of buildable land inside the urban growth boundary to accommodate estimated housing needs for twenty years. Metro fulfills a similar role in determining whether or not there is adequate capacity for employment. This draft 2030 forecast is a necessary step towards Metro's compliance with these requirements and is the determination of how much growth is expected. A separate analysis of the region's capacity to accommodate growth is included in the urban growth report.

## PURPOSE OF THE 2060 FORECASTS

The 2060 forecast is intended to inform the urban and rural reserves process. Metro and Clackamas, Multnomah and Washington counties are jointly leading this innovative regional effort to study and designate areas outside of the current urban growth boundary that are suitable for accommodating future population and job growth over the next 40 to 50 years (urban reserves) as well as areas that should be preserved for agriculture, forestry and natural resources (rural reserves).

A draft 2060 forecast was released by Metro in May 2008; the current forecast updates that release by starting with an updated 2030 forecast and responding to public comments and questions on the 2030 to 2060 component.

## DISCLAIMER

These forecasts illustrate a range of possible population and employment outcomes and trends for the greater Portland metropolitan area over a 50-year period. These forecasts are intended to inform local and regional public policy discussions and do not represent any policy agenda or policy decision of the Metro Council.

## OVERVIEW

To inform the regional discussion of growth management choices and the possible implications of those choices, Metro has developed a range population and employment forecast. This forecast is derived from national economic and demographic information and is adjusted by Metro based on regional growth factors.

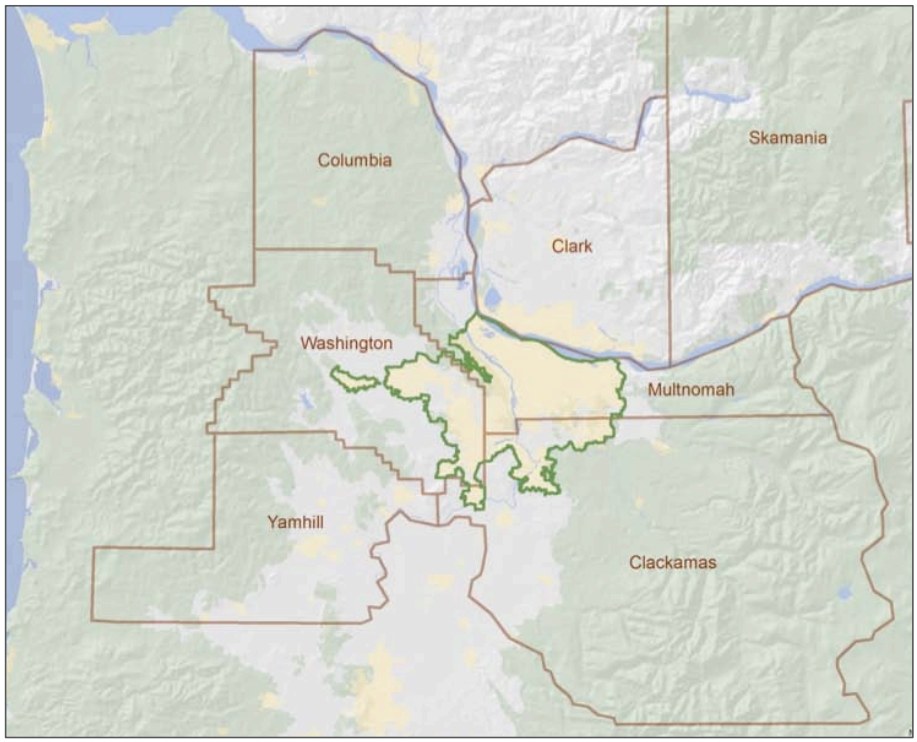
The forecasts cover the seven-county Portland-Beaverton-Vancouver Primary Metropolitan Statistical Area (PMSA), as defined by the U.S. Office of Management and Budget. It does not predict where within the statistical area future population and jobs may locate nor does it determine what portion may locate within the Metro urban growth boundary. Possible trends will be discussed fully in the urban growth report, to be released in Spring 2009.

The region must make a number of choices about how it will accommodate forecasted growth and what the possible implications of those choices may be.

**Regional choices:** Is the region willing and able to provide the necessary public facilities and services, governance and investments to accommodate population and employment growth and support the creation of sustainable, vibrant communities?

**Local choices:** How willing and able are the region's cities, counties and public service providers to make targeted investments and public improvements in their urban centers, transportation corridors and employment areas in order to support long-term population and employment growth?

**Map 1: Portland-Beaverton-Vancouver OR-WA PMSA**




*Geographic extent of the regional forecast encompasses seven counties. The Metro urban growth boundary comprises a fraction of the land area of the region.*

## SUMMARY FORECAST RESULTS

Population and employment forecast ranges are provided for the years 2030 and 2060 for the entire seven-county Portland-Beaverton-Vancouver Primary Metropolitan Statistical Area, which consists of Clackamas, Columbia, Multnomah, Washington and Yamhill counties in Oregon as well as Clark and Skamania counties in Washington. Though this forecast does not predict where growth will occur within the seven-county statistical area, it is safe to say that not all of it will be within Metro's boundary.

The forecast indicates a 90 percent chance that the population of the seven-county statistical area in 2030 will be between 2.9 and 3.2 million people. For 2060, the forecast projects a 90 percent probability that the population of the same area will be between 3.6 and 4.4 million people. In 2000, the population was 1.9 million people.

On the employment side, the forecast indicates a 90 percent chance that there will be between 1.3 and 1.7 million jobs in the statistical area in 2030 and a 90 percent chance that there will be between 1.7 million and 2.4 million jobs in the same area in 2060. In 2000, there were approximately 973,000 jobs.

Where the region's population and employment numbers ultimately land will be affected by several factors. They include varying conditions in the local and global economies, changing population and workforce demographics, and policy decisions and investments made in local communities that may attract particular types of population and employment growth to certain areas of the region.

### Next steps

**Spring 2009:** Metro will release a preliminary urban growth report with analyses of the region's capacity to accommodate the next twenty years of residential and employment growth within the existing urban growth boundary. The 2030 forecast informs the preliminary capacity analyses. The urban growth report will discuss what share of the forecasted growth may happen within the urban growth boundary. Metro will also release a final 2060 forecast that informs the designation of urban reserves.

**Summer 2009:** Regional leaders will engage in a more specific discussion of the long-term aspirations of local communities and the capacity assumptions in the preliminary analyses, culminating in a draft urban growth report to be issued in September 2009.

**Fall 2009:** The Metro Council will, with Clackamas, Multnomah and Washington counties, adopt urban and rural reserves. Urban reserves will be informed by the 40-50 year population and employment range forecast.

**December 2009:** The Metro Council will accept a 2030 population and employment range forecast and submit a final urban growth report to the Oregon Land Conservation and Development Commission that describes any capacity gap to be addressed in 2010.

**2010:** Local and regional governments will continue to implement policies and investments to create and enhance great communities while accommodating anticipated growth. Metro Council will submit plans to accommodate at least 50 percent of any 20-year capacity need to LCDC.

**2011:** If any additional 20-year capacity need remains, the Metro Council will consider urban growth boundary expansions into designated urban reserves.

## ABOUT THE RANGE

### Why use a range instead of a point forecast?

To plan for the future, it is important to have an idea what the future might look like. In making any prediction, it is necessary to acknowledge uncertainty. Predictions that declare absolute certainty can be regarded with skepticism.

Weather forecasting is an example. Which forecast is more trustworthy and provides more useful information for planning?

*Five days from today, it will be sunny.*
*or…*
*Five days from today, there is a 65 percent chance of sunny weather.*

If you rely on the first forecast, you may end up stuck in the rain without an umbrella. If you rely on the second forecast, you have the opportunity to consider whether or not it is worth taking an umbrella along.

Forecasting population and employment growth and subsequently making land use, transportation, and investment decisions is a similar exercise, though with higher stakes. The use of a range forecast allows for the consideration of a number of possible outcomes, rather than only planning for one future. Using a range forecast is more likely to result in growth management decisions that result in adaptable, resilient communities that are able to adjust course when conditions change. This ability to be adaptable is more critical than ever considering today's volatile fuel prices, an economic crisis of historic proportions, and the need to take significant and immediate actions to reduce greenhouse gas emissions.

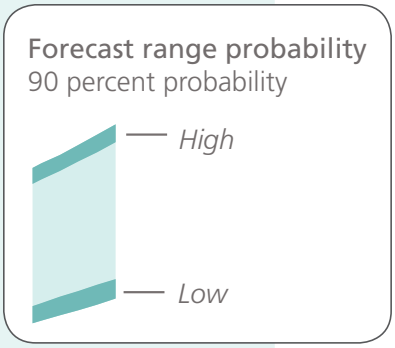
### What does the range mean?

As with a weather forecast, this population and employment range forecast is expressed in terms of probability. The methodology for producing the range forecast is described in more detail later in this document.

**Low end of range:** There is a five percent chance that actual growth will be less than or equal to the low end of the range.

**High end of range:** There is a 95 percent chance that actual growth will be less than or equal to the high end of the range.

Stated differently, there is a 90 percent chance that growth will occur within the outer bounds of the forecasted range.



## What kinds of questions should we consider in light of the range forecast?

The range forecast prompts questions for policy makers to consider such as:

- What are the risks of planning for the high or low end of the forecast? Are there different risks associated with planning for land use, transportation investments or other infrastructure system investments?
- How might the success or failure of efforts to preserve the region's livability push population and employment growth higher or lower within the forecasted range?
- How might particularly effective or ineffective economic development strategies push population and employment growth higher or lower within the forecasted range?
- The range forecast does not account for a number of unknowns such as the possibility of climate change refugees – people who may be displaced by climate change. Future climate conditions could result in additional people entering or leaving the region. How might this additional uncertainty influence how we make decisions?

## What are some of the variables that affect the forecast?

Some of the basic variables that inform this forecast are birth, death and immigration rates and anticipated economic conditions. The regional economy is increasingly subject to global and national forces that are beyond the region's influence and are not easily quantifiable through standard economic tools. Economic globalization affects the flow of trade, foreign exchange rates, and the cost and availability of foreign and domestic skilled and unskilled labor. Population growth in the region continues to reflect the region's status as one of the nation's more desirable metropolitan areas; in the early part of this decade, our region's population continued to grow even as employment stagnated during the recession.

These are but a few examples of the many factors that will ultimately affect both population and employment trends in the region.

## How has recent global economic turmoil influenced the forecast?

Our region is not immune to the recent recession and other economic distress. In the short term, it is expected that job growth will slow in our region. Employment sectors that tend to be most sensitive to downturns in business cycles include construction, manufacturing and professional business services. However, by the year 2020, growth is expected to have returned to the average long-term trend (compared to older forecasts).

### Managing in the fog

A recent article in *The Economist* refers to forward-thinking companies like Lego that use range forecasts instead of point forecasts. The article states that scenario planning, which considers a range of possible outcomes, is all the more important during uncertain times since it allows for contingency planning and adaptability.

*The Economist (February 26, 2009) Managing in the Fog. Accessed online on March 5, 2009 at http://www.economist.com/business/displaystory.cfm?story_id=13184837*

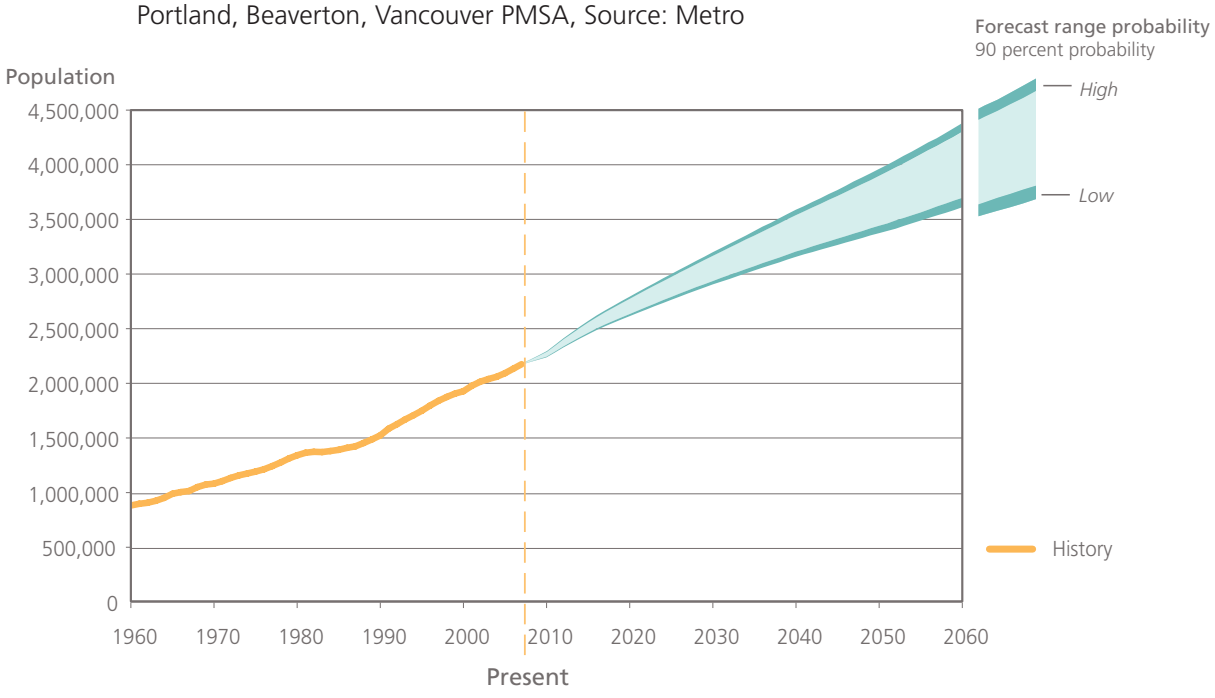
## POPULATION RANGE FORECAST RESULTS

In the year 2000, the population of the seven-county statistical area was about 1.9 million people. This forecast estimates that, by the year 2030, the population could grow to a total of 2.9 to 3.2 million people. By the year 2060, the population could grow to a total of 3.6 to 4.4 million people.

**Table 1: Population range forecast and annual percentage rate change from year 2000**
Portland, Beaverton, Vancouver PMSA, Source: Metro

| Year | Low end of range | High end of range |
|---|---|---|
| 2000 *1,927,881 Actual* | | |
| 2030 | 2,903,300<br>1.37% APR | 3,199,500<br>1.70% APR |
| 2060 | 3,609,300<br>1.05% APR | 4,376,100<br>1.38% APR |

**Figure 1: 2007 – 2060 Population forecast**
Portland, Beaverton, Vancouver PMSA, Source: Metro



## HOUSEHOLD RANGE FORECAST RESULTS

Using forecasted household sizes, the population forecast is translated into a household range forecast.

In the year 2000, there were approximately 742,300 households in the seven-county statistical area. This forecast estimates that, by the year 2030, there could be between 1.2 to 1.3 million households. By the year 2060, there could be between 1.5 to 1.8 million households.

**Table 2: Household forecast and annual percentage rate change from year 2000**
Portland, Beaverton, Vancouver PMSA, Source: Metro

| Year | | Low end of range | High end of range |
|---|---|---|---|
| 2000 | *742,300 Actual* | | |
| 2030 | | 1,181,300<br>1.56% APR | 1,301,800<br>1.89% APR |
| 2060 | | 1,478,400<br>1.15% APR | 1,792,500<br>1.48% APR |

**Figure 2: 2007 – 2060 Household forecast**
Portland, Beaverton, Vancouver PMSA, Source: Metro

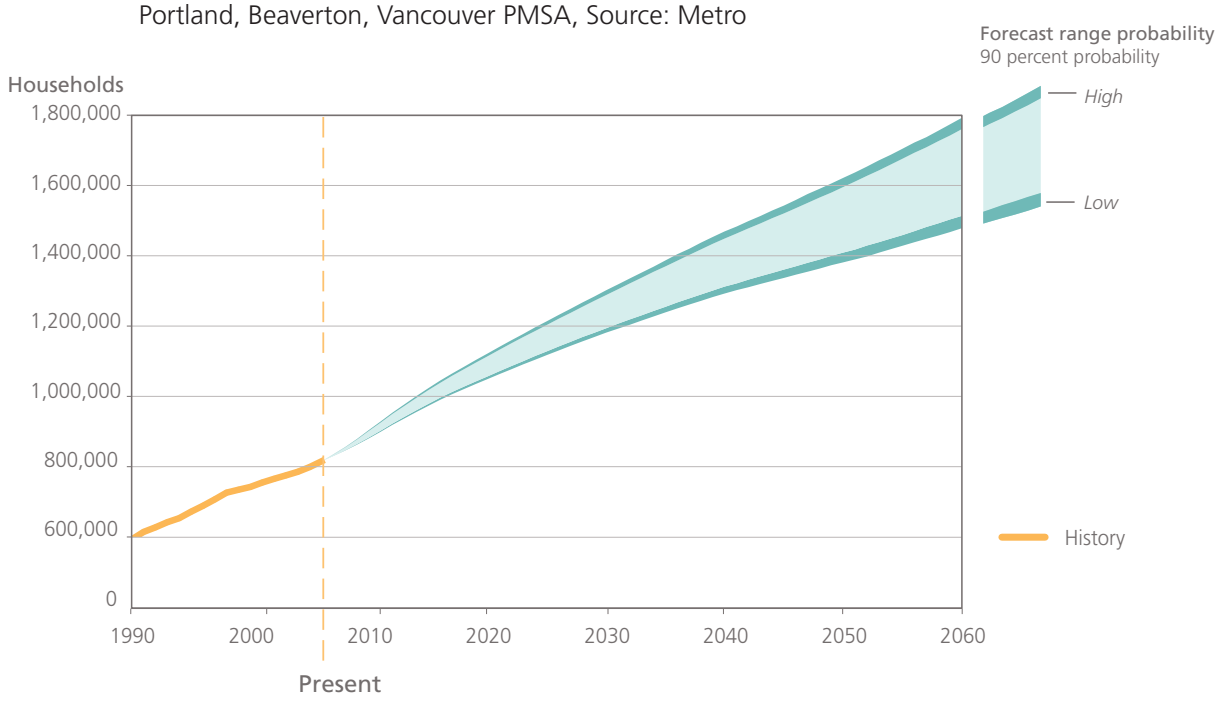
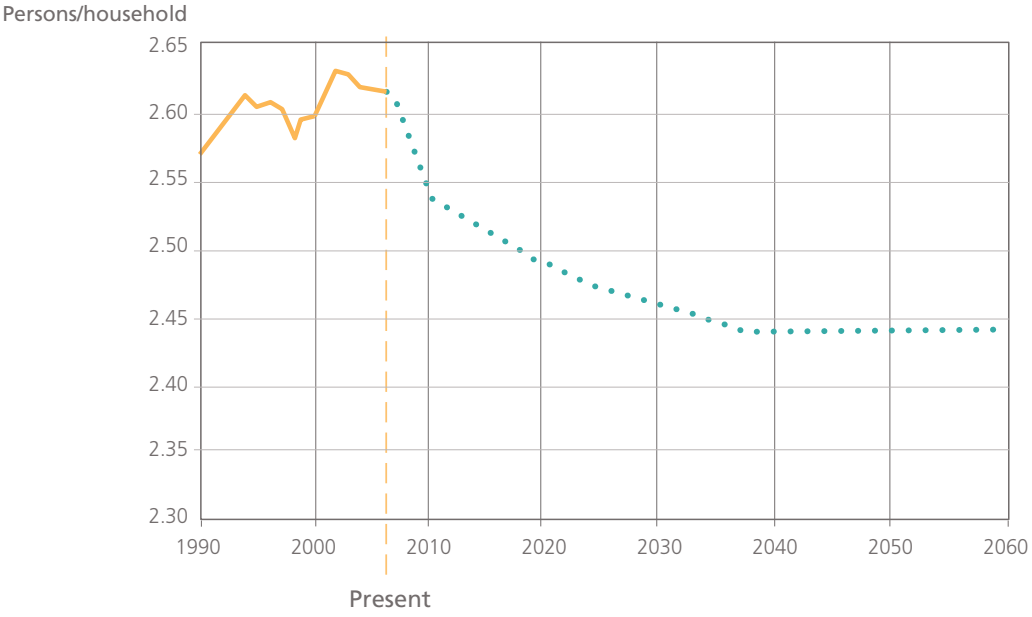


**Figure 3: 2007 – 2060 Average household size forecast**
Portland, Beaverton, Vancouver PMSA, Source: Metro




## What are some expected demographic changes?

The region's population is forecasted to be distributed fairly evenly among different age groups – a trend that is also predicted for the United States as a whole. This is a change from the past when there were progressively fewer people at more advanced ages. One implication of this anticipated change is that a greater percentage of households will be older and without children, resulting in a lower average household size. More demographic detail is presented in the full forecast report.

## EMPLOYMENT RANGE FORECAST

This forecast also predicts how many jobs will be in the seven-county statistical area in the future. As with the population and household forecasts, this forecast does not predict where these jobs will be within the seven-county statistical area. Not all forecasted jobs will be within Metro's jurisdiction.

In the year 2000, the number of jobs in the seven-county statistical area was 973,230. This forecast estimates that, by the year 2030, jobs could grow to a total of 1.3 to 1.7 million. By the year 2060, jobs could grow to a total of 1.6 to 2.4 million.

Economic lows and highs are to be expected at times throughout the course of the analysis period; this forecast focuses on the cumulative, long-term trends.

**Table 3: Employment range forecast and annual percentage rate change from year 2000**
Portland, Beaverton, Vancouver PMSA, Source: Metro

| Year | | Low end of range | High end of range |
|---|---|---|---|
| 2000 | *973,230 Actual* | | |
| 2030 | | 1,252,200<br>0.84% APR | 1,695,300<br>1.87% APR |
| 2060 | | 1,648,400<br>0.88% APR | 2,422,900<br>1.53% APR |

**Figure 4: 2007 – 2060 Employment forecast (nonfarm)**
Portland, Beaverton, Vancouver PMSA, Source: Metro

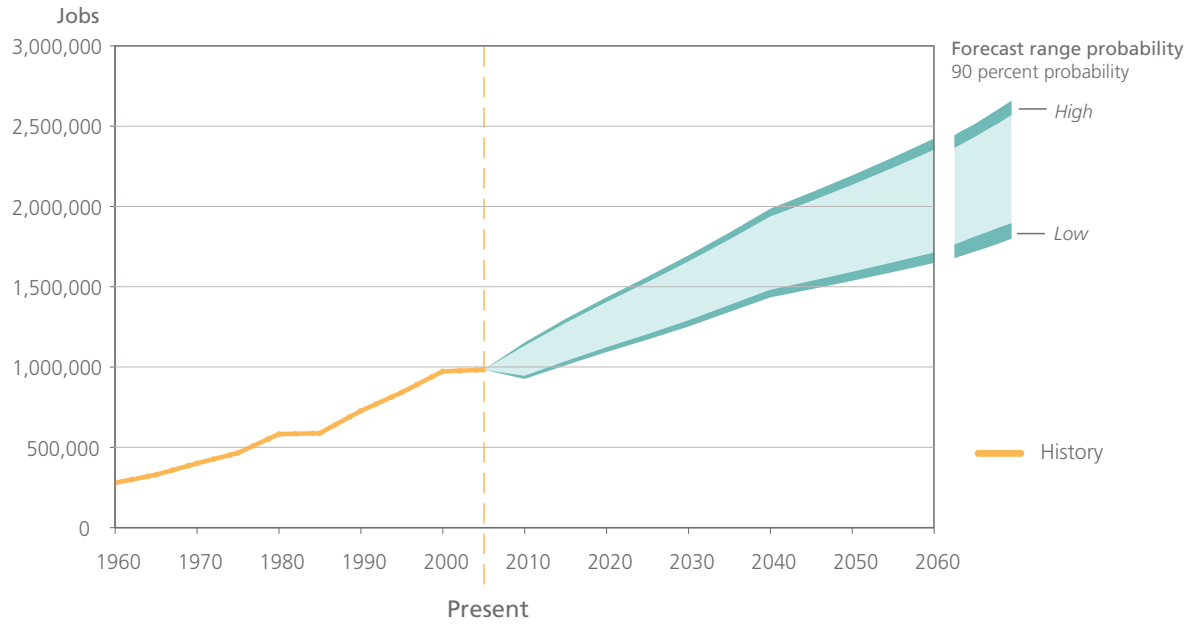
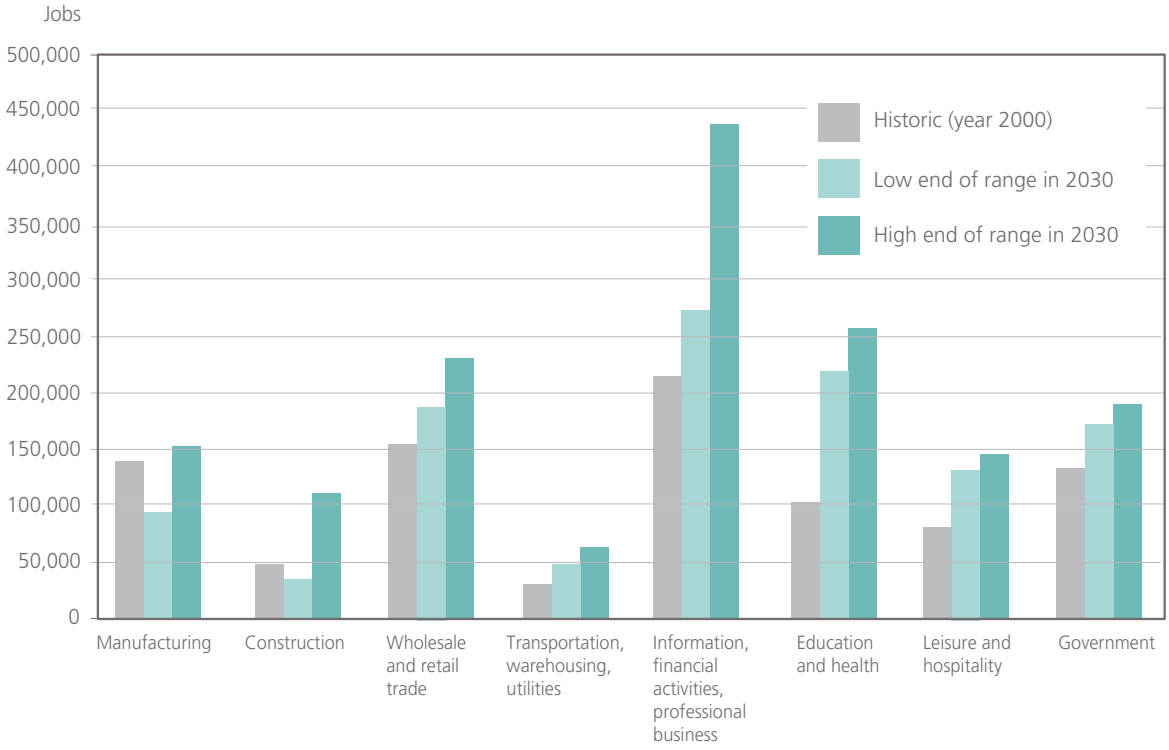


**Figure 5: 2007– 2060 Employment forecast by sector**
Portland, Beaverton, Vancouver PMSA, Source: Metro




## How might the mix of employment in 2030 compare with 2000?

As in the past, the information, financial activities and professional business sectors are forecasted to make up a substantial share of total future employment (about one-quarter of all jobs) in the seven-county statistical area.

Employment sectors that serve the resident population (e.g. the health and education and construction sectors) tend to show growth that is commensurate with overall population growth. From the years 2000 to 2030, employment in the education and health sectors is predicted to increase by 117 percent (low end of forecast range) to 154 percent (high end of forecast range).

The manufacturing sector is forecasted to see relatively little growth as many of these jobs move overseas. It is likely that the manufacturing jobs that do remain will be those that require specialized training and command competitive wages.

## ABOUT THE PROJECTIONS

### How Metro produced the projections

**Economic trend forecast:** Metro first produces the "econometric trend" forecast through 2040 using its own state-of-the-art regional econometric model. This model has been thoroughly vetted by an independent panel of economic and demographic experts from across the U.S. It relies on national growth factors obtained from the economic forecasting firm Global Insight, Inc., as well as birth and death rates derived from the U.S. Census Bureau's most current "middle series" fertility and survival rates. Both the national economic data and national demographic forecast data are then regionalized based on regional growth factors; net migration into the region pegged to relative differences between regional and national economic growth factors; and actual birth and death rates derived from local vital statistics. Population and migration trends are directly linked to specific economic sectors modeled in the regional econometric model, so employment trends and population growth are dependent upon one another.

**Range forecast:** The economic trend forecast assumes certain trends for birth rates, death rates and migration rates. Yet there is a degree of uncertainty surrounding those trends. To account for that uncertainty, 10,000 scenarios (*Monte Carlo simulations*) were conducted to determine possible population and employment outcomes if these rates were to differ to a greater or lesser degree from the assumed trends. Using this method, the probability that actual population and employment growth in 2030 and 2060 will be less than or equal to a certain projected or forecasted value was calculated. There is a 95 percent chance that actual growth will be less than or equal to the upper end of the range and a five percent chance that actual growth will be less than or equal to the bottom end of the range.

### Extrapolating the forecast beyond the year 2040

Global Insight does not produce a U.S. macroeconomic outlook that extends more than 30 years into the future. Consequently, to complete the "econometric trend" forecast to the full 2060 horizon, the post-2040 population trend from the regional econometric forecast has simply been extrapolated forward to converge with the trend growth rate predicted for U.S. population.

The projected employment trend to 2040 is also derived from Metro's regional econometric model and driven by the Global Insight U.S. macroeconomic outlook. Post-2040 employment projections are extrapolated based on a stable employment-population ratio.

### How do these projections compare with other projected growth rates?

To put Metro's forecast into context, Table 4 summarizes forecasted annual percentage rates of population growth from several different sources for the entire United States, Oregon, and the Portland metro region. The annual percentage rates of growth are for the 2000 to 2030 time period. This table shows forecasted growth rates increasing as the geography moves from nation to state to region. Of these three geographic scales, forecasted growth rates for the entire United States are the lowest since the large geography includes a variety of urban and rural areas, many of which are forecasted to grow slowly. Forecasted growth rates for Oregon are higher than rates for the United States since the historic trend of coastal states growing faster than interior states is expected to continue. Finally, given that a substantial portion of the Portland metro region is urban, its forecasted growth rates are even higher. Metro's regional forecasts (Table 4) are in keeping with regional forecasts conducted by the Oregon Office of Economic Analysis and Global Insight.

**Table 4: Forecast comparisons**

| **Population growth** **Annual percentage rate 2000 – 2030** | **Geography of forecast** | **Forecast source** | |
|---|---|---|---|
| 0.85% | United States | U.S. Census middle series (2004) | |
| 0.95% | United States | Global Insight (4th quarter, 2008) | |
| 1.14% | Oregon | Global Insight (2008) | |
| 1.16% | Oregon | U.S. Census middle series (2005) | |
| 1.18% | Oregon | OR Office of Economic Analysis (2004) | |
| 1.28% | Portland metro region (3 counties) | OR Office of Economic Analysis (2004) | |
| 1.40% | Portland metro region (7 counties) | Global Insight Regional Service (2008) | |
| 1.37% | Portland metro region (7 counties) | Metro – low end of range (2009) | Current forecast |
| 1.70% | Portland metro region (7 counties) | Metro – high end of range (2009) | |

*Source: US Census as compiled by Metro (for purposes of calculation consistency, the geographic extent of the PMSA used here is the same seven counties even though the PMSA's boundaries have changed over time)*

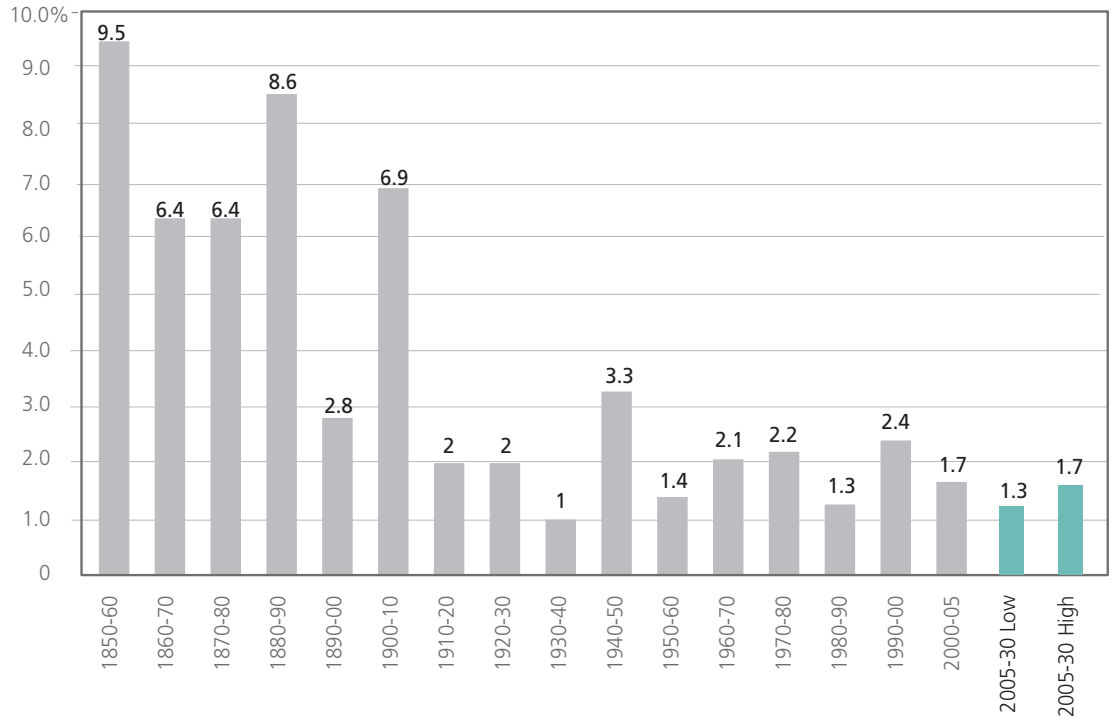
## How do the projections compare to historical growth rates?

Figure 6 helps put the population range forecast in perspective with historical population trends. This forecast indicates slower population growth in the region for the next 50 years than has historically been experienced since the inception of the state.

Population trends have varied widely since 1850. At a glance, the historical data show two distinct periods of growth: first, a hyper-expansion phase that carried through the early pioneer days and ensuing decades through 1910, when the base population of the region was small, and second, a slower pace over the last century, reflecting the maturation of Portland as a metropolitan area.

Population growth in the region averaged 2.44 percent per year during the 20th century. At that rate, it took over 100 years before the region's population reached one million residents in 1966. More recently, the population doubled to about two million people in only 36 years. This doubling of the population occurred at the relatively modest growth rate of 1.9 percent per year. The more recent lower growth rate can be explained both by declining birth rates and the mathematics of compounding growth on a large population base (in absolute terms, the population increase is substantial despite a lower growth rate). Likewise, when forecasting population growth, we start with a large population base and even modest growth rates amount to big increases in population numbers.

**Figure 6: Historic and forecasted population growth rates**



For more information on the forecasts, contact Ken Ray, Metro senior public affairs coordinator, at 503-797-1508 or ken.ray@oregonmetro.gov.

Visit www.oregonmetro.gov/forecasts

Metro | *People places. Open spaces.*

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

**Metro representatives**

Metro Council President – David Bragdon

Metro Councilors

Rod Park, District 1
Carlotta Collette, District 2
Carl Hosticka, District 3
Kathryn Harrington, District 4
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