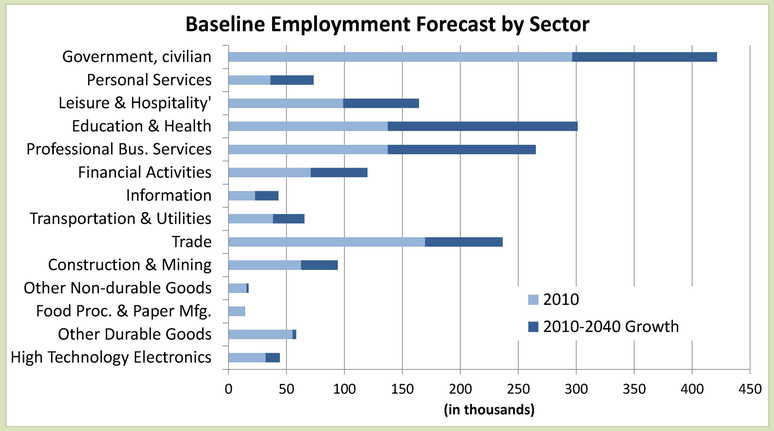
Economic and Land Use Forecasting
Simulating Urban Development – The Regional Econometric Model

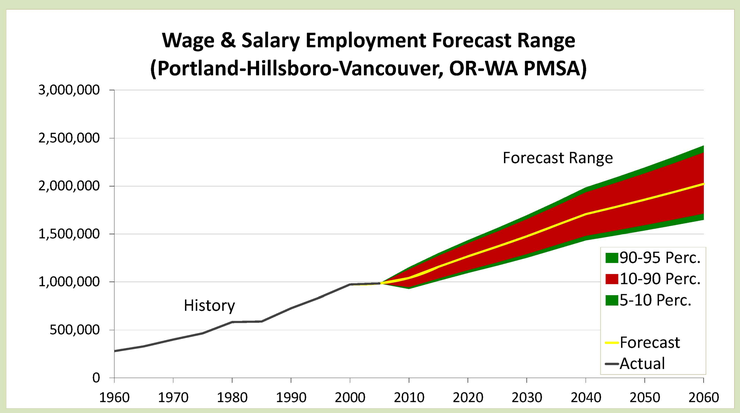
Employment Forecast

The regional econometric model projects job growth for a 7-county metropolitan region across 34 industry groupings. The projections incorporate national data such as:

- components of GDP
- interest rates
- exchange rates
- employment trends
- population
- industry productivity assumptions
- wage rates
- income projections

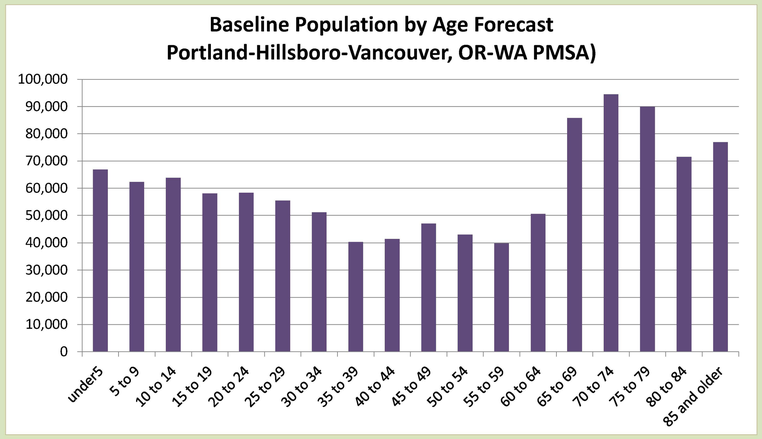


The forecast range for employment is derived for each industry individually from the statistical "forecast error" estimated from each industry employment category. The total employment range is the sum of the industries.

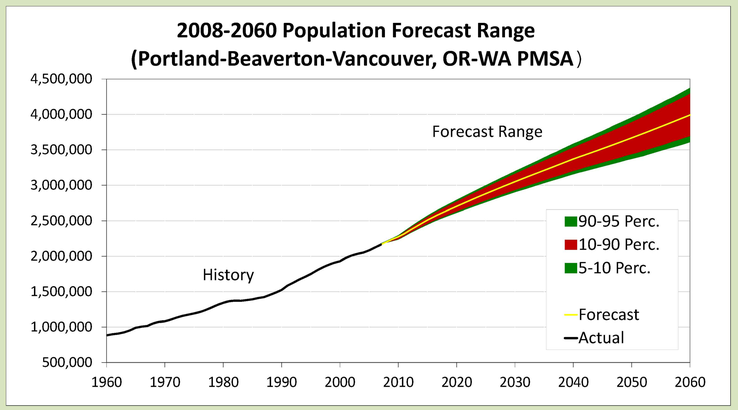


- Green bands: 90% confidence interval for future employment growth
- Red bands : 80% confidence interval for future employment growth

Population Forecast



A traditional cohort-component demographic model is used to generate the baseline regional population forecast. Birth and death rates were derived from the U.S. Census "middle-series" forecast assumptions and calibrated to year 2000-03 regional values. The migration component is generated as a function of relative employment (Portland vs. California and Portland vs. Washington), relative housing affordability (Portland vs. U.S.), and relative wages (Portland vs. U.S.).



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The population range forecast is derived from a probabilistic population model, which overlays a normal distribution on each and every birth, death and migration factor in the cohort-component population model. Using a Monte Carlo simulation approach, the forecast range is derived by sampling the factors of the cohort components and then calculating the resulting population estimate. This sampling is repeated 10,000 times to simulate a range of plausible outcomes.

FAQ

Who uses the regional forecast?
Metro Council and other public officials, policy makers, consultants and the general public

Why does Metro generate the regional forecast? What are its applications?
The forecast is used to gauge future population and employment trends for purposes of land development monitoring. It is utilized in regional transportation plans, corridor planning, urban growth report analysis and UGB administration.

How frequently is the regional forecast updated?
About every 5-years in anticipation of the next required RTP and periodic review/UGR

What happens next with the regional forecast?
The forecast serves as a region-wide land use control total for allocation of employment and demographic information to TAZ. TAZ are traffic analysis zones that are approximately the size of Census block groups.

How accurate is the regional forecast?
As compared to the baseline, population projections deviate from Census estimates between 0.2% to 2.1%. Baseline employment projections deviate from 0.1% up to 9.6% as compared to BLS estimates. The economic turbulence over the last ten years has demonstrated the importance of developing a range forecast that's capable of forecasting a plausible growth range for planning purposes.

For more information, contact:
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