

Growth Management Act
2012 Provisional County Population Projection
Office of Financial Management
April, 2012

I. General Discussion

State and Local Authority: Development of population projections for Growth Management Act (GMA) is a shared responsibility between state and local governments.

As directed by statute RCW 43.62.035, the Office of Financial Management (OFM) prepares a range of possible population growth for Washington's counties to use as they plan for future growth under GMA. These population projections begin at 2010 and extend to 2040, and they are presented by age and gender in five-year increments.

As indicated in RCW 36.70A.110 and RCW 36.70A.115, local officials are responsible for selecting a 20-year GMA planning target that is within the high and low growth projections prepared by OFM. County officials select the county planning target; then within each county, population planning targets for cities, towns, and unincorporated areas are developed among all affected local jurisdictions as part of the city and county planning process.

GMA Projection Process: State law requires that OFM produce GMA county population projections in high, medium, and low series. The medium series is developed by examining all available indicators, utilizing appropriate projection techniques, and applying methodological assumptions based on historical patterns of county growth, stability, or decline. This projection is the one considered most likely to occur based on current information and trends. However, the future does not always follow past trends, and uncertainty exists because current conditions change in ways that are unforeseeable. For planning purposes, uncertainty must be considered, and the OFM high and low series represent a measure of this uncertainty.

Considerable effort has been put into developing the medium series. It is developed with a top down procedure, starting with the state population forecast. State growth is allocated to each county based on an evaluation of the county's demographic and economic trends. This procedure is followed because more reliable information is available at the state level.

High and Low Series: The high and low series form uncertainty bands above and below the medium (and most likely) projection. They do not represent particular alternative scenarios. In general, the high and low series consider each county's historical high and low growth trends and the likelihood of such trends repeating. For example, whether the high growth experienced by some counties in the early nineties would happen again is considered for the high band. Uncertainty bands are larger for small counties, counties with erratic growth in the past, and counties with rapid growth only recently. In contrast, counties with very steady growth for several decades have narrower bands. The potential for changes to group quarter populations – for example, people living in college dorms, military bases, or correctional institutions – also contributes to the width of the uncertainty bands. Less accessible counties and counties distant from job centers have wider bands because people may reduce commuting if gas prices continue to climb and more central real estate remains less expensive. Those counties where the majority of recent growth has been due to international migration have been assigned wider uncertainty bands because of possible, but highly uncertain, migration policy changes at the federal level.

II. OFM State Population Forecast

OFM's annual population forecast is an important part of developing GMA county population projections since the counties' individually projected populations must sum to the state totals. The 2012 GMA county population projections are developed within the framework of the OFM November 2011 State Population Forecast.

The cohort component model is the primary means used to develop OFM's November state forecast. This model uses the most recent federal census counts by single year of age and gender, fertility rates, and migration trends to project age specific populations forward in time. While the detailed description of the state forecast assumptions can be found on OFM website

at http://www.ofm.wa.gov/pop/stfc/stfc2011/stfc_2011.pdf, the following is a general description of the inputs:

Fertility: Population growth due to births is projected based on forecasted changes to the total fertility rate (TFR), a measure of the total number of children born per woman in her lifetime. The 2010 base year TFRs are calculated using an average of 2009, 2010, and 2011 April-year births, divided by 2010 Census counts of women aged between 15 and 49. Research indicates that the TFR at the state level will remain steady around 2.0 throughout the forecasting horizon, with slight fluctuations as families delay childbearing during periods of economic uncertainty.

Mortality: Population decline due to deaths is projected based on life expectancy and a set of age and sex specific survival rates. While Washington's forecasted life expectancy between 2010 and 2030 remains unchanged from the last forecast, it has been adjusted slightly upward for 2030 to 2040 under the assumption that people will live longer due to advances in medicine and living healthier lifestyles. However, with the baby boomers starting to turn 65 in 2011, Washington State's population aged 65 and over is expected to grow by almost 125 percent between 2010 and 2040. This rapid increase in elderly population, whose mortality risk is much higher than the general population, is projected to cause the Washington State's crude death rate (CDR) to increase from 7.1 per 1,000 persons in 2010 to 10.5 by the end of the forecast horizon.

Migration: Net migration is an important, but difficult to predict, component of population change. To forecast short term migration, OFM uses an econometric model which weighs Washington's relative attractiveness to job seekers against that of California and other states. This short term migration forecast is transitioned into long term migration expectations based on historical data, which indicate that net migration is likely to reach 42,000 persons per year by 2016 and stabilize around 45,000 (on average) in 2025.

Net migration from the November 2011 state population forecast is significantly lower than the forecast used in 2007 GMA projection process. For the 2010-15 period, forecasted state net migration is 105,000, or 154,000 lower than the earlier forecast. The state migration forecast has also been adjusted downwards by 31,000 per decade between 2025 and 2040.

These adjustments were made based on the unique economic and demographic changes that occurred after the release of the 2007 GMA projections, and the anticipated impacts on domestic and international migration. The reasons are as follows: First, current economic and housing market conditions have lowered migration expectations for an extended period of time, longer than any other period in recent history. Second, with Washington population continuing to shift toward older ages, the overall mobility of the population is expected to decrease. Third, international migration has decreased since 2008 due to policy and economic factors; if policy continues to move towards more strict controls, immigration is not likely to reach pre-2008 levels even if the economic situation improves. Finally, in the long run, economic conditions

in immigration-sending countries will likely continue to improve, which would make moving to the U.S. (and Washington) less desirable.

III. 2012 GMA County Provisional Projections

With a few exceptions, the 2012 GMA county population projections are lower than those predicted in the 2007 GMA release. This is primarily due to update of the crucial input elements with 2010 vintage data and the adjustments made to certain existing demographic assumptions used in 2007 to predict future population growth. The following list the changes that impact the 2012 GMA projections most:

- The significant adjustments made to the state forecast model migration assumptions discussed above impact the overall projected growth for each county, because the GMA county population projection model takes a “top down” approach in which projected state growth is allocated to counties from the state forecast total.
- The 2012 GMA county projections use the 2010 Census for the jump-off population, and these new base numbers will often impact a particular county’s GMA projection. For example, if a county’s 2010 starting year population is lower or higher than the 2010 population predicted in the 2007 GMA projection, the GMA 2012 projected population will now be lower or higher throughout the projection period even if all other inputs remained unchanged.
- All data inputs needed for projecting the components of change have been redeveloped using 2010 Census and 2010 vintage information. These updated inputs have resulted in changes to county TFRs, life expectancies, and other rates.

The following describes the assumptions that serve as guidance for developing GMA inputs.

Fertility: Considerable variation exists in the 2010 TFRs across counties, while within each county we see fairly consistent trends over time. Numerous studies on fertility show that certain demographic characteristics influence women’s fertility behavior, which can be summarized as follows:

- Foreign born women tend to have higher TFRs than native born women. Foreign born Hispanic women, in particular, tend to have the highest TFRs, compared to those who have come from Asian or European countries.
- Second generation Hispanic women tend to have lower TFRs than foreign born Hispanic women, but their TFRs are still higher than other racial and ethnic groups.
- Women attending college, in the labor force, or with higher educational attainment tend to have lower TFRs than their counterparts.

These three findings are used to understand the changes in each county’s historical TFR and to project future TFRs. A general summary of the TFR assumptions by county groupings is presented below:

- *Highest TFR counties:* Adams, Franklin, Grant, Okanogan, and Yakima counties exhibit the highest TFRs in the state, above 2.7 children per woman during her childbearing age in 2010. These counties have large Hispanic populations, and 40 percent or more of these Hispanic populations are foreign born. High TFRs are expected to continue in these counties, with moderate decline likely over the projection horizon, based on the assumption that the proportion of foreign born Hispanics will decline, a trend which can be seen already in the 2006-2010 American Community Survey data.

- *Moderately high TFR counties:* Benton, Chelan, Douglas, and Skagit counties' TFRs (between 2.2 and 2.5) are distinctly higher than the state TFR but not as high as the highest TFR counties described above, primarily because, while these moderately high TFR counties have a relatively large proportion of Hispanics in their population, they have fewer foreign born Hispanics and more diversity overall. As with the highest fertility counties, the proportion of foreign born Hispanics in these counties continues to decline, which leads us to believe that their TFRs will decline slightly in the future and approach the state mean TFR.
- *Counties with TFRs near the state mean:* Historically, Snohomish, Pierce, Kitsap, and Clark tend to have TFRs just above the state mean, while Spokane's TFR falls just under the state mean. We have projected their 2010 TFRs forward, with a slight increase from 2015 onwards because we anticipate a fertility rebound after the economy improves.
- *Low fertility counties:* Counties with a high proportion of the population attending college have the lowest TFRs, and are expected to stay low in the future. Extreme cases include Whitman and Kittitas with TFRs of 1.5 or lower. Moderate cases include Walla Walla and Whatcom counties, where TFRs are also influenced by factors such as local Hispanic populations.
- *King and Thurston counties:* These two counties historically have low TFRs due to the large proportions of childbearing age women who are either attending college or pursuing a professional career. Furthermore, King County's TFR of 1.7 is likely to decline even further as families move to suburban counties, decreasing the proportion of women at reproductive age.
- *Remaining counties:* The remaining counties are rural with relatively large retirement populations. The diverse characteristics of these counties make generalizations difficult. With minor adjustments, the TFRs for these counties are held constant at the 2010 levels.

Mortality: The 2012 GMA projection of Washington counties' mortality is based on the preliminary 2010 U.S. life expectancies, released by the Center for Disease Control (CDC) in its 2010 National Vital Statistics Reports¹. The projected life expectancy at birth, i.e. the average number of years a person is expected to live from age 0, is used to project the number of deaths each county will experience. Life expectancies for all counties are expected to continue to increase but at a slower pace than in earlier periods. Based on historical data, we have made several adjustments to the national life expectancy to better reflect Washington and its counties' particular mortality experiences:

- Using the U.S. life expectancy as a base, we add 0.1 year to the CDC 2010 national life expectancy to reflect historical mortality differences between Washington the U.S. We then further increase the future life expectancy by 1.5 years per decade based on historical trends.
- Historically, life expectancy is lower for Black populations and higher for Hispanic populations. At the county level, however, if 25 percent of the population is Hispanic, life expectancy is adjusted up by 1.2 years at the base year and then trended forward. Affected counties include Adams, Chelan, Douglas, Franklin, Grant, and Yakima. Recent history shows that the life expectancy for Black populations has improved and the gap has narrowed significantly, so race is not used for adjustment.

¹ Sherry, L., Murphy, B.S., Xu, J., & Kochanek, K.D. (2010). *Deaths: Preliminary data for 2010*. National Vital Statistics Reports, 60(4). National Center for Health Statistics. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_04.pdf.

- Research at the national level has also shown that people with higher education tend to have higher life expectancies than their counterparts. We increase the life expectancy by 0.75 at the base year for counties in which more than 31 percent of the population over age 25 has at least a bachelor's degree, and we decrease the life expectancy by 0.75 for most counties in which 15 percent or less of the population over age 25 has at least a bachelor's degree.

Migration: Migration is the most difficult of all demographic dynamics to predict. While numerous socioeconomic factors impact local migration dynamics, certain counties have broad conditions affecting likely future migration. The following characteristics were considered during the allocation process:

- Urban areas and areas with transportation links to employment centers will continue to draw migration.
- Areas that recently experiencing growth from retirees and telecommuters will continue to attract such migrants.
- Over the last two decades, about 70% of Washington's net migration came from abroad, with the majority of these immigrants authorized through the family reunification program and settling in counties where their families were located. This trend is expected to continue.
- The recent economic downturn has had an impact on all counties' net migration. The 2007 migration expectations have been delayed for 5 years for most counties. We expect some counties to recover faster, but if a county historically has had low or negative migration, we project lower levels of migration than in the 2007 GMA projections.
- Large group quarters in certain counties also affect migration projections. Twenty-five hundred migrants were added to Pierce County, and 1,000 to Thurston County, for each of the 2010-15 and 2015-20 periods, based on the JBLM expansion plan². One thousand migrants were added to Kitsap County over the same period to account for an expected increase in the military population³. Moderate increases were made to Whitman and Kittitas counties totals after 2025 due to likely enrollment increases when babies born in the high fertility years of 2003-2008 reach college age.
- Since migration is volatile and difficult to predict, we keep migration projections relatively constant after 10-15 years into the forecast period for two reasons. One, a significant proportion of Washington net migration is driven by the employment of traded sector industries. Since employment is just beginning to consistently trend upward this year, it is still difficult to measure its effect on migration in the long term. Two, the migration pattern of the upcoming baby boom retirees is also hard to predict since it lacks historical precedent. We will have a much better idea of the retirement trends in the next GMA projections in 2017 and will revise our assumptions if necessary.

^{2,3} South Sound Military & Communities Partnership (2012). *Community needs survey of Joint Base Lewis-McChord personnel and families: Summary report*. Seattle: AECOM.