

Review of DC Office of Planning's Population Projections

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SUMMARY

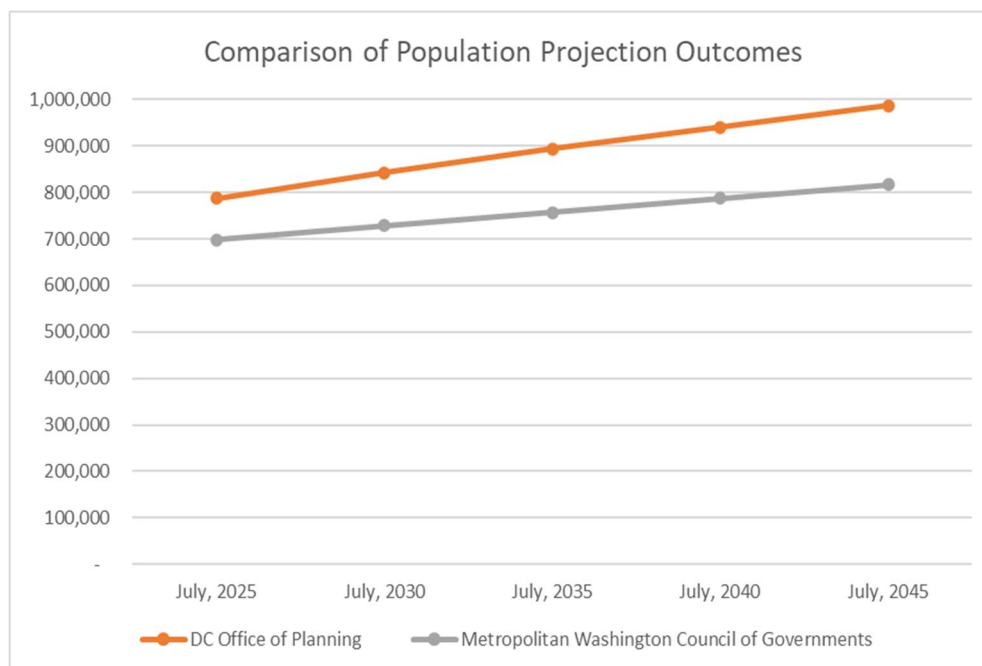
An impetus for the DC Office of Planning's policy approving development of public land for large-scale apartment projects includes demand-side assumptions of high rates of population growth between now and 2045. These assumptions are based on long-range population projections developed by OP that rely on several substandard and atypical methodologies. First, contrary to best practices in the field of demography, the population projections were not updated using 2020 Census data and instead rely on the 2010 Census and 2017 American Community Survey 5-year estimates. OP has never corrected and recalibrated its projections of population or households using the base year 2020 Census data. The result is that high rates of past growth inform assumptions of similar rates of future growth, when instead there was a period of population decline related to COVID deaths, increase in telecommuting (which appears to be a long-lasting workforce change) and out-migration. Additionally, the Housing Unit Methodology or supply-side method used by OP deviates from standard practice¹. OP relies on several inputs including the number of housing units, occupancy rates, and average household size as is typical, but net natural increase, or births minus deaths, is then inappropriately added to the totals, inflating and distorting the projections². Additionally, the Housing Unit Methodology is very sensitive to estimates of average household size, and the Office of Planning has assumed

¹ S. Smith, A Review and Evaluation of the Housing Unit Method of Population Estimation

² DC Office of Planning (2020), Chapter 2 Framework Element

a linear increase in people per household for the projection horizon 2025 to 2045 that may not materialize. The resulting projections being used by the Office of Planning vary widely from the most recent set of projections prepared by the Metropolitan Washington Council of Governments.

Comparison of Outcomes to Metropolitan Washington Council of Governments. Compared to Metropolitan Washington Council of Governments, the Office of Planning’s projections of population overestimate DC’s population by 12.8% in 2025. By 2025 OP is estimating 89,400 more individuals will live in DC than MWCOG is projecting. By 2045, OP’s overestimate of the population is 20.9%. By 2045, OP is estimating 170,900 more individuals live in DC than MWCOG is projecting. While the OP may have some reason to adopt a less cautious projection, it is unexpected and unacceptable to rely on results that vary from MWCOG by as much as 20.9% in 2045. This is a significant deviation, and the result is OP’s estimate of the need for future housing is much higher than one would expect.



	July, 2025	July, 2030	July, 2035	July, 2040	July, 2045
DC Office of Planning	787,100	842,200	893,900	940,700	987,200
Metropolitan Washington Council of Governments	697,700	728,600	757,200	787,100	816,400
Difference in OP's Projection Compared to COG	89,400	113,600	136,700	153,600	170,800
Percent Error Based on Comparison to COG	12.8%	15.6%	18.1%	19.5%	20.9% ³

Use of Old Census Data Inputs. OP's methodology is significantly overestimating both the population of the District of Columbia and future housing needs, as is evident from the 2020 Census. The differences between MWCOG projections and OP projections are caused by multiple factors. Unlike the MWCOG, the OP has failed to update their projections using 2020 Census data. In round 10.0 of MWCOG projections in 2023, planning professionals employed 2020 base year data, which is a best practice standard⁴. In contrast the OP projections rely on 2010 decennial data and 2017 ACS 5-year data. The Comprehensive Plan provides the OP projection of DC's 2020 population, which is 729,500 and the number of households in 2020 is projected to be 319,300⁵. The actual 2020 final Census count of population for DC was only 689,545 and total households is 312,448. The OP's Comp Plan over-estimated DC's population in 2020 by approximately 40,000 people. OP has not adjusted its 2020 projection down by approximately 40,000 to match the Census count, as it should have done and as the MWCOG did. OP is carrying that approximate 40,000 error in population forward into its projections of future population. Data from 2017 is not an actual enumeration as the decennial census is, and instead relies on a much smaller

³ DC Office of Planning Chapter 2 Framework Element p. 2-33 and Metropolitan Washington Council of Governments Round 10.0 Summary Tables

⁴ Metropolitan Washington Council of Governments (June, 2023). Round 10.0 Summary Tables.

⁵ DC Office of Planning Chapter 2 Framework Element (August, 2021). Comprehensive Plan Signed Revised Framework.

statistical sample. The result is that OP's base year is inaccurate and does not reflect changes in population that occurred between 2017 and 2020.

COVID-19 Effects on Population Projections and Vacancy. In addition, there is reason the OP should rely on more cautious projections because COVID-19 resulted in population reductions in DC related to availability of telework flexibility causing outmigration. To estimate potential long-term COVID impacts to growth, MWCOG developed a range of econometric forecasts that estimate changes to commercial space and changes to future housing and population in the region, including likely changes to future household size⁶. According to MWCOG, as of March 2022, weekly office activity in the Washington region has only returned to 37% of pre-pandemic levels, which will have implications for housing and population⁷. MWCOG is considering implications of COVID-19 on planning as is best practice, and this is another approach that OP could take toward developing more realistic projections.

OP's Non-Standard Housing Unit Methodology. The OP uses a Housing Unit Methodology, which differs from the Cohort-Component Methodology used by MWCOG. A recent statistical report from Maryland stated 95% of states which make population projections use the Cohort-Component Methodology⁸. Typically, this supply-side Housing Unit method begins with the total population in a base year and adds new occupied housing units times average number of persons per household at the time plus the population in group quarters. OP includes

⁶ Metropolitan Washington Council of Governments (May, 2023). Round 10.0 Cooperative Forecasts Presentation to COG Board of Directors Meeting May 10, 2023.

⁷ Metropolitan Washington Council of Governments (May, 2023). Round 10.0 Cooperative Forecasts Presentation to COG Board of Directors Meeting May 10, 2023.

⁸ Maryland Office of Planning (2020). Population Projections: An Overview of the Methodology

development in the pipeline to estimate growth. The problem is the OP is including an additional factor that is not usually featured in the Housing Unit Method. The Framework Element of the Comprehensive Plan 217.4 states that “Net natural increase (births minus deaths) is then added to the population numbers to reflect growth from within the District”⁹. Net natural increase is not typically added to the Housing Unit Method projection because growth is linked to housing units times average number of persons per household. The OP’s method duplicates this count of residents, inflating the total number atypically.

Problems with OP’s Average Number of Persons Per Household Multiplier. The Housing Unit Method is extremely sensitive to changes in the persons per household multiplier. OP is assuming linear growth in the persons per household multiplier from 2.11 and 2.27 between 2025 and 2040. This contradicts MWCOG’s trend assumption that the persons per household multiplier will decline in the same period to 1.93 persons per household¹⁰. There are multiple factors that may prevent that increase from materializing in the long-term, including the number of aging individuals over sixty who are more likely to live in households with fewer people. Also, low or decreasing birth rates will impact this estimate. This cornerstone of the Housing Unit Method needs to reflect current trends in order to produce accurate and effective population projections.

CONCLUSIONS

There are large and unexpected inconsistencies in OP’s population projections that impact interpretation of demand for large scale housing projects. OP relies on several substandard and atypical methodologies. These include:

⁹ DC Office of Planning Chapter 2 Framework Element, 2020. Comprehensive Plan Signed Revised Framework.

¹⁰ Metropolitan Washington Council of Governments (June, 2023). Round 10.0 Summary Tables.

- Failure to update projections using the 2020 decennial Census estimates, which is 5% lower than OP's base-year projection.
- Use of 2010 Census and 2017 ACS 5-Year Estimates.
- Potential impacts of COVID-19 not assessed.
- OP's Housing Unit Methodology includes a non-standard input, natural increase, or births minus deaths.
- Assumption of a linear increase in persons per household between now and the end of the projection horizon, 2045, which may not materialize.

The resulting projections being used by the Office of Planning vary widely from the most recent set of projections prepared by the Metropolitan Washington Council of Governments.

REFERENCES

DC Office of Planning (August, 2021) Comprehensive Plan Signed Revised Amended Framework.
https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/02_Framework_small.pdf

Maryland Office of Planning (2020). Population Projections: An Overview of the Methodology.
<https://planning.maryland.gov/MSDC/Documents/popproj/PopProjMethod-text.pdf>

Metropolitan Washington Council of Governments (June, 2023). Round 10.0 Summary Tables.
<https://www.mwcog.org/documents/2023/11/03/cooperative-forecasts-employment-population-and-household-forecasts-by-transportation-analysis-zone-cooperative-forecast-demographics-housing-population/>

Metropolitan Washington Council of Governments (May, 2023). Round 10.0 Cooperative Forecasts Presentation to COG Board of Directors Meeting May 10, 2023.
<https://www.mwcog.org/documents/2023/11/03/cooperative-forecasts-employment-population-and-household-forecasts-by-transportation-analysis-zone-cooperative-forecast-demographics-housing-population/>

Smith, S (1996). A Review and Evaluation of the Housing Unit Method of Population Estimation
<https://www.jstor.org/stable/2289216>