MARYLAND DEPARTMENT OF PLANNING

PROJECTIONS METHODOLOGY

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Planning’s Projections and State Data Center produces population projections. These projections include:

- Total Population
- Household Population
- Number of Households
- Average Household Size
- Labor Force
Mandated by Statute

Maryland Code, State Finance and Procurement, Division 1, Title 5-State Planning, Section 5-306

- The Department shall prepare population projections for the State and for each county and municipal corporation in the State.
- The population projections shall include details of age, sex, and race.
- The Department shall prepare the population projections for periods of 20 [30] years, in 5-year intervals beginning with 1990.
- Beginning in 1991, the Department shall revise the population projections at least every 3 years.
- In preparing the population projections for the Washington metropolitan area [and the Baltimore metropolitan area], the Department may use population figures developed by the Maryland-National Capital Park and Planning Commission [the Metropolitan Planning Organizations: Metropolitan Washington Council of Governments and the Baltimore Metropolitan Council]

Note: Text in brackets [ ] refer to subsequent changes to the language.
Population Projections - Methodology

Projections

- Major Projections - every three years
- Minor Projections - as needed
Projections to 2045

Geography:
- State
- County Jurisdictions (24)

Detail:
- Age at 5-year age cohorts (18)
- Race/Ethnicity (4)
- Gender (2)
Population Projections

Maryland Population and Projections 1970 - 2045

- 1970: 3,923,897
- 2045: 6,968,700
Population Projections

Maryland Household Population and Projections
1970 - 2045
County/Jurisdiction totals to 2045

- Use county total population from Washington and Baltimore Metropolitan Planning Organizations (MPO) forecasts as controls for age, race and sex distribution

- Develop total county population projections for jurisdictions in the Eastern Shore, Western Maryland, and Southern Maryland regions.
Review of MPO Cooperative Forecasts

- Modify forecasts of MPO jurisdictions and regions if estimates of the near-term population diverge or if alternate assumptions about future growth trends are adopted.
- Use a Cohort Model, to break out the MPO population forecast into its components of change - births, deaths and net migration.
- Check the migration component to test “reasonableness” of the projection.
Population Projections - Methodology

Cohort Component Model

General Equation:

- Projected Household Population = Initial Household Population + (Births - Deaths) + Net Migration
POPULATION PROJECTIONS - METHODOLOGY

Cohort-Component Model

Launch Year Population

Survival Rates → Survived Population

Childbearing Age Population

Survived Births → Fertility Rates and Infant and Child Survival Rates

Migration Rates

Projected Migration → Projected Population

Fertility Rates

- Historical county specific births data by age and race of mother and the gender of the child

- Fertility rates are developed based on historical data for females by cohorts for ages 10 to 59.

- These rates are developed separately by race and gender.
Survival Rates

- Historical county specific deaths data by age, race and gender

- Survival rates are developed based on the number of deaths by cohorts

- These rates are developed separately by race and gender
Population Projections - Methodology

Migration Rates

- Total Migration determined by
  *Historical jurisdictional population between two time periods and the births/deaths that happened during the same period*

- Total migration numbers converted into rates for each age cohort

- Migration rates developed separately by race and gender
Group Quarters
In generating the fertility, survival and migration rates, persons in group quarters less than 65 years of age are excluded from each race, sex and age cohorts

- Jurisdictions are assumed to receive a share of the projected Statewide group quarters population based on the share they had in 2010 for each sex, race and age cohort
Household Population Projections

Serve as the base for developing

- Households
- Average Household Size
Population Projections - Methodology

Maryland Household Size and Number of Households Projected, 1970-2045

Maryland Department of Planning, Maryland.gov
Population Projections - Methodology

Number of Households & Average Household Size

- **Inputs**
  - Projected Household Population by age cohort
  - 2010 Age of householder by age cohort
  - Projected Number of Households

- **Equations**
  
  Total Number of Households = 
  Projected Household Population / Age of Householder

  Average Household Size =
  Projected Household Population / Projected Number of Households

*Householder = head of household*
Population Projections - Methodology

Labor Force and Labor Force Participation Rate

- Inputs
  - Population 16 years and over (by different age cohorts)

- Equations
  \[
  \text{Labor Force} = \text{Population 16 years and over} \times \text{projected Labor Force Participation Rates from US BLS by different age groups}
  \]

  \[
  \text{Labor Force Participation Rate} = \frac{\text{Labor Force}}{\text{Population 16 years}}
  \]
Population Projections - Methodology


- Labor Force
- LFPR


Values: 70.6, 64.0
Employment Projections by Place of Work and Industry

**Inputs**
- Historical Data from Bureau of Economic Analysis (BEA)
- Total Wage and Salary jobs and Proprietors jobs
- Nonemployer Statistics (NES) from Census Bureau
- Historical Industrial sector employment from BEA and DLLR
- County totals from Cooperative Forecast Group (CFG) if available

**Process**
- Total jobs derived from Wage and Salary plus Proprietor jobs
- Proprietor jobs adjusted based on agreed upon methodology (using BEA Farm and Management of Companies & Enterprises) and the for other sectors NES data
- Project county total employment if not available from CFG
- Applying industry sector distribution from recent DLLR data
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WEBSITE AND CONTACT

Maryland State Data Center Projections website

https://planning.maryland.gov/MSDC/Pages/s3_projection.aspx

CONTACT

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