

MARYLAND DEPARTMENT OF PLANNING

PROJECTIONS METHODOLOGY

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POPULATION PROJECTIONS

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

POPULATION PROJECTIONS

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

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Projections to 2045

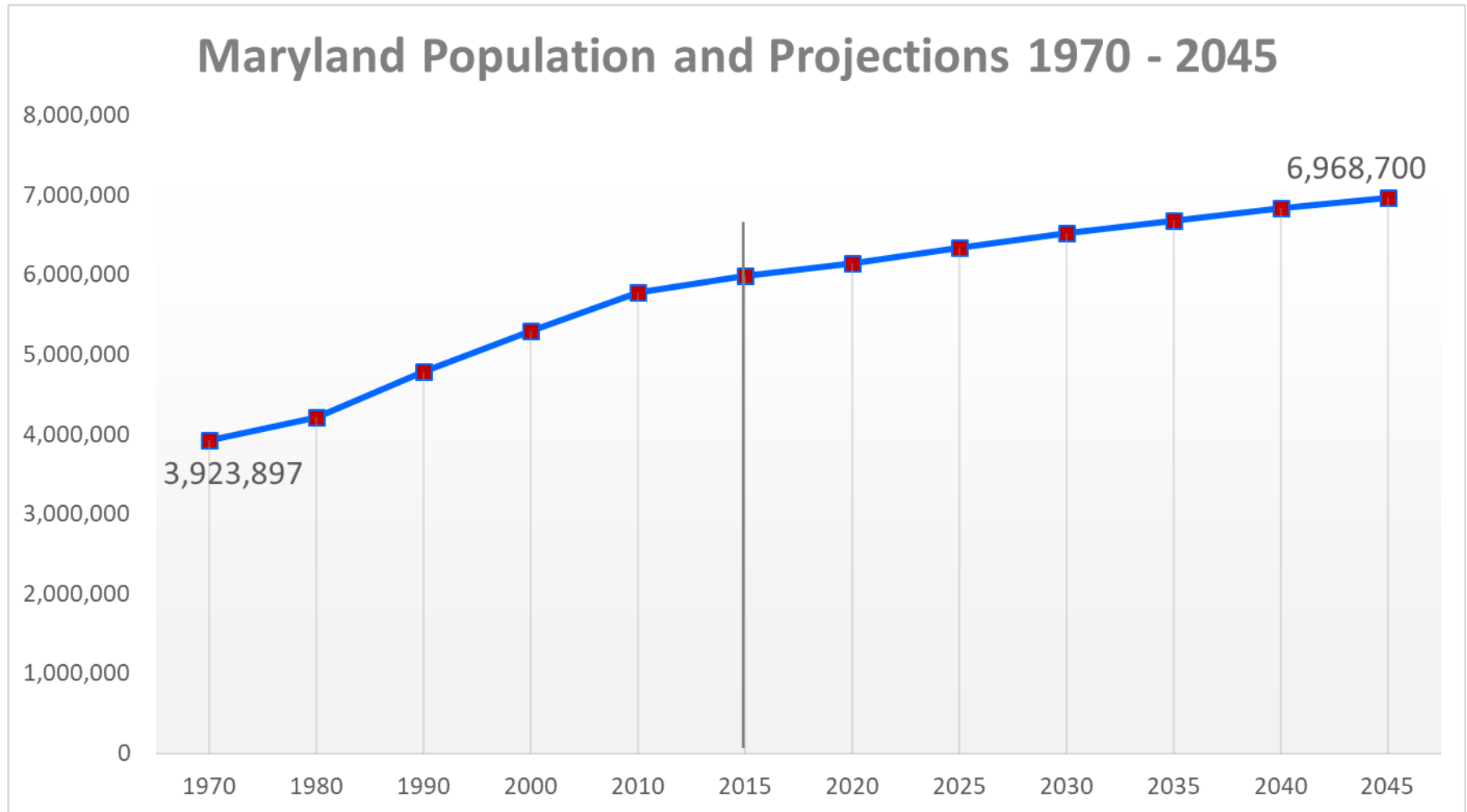
Geography:

- State
- County Jurisdictions (24)

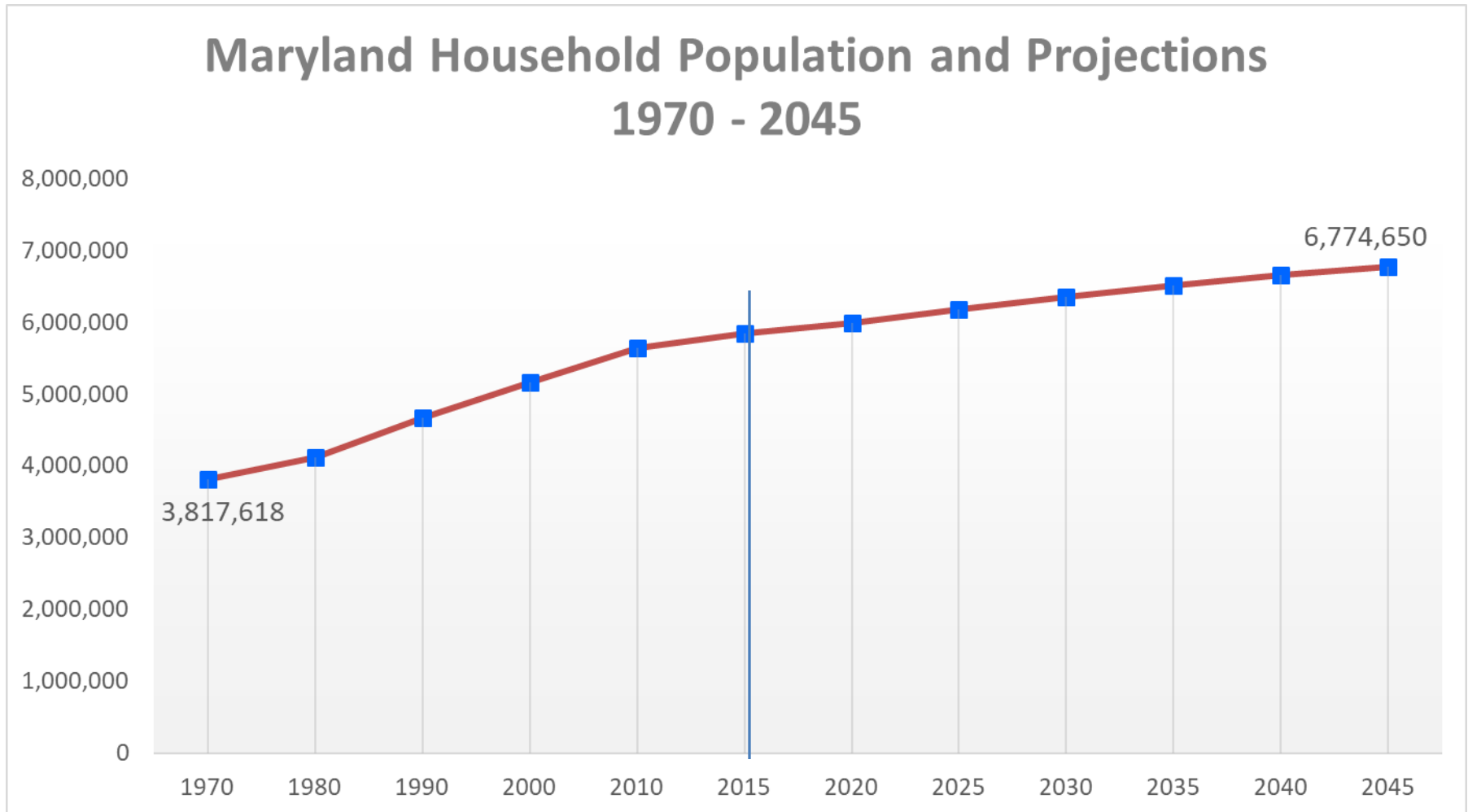
Detail:

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

POPULATION PROJECTIONS



POPULATION PROJECTIONS



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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.

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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

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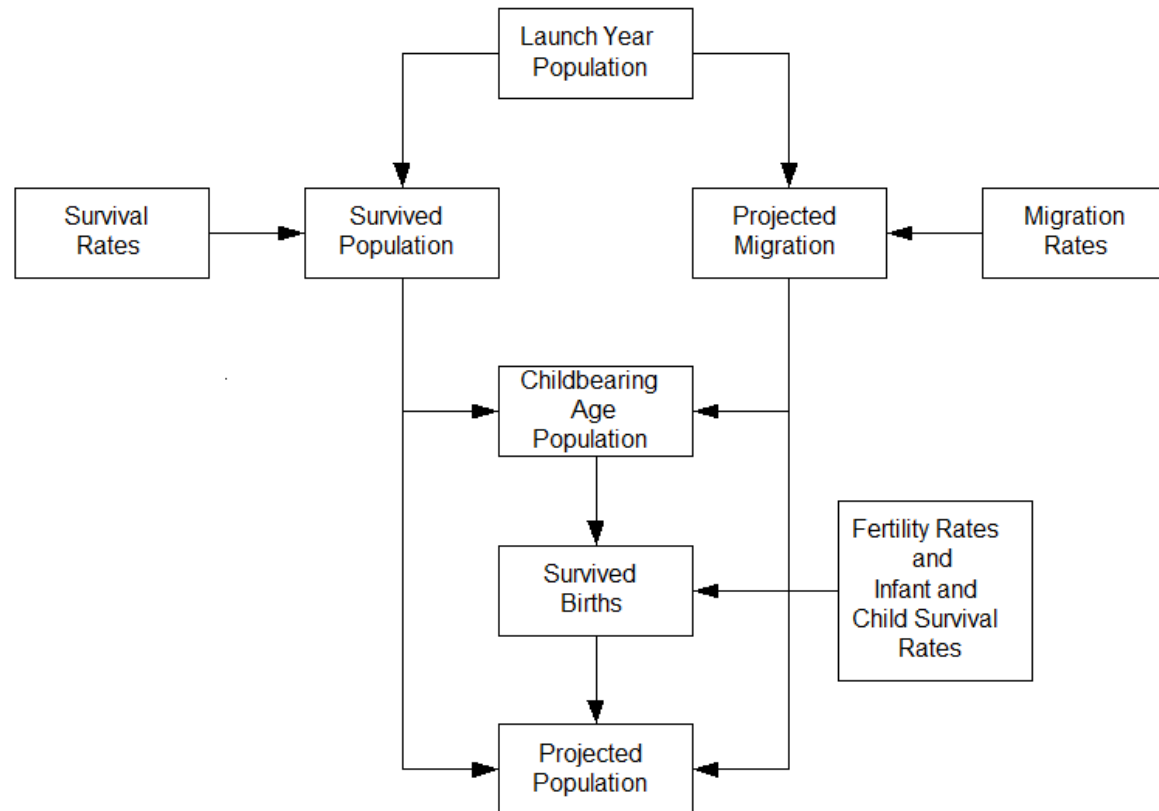
Cohort Component Model

General Equation:

$$\begin{aligned} \blacksquare \text{ Projected Household Population} = & \\ & \text{Initial Household Population} + \\ & (\text{Births} - \text{Deaths}) + \\ & \text{Net Migration} \end{aligned}$$

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Cohort-Component Model



Source: Smith S., D. Swanson, and J. Tayman. "Overview of the Cohort-Component Model", Ch. In The Springer Series on Demographic Methods and Population Analysis.

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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.

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Survival Rates

- Survival determined by
Historical county-specific deaths data by age, race and gender
- Survival rates are developed based on the number of deaths by age cohorts
- These rates are developed separately by race and gender

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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

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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

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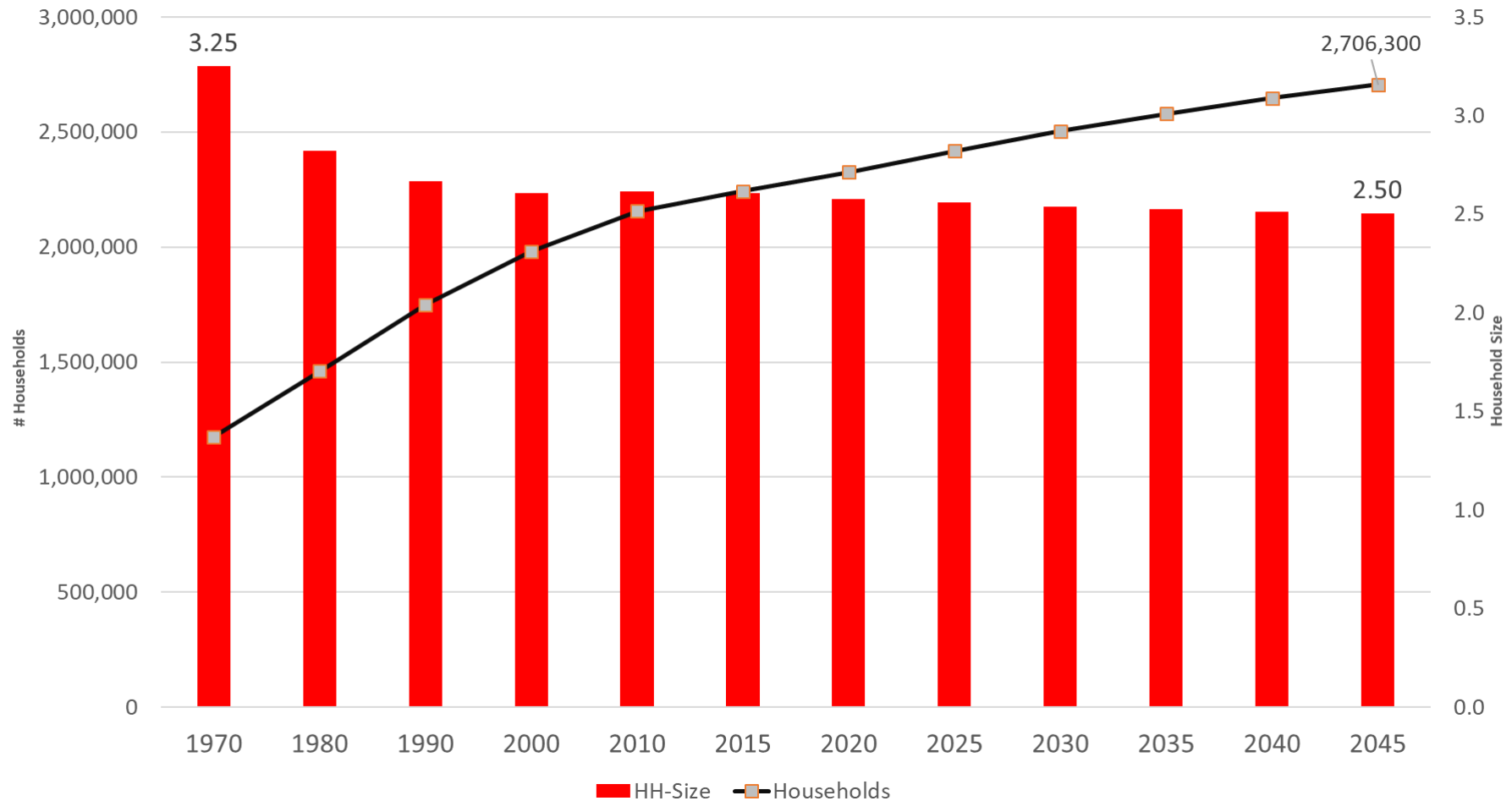
Household Population Projections

Serve as the base for developing

- Households
- Average Household Size

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



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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

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Labor Force and Labor Force Participation Rates

■ Inputs

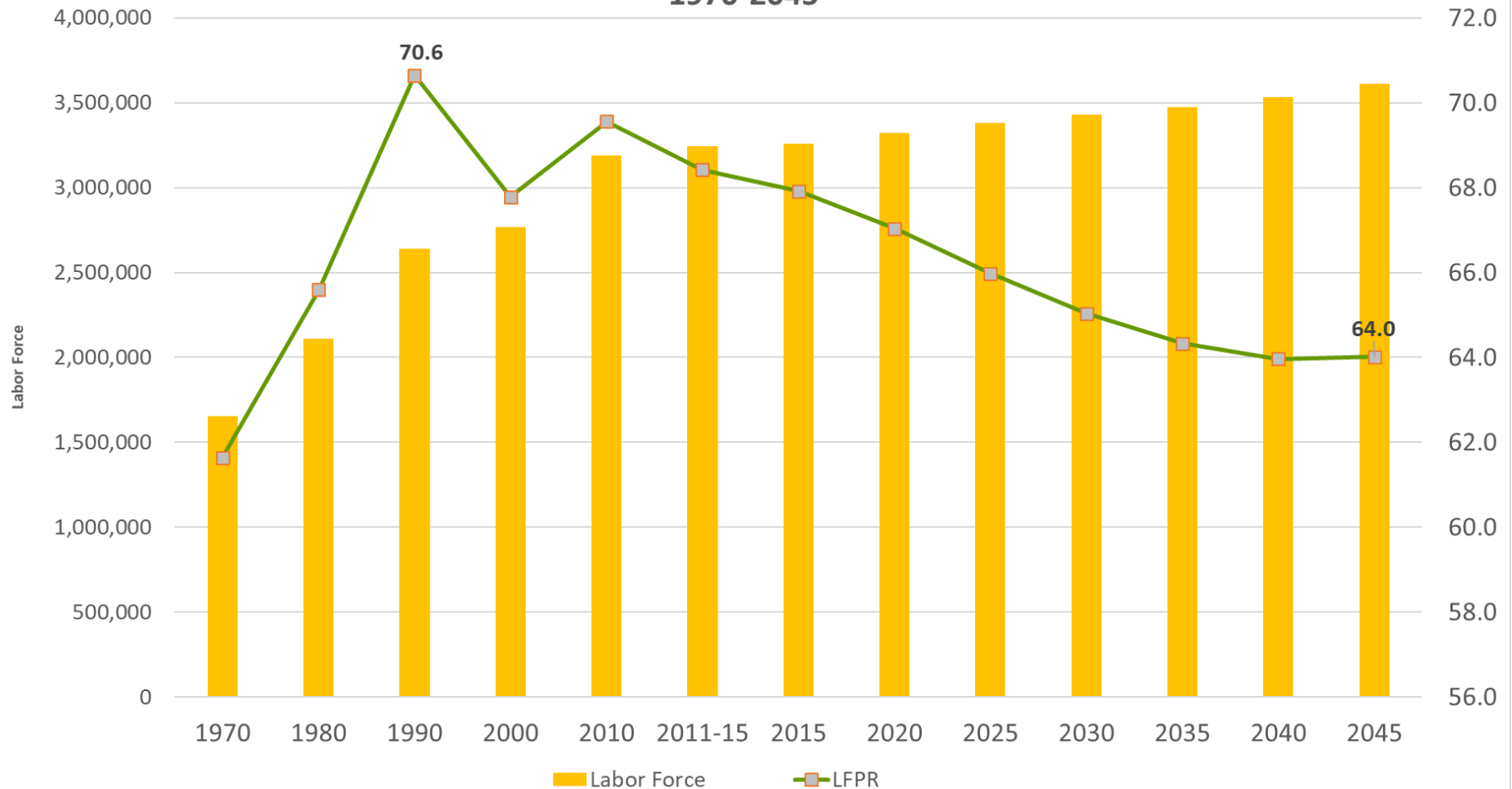
- Population 16 years and over (by different age cohorts)
- Labor Force Participation rates from American Community Survey (ACS) and US Bureau of Labor Statistics (BLS)

■ Equations

- Labor Force = *Population 16 years and over * BLS projected Labor Force Participation Rates by different age groups*
- Labor Force Participation Rate = *Labor Force / Population 16 years*

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Maryland Labor Force and Labor Force Participation Rates (LFPR) Projected,
1970-2045



WEBSITE AND CONTACT

Maryland State Data Center Projections website

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

CONTACT

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