MARYLAND DEPARTMENT OF PLANNING

PROJECTIONS METHODOLOGY

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PLANNING

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 .

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POPULATION PROJECTIONS – METHODOLOGY

Projections

- Major Projections – every three years

- Minor Projections – as needed

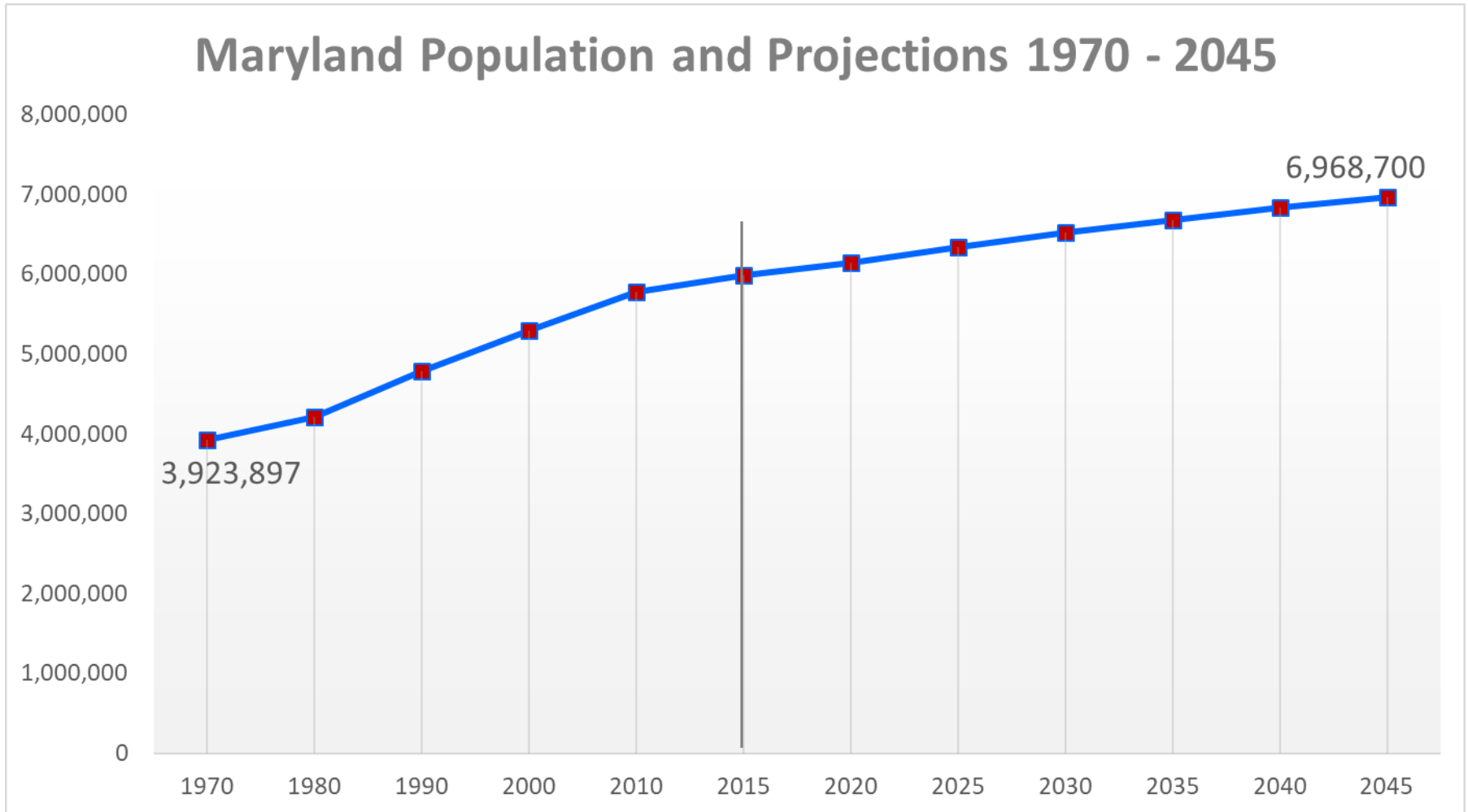# POPULATION PROJECTIONS – METHODOLOGY

Projections to 2045
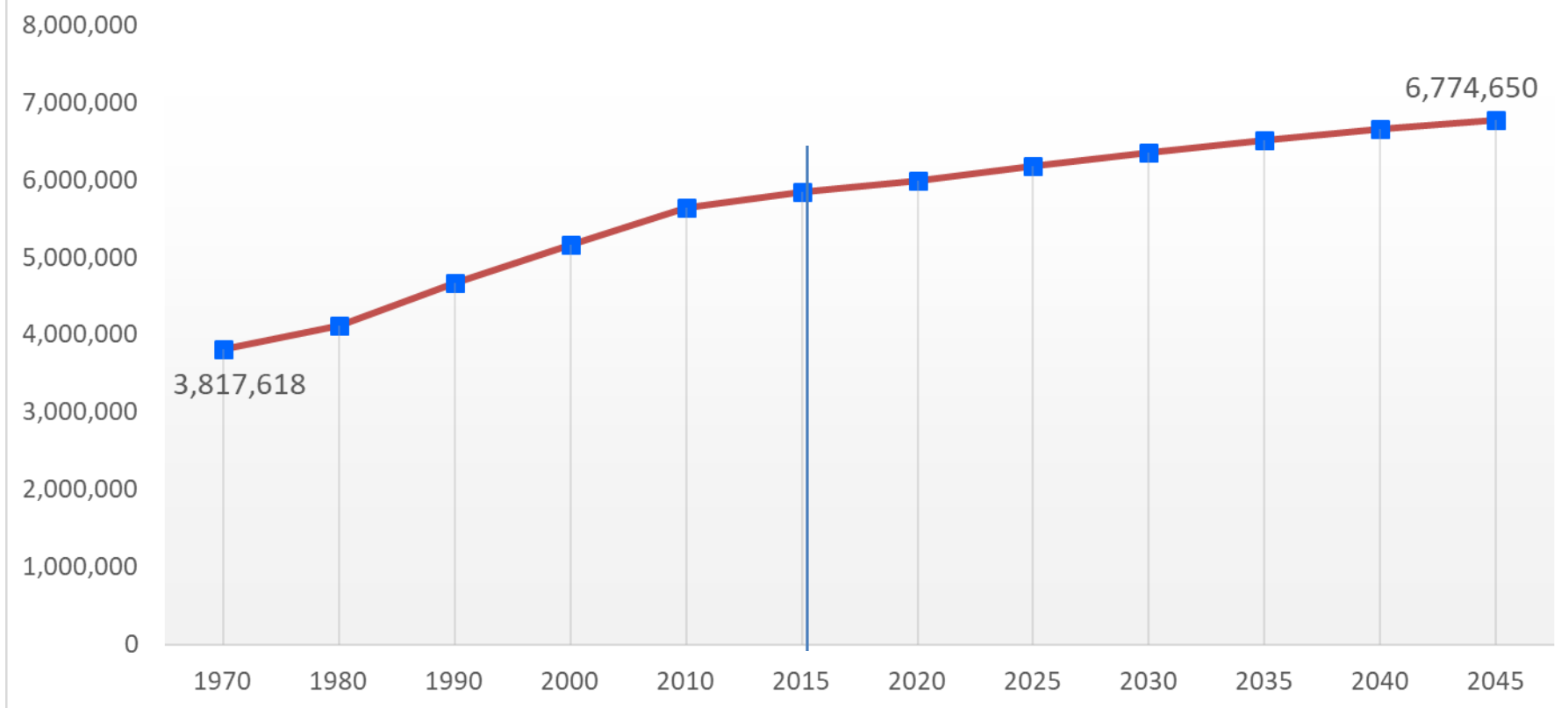
Geography:
- State
- County Jurisdictions (24)

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

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POPULATION PROJECTIONS

Maryland Population and Projections 1970 - 2045

POPULATION PROJECTIONS

Maryland Household Population and Projections 1970 - 2045

3,817,618

6,774,650

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POPULATION PROJECTIONS – METHODOLOGY

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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POPULATION PROJECTIONS – METHODOLOGY

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

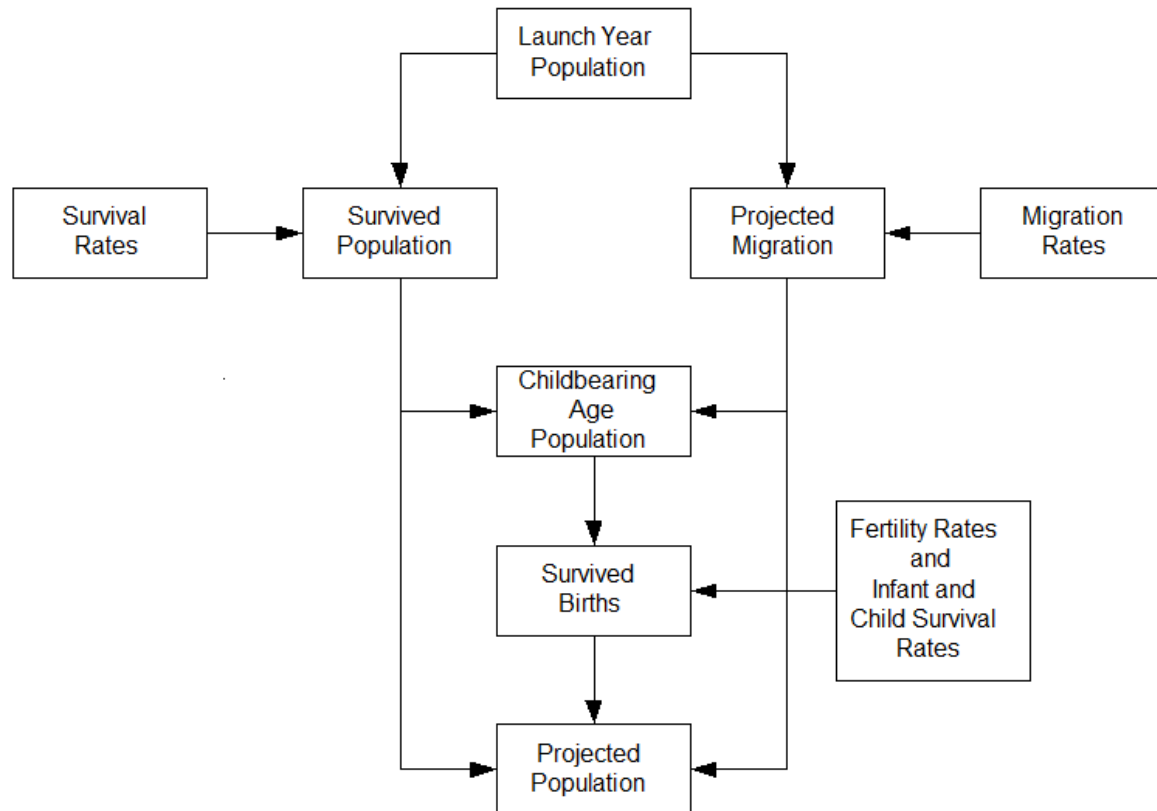MARYLAND DEPARTMENT OF
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POPULATION PROJECTIONS – METHODOLOGY

Cohort Component Model

General Equation:

- Projected Household Population =

  Initial Household Population +

  (Births - Deaths) +

  Net Migration

POPULATION PROJECTIONS – METHODOLOGY

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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POPULATION PROJECTIONS – METHODOLOGY

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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POPULATION PROJECTIONS – METHODOLOGY

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

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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**

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POPULATION PROJECTIONS – METHODOLOGY

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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POPULATION PROJECTIONS – METHODOLOGY

Household Population Projections

Serve as the base for developing

- **Households**

- **Average Household Size**

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POPULATION PROJECTIONS – METHODOLOGY

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

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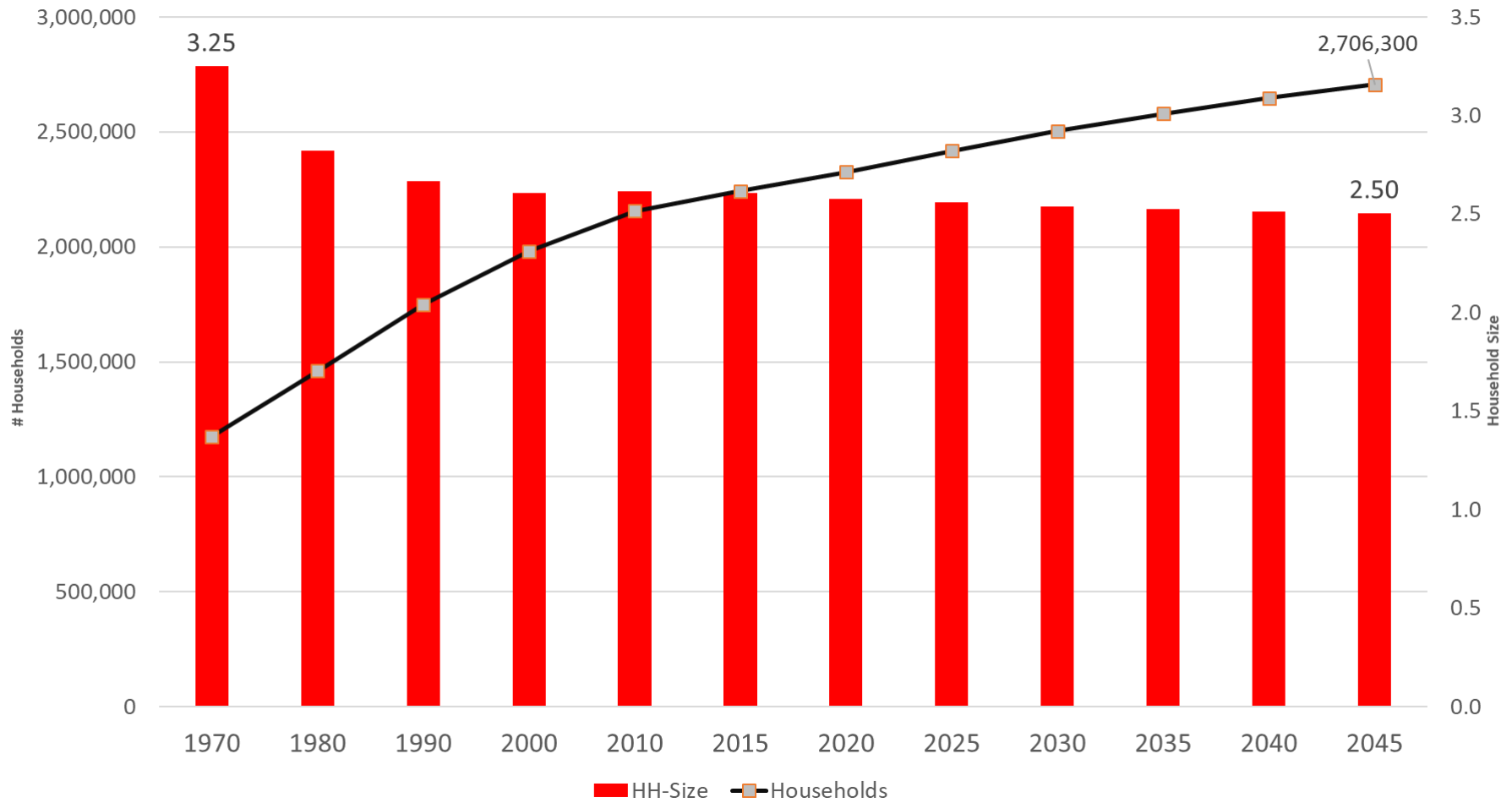
POPULATION PROJECTIONS – METHODOLOGY

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

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POPULATION PROJECTIONS – METHODOLOGY

Labor Force and Labor Force Participation Rate

- Inputs
  - Population 16 years and over (by different age cohorts)
  - Labor Force Participation rates from ACS and US Bureau of Labor Statistics
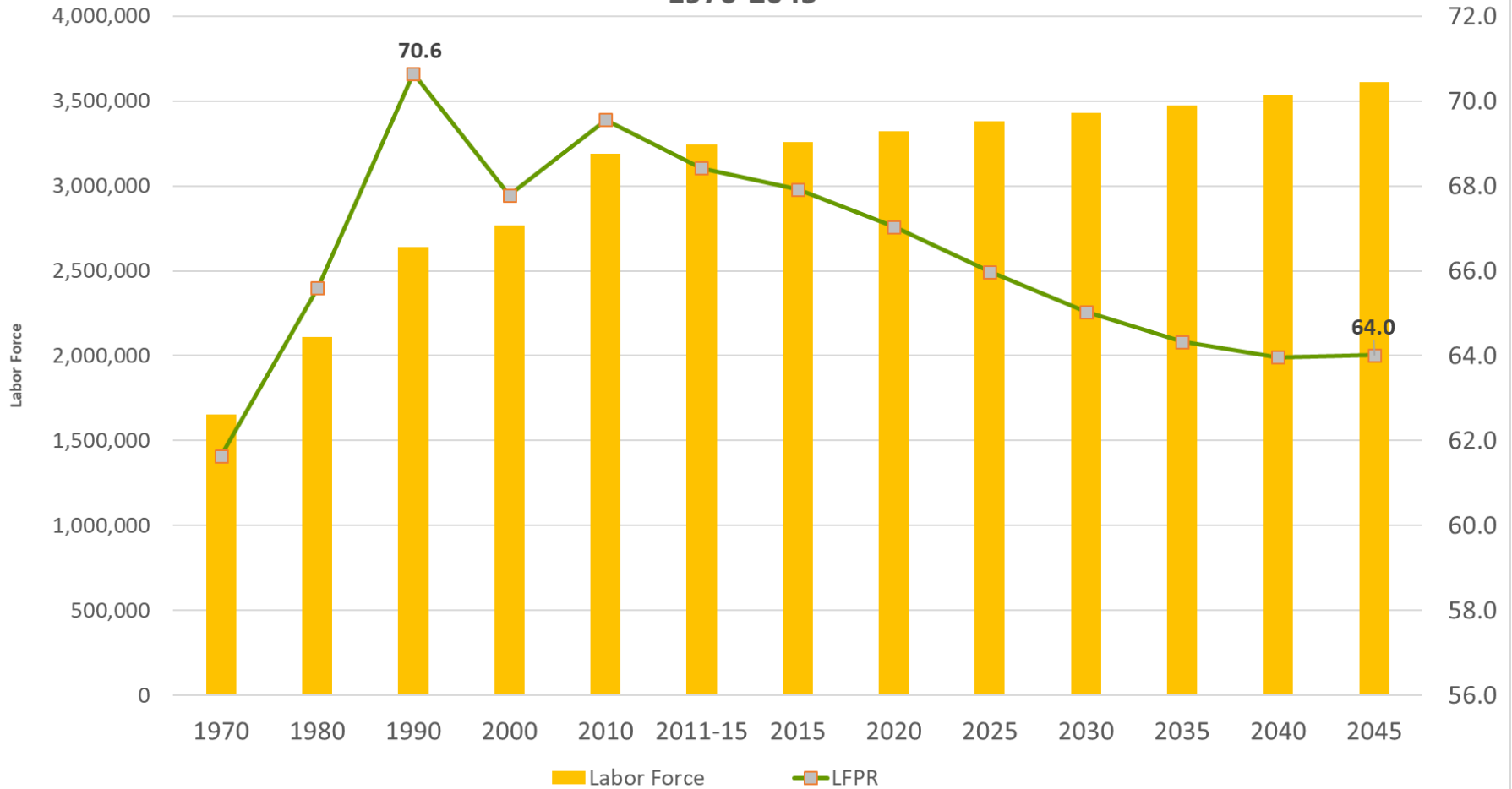
- Equations

  Labor Force = Population 16 years and over * projected Labor Force Participation Rates from US BLS by different age groups

  Labor Force Participation Rate = Labor Force / Population 16 years

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POPULATION PROJECTIONS – METHODOLOGY

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

EMPLOYMENT PROJECTIONS – METHODOLOGY

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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