

## Maryland Municipal Projections Methodology

Long range population and household projections for Maryland's municipalities are inherently difficult. Typical problems are the relatively small number of residents in many municipalities leading to possibly large percentage errors; an often wildly fluctuating historical growth path because of changing municipal boundaries or other local characteristics; and, a lack of data on the components of population growth – births, deaths and migration. In addition, fluctuating household size and vacancy rates, and uncertainty about group quarters population, often make the link between population and households difficult to determine several decades into the future.

With the uncertainty inherent in doing municipal projections, the Maryland Department of Planning undertook a variety of projection techniques designed to generate a reasonable range of population projections for each of Maryland's 157 municipalities. These techniques can be grouped into two broad categories: 1) naïve methods and 2) development pressure methods.

### A. Naïve Projection Techniques

The naïve population projection methods involve seven different techniques that are based on past growth trends or past relationships between the municipality and the county and the county's projected growth. They are classified as “naïve” because they rely totally on the past to project the future. These techniques include the following:

- **Constant share** – the municipality's projected share of its county's projected population remains the same as its 2000 share
- **Shift share based on 1990 – 2000** – the municipality's projected share of its projected county population is altered based on the change in its share during the 1990 to 2000 time period
- **Shift share based on 1980 – 1990** – the municipality's projected share of its projected county population is altered based on the change in its share during the 1980 to 2000 time period
- **Share of growth** - the municipality's share of county-wide growth over a specific historic period (typically 1990 to 2000) is applied to future projected county-wide population
- **Weighted average of change** – the municipality grows in each time period by the weighted average of change over the 1970 to 2000 time period (with greater weights applied to more recent time periods)
- **Geometric Growth** – the municipality grows at a historical rate of change in all future time periods
- **Regression** - historic municipal growth path is regressed against time to generate future municipal growth path

Each of the above techniques are applied to all of the municipalities (as well as the non-municipal portion of the county (the “balance of the county”) at the same time for each projected time period and then controlled to the previously projected county control total

## B. Development Pressure Technique

The development pressure population projection methodology assumes that a municipality's growth pressure will be directly related to the recent development activity that has occurred just outside the municipality's borders. That is, the more development outside of a municipality's boundaries, the greater likelihood for that municipality to grow either within its current boundaries or through annexation. This change in development pressure is reflected by modification (either up or down) to the municipality's constant 2000 share of its county's projected population in each projection period.

The development activity in and around municipalities is derived from housing unit counts from Md Property View, MDP's GIS database that tracks the location and type of development by parcel for all jurisdictions in Maryland. Municipal boundary map layers are those updated and maintained by MDP in support of Priority Funding Area mapping.

A total of nine scenarios are run based on three different historical time periods and three different development rings around each municipality's boundaries:

- Time periods – 1990 to 2005, 1997 to 2005 and 2000 to 2005
- Development rings – one-eighth mile, one-quarter mile and one-half mile

These development pressure scenarios are run for each municipality at the same time, with the balance of the county being the difference between the previously projected county total and the sum of the projected municipality populations

## C. Municipal Population and Household Projections

Between the naïve and development pressure techniques, there are a total of 16 individual population projections for each municipality. In order to narrow the range, the following are chosen for each municipality (in addition to the results from the constant share method) from each of the two different techniques:

- the lowest total
- the highest total
- the average total
- the average after dropping the lowest and highest totals

The population projections from these selected results (four from the naïve methods and four from the development pressure method, plus the constant share results) are then translated into household projections. This is done by adjusting for (1) projected group quarters population (if any) and (2) projected household size of the municipality, where the change in the municipality's household size over time is assumed to be proportional to the change in the previously projected county household size.