5 Representative Population Data

The SACSIM model requires a detailed population file with representation of key demographics, such as household size, income and age of the population. SACOG uses the following process to generate the representative population file. The key software used in the process is known as “PopGen”, developed by the School of Sustainable Engineering and the Built Environment at Arizona State University along with additional research institutions and metropolitan planning organizations. The current PopGen version is maintained and hosted by the Mobility Analysis Research Group. The program generates synthetic populations whereby both household-level and person-level characteristics of interest can be matched. Moreover, PopGen facilitates the use of Census data. This chapter describes the various aspects involved in the process of generating the representative population for transportation demand forecasting.

5.1 Land Use Scenarios

Parcel-based dwelling units maintained in the land use scenario model is the base for generating representative population. Land use scenarios include “yield” estimates of a range of land use variables at parcel level. Two variables are used directly in SACSIM: dwelling units and jobs by sector. The yield estimates are based on the “place type” (generalized land use) of the parcel, the parcel area, and a number of physical, environmental, or policy constraints. Yield estimates are calibrated to match small area inventories of dwellings and jobs for the base year. Yield estimates are made for future year growth based on the future year place type and development status of each parcel in the future year scenario, and constraints expected to be in place at each parcel in the future year.