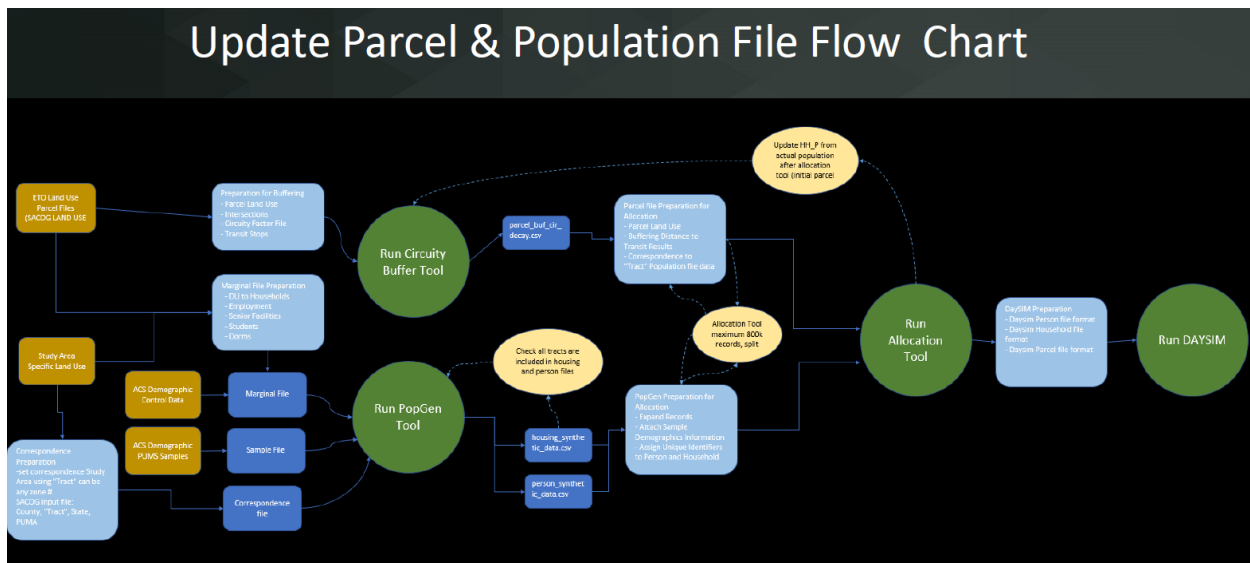# Land Use Processing Resources and Tools

SACSIM land use inputs are the primary data source for households and jobs on each parcel. While SACSIM does not require land use input updates to run, users may wish to make their own adjustments to land use and population to test alternative scenarios. To aid users in making these adjustments, SACOG staff have provided multiple processing tools and documentation to help users assemble SACSIM's parcel-point land use and population inputs. Assembly of additional land use inputs such as school employment and enrollments, street pattern, off-street parking supply and cost, and transit proximity are also described in the resources below.

Land Use Processing Spreadsheets

To request processing spreadsheets and supplemental resources, contact sacsim@sacog.org and a link will be provided to our FTP site with these resources.

Project_Build_PopGen_Inputs_Example.xlsx

Update project level land use into SACSIM categories. Update household marginal files to develop a project level synthetic population.

Project_Build_Buffering_Inputs_Example.xlsx

Convert project level land use categories into SACSIM categories. Update buffering process, used to build land use relationships for SACSIM, inputs based on project land use and infrastructure changes.

Project_Parcel_Allocation_Example.xlsx

Prepare parcel inputs required to use Allocation Tool to assign population from PopGen to SACSIM parcels and TAZs.

Project_PopGen_To_Allocation_Example.xlsx

Format and assign uncontrolled and required socio-demographic data to synthetic population data output results from PopGen into format used for running parcel allocation tool to assign the PopGen population to parcels.

Project_Allocation_to_SACSIM19_Inputs.xlsx

Prepare DAYSIM Household and Person Files with combine file from Allocation Tool results. Prepare Buffer Tool Parcel File with Final Households from Allocation Tool results.

Project_Build_Add_TAZ_Example.xlsx

Split Zone input used for assignment loading on SACSIM19.

Land Use Processing Script

To develop land use and population inputs at a regional level, SACOG staff has developed processing scripts to streamline some of these processes. Scripts may provide modelers with an efficient alternative method, but are not required, to developing project processing spreadsheets to update project level land use alternatives. Processing scripts are available for all to use, SACOG staff requests users add to and share their edits and updates through Github repository.

For processing scripts, pull from SACOG's Github page at:

https://github.com/SACOG/SACSIM19/tree/main/Land_Use_Prep

PopGen_InputProcess_v2.py

To prepare the PopGen Input SAMPLE files based on PUMAs Household and Person data.

Python Version: 3.6, requires access to ArcGIS license for arcpy module

PopGen_To_Allocation.py

To prepare the PopGen Outputs to final Population inputs for parcel Allocation process.

Python Version: 3.6, requires access to ArcGIS license for arcpy module

Post_Allocation_v2.py

To finalize population file and bring population information back to the parcel file.

Python Version: 3.6, requires access to ArcGIS license for arcpy module

Additional Resources and Supplementary Materials

To learn more and user guides on how to prepare SACSIM land use inputs, check out SACSIM documentation resources:

- Chapter 4 Land Use Data
- Chapter 5 Representative Population Data
- Appendix A DAYSIM Reference Guide
- Appendix F Circuity Surface Data Preparation Memo
- Appendix G Run POPGEN

00_ScenarioTemplate_withscripts:
 SACOG folder structure template used for new land use scenarios.

LandUse_Scenario_FolderStructure_Example.PNG:
 Example of SACOG's scenario folder structure

Parcel and Population flow chart.pdf:
 Processing flow chart to update population and parcel inputs for SACSIM.

PUMA.zip
 2010 ipums boundary shape file, PUMS readme and data dictionary

SACSIM Land Use and Population relationships.pdf:
 SACSIM example of relationship between population, land use, and transportation inputs

Session 2_Installation.pdf:
 PopGen 1.1 Installation instructions developed by ASU.