**AR Calculations Work Papers for Affordability Report**

The files in <ftp://ftp.cpuc.ca.gov/Affordability_Framework/2019_Annual_Report/AR/Calculations/> consist of the Excel, CSV, and R datasets and code files used to calculate affordability ratio results for the 2018 and 2019 analyses. The 2018 AR results can be found in the file “ARC\_2018\_output.xlsx” and the 2019 AR results can be found in the file “ARC\_2019\_output.xlsx”. An explanation of the variables included in those results files can be found in “Results Data Dictionary.xlsx”.

The files “2018 Bills\_AR calculator.xlsm” and “2019 AR calculator.xlsm” contain the essential usage billing data that serves as one of the inputs for the AR calculations. These files served as the interface to launch the R code files “ARC\_test\_2018\_calcs.R” and “ARC\_2019.R”, which performed the bulk of the AR calculations for the 2018 and 2019 analyses, respectively. These code files reference several input datasets:

* "All\_Uti\_Block\_PUMA\_20200803.csv" – GIS output with details of service territory/Census tract intersections for 2018 analysis
* "2019AR20\_20201021.csv" – GIS output with details of service territory/Census tract intersections for 2019 analysis
* "income\_housing\_regression.xlsx" – regression output for prediction of housing costs for 2018 analysis
* "25\_Regression\_outputs\_nonlinear\_no\_v\_large\_income\_2019\_update.csv" - regression output for prediction of housing costs for 2019 analysis (also included R code file that generated this output in “25\_Nonlinear regression of housing cost on income\_no v large income\_2019 update.R”)
* "climate zones with zero gas bills\_all zones.xlsx" – list of climate zones where propane costs were estimated and used as a proxy for natural gas costs because gas provider is not present
* “22\_Analysis of 2019 PUMS Data.R” – R code file used to analyze raw ACS data for 2019 analysis
* “22\_Curated\_CA\_2014-2018 ACS 5-year.csv” – detailed PUMS data from ACS survey for 2019 analysis
* “22\_Summary PUMA Stats for 2019 Analysis.csv” – summary PUMA-level statistics derived from ACS survey for 2019 analysis
* “SWRCB\_2019\_EAR\_Adjusted.xlsx” – index of modifications to State Water Board’s Annual Report data, used for proxy bills of non-CPUC water systems

For any questions about how the AR results were derived or any of the calculations were performed, please contact Ankit Jain at [ankit.jain@cpuc.ca.gov](mailto:ankit.jain@cpuc.ca.gov).