**American Housing Survey (AHS) API Overview**

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Coda page: <https://coda.io/d/BP-Research-projects_d3wSLGCxX7I/AHS-Microdata-API_su2VgYhN>

Github repo: <https://github.com/JBRECLLC/BP-AHS-API>

**The American Housing Survey (AHS) is a biannual survey of US homeowners and renters. Click** [**here**](https://www.census.gov/programs-surveys/ahs/about.html) **for more high-level information on the AHS.**

# **1. Creating clean project-level AHS data files:**

## **If appending a new AHS Survey’s data (i.e. 2025), follow the steps below; otherwise,** [**skip to the portion below**](#ScriptUpdate):

1. Update the file *ahs\_variables\_by\_year.xlsx (*[*link within the GitHub Repo*](https://github.com/JBRECLLC/BP-AHS-API/blob/main/variable-matching/ahs_variables_by_year.xlsx)*).* This file lives within the GitHub repository, in the folder variable\_matching. It is not used in any scripts but can be used as a proxy to decide whether the same data cleaning logic from the script that cleans 2015-2023 AHS data can be used for 2025 AHS data (scheduled for release in Q3 2026).
   * There are two tabs of relevance: Household and Project. Each tab corresponds to variables within the household.csv and project.csv files. AHS releases microdata in a zipped folder; each year, it contains the four datasets listed below. We only utilize the household.csv and project.csv files as of now:
     + household.csv
     + mortgage.csv
     + person.csv
     + project.csv
   * Update each tab with the latest surveys’ [codebook](https://www.census.gov/data-tools/demo/codebook/ahs/ahsdict.html?s_year=2023%20National&s_availability=PUF) entries:
     + When using the AHS Codebook, specify the ‘Survey Year’ (*2025 for the next update*) and ‘Availability’ (*PUF*).

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* Each colored portion corresponds to a single variable throughout the AHS history.
  + For example, the variable for Type of Housing Unit has changed classifications throughout AHS survey history:
    - From 2015 to 2023, this variable has been named BLD, and contains ten classifications:
      * 01: Mobile home or trailer
      * 02: One-family house, detached
      * 03: One-family house, attached
      * 04: 2 apartments
      * 05: 3 to 4 apartments
      * 06: 5 to 9 apartments
      * 07: 10 to 19 apartments
      * 08: 20 to 49 apartments
      * 09: 50 or more apartments
      * 10: Boat, RV, van, etc.
    - From 2001 to 2013, this variable was named NUNIT2 and contained four classifications
      * 1: 1 unit building, detached
      * 2: 1 unit building, attached
      * 3: Building with 2 or more apartments
      * 4: Manufactured / mobile home
* From 1995 to 1999, this variable was named NUNIT2 and contained five classifications:
  + 1: 1 unit building, detached
  + 2: 1 unit building, attached
  + 3: Building with 2 or more apartments
  + 4: One unit mobile home
  + 5: Two or more unit mobile home

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* Due to mismatches in historical classification, add codebook entries for each variable within the Household and Project tabs upon release of the 2025 AHS (and beyond).
  + ***If all variable classifications are the same as in 2023***, add the 2025 zipped data download to the ‘15\_23’ folder and rename it to ‘15\_25’.
  + Then update the portions shown below to include 2025 data within [ahs\_api\_2015\_thru\_2023.R](https://github.com/JBRECLLC/BP-AHS-API/blob/main/scripts/ahs_api_2015_thru_2023.R) (there will be a lot of renaming here):

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## **Regardless of whether you are appending a new AHS Survey’s data (i.e. 2025), follow the steps below:**

* ***Update the ‘folder\_location’ within each script:***



* Moreover, **the file path entered for ‘folder\_location’ *MUST* contain all the AHS PUF microdata files** (*see the image below for an example*):
  + household.csv
  + mortgage.csv
  + person.csv
  + project.csv

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* AHS allows users to download a zipped folder containing all the above files for each AHS Survey. Here are links to download each of those folders (they will automatically download if you click the links):
  + [2023 AHS](https://www2.census.gov/programs-surveys/ahs/2023/AHS%202023%20National%20PUF%20v1.1%20CSV.zip)
  + [2021 AHS](https://www2.census.gov/programs-surveys/ahs/2021/AHS%202021%20National%20PUF%20v1.0%20CSV.zip)
  + [2019 AHS](https://www2.census.gov/programs-surveys/ahs/2019/AHS%202019%20National%20PUF%20v1.1%20CSV.zip)
  + [2017 AHS](https://www2.census.gov/programs-surveys/ahs/2017/AHS%202017%20National%20PUF%20v3.1%20CSV.zip)
  + [2015 AHS](https://www2.census.gov/programs-surveys/ahs/2015/AHS%202015%20National%20PUF%20v3.1%20CSV.zip)
  + [2013 AHS](https://www2.census.gov/programs-surveys/ahs/2013/AHS%202013%20National%20PUF%20v2.0%20CSV.zip)
  + [2011 AHS](https://www2.census.gov/programs-surveys/ahs/2011/AHS%202011%20National%20PUF%20v3.0%20CSV.zip)
  + [2009 AHS](https://www2.census.gov/programs-surveys/ahs/2009/AHS%202009%20National%20PUF%20v2.0%20CSV.zip)
  + [2007 AHS](https://www2.census.gov/programs-surveys/ahs/2007/AHS%202007%20National%20PUF%20v2.0%20CSV.zip)
  + [2005 AHS](https://www2.census.gov/programs-surveys/ahs/2005/AHS%202005%20National%20PUF%20v2.0%20CSV.zip)
  + [2003 AHS](https://www2.census.gov/programs-surveys/ahs/2003/AHS%202003%20National%20PUF%20v2.0%20CSV.zip)
  + [2001 AHS](https://www2.census.gov/programs-surveys/ahs/2001/AHS%202001%20National%20PUF%20v2.0%20CSV.zip)
  + [1999 AHS](https://www2.census.gov/programs-surveys/ahs/1999/AHS%201999%20National%20PUF%20v2.0%20CSV.zip)
  + [1997 AHS](https://www2.census.gov/programs-surveys/ahs/1997/AHS%201997%20National%20PUF%20v2.0%20CSV.zip)
  + [1995 AHS](https://www2.census.gov/programs-surveys/ahs/1995/AHS%201995%20National%20PUF%20v2.1%20CSV.zip)
* Once downloaded, amend each year’s folder name to the year in question (ex. ‘2023’). Then paste each year’s folder (which should contain all 4 .csv files shown above) into the corresponding folder in ‘raw-data’:
  + 2015 – 2023 data in ‘15\_23’
  + 2011 – 2013 data in ‘11\_13’
  + 2001 – 2009 data in ’01\_09’
  + 1997 – 1999 data in ‘97\_99’
  + 1995 data in ‘1995’

***You are now ready to run the scripts!***

***Scripts MUST BE RUN IN SEQUENTIAL ORDER*** *(i.e. in the numbered order below)*

**There are five scripts total:**

* Each script cleans/appends specific periods of AHS data to a final ‘cleaned’ file. Separate scripts were needed for different periods, given historical differences in classification.
  + 1. 2015 – 2023 (ahs\_api\_2015\_thru\_2023)
    2. 2011 – 2013 (ahs\_api\_2011\_thru\_2013)
    3. 2001 – 2009 (ahs\_api\_2001\_thru\_2009)
    4. 1997 – 1999 (ahs\_api\_1997\_thru\_1999)
    5. 1995 (ahs\_api\_1995)
* The scripts follow similar logic, for the first four sections:

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* + The fifth section contains a custom ‘reclassify’ function that differs within each script. This function is used to do the vast majority of data reclassification. Some variables that are present in the 2015-2023 data were not present in prior years’ data. Thus, prior years' scripts ‘reclassify’ variables in a way that matches the logic used in the 2015-2023 cleaning script:

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# **2. Creating clean household-level AHS data files:**

* + Once you have finalized the project-level AHS data files, there is one additional R script within the GitHub repository, *generate\_household\_level\_spending\_file.R,* that can be used to generate a household-level AHS file.
  + The only portions of this script that will need to be edited in the future lie within the second and third sections, ‘Setting file paths and environment variables’: and ‘Reading in inflation data’:

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* Once you have edited these portions, the rest of the script should run smoothly!