# CDC SVI 2018 Documentation - 1/19/2022

Please see data dictionary below.

## *Introduction*

### *What is Social Vulnerability?*

Every community must prepare for and respond to hazardous events, whether a natural disaster like a tornado or a disease outbreak, or an anthropogenic event such as a harmful chemical spill. The degree to which a community exhibits certain social conditions, including high poverty, low percentage of vehicle access, or crowded households, may affect that community's ability to prevent human suffering and financial loss in the event of disaster. These factors describe a community's social vulnerability.

### *What is CDC Social Vulnerability Index?*

ATSDR's Geospatial Research, Analysis & Services Program (GRASP) created Centers for Disease Control and Prevention Social Vulnerability Index (CDC SVI or simply SVI, hereafter) to help public health officials and emergency response planners identify and map the communities that will most likely need support before, during, and after a hazardous event.

SVI indicates the relative vulnerability of every U.S. Census tract. Census tracts are subdivisions of counties for which the Census collects statistical data. SVI ranks the tracts on 15 social factors, including unemployment, minority status, and disability, and further groups them into four related themes. Thus, each tract receives a ranking for each Census variable and for each of the four themes, as well as an overall ranking.

In addition to tract-level rankings, SVI 2010, 2014, 2016, and 2018 also have corresponding rankings at the county level. Notes below that describe "tract" methods also refer to county methods.

### *How can CDC SVI help communities be better prepared for hazardous events?*

SVI provides specific socially and spatially relevant information to help public health officials and local planners better prepare communities to respond to emergency events such as severe weather, floods, disease outbreaks, or chemical exposure.

### *CDC SVI can be used to:*

- Allocate emergency preparedness funding by community need.
- Estimate the type and amount of needed supplies such as food, water, medicine, and bedding.
- Decide how many emergency personnel are required to assist people.
- Identify areas in need of emergency shelters.
- Create a plan to evacuate people, accounting for those who have special needs, such as those without vehicles, the elderly, or people who do not speak English well.
- Identify communities that will need continued support to recover following an emergency or natural disaster.

### *Important Notes on CDC SVI Databases*

- SVI 2014, 2016, and 2018 are available for download in shapefile format from https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. SVI 2014 and 2016 are also available via ArcGIS Online. Search on "CDC's Social Vulnerability Index."
- For SVI 2000 and 2010, keep the data in geodatabase format when downloading from https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. Converting to shapefile changes the field names.

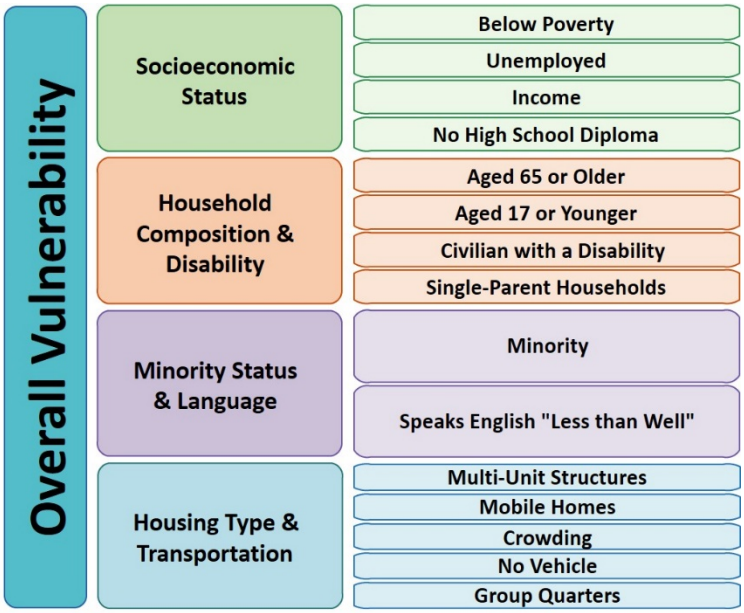
- ACS field names have changed between SVI 2016 and 2018. Name changes are noted in the Data Dictionary below.
- For US-wide or multi-state mapping and analysis, use the US database, in which all tracts are ranked against one another. For individual state mapping and analysis, use the state-specific database, in which tracts are ranked only against other tracts in the specified state.
- Starting with SVI 2014, we've added a stand-alone, state-specific Commonwealth of Puerto Rico database. Puerto Rico is not included in the US-wide ranking.
- Starting with SVI 2014, we've added a database of Tribal Census Tracts (https://www.census.gov/newsroom/blogs/random-samplings/2012/07/decoding-state-county-census-tracts-versus-tribal-census-tracts.html). Tribal tracts are defined independently of, and in addition to, standard county-based tracts. The tribal tract database contains only estimates, percentages, and their respective margins of error (MOEs), along with the adjunct variables described in the data dictionary below. Because of geographic separation and cultural diversity, tribal tracts are not ranked against each other nor against standard census tracts.
- Tracts with zero estimates for total population (N = 645 for the U.S.) were removed during the ranking process. These tracts were added back to the SVI databases after ranking. The TOTPOP field value is 0, but the percentile ranking fields (RPL_THEME1, RPL_THEME2, RPL_THEME3, RPL_THEME4, and RPL_THEMES) were set to -999.
- For tracts with > 0 TOTPOP, a value of -999 in any field either means the value was unavailable from the original census data or we could not calculate a derived value because of unavailable census data.
- Any cells with a -999 were not used for further calculations. For example, total flags do not include fields with a -999 value.
- Whenever available, we use Census-calculated MOEs. If Census MOEs are unavailable, for instance when aggregating variables within a table, we use approximation formulas provided by the Census in Appendix A (pages A-14 through A-17) of *A Compass for Understanding and Using American Community Survey Data* here: https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf If more precise MOEs are required, see Census methods and data regarding Variance Replicate Tables here: https://www.census.gov/programs-surveys/acs/technical-documentation/variance-tables.html. For selected ACS 5-year Detailed Tables, "Users can calculate margins of error for aggregated data by using the variance replicates. Unlike available approximation formulas, this method results in an exact margin of error by using the covariance term."
- The U.S. Census Bureau reports that data collection errors prohibited the inclusion of income and poverty data from Rio Arriba County, New Mexico. Please see a more detailed explanation provided by the Census Bureau here: https://www.census.gov/programs-surveys/acs/technical-documentation/errata/125.html.
- FIPS codes are generally defined as text to preserve leading zeros (0s). If you're working with csv files, leading 0s are required to properly join or merge tables. ArcGIS maintains leading 0s in the FIPS code fields of csv files. To preserve leading 0s and create an Excel file in Excel for Office 365, follow these steps:
    - Open a blank worksheet in Excel.
    - Click Data in the menu bar and choose the icon From Text/CSV
    - Navigate to the csv file and choose to Import
    - In the dialog box that opens, choose to Transform Data
    - In the Power Query Editor dialog box, for each of the FIPS columns (ST, STCNTY, FIPS for tracts and ST, FIPS for counties), right click the column name and choose to Change Type to Text.
    - As prompted in the Change Column Type dialog box, choose to Replace current. Click Close and Load.
    - Save As an Excel xlsx file.
- See the ***Methods*** section below for further details.

- Questions? Please visit the SVI website at http://svi.cdc.gov for additional information or email the SVI Coordinator at svi_coordinator@cdc.gov.

## *Methods*

### *Variables Used*

American Community Survey (ACS), 2014-2018 (5-year) data for the following estimates:




Text version of overall vulnerability image:

- Socioeconomic Status
  - Below Poverty
  - Unemployed
  - Income
  - No High School Diploma
- Household Composition & Disability
  - Aged 65 or Older
  - Aged 17 or Younger
  - Civilian with a Disability
  - Single-Parent Households
- Minority Status & Language
  - Minority
  - Aged 5 or Older who Speaks English “Less than Well”
- Housing Type & Transportation
  - Multi-Unit Structures
  - Mobile Homes
  - Crowding
  - No Vehicle
  - Group Quarters

For SVI 2018, we included two adjunct variables, 1) 2014-2018 ACS estimates for persons without health insurance, and 2) an estimate of daytime population derived from LandScan 2018 estimates. These adjunct variables are excluded from SVI rankings.
Raw data estimates and percentages for each variable, for each tract, are included in the database. In addition, the margins of error (MOEs) for each estimate, at the Census Bureau standard of 90%, are also included. Confidence intervals can be calculated by subtracting the MOE from the estimate (lower limit) and adding the MOE to the estimate (upper limit). Because of relatively small sample sizes, some of the MOEs are high. It's important to identify the amount of error acceptable in any analysis.

### *Rankings*

We ranked Census tracts within each state and the District of Columbia, to enable mapping and analysis of relative vulnerability in individual states. We also ranked tracts for the entire United States against one another, for mapping and analysis of relative vulnerability in multiple states, or across the U.S. as a whole. Tract rankings are based on percentiles. Percentile ranking values range from 0 to 1, with higher values indicating greater vulnerability.

For each tract, we generated its percentile rank among all tracts for 1) the fifteen individual variables, 2) the four themes, and 3) its overall position.

Theme rankings: For each of the four themes, we summed the percentiles for the variables comprising each theme. We ordered the summed percentiles for each theme to determine theme-specific percentile rankings.

**The four summary theme ranking variables, detailed in the Data Dictionary below, are**:

- **Socioeconomic - RPL_THEME1**
- **Household Composition & Disability - RPL_THEME2**
- **Minority Status & Language - RPL_THEME3**
- **Housing Type & Transportation - RPL_THEME4**

Overall tract rankings: We summed the sums for each theme, ordered the tracts, and then calculated overall percentile rankings. Please note; taking the sum of the sums for each theme is the same as summing individual variable rankings. **The overall tract summary ranking variable is RPL_THEMES**.

### *Flags*

Tracts in the top 10%, i.e., at the 90$^{th}$ percentile of values, are given a value of 1 to indicate high vulnerability. Tracts below the 90$^{th}$ percentile are given a value of 0.

For a theme, the flag value is the number of flags for variables comprising the theme. We calculated the overall flag value for each tract as the number of all variable flags.

For a detailed description of SVI variable selection rationale and methods, see A Social Vulnerability Index for Disaster Management (https://www.atsdr.cdc.gov/placeandhealth/svi/img/pdf/Flanagan_2011_SVIforDisasterManagement-508.pdf).

### ***Reproducibility Caveat***

When replicating SVI using Microsoft Excel or similar software, results may differ slightly from databases on the SVI website or ArcGIS Online. This is due to variation in the number of decimal places used by the different software programs. For purposes of automation, we developed SVI using SQL programming language. Because the SQL programming language uses a different level of precision compared to Excel and similar software, reproducing SVI in Excel may marginally differ from the SVI databases downloaded from the SVI website. For

future iterations of SVI, beginning with SVI 2018, we plan to modify the SQL automation process for constructing SVI to align with that of Microsoft Excel. If there are any questions, please email the SVI Coordinator at svi_coordinator@cdc.gov.

***CDC SVI 2018 Data Dictionary – American Community Survey field names that changed between 2016 and 2018 are noted in RED and marked 'Yes' or 'No' in the 'Field Name Changed Since 2016?' column.***

| Themes |
|---|
| 1. Socioeconomic |
| 2. Household Composition/Disability |
| 3. Minority Status/Language |
| 4. Housing Type/Transportation |

Variables beginning with "E_" are estimates. Variables beginning with "M_" are margins of error for those estimates. Values of -999 represent "null" or "no data."

**The four summary theme ranking variables, detailed in the Data Dictionary below, are**:

- **Socioeconomic - RPL_THEME1**
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- **Minority Status & Language - RPL_THEME3**
- **Housing Type & Transportation - RPL_THEME4**

**The overall tract summary ranking variable is RPL_THEMES**.

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| ST | State-level FIPS code | | SVI | No | FIPS | In Excel, from Tract-level FIPS code, LEFT (FIPS, 2) | | |
| STATE | State name | | S0601 | Yes | NAME | In Excel, use DATA\|Text to Columns to extract state name | | GEO.display-label |
| ST_ABBR | State abbreviation | | N/A | No | N/A | Joined from Esri state boundary shapefile | | |
| STCNTY | County-level FIPS code | | SVI | No | FIPS | In Excel, from Tract-level FIPS code, LEFT (FIPS, 5) | In the county-level SVI database, the 5-digit STCNTY field is the FIPS field, used for joins. | GEO.id |
| COUNTY | County name | | S0601 | Yes | NAME | In Excel, use DATA\| Text to Columns to extract county name | | GEO.display-label |
| FIPS | Tract-level FIPS code | | S0601 | Yes | GEO_ID | In Excel, RIGHT (GEO.id, 11) | | |
| LOCATION | Text description of tract, county, state | | S0601 | Yes | NAME | | | GEO.display-label |
| AREA_SQMI | Tract area in square miles | | Census Cartographic Boundary File - U.S. Tracts 2018 500K | No | ALAND * 3.86102e-7 | Conversion from square meters to square miles | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| E_TOTPOP | Population estimate, 2014-2018 ACS | | S0601 | Yes | S0601_C01_001E | | | HC01_EST_VC01 |
| M_TOTPOP | Population estimate MOE, 2014-2018 ACS | | S0601 | Yes | S0601_C01_001M | | | HC01_MOE_VC01 |
| E_HU | Housing units estimate, 2014-2018 ACS | | DP04 | Yes | DP04_0001E | | | HC01_VC03 |
| M_HU | Housing units estimate MOE, 2014-2018 ACS | | DP04 | Yes | DP04_0001M | | | HC02_VC03 |
| E_HH | Households estimate, 2014-2018 ACS | | DP02 | Yes | DP02_0001E | | | HC01_VC03 |
| M_HH | Households estimate MOE, 2014-2018 ACS | | DP02 | Yes | DP02_0001M | | | HC02_VC03 |
| E_POV | Persons below poverty estimate, 2014-2018 ACS | 1 | B17001 | Yes | B17001_002E | | | HD01_VD02 |
| M_POV | Persons below poverty estimate MOE, 2014-2018 ACS | 1 | B17001 | Yes | B17001_002M | | | HD02_VD02 |
| E_UNEMP | Civilian (age 16+) unemployed estimate, 2014-2018 ACS | 1 | DP03 | Yes | DP03_0005E | | | HC01_VC07 |
| M_UNEMP | Civilian (age 16+) unemployed estimate MOE, 2014-2018 ACS | 1 | DP03 | Yes | DP03_0005M | | | HC02_VC07 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| E_PCI | Per capita income estimate, 2014-2018 ACS | 1 | B19301 | Yes | B19301_001E | | Fewer rows than other variables - joined to Census 2016 tracts. Contains null cells (i.e. -999). | HD01_VD01 |
| M_PCI | Per capita income estimate MOE, 2014-2018 ACS | 1 | B19301 | Yes | B19301_001M | | Fewer rows than other variables - joined to Census 2016 tracts | HD02_VD01 |
| E_NOHSDP | Persons (age 25+) with no high school diploma estimate, 2014-2018 ACS | 1 | B06009 | Yes | B06009_002E | | | HD01_VD03 |
| M_NOHSDP | Persons (age 25+) with no high school diploma estimate MOE, 2014-2018 ACS | 1 | B06009 | Yes | B06009_002M | | | HD02_VD03 |
| E_AGE65 | Persons aged 65 and older estimate, 2014-2018 ACS | 2 | S0101 | Yes | S0101_C01_030E | | | HC01_EST_VC32 |
| M_AGE65 | Persons aged 65 and older estimate MOE, 2014-2018 ACS | 2 | S0101 | Yes | S0101_C01_030M | | | HC01_MOE_VC32 |
| E_AGE17 | Persons aged 17 and younger estimate, 2014-2018 ACS | 2 | B09001 | Yes | B09001_001E | | | HD01_VD01 |
| M_AGE17 | Persons aged 17 and younger estimate MOE, 2014-2018 ACS | 2 | B09001 | Yes | B09001_001E | | | HD02_VD01 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| E_DISABL | Civilian noninstitutionalized population with a disability estimate, 2014-2018 ACS | 2 | DP02 | Yes | DP02_0071E | | | HC01_VC106 |
| M_DISABL | Civilian noninstitutionalized population with a disability estimate MOE, 2014-2018 ACS | 2 | DP02 | Yes | DP02_0071M | | | HC02_VC106 |
| E_SNGPNT | Single parent household with children under 18 estimate, 2014-2018 ACS | 2 | DP02 | Yes | DP02_0007E+ DP02_0009E | Estimate male householder, no wife present, family - With own children under 18 years + Estimate female householder, no husband present, family - With own children under 18 years | | HC01_VC09 + HC01_VC11 |
| M_SNGPNT | Single parent household with children under 18 estimate MOE, 2014-2018 ACS | 2 | DP02 | Yes | SQRT (DP02_0007M^2 + DP02_0009M^2) | SQRT (MOE male householder, no wife present, family - With own children under 18 years^2 + MOE female householder, no husband present, family - With own children under 18 years^2) | | SQRT(HC02_VC09^2 + HC02_VC11^2) |
| E_MINRTY | Minority (all persons except white, non-Hispanic) estimate, 2014-2018 ACS | 3 | B01001H | Yes | E_TOTPOP - B01001H_001E | Estimate total population – white, Non-Hispanic population | | E_TOTPOP - HD01_VD01 |
| M_MINRTY | Minority (all persons except white, non-Hispanic) estimate MOE, 2014-2018 ACS | 3 | B01001H | Yes | SQRT(M_TOTPOP^2 + B01001H_001M^2) | SQRT (MOE total population^2 + MOE white, non-Hispanic^2) | | SQRT(M_TOTPOP^2 + HD02_VD01^2) |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| E_LIMENG | Persons (age 5+) who speak English "less than well" estimate, 2014-2018 ACS | 3 | B16005 | Yes | B16005_007E + B16005_008E + B16005_012E + B16005_013E + B16005_017E + B16005_018E + B16005_022E + B16005_023E + B16005_029E + B16005_030E + B16005_034E + B16005_035E + B16005_039E + B16005_040E + B16005_044E + B16005_045E + | Estimate; Native: - Speak Spanish: - Speak English "not well" + Estimate; Native: - Speak Spanish: - Speak English "not at all" + Estimate; Native: - Speak other Indo-European languages: - Speak English "not well" + Estimate; Native: - Speak other Indo-European languages: - Speak English "not at all" + Estimate; Native: - Speak Asian and Pacific Island languages: - Speak English "not well" + Estimate; Native: - Speak Asian and Pacific Island languages: - Speak English "not at all" + Estimate; Native: - Speak other languages: - Speak English "not well" + Estimate; Native: - Speak other languages: - Speak English "not at all" + Estimate; Foreign born: - Speak Spanish: - Speak English "not well" + Estimate; Foreign born: - Speak Spanish: - Speak English "not at all" + Estimate; Foreign born: - Speak other Indo-European languages: - Speak English "not well" + Estimate; Foreign born: - Speak other Indo-European languages: - Speak English "not at all" + Estimate; Foreign born: - Speak Asian and Pacific Island languages: - Speak English "not well" + Estimate; Foreign born: - Speak Asian and Pacific Island languages: - Speak English "not at all" + Estimate; Foreign born: - Speak other languages: - Speak English "not well" + Estimate; Foreign born: - Speak other languages: - Speak English "not at all" | | HD01_VD07 + HD01_VD08 + HD01_VD12 + HD01_VD13 + HD01_VD17 + HD01_VD18 + HD01_VD22 + HD01_VD23 + HD01_VD29 + HD01_VD30 + HD01_VD34 + HD01_VD35 + HD01_VD39 + HD01_VD40 + HD01_VD44 + HD01_VD45 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| M_LIMENG | Persons (age 5+) who speak English "less than well" estimate MOE, 2014-2018 ACS | 3 | B16005 | Yes | SQRT(B16005_007M ^2 + B16005_008M ^2 + B16005_012M ^2 + B16005_013M ^2 + B16005_017M ^2 + B16005_018M ^2 + B16005_022M ^2 + B16005_023M ^2 + B16005_029M ^2 + B16005_030M ^2 + B16005_034M ^2 + B16005_035M ^2 + B16005_039M ^2 + B16005_040M ^2 + B16005_044M ^2 + B16005_045M ^2) | SQRT (MOE Native: - Speak Spanish: - Speak English "not well"^2 + MOE Native: - Speak Spanish: - Speak English "not at all"^2 + MOE Native: - Speak other Indo-European languages: - Speak English "not well"^2 + MOE Native: - Speak other Indo-European languages: - Speak English "not at all"^2 + MOE Native: - Speak Asian and Pacific Island languages: - Speak English "not well"^2 + MOE Native: - Speak Asian and Pacific Island languages: - Speak English "not at all"^2 + MOE Native: - Speak other languages: - Speak English "not well"^2 + MOE Native: - Speak other languages: - Speak English "not at all"^2 + MOE Foreign born: - Speak Spanish: - Speak English "not well"^2 + MOE Foreign born: - Speak Spanish: - Speak English "not at all"^2 + MOE Foreign born: - Speak other Indo-European languages: - Speak English "not well"^2 + MOE Foreign born: - Speak other Indo-European languages: - Speak English "not at all"^2 + MOE Foreign born: - Speak Asian and Pacific Island languages: - Speak English "not well"^2 + MOE Foreign born: - Speak Asian and Pacific Island languages: - Speak English "not at all"^2 + MOE Foreign born: - Speak other languages: - Speak English "not well"^2 + MOE Foreign born: - Speak other languages: - Speak English "not at all"^2) | | SQRT(HD02_VD07^2 + HD02_VD08^2 + HD02_VD12^2 + HD02_VD13^2 + HD02_VD17^2 + HD02_VD18^2 + HD02_VD22^2 + HD02_VD23^2 + HD02_VD29^2 + HD02_VD30^2 + HD02_VD34^2 + HD02_VD35^2 + HD02_VD39^2 + HD02_VD40^2 + HD02_VD44^2 + HD02_VD45^2) |
| E_MUNIT | Housing in structures with 10 or more units estimate, 2014-2018 ACS | 4 | DP04 | Yes | DP04_0012E + DP04_0013E | Estimate; UNITS IN STRUCTURE - Total housing units - 10 to 19 units + Estimate; UNITS IN STRUCTURE - Total housing units - 20 or more units | | HC01_VC19 + HC01_VC20 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| M_MUNIT | Housing in structures with 10 or more units estimate MOE, 2014-2018 ACS | 4 | DP04 | Yes | SQRT(DP04_0012M^2 + DP04_0013M^2) | SQRT (MOE UNITS IN STRUCTURE - Total housing units - 10 to 19 units^2 + MOE; UNITS IN STRUCTURE - Total housing units - 20 or more units^2) | | SQRT(HC02_VC19^2 + HC02_VC20^2) |
| E_MOBILE | Mobile homes estimate, 2014-2018 ACS | 4 | DP04 | Yes | DP04_0014E | | | HC01_VC21 |
| M_MOBILE | Mobile homes estimate MOE, 2014-2018 ACS | 4 | DP04 | Yes | DP04_0014M | | | HC02_VC21 |
| E_CROWD | At household level (occupied housing units), more people than rooms estimate, 2014-2018 ACS | 4 | DP04 | Yes | DP04_0078E + DP04_0079E | Estimate; OCCUPANTS PER ROOM - Occupied housing units - 1.01 to 1.50 + Estimate; OCCUPANTS PER ROOM - Occupied housing units - 1.51 or more | | HC01_VC114 + HC01_VC115 |
| M_CROWD | At household level (occupied housing units), more people than rooms estimate MOE, 2014-2018 ACS | 4 | DP04 | Yes | SQRT(DP04_0078M^2 + DP04_0079M^2) | SQRT (MOE OCCUPANTS PER ROOM - Occupied housing units - 1.01 to 1.50^2+ MOE OCCUPANTS PER ROOM - Occupied housing units - 1.51 or more^2) | | SQRT(HC02_VC114^2 + HC02_VC115^2) |
| E_NOVEH | Households with no vehicle available estimate, 2014-2018 ACS | 4 | DP04 | Yes | DP04_0058E | | | HC01_VC85 |
| M_NOVEH | Households with no vehicle available estimate MOE, 2014-2018 ACS | 4 | DP04 | Yes | DP04_0058M | | | HC02_VC85 |
| E_GROUPQ | Persons in group quarters estimate, 2014-2018 ACS | 4 | B26001 | Yes | B26001_001E | | | HD01_VD01 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| M_GROUPQ | Persons in group quarters estimate MOE, 2014-2018 ACS | 4 | B26001 | Yes | B26001_001M | | | HD02_VD01 |
| EP_POV | Percentage of persons below poverty estimate | 1 | S0601 | Yes | S0601_C01_049E | | | HC01_EST_VC67 |
| MP_POV | Percentage of persons below poverty estimate MOE | 1 | S0601 | Yes | S0601_C01_049M | | | HC01_MOE_VC67 |
| EP_UNEMP | Unemployment Rate estimate | 1 | DP03 | Yes | DP03_0009PE | | The ACS calculated Unemployment Rate = E_UNEMP/civilian population age 16+ in the labor force | HC03_VC12 |
| MP_UNEMP | Unemployment Rate estimate MOE | 1 | DP03 | Yes | DP03_0009PM | | | HC04_VC12 |
| EP_PCI | Per capita income estimate, 2014-2018 ACS | 1 | B19301 | Yes | B19301_001E | | Value is the same as E_PCI | HD01_VD01 |
| MP_PCI | Per capita income estimate MOE, 2014-2018 ACS | 1 | B19301 | Yes | B19301_001M | | Value is the same as M_PCI | HD02_VD01 |
| EP_NOHSDP | Percentage of persons with no high school diploma (age 25+) estimate | 1 | S0601 | Yes | S0601_C01_033E | | | HC01_EST_VC46 |
| MP_NOHSDP | Percentage of persons with no high school diploma (25+) estimate MOE | 1 | S0601 | Yes | S0601_C01_033M | | | HC01_MOE_VC46 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| EP_AGE65 | Percentage of persons aged 65 and older estimate, 2014-2018 ACS | 2 | S0101 | Yes | S0101_C02_030E | | | HC01_EST_VC31 |
| MP_AGE65 | Percentage of persons aged 65 and older estimate MOE, 2014-2018 ACS | 2 | S0101 | Yes | S0101_C02_030M | | | HC01_MOE_VC31 |
| EP_AGE17 | Percentage of persons aged 17 and younger estimate, 2014-2018 ACS | 2 | SVI | No | (E_AGE17 / E_TOTPOP)*100 | (Persons aged 17 and younger estimate / Total population estimate) * 100 | This calculation resulted in some division by 0 errors in cases where E_TOTPOP equals 0. These rows were revised with the estimated proportions set to 0 and their corresponding MOEs set to -999. | |
| MP_AGE17 | Percentage of persons aged 17 and younger estimate MOE, 2014-2018 ACS | 2 | SVI | No | ((SQRT(M_AGE17^2-((EP_AGE17/100)^2*M_TOTPOP^2)))/E_TOTPOP)*100 | ((SQRT(MOE Population under 18 years^2 - (Estimated proportion of persons aged 17 and younger^2 * MOE Total Population^2))) / Total population estimate) * 100 | Some MOE calculations resulted in errors because the value under the square root was negative. For these rows, as the Census Bureau suggests, we used the formula for derived ratios, as opposed to that for derived proportions. Instead of the subtraction in the standard formula, we add. See *A Compass for Understanding and Using American Community Survey Data*, page A-15 (https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf). | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| EP_DISABL | Percentage of civilian noninstitutionalized population with a disability estimate, 2014-2018 ACS | 2 | DP02 | Yes | DP02_0071PE | | | HC03_VC106 |
| MP_DISABL | Percentage of civilian noninstitutionalized population with a disability estimate MOE, 2014-2018 ACS | 2 | DP02 | Yes | DP02_0071PM | | | HC04_VC106 |
| EP_SNGPNT | Percentage of single parent households with children under 18 estimate, 2014-2018 ACS | 2 | SVI | No | (E_SNGPNT / E_HH) * 100 | (Single parent household with children under 18 estimate / Households estimate) * 100 | This calculation resulted in some division by 0 errors in cases where E_HH equals 0. These rows were revised with the estimated proportions set to 0 and their corresponding MOEs set to -999. | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| MP_SNGPNT | Percentage of single parent households with children under 18 estimate MOE, 2014-2018 ACS | 2 | SVI | No | ((SQRT(M_SNGPNT^2-((EP_SNGPNT/100)^2*M_HH^2)))/E_HH)*100 | ((SQRT(MOE Single parent households^2 - (Estimated proportion single parent households^2 * MOE Households^2))) / Households estimate) * 100 | Some MOE calculations resulted in errors because the value under the square root was negative. For these rows, as the Census Bureau suggests, we used the formula for derived ratios, as opposed to that for derived proportions. Instead of the subtraction in the standard formula, we add. See *A Compass for Understanding and Using American Community Survey Data*, page A-15 (https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf). | |
| EP_MINRTY | Percentage minority (all persons except white, non-Hispanic) estimate, 2014-2018 ACS | 3 | SVI | No | (E_MINRTY/E_TOTPOP)*100 | (Minority estimate / Total population estimate) * 100 | This calculation resulted in some division by 0 errors in cases where E_HH equals 0. These rows were revised with the estimated proportions set to 0 and their corresponding MOEs set to -999. | |
| MP_MINRTY | Percentage minority (all persons except white, non-Hispanic) estimate MOE, 2014-2018 ACS | 3 | SVI | | ((SQRT(M_MINRTY^2-((EP_MINRTY/100)^2*M_TOTPOP^2)))/E_TOTPOP)*100 | ((SQRT(MOE Minority^2 - (Estimated proportion minority^2 * MOE Total population^2))) / Total population estimate) * 100 | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| EP_LIMENG | Percentage of persons (age 5+) who speak English "less than well" estimate, 2014-2018 ACS | 3 | SVI and B16005 | Yes | (E_LIMENG/B16005_001E)*100 | (Persons who speak English "less than well" estimate / Population age 5 and over estimate) * 100 | This calculation resulted in some division by 0 errors in cases where total population age 5 and over equals 0. These rows were revised with the estimated proportions set to 0 and their corresponding MOEs set to -999. | (E_LIMENG/HD01_VD01)*100 |
| MP_LIMENG | Percentage of persons (age 5+) who speak English "less than well" estimate MOE, 2014-2018 ACS | 3 | SVI and B16005 | Yes | ((SQRT(M_LIMENG^2-((EP_LIMENG/100)^2*B16005_001M^2)))/B16005_001E)*100 | ((SQRT(MOE Persons who speak English less than well^2 - (Estimated proportion persons who speak English less than well^2 * MOE population age 5 and over^2))) / Population age 5 and over estimate) * 100 | Some MOE calculations resulted in errors because the value under the square root was negative. For these rows, as the Census Bureau suggests, we used the formula for derived ratios, as opposed to that for derived proportions. Instead of the subtraction in the standard formula, we add. See *A Compass for Understanding and Using American Community Survey Data*, page A-15 (https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf). | ((SQRT(M_LIMENG^2-((EP_LIMENG/100)^2*HD02_VD01^2)))/HD01_VD01)*100 |
| EP_MUNIT | Percentage of housing in structures with 10 or more units estimate | 4 | SVI | No | (E_MUNIT/E_HU)*100 | (Housing in structures with 10 or more units estimate / Housing units estimate)*100 | This calculation resulted in some division by 0 errors in cases where E_HU equals 0. These rows were revised with the estimated proportions set to 0 and their corresponding MOEs set to -999. | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| MP_MUNIT | Percentage of housing in structures with 10 or more units estimate MOE | 4 | SVI | No | ((SQRT(M_MUNIT^2-((EP_MUNIT/100)^2*M_HU^2)))/E_HU)*100 | ((SQRT(MOE Housing in structures with 10 or more units^2 - (Estimated proportion housing in structures with 10 or more units^2 * MOE Housing units^2))) / Housing units estimate) * 100 | Some MOE calculations resulted in errors because the value under the square root was negative. For these rows, as the Census Bureau suggests, we used the formula for derived ratios, as opposed to that for derived proportions. Instead of the subtraction in the standard formula, we add. See *A Compass for Understanding and Using American Community Survey Data*, page A-15 (https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf). | |
| EP_MOBILE | Percentage of mobile homes estimate | 4 | DP04 | Yes | DP04_0014PE | | | HC03_VC21 |
| MP_MOBILE | Percentage of mobile homes estimate MOE | 4 | DP04 | Yes | DP04_0014PM | | | HC04_VC21 |
| EP_CROWD | Percentage of occupied housing units with more people than rooms estimate | 4 | SVI and DP04 | Yes | (E_CROWD/DP04_0002E)*100 | (Occupied housing units with more people than rooms estimate / Occupied housing units estimate)*100 | This calculation resulted in some division by 0 errors in cases where HC01_VC04 equals 0. These rows were revised with the estimated proportions set to 0 and their corresponding MOEs set to -999. | E_CROWD/HC01_VC04)*100 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| MP_CROWD | Percentage of occupied housing units with more people than rooms estimate MOE | 4 | SVI and DP04 | Yes | ((SQRT(M_CROWD^2-((EP_CROWD/100)^2* DP04_0002M^2 )))/ DP04_0002E)*100 | ((SQRT(MOE Occupied housing units with more people than rooms^2 - (Estimated proportion of occupied housing units with more people than rooms^2 * MOE Occupied housing units^2))) /Occupied housing units estimate) * 100 | Some MOE calculations resulted in errors because the value under the square root was negative. For these rows, as the Census Bureau suggests, we used the formula for derived ratios, as opposed to that for derived proportions. Instead of the subtraction in the standard formula, we add. See *A Compass for Understanding and Using American Community Survey Data*, page A-15 (https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf). | ((SQRT(M_CROWD^2-((EP_CROWD/100)^2 *HC02_VC04^2))) / HC01_VC04)*100 |
| EP_NOVEH | Percentage of households with no vehicle available estimate | 4 | DP04 | Yes | DP04_0058PE | | | HC03_VC85 |
| MP_NOVEH | Percentage of households with no vehicle available estimate MOE | 4 | DP04 | Yes | DP04_0058PM | | | HC04_VC85 |
| EP_GROUPQ | Percentage of persons in group quarters estimate, 2014-2018 ACS | 4 | SVI | No | (E_GROUPQ/E_TOTPOP)*100 | (Persons in group quarters estimate / Total population estimate) * 100 | This calculation resulted in some division by 0 errors in cases where E_TOTPOP equals 0. These rows were revised with the estimated proportions set to 0 and their corresponding MOEs set to -999. | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| MP_GROUPQ | Percentage of persons in group quarters estimate MOE, 2014-2018 ACS | 4 | SVI | No | ((SQRT(M_GROUPQ^2-((EP_GROUPQ/100)^2*M_TOTPOP^2)))/E_TOTPOP)*100 | ((SQRT(MOE Persons in group quarters^2 - (Estimated proportion persons in group quarters^2 * MOE Total population^2))) / Total population estimate) * 100 | Some MOE calculations resulted in errors because the value under the square root was negative. For these rows, as the Census Bureau suggests, we used the formula for derived ratios, as opposed to that for derived proportions. Instead of the subtraction in the standard formula, we add. See *A Compass for Understanding and Using American Community Survey Data*, page A-15 (https://www.census.gov/content/dam/Census/library/publications/2008/acs/ACSGeneralHandbook.pdf). | |
| EPL_POV | Percentile Percentage of persons below poverty estimate | 1 | SVI | No | In Excel: PERCENTRANK.INC on EP_POV array with 4 significant digits | | | |
| EPL_UNEMP | Percentile Percentage of civilian (age 16+) unemployed estimate | 1 | SVI | No | In Excel: PERCENTRANK.INC on EP_UNEMP array with 4 significant digits | | | |
| EPL_PCI | Percentile per capita income estimate | 1 | SVI | No | In Excel: 1-(PERCENTRANK.INC on EP_PCI array with 4 significant digits) | | Per capita income necessarily reversed as high income equates with low vulnerability and vice versa. | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| EPL_NOHSDP | Percentile Percentage of persons with no high school diploma (age 25+) estimate | 1 | SVI | No | In Excel: PERCENTRANK.INC on EP_NOHSDP array with 4 significant digits | | | |
| SPL_THEME1 | Sum of series for Socioeconomic theme | 1 | SVI | No | EPL_POV + EPL_UNEMP + EPL_PCI + EPL_NOHSDP | | Null values (-999) removed before calculating output sum. Output for sums with null values in the same row set to -999. | |
| **RPL_THEME1** | Percentile ranking for Socioeconomic theme summary | 1 | SVI | No | In Excel: PERCENTRANK.INC on SPL_THEME1 array with 4 significant digits | | Null values (-999) removed from the array before calculating output percentile ranks. Output for -999 input cells set to -999. | |
| EPL_AGE65 | Percentile percentage of persons aged 65 and older estimate | 2 | SVI | No | In Excel: PERCENTRANK.INC on EP_AGE65 array with 4 significant digits | | | |
| EPL_AGE17 | Percentile percentage of persons aged 17 and younger estimate | 2 | SVI | No | In Excel: PERCENTRANK.INC on EP_AGE17 array with 4 significant digits | | | |
| EPL_DISABL | Percentile percentage of civilian noninstitutionalized population with a disability estimate | 2 | SVI | No | In Excel: PERCENTRANK.INC on EP_DISABL array with 4 significant digits | | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| EPL_SNGPNT | Percentile percentage of single parent households with children under 18 estimate | 2 | SVI | No | In Excel: PERCENTRANK.INC on EP_SNGPNT array with 4 significant digits | | | |
| SPL_THEME2 | Sum of series for Household Composition theme | 2 | SVI | No | EPL_AGE65 + EPL_AGE17 + EPL_DISABL + EPL_SNGPNT | | | |
| **RPL_THEME2** | Percentile ranking for Household Composition theme summary | 2 | SVI | No | In Excel: PERCENTRANK.INC on SPL_THEME2 array with 4 significant digits | | | |
| EPL_MINRTY | Percentile percentage minority (all persons except white, non-Hispanic) estimate | 3 | SVI | No | In Excel: PERCENTRANK.INC on EP_MINRTY array with 4 significant digits | | | |
| EPL_LIMENG | Percentile percentage of persons (age 5+) who speak English "less than well" estimate | 3 | SVI | No | In Excel: PERCENTRANK.INC on EP_LIMENG array with 4 significant digits | | | |
| SPL_THEME3 | Sum of series for Minority Status/Language theme | 3 | SVI | No | EPL_MINRTY + EPL_LIMENG | | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| **RPL_THEME3** | Percentile ranking for Minority Status/Language theme | 3 | SVI | No | In Excel: PERCENTRANK.INC on SPL_THEME3 array with 4 significant digits | | | |
| EPL_MUNIT | Percentile percentage housing in structures with 10 or more units estimate | 4 | SVI | No | In Excel: PERCENTRANK.INC on EP_MUNIT array with 4 significant digits | | | |
| EPL_MOBILE | Percentile percentage mobile homes estimate | 4 | SVI | No | In Excel: PERCENTRANK.INC on EP_MOBILE array with 4 significant digits | | | |
| EPL_CROWD | Percentile percentage households with more people than rooms estimate | 4 | SVI | No | In Excel: PERCENTRANK.INC on EP_CROWD array with 4 significant digits | | | |
| EPL_NOVEH | Percentile percentage households with no vehicle available estimate | 4 | SVI | No | In Excel: PERCENTRANK.INC on EP_NOVEH array with 4 significant digits | | | |
| EPL_GROUPQ | Percentile percentage of persons in group quarters estimate | 4 | SVI | No | In Excel: PERCENTRANK.INC on EP_GROUPQ array with 4 significant digits | | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| SPL_THEME4 | Sum of series for Housing Type/ Transportation theme | 4 | SVI | No | EPL_MUNIT + EPL_MOBIL + EPL_CROWD + EPL_NOVEH + EPL_GROUPQ | | | |
| **RPL_THEME4** | Percentile ranking for Housing Type/ Transportation theme | 4 | SVI | No | In Excel: PERCENTRANK.INC on SPL_THEME4 array with 4 significant digits | | | |
| SPL_THEMES | Sum of series themes | | SVI | No | SPL_THEME1 + SPL_THEME2 + SPL_THEME3 + SPL_THEME4 | | Null values (-999) removed before calculating output sum. Output for sums with null values in the same row set to -999. | |
| **RPL_THEMES** | Overall percentile ranking | | SVI | No | In Excel: PERCENTRANK.INC on SPL_THEMES array with 4 significant digits | | Null values (-999) removed from the array before calculating output percentile ranks. Output for -999 input cells set to -999. | |
| F_POV | Flag - the percentage of persons in poverty is in the 90th percentile (1 = yes, 0 = no) | 1 | SVI | No | EPL_POV >= 0.90 | | | |
| F_UNEMP | Flag - the percentage of civilian unemployed is in the 90th percentile (1 = yes, 0 = no) | 1 | SVI | No | EPL_UNEMP >= 0.90 | | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| F_PCI | Flag - per capita income is in the 90th percentile (1 = yes, 0 = no) | 1 | SVI | No | EPL_PCI >= 0.90 | | Output for -999 input cells set to -999. | |
| F_NOHSDP | Flag - the percentage of persons with no high school diploma is in the 90th percentile (1 = yes, 0 = no) | 1 | SVI | No | EPL_NOHSDIP >= 0.90 | | | |
| F_THEME1 | Sum of flags for Socioeconomic Status theme | 1 | SVI | No | F_POV + F_UNEMP + F_PCI + F_NOHSDP | | Null values (-999) removed before calculating output sum. Output for sums with null values in the same row set to -999. | |
| F_AGE65 | Flag - the percentage of persons aged 65 and older is in the 90th percentile (1 = yes, 0 = no) | 2 | SVI | No | EPL_AGE65 >= 0.90 | | | |
| F_AGE17 | Flag - the percentage of persons aged 17 and younger is in the 90th percentile (1 = yes, 0 = no) | 2 | SVI | No | EPL_AGE17 >= 0.90 | | | |
| F_DISABL | Flag - the percentage of persons with a disability is in the 90th percentile (1 = yes, 0 = no) | 2 | SVI | No | EPL_DISABL >= 0.90 | | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| F_SNGPNT | Flag - the percentage of single parent households is in the 90th percentile (1 = yes, 0 = no) | 2 | SVI | No | EPL_SNGPNT >= 0.90 | | | |
| F_THEME2 | Sum of flags for Household Composition theme | 2 | SVI | No | F_AGE65 + F_AGE17 + F_DISABL + F_SNGPNT | | | |
| F_MINRTY | Flag - the percentage of minority is in the 90th percentile (1 = yes, 0 = no) | 3 | SVI | No | EPL_MINRTY >= 0.90 | | | |
| F_LIMENG | Flag - the percentage those with limited English is in the 90th percentile (1 = yes, 0 = no) | 3 | SVI | No | EPL_LIMENG >= 0.90 | | | |
| F_THEME3 | Sum of flags for Minority Status/Languag e theme | 3 | SVI | No | F_MINRTY + F_LIMENG | | | |
| F_MUNIT | Flag - the percentage of households in multi-unit housing is in the 90th percentile (1 = yes, 0 = no) | 4 | SVI | No | EPL_MUNIT >= 0.90 | | | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| F_MOBILE | Flag - the percentage of mobile homes is in the 90th percentile (1 = yes, 0 = no) | 4 | SVI | No | EPL_MOBILE >= 0.90 | | | |
| F_CROWD | Flag - the percentage of crowded households is in the 90th percentile (1 = yes, 0 = no) | 4 | SVI | No | EPL_CROWD >= 0.90 | | | |
| F_NOVEH | Flag - the percentage of households with no vehicles is in the 90th percentile (1 = yes, 0 = no) | 4 | SVI | No | EPL_NOVEH >= 0.90 | | | |
| F_GROUPQ | Flag - the percentage of persons in institutionalized group quarters is in the 90th percentile (1 = yes, 0 = no) | 4 | SVI | No | EPL_GROUPQ >= 0.90 | | | |
| F_THEME4 | Sum of flags for Housing Type/ Transportation theme | 4 | SVI | No | F_MUNIT + F_MOBILE + F_CROWD + F_NOVEH + F_GROUPQ | | | |
| F_TOTAL | Sum of flags for the four themes | 4 | SVI | No | F_THEME1 + F_THEME2 + F_THEME3 + F_THEME4 | | Null values (-999) removed before calculating output sum. Output for sums with null values in the same row set to -999. | |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| E_UNINSUR | Adjunct variable - Uninsured in the total civilian noninstitutionalized population estimate, 2014-2018 ACS | | S2701 | Yes | S2701_C04_001E | | | HC04_EST_VC01 |
| M_UNINSUR | Adjunct variable - Uninsured in the total civilian noninstitutionalized population estimate MOE, 2014-2018 ACS | | S2701 | Yes | S2701_C04_001M | | | HC04_MOE_VC01 |
| EP_UNINSUR | Adjunct variable - Percentage uninsured in the total civilian noninstitutionalized population estimate, 2014-2018 ACS | | S2701 | Yes | S2701_C05_001E | | | HC05_EST_VC01 |

| 2018 VARIABLE NAME | 2018 DESCRIPTION | THEME | CENSUS or SVI TABLE(S) | FIELD NAME CHANGED SINCE 2016? | 2018 TABLE FIELD CALCULATION | CALCULATION DESCRIPTION | NOTES | 2016 TABLE FIELD CALCULATION if changed |
|---|---|---|---|---|---|---|---|---|
| MP_UNINSUR | Adjunct variable - Percentage uninsured in the total civilian noninstitutionalized population estimate MOE, 2014-2018 ACS | | S2701 | Yes | S2701_C05_001M | | | HC05_MOE_VC01 |
| E_DAYPOP | Adjunct variable - Estimated daytime population, LandScan 2018 | | N/A | No | | Derived from LandScan 2018 - http://web.ornl.gov/sci/landscan/index.shtml. We followed ORNL's instructions for processing in ArcGIS, loading the LandScan grid first and maintaining WGS84 projection parameters. Using Spatial Analyst, we ran the Zonal Statistics as Table function to sum estimated daytime population for each LandScan raster cell to obtain an estimated daytime population for each SVI 2018 census tract. | Tracts having no LandScan cells that overlay have been assigned null values (i.e. -999).<br><br>LandScan daytime populations are unavailable for Puerto Rico, therefore all Puerto Rico tracts and municipios are assigned -999. | |