CDC/ATSDR SVI 2020 Documentation - 8/5/2022

Please see data dictionary below beginning on page 7.

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/ATSDR Social Vulnerability Index?

ATSDR's Geospatial Research, Analysis, & Services Program (GRASP) created the Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry Social Vulnerability Index (CDC/ATSDR 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 16 social factors, including unemployment, racial and ethnic 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, 2018, and 2020 also have corresponding rankings at the county level.

Notes below that describe "tract" methods also refer to county methods.

How can 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.

SVI can be used to:

- Assess community need during emergency preparedness planning.
- 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 SVI Databases

- SVI 2014, 2016, 2018, and 2020 are available for download in shapefile format from https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. SVI 2014, 2016, 2018, and 2020 are also available via ArcGIS Online. Search for "CDC's Social Vulnerability Index."

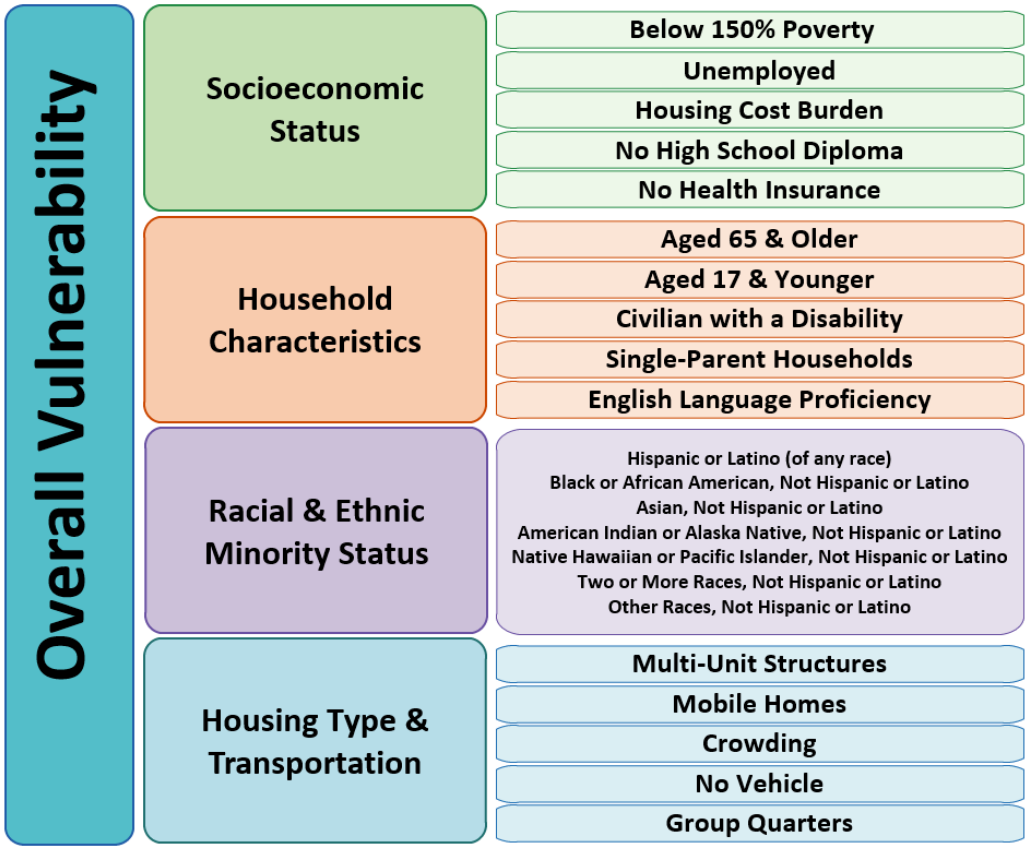
- For SVI 2000 and 2010, keep the data in geodatabase format when downloading from https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. Converting to shapefile changes the field names.
- ACS field names changed between SVI 2018 and 2020. Name changes are noted in the Data Dictionary 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/data/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."
- FIPS codes are generally defined as text to preserve leading zeros (0s). While 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), 2016-2020 (5-year) data for the following estimates:



Text version of overall vulnerability image:

- Socioeconomic Status
  - Below 150% Poverty
  - Unemployed
  - Housing Cost Burden
  - No High School Diploma
  - No Health Insurance
- Household Characteristics
  - Aged 65 & Older
  - Aged 17 & Younger
  - Civilian with a Disability
  - Single-Parent Households
  - English Language Proficiency
- Racial & Ethnic Minority Status
  - Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino

- Housing Type & Transportation
    - Multi-Unit Structures
    - Mobile Homes
    - Crowding
    - No Vehicle
    - Group Quarters

For SVI 2020, adjunct variables were included:

1) An estimate of daytime population derived from LandScan 2020 estimates
2) 2016-2020 ACS estimates for households without a computer with a broadband Internet subscription
3) 2016-2020 ACS estimates for Hispanic/Latino persons, Not Hispanic or Latino Black/African American persons, Not Hispanic or Latino Asian persons, Not Hispanic or Latino American Indian and Alaska Native persons, Not Hispanic or Latino Native Hawaiian and Other Pacific Islander persons, Not Hispanic or Latino persons of two or more races, and Not Hispanic or Latino persons of some other race

These adjunct variables are excluded from SVI rankings. We include these variables as adjunct variables because they can be helpful to explain more about the local areas in certain circumstances, and we want to make them easily accessible.

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 is 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 16 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 Status - RPL_THEME1**
- **Household Characteristics - RPL_THEME2**
- **Racial & Ethnic Minority Status - 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 summary ranking variable is RPL_THEMES**.

Flags

Tracts in the top 10%, i.e., at the 90th percentile of values, are given a flag value of 1 to indicate high vulnerability. Tracts below the 90th percentile are given a flag 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).

Caveat for SVI State Databases

The order of overall SVI rankings and SVI theme rankings of census tracts and counties may differ between the U.S. and state SVI databases. A detailed explanation follows.

Overall and theme rankings are based on cumulative values that are relative to the number of census tracts or counties being compared. Thus, differences between the order of overall and theme rankings in the U.S. database and that of state databases may arise from the accumulation of differences in summing the percentile ranks for the individual SVI variables.

For example, using the 2018 Georgia SVI database, Fulton County has an overall SVI score of 0.2658 with a ranking of 117 out of 159 Georgia counties. However, using the 2018 U.S. SVI database, Fulton County has an overall SVI score of 0.5268, giving Fulton County a ranking of 125 out of the 159 Georgia counties. The ranking differences between the two databases are due to differences in summed percentile ranks caused, in turn, by differences in the number of counties being compared in the U.S. database versus Georgia database.

In short, because Georgia (or any state) has far fewer census tracts and counties than does the nation, differences in one or more variable percentages from one census tract or county to another are more pronounced at the state level than at the national level. Such differences, when summed across all variables, will in some cases result in a rank order change between the two databases.

If there are any questions, please contact the SVI Coordinator at svi_coordinator@cdc.gov.

SVI 2020 Updates

As our understanding of social vulnerability evolves over time, SVI must evolve as well. Beginning with SVI 2020, we made modifications to SVI theme names, individual SVI indicators, and adjunct data. We modified the name of Theme 2 from Household Composition & Disability to Household Characteristics, and we modified the name of Theme 3 from Minority Status & Language to Racial & Ethnic Minority Status. Within Theme 1 Socioeconomic Status, we modified the Below Poverty variable from the 100% federal poverty level to the 150% federal poverty level, considering the federal poverty line thresholds established for several federal health coverage policies.[1] Similarly, we included a No Health Insurance variable in Theme 1 Socioeconomic Status as a lack of health insurance coverage is increasingly considered a marker of lower socioeconomic status and a barrier to healthcare access.[2] Also, within Theme 1 Socioeconomic Status, we exchanged the Per Capita Income variable for Housing Cost Burden, which are households that spend 30% or more of annual income on housing costs. Recent studies have emphasized the importance of examining housing cost burden as opposed to per capita income as a better indicator of insufficient disposable income among households.[3,4] Further, we moved the English Language Proficiency variable from Theme 3 Racial & Ethnic Minority Status to Theme 2 Household Characteristics because the ACS variables are based on language spoken at home and are better suited in the Household Characteristics theme. Additionally, although people in racial and ethnic minority groups are overall more likely to have limited English language proficiency than non-Hispanic whites, most (90.9%) are English language proficient.[5] Thus, we moved the English Language Proficiency out of the Minority theme because it may have adversely affected the vulnerability ranking of communities in high minority areas of the country. Lastly, we included new adjunct variables: households without a computer with a broadband Internet subscription, and breakdowns of racial and ethnic minority populations. The coronavirus disease 2019 pandemic has underscored the importance of broadband Internet access as a social determinant of health, justifying the inclusion of data on the lack of broadband Internet access as an adjunct variable.[6] While we aggregate all racial

and ethnic minority persons in Theme 3 Racial & Ethnic Minority Status, we recognize that SVI users may be interested in its component populations. A thorough literature review and internal validation were conducted to finalize the construction of SVI 2020.

1. https://www.healthcare.gov/glossary/federal-poverty-level-fpl/
2. McMaughan DJ, Oloruntoba O, Smith ML. Socioeconomic status and access to healthcare: Interrelated drivers for healthy aging. *Front Public Health*. 2020;8:231. doi:10.3389/fpubh.2020.00231
3. Hernández D, Swope CB. Housing as a platform for health and equity: Evidence and future directions. *Am J Public Health*. 2019;109(10):1363-1366. doi:10.2105/AJPH.2019.305210
4. Swope CB, Hernández D. Housing as a determinant of health equity: A conceptual model. *Soc Sci Med*. 2019;243:112571. doi:10.1016/j.socscimed.2019.112571
5. U.S. Census Bureau; American Community Survey (ACS), Five-Year Public Use Microdata Sample (PUMS), 2016-2020; accessed via MDAT; ; (27 July 2022).
6. Benda NC, Veinot TC, Sieck CJ, Ancker JS. Broadband Internet Access Is a Social Determinant of Health! *Am J Public Health*. 2020;110(8):1123-1125. doi:10.2105/AJPH.2020.305784

CDC SVI 2020 Data Dictionary – American Community Survey field names that changed between 2018 and 2020 are noted in RED and marked 'Yes' or 'No' in the 'Field Name Changed Since 2018?' column.

Themes
1. Socioeconomic Status
2. Household Characteristics
3. Racial & Ethnic Minority Status
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 Status - RPL_THEME1**
- **Household Characteristics - RPL_THEME2**
- **Racial & Ethnic Minority Status - RPL_THEME3**
- **Housing Type & Transportation - RPL_THEME4**

The overall summary ranking variable is RPL_THEMES.

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 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	No	NAME	In Excel, use DATA|Text to Columns to extract state name		
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.	
COUNTY	County name		S0601	No	NAME	In Excel, use DATA| Text to Columns to extract county name		
FIPS	Tract-level FIPS code		S0601	No	GEO_ID	In Excel, RIGHT (GEO.id, 11)		
LOCATION	Text description of tract, county, state		S0601	No	NAME			
AREA_SQMI	Tract area in square miles		Census Cartographic Boundary File - U.S. Tracts 2020 500K	No	ALAND * 3.86102e-7	Conversion from square meters to square miles		

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
E_TOTPOP	Population estimate, 2016-2020 ACS		S0601	No	S0601_C01_001E			
M_TOTPOP	Population estimate MOE, 2016-2020 ACS		S0601	No	S0601_C01_001M			
E_HU	Housing units estimate, 2016-2020 ACS		DP04	No	DP04_0001E			
M_HU	Housing units estimate MOE, 2016-2020 ACS		DP04	No	DP04_0001M			
E_HH	Households estimate, 2016-2020 ACS		DP02	No	DP02_0001E			
M_HH	Households estimate MOE, 2016-2020 ACS		DP02	No	DP02_0001M			
E_POV150	Persons below 150% poverty estimate, 2016-2020 ACS	1	S1701	Yes	S1701_C01_040E		Replaces E_POV	B17001_002E
M_POV150	Persons below 150% poverty estimate MOE, 2016-2020 ACS	1	S1701	Yes	S1701_C01_040M		Replaces E_POV	B17001_002M
E_UNEMP	Civilian (age 16+) unemployed estimate, 2016-2020 ACS	1	DP03	No	DP03_0005E			
M_UNEMP	Civilian (age 16+) unemployed estimate MOE, 2016-2020 ACS	1	DP03	No	DP03_0005M			
E_HBURD	Housing cost-burdened occupied housing units with annual income less than $75,000	1	S2503	Yes	S2503_C01_028E + S2503_C01_032E + S2503_C01_036E + S2503_C01_040E	Estimate; Occupied housing units with annual income of less than $20,000 with monthly housing costs of 30 percent or more of annual income + Estimate; Occupied housing units with annual income of $20,000 to $34,999	Replaces E_PCI	B19301_001E

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	(30%+ of income spent on housing costs) estimate, 2016-2020 ACS					with monthly housing costs of 30 percent or more of annual income + Estimate; Occupied housing units with annual income of $35,000 to $49,999 with monthly housing costs of 30 percent or more of annual income + Estimate; Occupied housing units with annual income of $50,000 to $74,999 with monthly housing costs of 30 percent or more of annual income		
M_HBURD	Housing cost-burdened occupied housing units with annual income less than $75,000 (30%+ of income spent on housing costs) estimate MOE, 2016-2020 ACS	1	S2503	Yes	SQRT (S2503_C01_028M ^2 + S2503_C01_032M ^2 + S2503_C01_036M ^2 + S2503_C01_040M ^2)	SQRT(MOE Occupied housing units with annual income of less than $20,000 with monthly housing costs of 30 percent or more of annual income^2 + MOE Occupied housing units with annual income of $20,000 to $34,999 with monthly housing costs of 30 percent or more of annual income^2 + MOE Occupied housing units with annual income of $35,000 to $49,999 with monthly housing costs of 30 percent or more of annual income^2 + MOE Occupied housing units with annual income of $50,000 to $74,999 with monthly housing costs of 30 percent or more of annual income^2	Replaces E_PCI	B19301_001M
E_NOHSDP	Persons (age 25+) with no high school diploma estimate, 2016-2020 ACS	1	B06009	No	B06009_002E			
M_NOHSDP	Persons (age 25+) with no high school diploma estimate MOE, 2016-2020 ACS	1	B06009	No	B06009_002M			
E_UNINSUR	Uninsured in the total civilian noninstitutionalized population estimate, 2016-2020 ACS	1	S2701	No	S2701_C04_001E		Newly included in Theme 1, was previously an adjunct variable	
M_UNINSUR	Uninsured in the total civilian noninstitutionalized	1	S2701	No	S2701_C04_001M		Newly included in Theme 1, was	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	population estimate MOE, 2016-2020 ACS						previously an adjunct variable	
E_AGE65	Persons aged 65 and older estimate, 2016-2020 ACS	2	S0101	No	S0101_C01_030E			
M_AGE65	Persons aged 65 and older estimate MOE, 2016-2020 ACS	2	S0101	No	S0101_C01_030M			
E_AGE17	Persons aged 17 and younger estimate, 2016-2020 ACS	2	B09001	No	B09001_001E			
M_AGE17	Persons aged 17 and younger estimate MOE, 2016-2020 ACS	2	B09001	No	B09001_001M			
E_DISABL	Civilian noninstitutionalized population with a disability estimate, 2016-2020 ACS	2	DP02	Yes	DP02_0072E			DP02_0071E
M_DISABL	Civilian noninstitutionalized population with a disability estimate MOE, 2016-2020 ACS	2	DP02	Yes	DP02_0072M			DP02_0071M
E_SNGPNT	Single-parent household with children under 18 estimate, 2016-2020 ACS	2	B11012	Yes	B11012_010E + B11012_015E	Estimate; Male householder, no spouse or partner present, with own children under 18 years + Estimate; Female householder, no spouse or partner present, with own children under 18 years		DP02_0007E + DP02_0009E
M_SNGPNT	Single-parent household with children under 18 estimate MOE, 2016-2020 ACS	2	B11012	Yes	SQRT (B11012_010M ^2 + B11012_015M ^2)	SQRT (MOE Male householder, no spouse or partner present, with own children under 18 years^2 + MOE Female householder, no spouse or partner present, with own children under 18 years^2)		SQRT (DP02_0007M ^2 + DP02_0009M ^2)

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
E_LIMENG	Persons (age 5+) who speak English "less than well" estimate, 2016-2020 ACS	2	B16005	No	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"	Newly included in Theme 2, removed from Theme 3	
M_LIMENG	Persons (age 5+) who speak English "less than well" estimate MOE, 2016-2020 ACS	2	B16005	No	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 +	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	Newly included in Theme 2, removed from Theme 3	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
					B16005_034M ^2 + B16005_035M ^2 + B16005_039M ^2 + B16005_040M ^2 + B16005_044M ^2 + B16005_045M ^2)	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)		
E_MINRTY	Minority (Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino) estimate, 2016-2020 ACS	3	DP05	No	DP05_0071E + DP05_0078E + DP05_0079E + DP05_0080E + DP05_0081E + DP05_0082E + DP05_0083E	Estimate; Hispanic or Latino, Total Population + Estimate; Black and African American Not Hispanic or Latino + Estimate; American Indian and Alaska Native Not Hispanic or Latino + Estimate; Asian Not Hispanic or Latino + Estimate; Native Hawaiian and Other Pacific Islander Not Hispanic or Latino + Estimate; Two or More Races Not Hispanic or Latino + Estimate; Other Races Not Hispanic or Latino	Replaces Estimate total population – white, non-Hispanic population	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
M_MINRTY	Minority (Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino) estimate MOE, 2016-2020 ACS	3	DP05	No	SQRT (DP05_0071M ^2 + DP05_0078M ^2 + DP05_0079M ^2 + DP05_0080M ^2 + DP05_0081M ^2 + DP05_0082M ^2 + DP05_0083M ^2)	SQRT (MOE; Hispanic or Latino, Total Population^2 + MOE; Black and African American Not Hispanic or Latino^2 + MOE; American Indian and Alaska Native Not Hispanic or Latino^2 + MOE; Asian Not Hispanic or Latino^2 + MOE; Native Hawaiian and Other Pacific Islander Not Hispanic or Latino^2 + MOE; Two or More Races Not Hispanic or Latino^2 + MOE; Other Races Not Hispanic or Latino^2)	Replaces SQRT (MOE total population^2 + MOE white, non-Hispanic^2)	
E_MUNIT	Housing in structures with 10 or more units estimate, 2016-2020 ACS	4	DP04	No	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		
M_MUNIT	Housing in structures with 10 or more units estimate MOE, 2016-2020 ACS	4	DP04	No	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)		
E_MOBILE	Mobile homes estimate, 2016-2020 ACS	4	DP04	No	DP04_0014E			
M_MOBILE	Mobile homes estimate MOE, 2016-2020 ACS	4	DP04	No	DP04_0014M			
E_CROWD	At household level (occupied housing units), more people	4	DP04	No	DP04_0078E + DP04_0079E	Estimate; Occupants per room, occupied housing units, 1.01 to 1.50 + Estimate;		

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	than rooms estimate, 2016-2020 ACS					Occupants per room, occupied housing units, 1.51 or more		
M_CROWD	At household level (occupied housing units), more people than rooms estimate MOE, 2016-2020 ACS	4	DP04	No	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)		
E_NOVEH	Households with no vehicle available estimate, 2016-2020 ACS	4	DP04	No	DP04_0058E			
M_NOVEH	Households with no vehicle available estimate MOE, 2016-2020 ACS	4	DP04	No	DP04_0058M			
E_GROUPQ	Persons in group quarters estimate, 2016-2020 ACS	4	B26001	No	B26001_001E			
M_GROUPQ	Persons in group quarters estimate MOE, 2016-2020 ACS	4	B26001	No	B26001_001M			
EP_POV150	Percentage of persons below 150% poverty estimate	1	SVI and S1701	Yes	(E_POV150 / S1701_C01_001E) * 100	(Persons below 150% poverty estimate / Population for whom poverty status is determined estimate) * 100		S0601_C01_049E
MP_POV150	Percentage of persons below 150% poverty estimate MOE	1	SVI and S1701	Yes	((SQRT (M_POV150^2-((EP_POV150 / 100)^2 * S1701_C01_001M ^2))) / S1701_C01_001E) * 100	((SQRT(MOE Persons below 150% poverty^2 - ((Estimated proportion of persons below 150% poverty)^2 * MOE Population for whom poverty status is determined^2))) / Population for whom poverty status is determined estimate) * 100		S0601_C01_049M
EP_UNEMP	Unemployment Rate estimate	1	DP03	No	DP03_0009PE		The ACS calculated Unemployment Rate = E_UNEMP/civilian	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
							population age 16+ in the labor force	
MP_UNEMP	Unemployment Rate estimate MOE	1	DP03	No	DP03_0009PM			
EP_HBURD	Percentage of housing cost-burdened occupied housing units with annual income less than $75,000 (30%+ of income spent on housing costs) estimate, 2016-2020 ACS estimate, 2016-2020 ACS	1	SVI and S2503	Yes	(E_HBURD / S2503_C01_001E) * 100	(Housing cost-burdened occupied housing units with annual income less than $75,000 estimate / Occupied housing units estimate) * 100		B19301_001E
MP_HBURD	Percentage of housing cost-burdened occupied housing units with annual income less than $75,000 (30%+ of income spent on housing costs) estimate MOE, 2016-2020 ACS	1	SVI and S2503	Yes	((SQRT (M_HBURD^2 - ((EP_HBURD / 100)^2 * S2503_C01_001M ^2))) / S2503_C01_001E) * 100	((SQRT(MOE Housing cost-burdened occupied housing units with annual income less than $75,000^2 - ((Estimated proportion of housing cost-burdened occupied housing units with annual income less than $75,000)^2 * MOE Occupied housing units^2))) / Occupied housing units estimate) * 100		B19301_001M
EP_NOHSDP	Percentage of persons with no high school diploma (age 25+) estimate	1	S0601	No	S0601_C01_033E			
MP_NOHSDP	Percentage of persons with no high school diploma (25+) estimate MOE	1	S0601	No	S0601_C01_033M			
EP_UNINSUR	Percentage uninsured in the	1	S2701	No	S2701_C05_001E		Newly included in Theme 1, was	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	total civilian noninstitutionalized population estimate, 2016-2020 ACS						previously an adjunct variable	
MP_UNINSUR	Percentage uninsured in the total civilian noninstitutionalized population estimate MOE, 2016-2020 ACS	1	S2701	No	S2701_C05_001M		Newly included in Theme 1, was previously an adjunct variable	
EP_AGE65	Percentage of persons aged 65 and older estimate, 2016-2020 ACS	2	S0101	No	S0101_C02_030E			
MP_AGE65	Percentage of persons aged 65 and older estimate MOE, 2016-2020 ACS	2	S0101	No	S0101_C02_030M			
EP_AGE17	Percentage of persons aged 17 and younger estimate, 2016-2020 ACS	2	SVI	No	(E_AGE17 / E_TOTPOP) * 100	(Persons aged 17 and younger estimate / Total population estimate) * 100		
MP_AGE17	Percentage of persons aged 17 and younger estimate MOE, 2016-2020 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		
EP_DISABL	Percentage of civilian noninstitutionalized population with a disability estimate, 2016-2020 ACS	2	DP02	Yes	DP02_0072PE			DP02_0071PE
MP_DISABL	Percentage of civilian noninstitutionalized	2	DP02	Yes	DP02_0072PM			DP02_0071PM

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	population with a disability estimate MOE, 2016-2020 ACS							
EP_SNGPNT	Percentage of single-parent households with children under 18 estimate, 2016-2020 ACS	2	SVI	No	(E_SNGPNT/E_HH) * 100	(Single-parent household with children under 18 estimate / Households estimate) * 100		
MP_SNGPNT	Percentage of single-parent households with children under 18 estimate MOE, 2016-2020 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 of single-parent households^2 * MOE Households^2))) / Households estimate) * 100		
EP_LIMENG	Percentage of persons (age 5+) who speak English "less than well" estimate, 2016-2020 ACS	2	SVI and B16005	No	(E_LIMENG / B16005_001E) * 100	(Persons who speak English "less than well" estimate / Population age 5 and over estimate) * 100	Newly included in Theme 2, removed from Theme 3	
MP_LIMENG	Percentage of persons (age 5+) who speak English "less than well" estimate MOE, 2016-2020 ACS	2	SVI and B16005	No	((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 of persons who speak English "less than well"^2 * MOE population age 5 and over^2))) / Population age 5 and over estimate) * 100	Newly included in Theme 2, removed from Theme 3	
EP_MINRTY	Percentage minority (Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native	3	SVI	No	(E_MINRTY / E_TOTPOP) * 100	(Minority estimate / Total population estimate) * 100		

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino) estimate, 2016-2020 ACS							
MP_MINRTY	Percentage minority (Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino) estimate MOE, 2016-2020 ACS	3	SVI	No	((SQRT (M_MINRTY^2 - ((EP_MINRTY / 100)^2 * M_TOTPOP^2))) / E_TOTPOP) * 100	((SQRT(MOE Minority^2 - (Estimated proportion of minority^2 * MOE Total population^2))) / Total population estimate) * 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		
MP_MUNIT	Percentage of housing in structures with 10	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 of housing in structures with 10 or more units^2		

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	or more units estimate MOE					* MOE Housing units^2))) / Housing units estimate) * 100		
EP_MOBILE	Percentage of mobile homes estimate	4	DP04	No	DP04_0014PE			
MP_MOBILE	Percentage of mobile homes estimate MOE	4	DP04	No	DP04_0014PM			
EP_CROWD	Percentage of occupied housing units with more people than rooms estimate	4	SVI and DP04	No	(E_CROWD / DP04_0002E) * 100	(Occupied housing units with more people than rooms estimate / Occupied housing units estimate) * 100		
MP_CROWD	Percentage of occupied housing units with more people than rooms estimate MOE	4	SVI and DP04	No	((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		
EP_NOVEH	Percentage of households with no vehicle available estimate	4	DP04	No	DP04_0058PE			
MP_NOVEH	Percentage of households with no vehicle available estimate MOE	4	DP04	No	DP04_0058PM			
EP_GROUPQ	Percentage of persons in group quarters estimate, 2016-2020 ACS	4	SVI	No	(E_GROUPQ / E_TOTPOP) * 100	(Persons in group quarters estimate / Total population estimate) * 100		
MP_GROUPQ	Percentage of persons in group quarters estimate MOE, 2016-2020 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 of persons in group quarters^2 * MOE Total population^2))) / Total population estimate) * 100		
EPL_POV150	Percentile percentage of	1	SVI	Yes	In Excel: PERCENTRANK.INC on			In Excel: PERCENTRANK.INC

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	persons below 150% poverty estimate				EP_POV150 array with 4 significant digits			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_HBURD	Percentile percentage of housing cost-burdened occupied housing units estimate	1	SVI	Yes	In Excel: PERCENTRANK.INC on EP_HBURD array with 4 significant digits			In Excel: 1-(PERCENTRANK.INC on EP_PCI array with 4 significant digits)
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			
EPL_UNINSUR	Percentile percentage of uninsured estimate	1	SVI	Yes	In Excel: PERCENTRANK.INC on EP_UNINSUR array with 4 significant digits		Newly included in Theme 1	
SPL_THEME1	Sum of series for Socioeconomic Status theme	1	SVI	Yes	EPL_POV150 + EPL_UNEMP + EPL_HBURD + EPL_NOHSDP + EPL_UNINSUR			EPL_POV + EPL_UNEMP + EPL_PCI + EPL_NOHSDP
RPL_THEME1	Percentile ranking for Socioeconomic Status theme summary	1	SVI	No	In Excel: PERCENTRANK.INC on SPL_THEME1 array with 4 significant digits			
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	2	SVI	No	In Excel: PERCENTRANK.INC on			

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	and younger estimate				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			
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			
EPL_LIMENG	Percentile percentage of persons (age 5+) who speak English "less than well" estimate	2	SVI	No	In Excel: PERCENTRANK.INC on EP_LIMENG array with 4 significant digits		Newly included in Theme 2, removed from Theme 3	
SPL_THEME2	Sum of series for Household Characteristics theme	2	SVI	Yes	EPL_AGE65 + EPL_AGE17 + EPL_DISABL + EPL_SNGPNT + EPL_LIMENG			EPL_AGE65 + EPL_AGE17 + EPL_DISABL + EPL_SNGPNT
RPL_THEME2	Percentile ranking for Household Characteristics theme summary	2	SVI	No	In Excel: PERCENTRANK.INC on SPL_THEME2 array with 4 significant digits			
EPL_MINRTY	Percentile percentage minority (Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino;	3	SVI	No	In Excel: PERCENTRANK.INC on EP_MINRTY array with 4 significant digits			

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino) estimate							
SPL_THEME3	Sum of series for Racial and Ethnic Minority Status theme	3	SVI	Yes	EPL_MINRTY			EPL_MINRTY + EPL_LIMENG
RPL_THEME3	Percentile ranking for Racial and Ethnic Minority Status 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	4	SVI	No	In Excel: PERCENTRANK.INC on			

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	persons in group quarters estimate				EP_GROUPQ array with 4 significant digits			
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			
RPL_THEMES	Overall percentile ranking		SVI	No	In Excel: PERCENTRANK.INC on SPL_THEMES array with 4 significant digits			
F_POV150	Flag - the percentage of persons below 150% poverty is in the 90th percentile (1 = yes, 0 = no)	1	SVI	Yes	EPL_POV150 >= 0.90			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			
F_HBURD	Flag - the percentage of housing cost-burdened occupied housing units is in the 90th percentile (1 = yes, 0 = no)	1	SVI	Yes	EPL_HBURD >= 0.90			EPL_PCI >= 0.90
F_NOHSDP	Flag - the percentage of	1	SVI	No	EPL_NOHSDP >= 0.90			

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	persons with no high school diploma is in the 90th percentile (1 = yes, 0 = no)							
F_UNINSUR	Flag - the percentage of uninsured is in the 90th percentile (1 = yes, 0 = no)	1	SVI	Yes	EPL_UNINSUR >= 0.90		Newly included in Theme 1	
F_THEME1	Sum of flags for Socioeconomic Status theme	1	SVI	Yes	F_POV150 + F_UNEMP + F_HBURD + F_NOHSDP + F_UNINSUR			F_POV + F_UNEMP + F_PCI + F_NOHSDP
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			
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_LIMENG	Flag - the percentage those	2	SVI	No	EPL_LIMENG >= 0.90		Newly included in Theme 2,	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	with limited English is in the 90th percentile (1 = yes, 0 = no)						removed from Theme 3	
F_THEME2	Sum of flags for Household Characteristics theme	2	SVI	Yes	F_AGE65 + F_AGE17 + F_DISABL + F_SNGPNT + F_LIMENG			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_THEME3	Sum of flags for Racial and Ethnic Minority Status theme	3	SVI	Yes	F_MINRTY			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			
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	4	SVI	No	EPL_NOVEH >= 0.90			

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	90th percentile (1 = yes, 0 = no)							
F_GROUPQ	Flag - the percentage of persons in 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			
E_DAYPOP	Adjunct variable - Estimated daytime population, LandScan 2020		N/A	No		Derived from LandScan 2020 - 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 2020 census tract.	Tracts having no LandScan cells that overlay have been assigned null values (i.e. -999).	
E_NOINT	Adjunct variable - Households without a computer with a broadband Internet subscription estimate, 2016-2020 ACS		S2802	N/A	S2802_C01_001E - S2802_C02_001E	Total population in households estimate – Total population in households with a computer with a broadband Internet subscription estimate	Newly included adjunct data	
M_NOINT	Adjunct variable - Households without a computer with a broadband Internet		S2802	N/A	SQRT (S2802_C01_001M ^2 - S2802_C02_001M ^2)	SQRT(MOE Total population in households^2 - MOE Total population in households with a computer with a broadband Internet subscription^2)	Newly included adjunct data	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	subscription estimate MOE, 2016-2020 ACS							
E_AFAM	Adjunct variable - Black/African American, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0078E		Newly included adjunct data	
M_AFAM	Adjunct variable - Black/African American, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0078M		Newly included adjunct data	
E_HISP	Adjunct variable – Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0071E		Newly included adjunct data	
M_HISP	Adjunct variable – Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0071M		Newly included adjunct data	
E_ASIAN	Adjunct variable – Asian, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0080E		Newly included adjunct data	
M_ASIAN	Adjunct variable – Asian, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0080M		Newly included adjunct data	
E_AIAN	Adjunct variable - American Indian or Alaska Native, not Hispanic or Latino		DP05	N/A	DP05_0079E		Newly included adjunct data	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	persons estimate, 2016-2020 ACS							
M_AIAN	Adjunct variable - American Indian or Alaska Native, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0079M		Newly included adjunct data	
E_NHPI	Adjunct variable - Native Hawaiian or Other Pacific Islander, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0081E		Newly included adjunct data	
M_NHPI	Adjunct variable - Native Hawaiian or Other Pacific Islander, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0081M		Newly included adjunct data	
E_TWOMORE	Adjunct variable - Two or more races, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0083E		Newly included adjunct data	
M_TWOMORE	Adjunct variable - Two or more races, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0083M		Newly included adjunct data	
E_OTHERRACE	Adjunct variable - Some other race, not Hispanic or Latino persons		DP05	N/A	DP05_0082E		Newly included adjunct data	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	estimate, 2016-2020 ACS							
M_OTHERRACE	Adjunct variable - Some other race, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0082M		Newly included adjunct data	
EP_NOINT	Adjunct variable - Percentage of households without a computer with a broadband Internet subscription estimate, 2016-2020 ACS		S2802	N/A	(E_NOINT / S2802_C01_001E) * 100	(Households without a computer with a broadband Internet subscription estimate / Households estimate) * 100	Newly included adjunct data	
MP_NOINT	Adjunct variable - Percentage of households without a computer with a broadband Internet subscription estimate MOE, 2016-2020 ACS		S2802	N/A	((SQRT (M_NOINT^2 - ((EP_NOINT / 100)^2 * S2802_C01_001M^2))) / S2802_C01_001M) * 100	((SQRT(MOE Households without a computer with a broadband Internet subscription^2 - ((Estimated proportion of households without a computer with a broadband Internet subscription estimate^2 * MOE Households^2))) / Households estimate) * 100	Newly included adjunct data	
EP_AFAM	Adjunct variable - Percentage of Black/African American, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0078PE		Newly included adjunct data	
MP_AFAM	Adjunct variable - Percentage of Black/African American, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0078PM		Newly included adjunct data	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
EP_HISP	Adjunct variable - Percentage of Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0071PE		Newly included adjunct data	
MP_HISP	Adjunct variable - Percentage of Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0071PM		Newly included adjunct data	
EP_ASIAN	Adjunct variable - Percentage of Asian, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0080PE		Newly included adjunct data	
MP_ASIAN	Adjunct variable - Percentage of Asian, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0080PM		Newly included adjunct data	
EP_AIAN	Adjunct variable - Percentage of American Indian or Alaska Native, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0079PE		Newly included adjunct data	
MP_AIAN	Adjunct variable - Percentage of American Indian or Alaska Native, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0079PM		Newly included adjunct data	
EP_NHPI	Adjunct variable - Percentage of		DP05	N/A	DP05_0081PE		Newly included adjunct data	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	Native Hawaiian or Other Pacific Islander, not Hispanic or Latino persons estimate, 2016-2020 ACS							
MP_NHPI	Adjunct variable - Percentage of Native Hawaiian or Other Pacific Islander, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0081PM		Newly included adjunct data	
EP_TWOMORE	Adjunct variable - Percentage of two or more races, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0083PE		Newly included adjunct data	
MP_TWOMORE	Adjunct variable - Percentage of two or more races, not Hispanic or Latino persons estimate MOE, 2016-2020 ACS		DP05	N/A	DP05_0083PM		Newly included adjunct data	
EP_OTHERRACE	Adjunct variable - Percentage of some other race, not Hispanic or Latino persons estimate, 2016-2020 ACS		DP05	N/A	DP05_0082PE		Newly included adjunct data	
MP_OTHERRACE	Adjunct variable - Percentage of some other race, not Hispanic or Latino persons estimate		DP05	N/A	DP05_0082PM		Newly included adjunct data	

2020 VARIABLE NAME	2020 DESCRIPTION	THEME	CENSUS or SVI TABLE(S)	FIELD NAME CHANGED SINCE 2018?	2020 TABLE FIELD CALCULATION	CALCULATION DESCRIPTION	NOTES	2018 TABLE FIELD CALCULATION if changed
	MOE, 2016-2020 ACS							