This document provides a general overview of methods that can be used to collect data on demographics (social and economic characteristics) of the community in the project service area,[1] including data that could be used to indicate social vulnerabilities within the community around the project. You have likely entered this document thinking about planning or monitoring for a particular outcome (e.g. recreational fishing), however the method can be used for additional outcomes as well (e.g. environmental education, subsistence fishing, mental health). Demographic data collection will likely only have to be carried out once for a particular project, and can be applied to the monitoring of multiple outcomes. The only reason this data collection will differ based on outcome is when the relevant project service areas for the outcomes are different. For example, the project service area for a recreational fishing outcome might include recreational fishers from five surrounding counties, whereas the project service area for flood control may only extend to the neighborhood adjacent to the project where flooding tends to occur.

## Background

Demographics data can be used to identify and map the locations, population size, and characteristics of communities in the project service area. These data include information such as socioeconomic status, household composition, disability, minority status, language, housing type, and transportation availability. Demographic data are also used to answer questions related to who is affected by new projects regarding access to and distribution of project benefits. As stated above, each project will likely only have to complete the community demographics assessment once, but it should be updated every time new census data are released.

### If you are applying these methods at the planning stage of your project:

Community demographics assessment in advance of or at the outset of a project is useful for understanding the makeup of the community the project is situated in and what vulnerabilities may exist in that community. Project teams can use this information to adjust project plans to maximize benefits to the community and minimize harm to existing marginalized groups. This information, along with a stakeholder assessment can also be used to help identify the types of stakeholder groups that need to be engaged throughout the project.

### If you are applying these methods for monitoring a particular outcome:

Community demographics assessment can be used for identifying potential equity concerns related to the access and distribution of project outcomes. You can use this information during the monitoring stages to: a) identify if there are socially vulnerable communities that may have limited or disproportionate access to the project site and its outcomes; b) identify who to engage with during outreach using surveys, workshops, and focus groups; c) tailor the methods used during outreach to best reach the community; or d) assess how the benefits are distributed to the communities in your service area. For example, if the community demographics assessment identifies that there is a large Vietnamese speaking community within your project service area, this could be a signal that a survey you develop should be translated into Vietnamese to enable responses from people who feel more comfortable communicating in that language.

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[1] The geographic boundary containing those stakeholders for whom a particular project outcome is relevant

# Methods:

## Step 1. Identify project service area (geographic boundaries)

First, you will need to define the project service area, which is the geographic region encompassing those who are likely to be affected by or interested in your project and its outcomes. Typically, the service area will include the area of all zip codes directly adjacent to the project site or where the project site's benefits are expected to occur (e.g. downstream of a water quality enhancement project), and could include all areas within a certain radius from the project site. For example, if the outcome of interest is employment by the project, your project service area will include the zip codes of past, current, or potential future employees (e.g. the employable workforce) of your project. However, the project service area will vary by project and outcomes of interest, and is best determined by the stakeholder assessment and project team knowledge of the surrounding areas; it is not an exact science. For example, if both local communities and tourists are traveling to visit your project, your project service area could include the zip codes of all (or most) visitors to the site as well as those who are interested in visiting the site.

## Step 2. Use existing tools to collect relevant demographic data

There are multiple existing online tools that allow you to explore and download demographic data at the zip code or census tract scale. Data is viewable within each tool and most of these data can be downloaded as Excel or .CSV files.

| Tool | Description | Scale of data |
|---|---|---|
| Place Explorer | This is the most comprehensive tool. It pulls together a set of charts on the demographics, education, economics, etc., of the place of interest, placing them in context with comparisons to other places. You can also see how different places rank on different metrics like unemployment, crime and income. | Zip code |
| Neighborhoods at Risk Tool | See where flooding, urban heat, and hurricanes impact the most vulnerable people. Map and explore information at the neighborhood level for every community in the U.S. | Census tract |
| Populations at Risk Tool | Customize and download reports about U.S. populations more likely to experience adverse social, health, or economic outcomes due to race, age, gender, poverty status, or other factors. Reports can be generated for census tracts, counties, or states. | Census tract |

If the above tools do not provide all the demographic data of interest, supplement these using other publicly available databases, such as those provided by the US Census Bureau, the USDA Economic Research Service, or the Center for Disease Control Social Vulnerability Index. Each of these sources have publicly available data at the zip code or county level, updated within the last five years. State and local governments may also have updated and publicly available demographic data. Multiple resources exist for accessing and processing these data through R, ArcGIS, Excel, and other software. A full list of links to data sets and toolkits are included at the end of this document.

## Social Vulnerability

Many of the datasets included in these tools can be used as indicators of social vulnerability. You can use the demographic data you collect to identify socially vulnerable groups in your project service area. It is critical to recognize that people living in socially or economically vulnerable areas may have reduced access to the project site or may be disproportionately affected if projects outcomes include trade-offs.

A community within your project service area could be considered socially vulnerable if demographic data and vulnerability deviate from national, state, or neighboring county averages by an amount that your project deems significant based on knowledge of the area. Assess this by determining the proportion of the population in each community (as defined in your county- and zip code-level data) that is made up of the potentially vulnerable or marginalized populations, and compare that to the average for the state or nearby counties.

Defining social vulnerabilities can be subjective, though there have been attempts to standardize these assessments—for example the White House Environmental Justice Advisory Council[2] defines disadvantaged and underserved communities to include those that are:

- Majority minority
    - Data can help identify marginalized racial groups, including (but not limited to) Black, Latinx, and Indigenous ("People of color, including Hispanics" in Neighborhoods at Risk tool)
- Have a high rate of health disparity
    - Data can help identify rates of illness ("Life expectancy," "COVID-19 cumulative cases," and "Prescribed drugs" in Place Explorer)
- Not attaining clean air and water standards
- Formerly redlined
- Have food insecurity and low child nutrition levels
- Have high rates of children receiving a school lunch program
- Low income (and/or high percentage of households on supplementary income benefits)
    - Data can identify the proportion of community that lives below the poverty line
- High numbers of superfund, waste, landfills, and toxic facilities
- Low education attainment
    - Data can help identify average education levels ("Educational attainment" in Populations at Risk tool or "Rate of associate degree/bachelor's degree attainment by gender," "Education attainment," and "School enrollment" in Place Explorer)
- High material and infant mortality rates
- High asthma rates and deaths
- Poorly maintained housing stock
- Lack of grocery stores, proliferation of cent stores and fast food outlets

The following demographic categories may also be good starting points for identifying social vulnerability.

- Population aged 65+ or under 5 ("Children under 5 years old" and "People over 65 years old" in Neighborhoods at Risk tool)
- Population with disabilities ("People with disabilities" in Neighborhoods at Risk tool)

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[2] White House Environmental Justice Advisory Council. Justice40 Climate and Economic Justice Screening Tool. May 2021. p. 64.

- Proportion of the population's primary language is not English ("People who don't speak English well" in Neighborhoods at Risk tool or "Language proficiency" in Populations at Risk tool)
- Low average per capita income (compared to state average)
- Above the national or state average rate of unemployment

Not every consideration will be fully addressed in census data or other publicly available data. You may be able to collect this type of information through participatory mapping or other qualitative methods. Other relevant information not explicitly captured by the tools mentioned above that may be worth considering in your determination of vulnerability and marginalized communities include:

- Poor public infrastructure
- Lack of access to fresh foods and other nutritional needs
- Lack of public services (particularly health and education)
- High levels of crowding
- Significantly decreasing rates of population density

# Resources
## General demographic data resources
- Place Explorer
- Neighborhoods at Risk Tool
- Populations at Risk Tool
- US Census Bureau, all datasets
- US Census Bureau Quick Facts
  - Includes summary demographic information, downloadable data tables and charts, and an interactive map
- US Census Bureau, Census and Survey Processing System (CSPro)
  - Public domain software package for entering, editing, tabulating, and disseminating census and survey data
- US Census Bureau, Population Analysis System (PAS) Software
  - Microsoft Excel workbooks with common procedures and methods for demographic analysis
- USDA Economic Research Service, County level datasets
  - Includes links to datasets at state and county level for population, poverty, employment, income, and education.
- USDA Economic Research Service Atlas of Rural and Small-Town America
  - Includes a spreadsheet for all data utilized in the atlas, and link to interactive map with county-level visualization of rates of population change, income levels and poverty rates, employment, and veteran populations.
- Free demographic data reports by zip code

## Resources for assessing social vulnerability
- The White House Environmental Justice Advisory Council's definition of a disadvantaged or underserved communities (see p. 64)
- The NAACP Equity in Building Resilience in Adaptation Planning document - includes a list of pre-existing vulnerabilities to consider

- The Environmental Protection Agency (EPA)'s Environmental Justice Screening and Mapping Tool (EJSCREEN) offers publicly accessible data that combines demographic and environmental information to produce environmental justice indices.
- The CDC's Social Vulnerability Index (SVI) includes additional guidance of how to assess and identify vulnerable areas. The CDC's overall Social Vulnerability Index is calculated using 15 variables grouped across four themes: socioeconomic status, household composition, race/ethnicity/language, and housing/transportation. Data used in the CDC calculation is from the US Census American Community Survey 2012-2016 for each state at a census-tract level.
- The County Health Rankings & Roadmaps from the Robert Wood Johnson Foundation, which determines county and zip code health based on 35 measures related to physical environment, social and economic factors, clinical care, and health behaviors of that community

For more information on the GEMS project metrics and protocols, visit this page.