Overall Disadvantage – The Department of Transportation (DOT) considers a census tract/project area as "disadvantaged" if its overall disadvantage score is in the 65th percentile or greater nationally. Overall disadvantage is also broken down into three component scores: transportation insecurity, place-based burden, and population-based vulnerability.

Transportation Insecurity – The disadvantage experienced when people are unable to get to where they need to go to meet the needs of their daily life regularly, reliably, affordably, and safely. This component score is calculated based on four subcomponents:

- **Destination Access Vulnerability** measures access to essential destinations, such as public transit, medical facilities, education, groceries, and jobs. Higher scores reflect project areas where residents have less access to essential destinations within 30 minutes of driving, walking, or biking.

- **Vehicle Access Vulnerability** measures whether residents in the project area have access to a vehicle and/or have the ability to drive. Higher scores reflect project areas where households are less likely able to drive to essential destinations.

    o *High scores in both Vehicle Access Vulnerability and Destination Access Vulnerability indicate disadvantage.*

- **Transportation Cost Burden** measures the share of income that households in the project area spend on daily transportation. Higher scores reflect project areas where households spend a higher percentage of their income on transportation.

- **Traffic Fatality Burden** measures traffic fatalities (both motorist non-motorist) using the National Highway Transportation Safety Administration's (NHTSA) Fatality Analysis Reporting System (FARS) data for 2018–2022. Higher scores reflect project areas with higher number of traffic fatalities.

Place-Based Burden – The disadvantage inherent in a location and experienced by all residents of the location. The subcomponents and indicators in this component are important because they provide transportation decision makers the information needed to develop transportation plans and make funding decisions that ensure a community's transportation infrastructure is resilient and minimizes negative health and economic impacts. This component score is calculated based on four subcomponents:

- **Extreme Weather Hazard** measures the predicted change in climate hazards or variability in the project area by 2050 which may have impacts on transportation system performance, safety, and reliability. These impacts in turn have major implications to supply chains, emergency response and the longevity of transportation investments. Higher scores reflect project areas that are likely to see increased climate impacts to transportation infrastructure.

- **Infrastructure Proximity** measures how close the project area is to freeways, high-volume roads, railways, airports, and ports, which may align with higher rates air and noise pollution, as well as divided communities. Higher scores reflect project areas close to one or more forms of transportation infrastructure.

- **Air Pollution Burden** measures the potential exposure of the project area to air pollutants and the adverse environmental conditions caused by air pollution. This measure does not incorporate carbon dioxide or greenhouse gases as a form of air pollution, but focuses on [criteria air pollutants](#) and on [hazardous air pollutants](#) (also known as air toxics), which are known to cause negative health outcomes. Higher scores reflect project areas with higher rates of air pollution. Higher scores reflect project areas with higher rates of air pollution.

- **Surface Pollution Burden** measures the potential exposure of the project area to land and surface water pollutants and the adverse environmental conditions cause by surface pollution. Higher scores reflect project areas with higher rates of surface pollution.

Population-Based Vulnerability – The disadvantage experienced by a population due to demographic and socioeconomic traits that make them particularly vulnerable. This component score is calculated based on five subcomponents:

- **Communication Vulnerability** measures whether community members can easily and reliably receive information and alerts about the transportation system. Higher scores reflect project areas whose households have limitations in their ability to receive digital communications or understand English.

- **Employment Vulnerability** measures lack of employment and education. Higher scores reflect project areas whose residents have lower rates of employment and high school graduation.

- **Income Vulnerability** measures poverty and income inequality in the project area. Higher scores reflect project areas with higher poverty rates and median household incomes below the regional average.

- **Housing Vulnerability** measures housing condition and the share of household income spent on housing. Higher scores reflect project areas where households spend a higher percentage of income on housing or there is a prevalence of household overcrowding and lack of indoor plumbing and kitchens.

- **Health Vulnerability** measures the increased prevalence of health conditions that may result from exposure to pollutants, poor walkability, car dependency, and long commute times. Higher scores reflect project areas with higher rates of asthma, cancer, high blood pressure, diabetes, and poor mental health.

Raw Data – the raw data provided is commonly-used in developing grant application narratives. In the definitions below DOT has provided the national averages, calculated using the data in the ETC Explorer. Note the data provided does not reflect the complete set of indicators that go into calculating disadvantage scores. See the Methodology and Data Download tab in the ETC Explorer tool for full methodology and to download a complete set of raw indicator data.

- **Children, Elderly and Disabled –** The percentage of the population who are persons younger than 18 years of age, 65 years of age and older, and/or persons having a physical or mental condition that limits movements, senses, or activities (2019–2023 American Community Survey (ACS) 5-year estimates). Higher percentages indicate the likelihood that a lower percentage of individuals within the project area are able to drive; the average value for the US is 45%.

- **Vehicles/Adult in Household –** The ratio of vehicles available to adults living in a household (2019–2023 ACS 5-year estimates). Scores less than 1 indicate more adults than cars in a household. The average value for the US is 0.92.

- **Households Without Vehicles –** The percentage of households that lack access to a vehicle (2019–2023 ACS 5-year estimates). When combined with lack of access to destinations, high percentages indicate that households within the project area may not be able to access medical care, have reduced employment prospects or have limited access to grocery stores. The average value for the US is 8%.

- **Pedestrian Access Score –** Measures the availability of daily destinations (including grocery stores, parks, medical and education facilities, jobs, and public transit) within a half-hour walk (1 mile). Higher scores indicate that residents can access more daily destinations by walking; 100% corresponds to the maximum availability in the US. The average value for the US is 12%. See the technical methodology documentation for more details.

- **Cyclist Access Score –** Measures the availability of daily destinations (including grocery stores, parks, medical and education facilities, jobs, and public transit) within a half-hour bike ride (5 miles). Higher scores indicate that residents can access more daily destinations by cycling; 100% corresponds to the maximum availability in the US. The average value for the US is 15%. See the technical methodology documentation for more details.

- **Motorist Access Score –** Measures the availability of daily destinations (including grocery stores, parks, medical and education facilities, jobs, and public transit) within a half-hour drive at rush hour. Higher scores indicate that residents can access more daily destinations by driving; 100% corresponds to the maximum availability in the US. The average value for the US is 23%. See the technical methodology documentation for more details.

- **Transportation Cost Burden –** The percentage of household income spent on daily transportation. The average value for the US is 19%. Percentages above 15% indicate that the project area is transportation cost burdened.

- **Housing Cost Burden –** The percentage of household income spent on housing (Bureau of Transportation Statistics, 2021). The average value for the US is 23%. Percentages above 30% indicate that the project area is housing cost burdened.

- **5-Year Count of Traffic Fatalities –** The number of fatalities that occurred in motor vehicle crashes 2018–2022, as reported by the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS).

- **2023 ACS Population –** Number of inhabitants (2019–2023 ACS 5-year estimates). Note that this will differ from the populations reported elsewhere on the dashboard, which are 2020 Decennial Census figures.

- **2.5-Micron Particulates (PM$_{2.5}$) –** The concentration in outdoor air of particulate matter less than 2.5 microns (μm) in diameter (Environmental Protection Agency (EPA), EJScreen 2024). Because of their small size (approximately 1/30th the average width of a human hair), the fine particles can lodge deeply into the lungs and are believed to pose significant health risks. The World Health Organization (WHO) considers concentrations over 5 micrograms per cubic meter to be high. The Environmental Protection Agency (EPA) National Ambient Air Quality Standard for PM$_{2.5}$ is a maximum of 9.0 micrograms per cubic meter.

- **Diesel Particulates –** The concentration of outdoor air of particulate matter found in the exhaust from trucks, buses, trains, ships, and other equipment with diesel engines (EPA, EJScreen 2024). According to the National Parks Service, concentrations of 35.5 micrograms per cubic meter or higher are unhealthy for sensitive groups.

- **Population with Limited English –** The percentage of residents, age 5 or older, who do not speak English "very well" (2019–2023 ACS 5-year estimates). The average value for the US is 8%.

- **Households Without Internet Access –** The percentage of households that do not have internet access at home (2019–2023 ACS 5-year estimates). The average value for the US is 12%.

- **Population Below 200% Poverty Line –** The percentage of residents living at incomes below twice the federal poverty line (2019–2023 ACS 5-year estimates). This is a measure of the portion of the population that are in economic distress. The average value for the US is 29%.

- **Average Median Household Income –** The average of median household income values for Census tracts in the project area (2019–2023 ACS 5-year estimates). The average value for the US is $82,167.