ARC

Overview: Equity is important to ARC. Additionally, federal guidance, such as Environmental Justice and Title VI, protects specific populations and requires planning organizations to address disproportionately high health or environmental burdens affecting these communities. As a first step in equity planning, federal guidance outlines identifying where specific populations live. Our analysis is one means to understand where there are concentrations of various populations in the region. We conduct these analyses using the most current American Community Survey (ACS)* data. This quantitative approach is one tool, used in tandem with qualitative knowledge and Transportation Equity Advisory Group (TEAG) input, to guide policy and funding decisions. Below are two methodology descriptions for the models ARC uses.

1 The Protected Classes Model

Purpose: The protected classes model is an analysis that helps ARC more directly and clearly identify the nine populations protected under Title VI of the Civil Rights Act and considered within the Executive Order on Environmental Justice. Those populations are:

- ethnic minority
- female
- foreign born
- limited English proficiency
- low-income
- older adults
- people with disabilities
- racial minority
- youth

Additional considerations were added based on FHWA's Environmental Justice recommendations (2017), FTA's Environmental Justice policy guidance (2012), and FTA's Title VI requirements and guidelines (2012). The results indicate population concentrations relative to the region. ARC uses the results of the analysis to demonstrate compliance with this guidance and demonstrate fair treatment of those population groups.

*For more information on American Community Surveys (ACS), click here.

Table 1: Summary of Protected Classes Model Criteria

Model Criteria	2013-2017 ACS 5-Year Estimates Table Name	Protected Class	Authorizing Source or Guiding Document
Ethnic Minority	B03002: Hispanic or Latino Origin by Race[†]	Minority and National Origin	Executive Order 12898, Title VI of the Civil Rights Act of 1964, FHWA's Title VI Program and Related Authorities: 23 CFR, and Title VI Requirements and Guidelines for FTA Recipients
Female	S0101: Age and Sex	Sex	FHWA's Title VI Program and Related Authorities: 23 CFR 200
Foreign Born	B05012: Nativity in the United States	National Origin	Title VI of the Civil Rights Act of 1964, FHWA's Title VI Program and Related Authorities: 23 CFR, and Title VI Requirements and Guidelines for FTA Recipients
Limited English Proficiency	S1601: Language Spoken at Home	Limited English Proficiency and National Origin	Title VI of the Civil Rights Act of 1964, FHWA's Title VI Program and Related Authorities: 23 CFR 200, and Title VI Requirements and Guidelines for FTA Recipients
Low-Income	S1701: Poverty Status in the Past 12 Months	Low-Income	Executive Order 12898 and FHWA's Title VI Program and Related Authorities: 23 CFR
Older Adults	S0101: Age and Sex	Age	FHWA's Title VI Program and Related Authorities: 23 CFR 200
People with Disability	S1810: Disability Characteristics	Disability	FHWA's Title VI Program and Related Authorities: 23 CFR 200
Racial Minority	B02001: Race	Race and Minority	Executive Order 12898, Title VI of the Civil Rights Act of 1964, FHWA's Title VI Program and Related Authorities: 23 CFR, and Title VI Requirements and Guidelines for FTA Recipients
Youth	S0101: Age and Sex	Age	FHWA's Title VI Program and Related Authorities: 23 CFR 200

[†]While the current information only answers whether a person is of Hispanic origins or not, future questionnaires may include additional ethnicities such as Middle East or North African (MENA) origins.

Calculating Scores: The protected classes model calculates the percentage of each of the population groups (model criteria) present in every census tract in the region. Next, every census tract is classified into one of five bins – well above average, above average, average, below average, and well below average – based on standard deviations relative to the regional mean. Each bin is given a score of 0 to 4 based on the concentration of a population which that bin represents. A 4 represents well above average (See Figure 1 below). Then a cumulative numeric score of 0 to 36 is calculated based on the concentration of a population identified in each bin across all nine criteria (See Figure 2 below).

This scoring calculation better identifies the concentration of each of the population groups for every census tract in the region. The change from ARC's ETA index methodology (2012) to the standard deviation methodology (2018) is supported by both FHWA's and FTA's Title VI recommendations to simply identify the protected classes using demographic data from the U.S. Census Bureau as the first step in conducting equity analyses. However, FTA's EJ guidance cautions recipients not to rely solely on population concentrations to understand the impact on a population group. In addition to technical analyses to understand where concentrations of populations are, ARC balances this approach with community engagement, policy and program development, and qualitative knowledge.

Figure 1: Criteria Bin Scoring

Bin scores of 1 and 3 are one standard deviation (st dev) from the regional average. Bins scores of 0 and 4 contain any remaining census tracts.

bin score: 0   1   2   3   4

- well below average
- below average
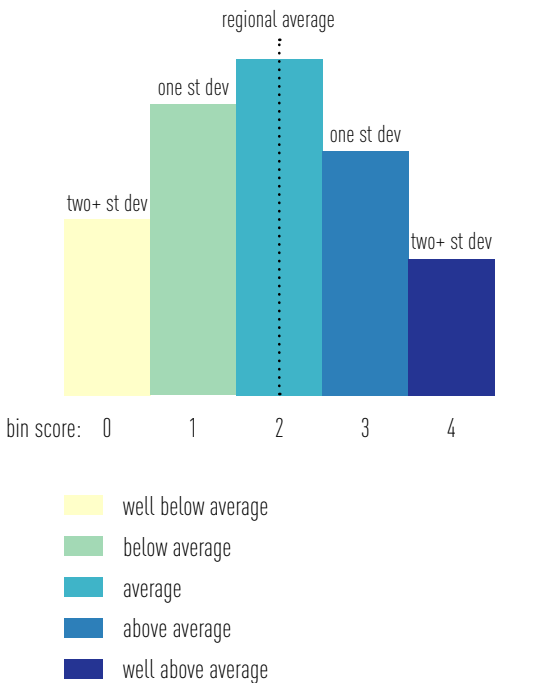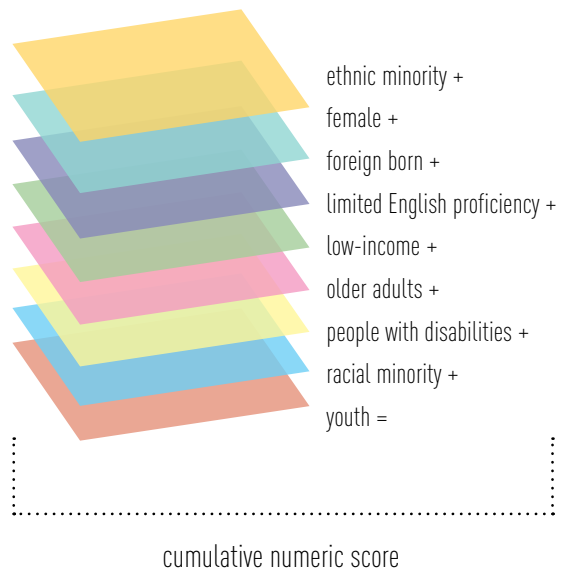- average
- above average
- well above average

Figure 2: Cumulative Bin Scoring

Every census tract has a maximum possible score of 36 since there are 9 criteria and a maximum bin score of 4 per criteria.

ethnic minority +
female +
foreign born +
limited English proficiency +
low-income +
older adults +
people with disabilities +
racial minority +
youth =

cumulative numeric score

2 Environmental Justice Model

Purpose: The Executive Order on Environmental Justice (1994) "requires federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects, including the interrelated social and economic effects of their programs, policies, and activities on minority populations and low-income populations in the United States."[1] ARC examines racial minority, ethnic minority, and low-income populations in an analysis distinct from all federally protected classes because these three inputs are considered indicators of the greatest inequality in the Atlanta region. ARC previously analyzed these three inputs and referred to the results as Equitable Target Areas (ETA). The environmental justice model supplants the ETA index methodology and nomenclature.

The environmental justice model results guide regional transportation and land use planning investments. In particular, the ARC Transportation Improvement Program (TIP) Project Evaluation Framework utilizes the results of this analysis to score and rank proposed projects. The regional analysis results are not the end-all for identifying and addressing disproportionately high and adverse effects, but rather one tool to leverage in our regional environmental justice efforts. This technical perspective is further refined and calibrated by qualitative knowledge, community engagement, and policy and program development.
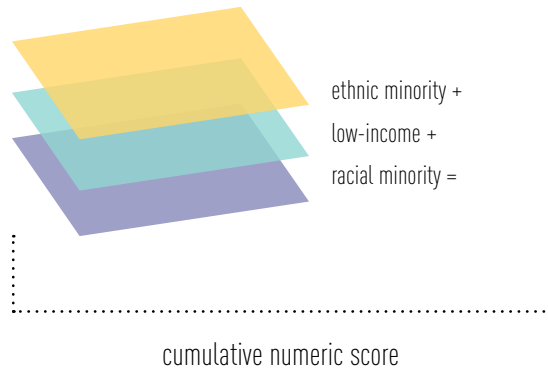
Table 2: Summary of Environmental Justice Model Criteria

Model Criteria	2013-2017 ACS 5-Year Estimates Table Name	Protected Class	Authorizing Source or Guiding Document
Ethnic Minority	B03002: Hispanic or Latino Origin by Race	Minority and National Origin	Executive Order 12898, Title VI of the Civil Rights Act of 1964, FHWA's Title VI Program and Related Authorities: 23 CFR, and Title VI Requirements and Guidelines for FTA Recipients
Low-Income	S1701: Poverty Status in the Past 12 Months	Low-Income	Executive Order 12898 and FHWA's Title VI Program and Related Authorities: 23 CFR
Racial Minority	B02001: Race	Race and Minority	Executive Order 12898, Title VI of the Civil Rights Act of 1964, FHWA's Title VI Program and Related Authorities: 23 CFR, and Title VI Requirements and Guidelines for FTA Recipients

[1]Summary of Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority and Low-Income Populations

Calculating Scores: This model follows the same standard deviation and calculation method as the Protected Classes Model. However, the cumulative numeric score ranges from 0 to 12 since there are only three criteria considered (See Figure 3). It is important to note that the results are relative to the region. Results will look different when analyzed at the county or city scale.

Figure 3: Cumulative Bin Scoring

Every census tract has a maximum possible score of 12 since there are 3 criteria and a maximum bin score of 4 per criteria.

ethnic minority +
low-income +
racial minority =

cumulative numeric score

Questions?

Need clarification?

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