Montgomery Planning

COMMUNITY EQUITY INDEX (CEI) USER GUIDE AND FREQUENTLY ASKED QUESTIONS

Background

The Community Equity Index (CEI) was developed as part of Montgomery Planning's commitment to advancing equity in land use planning and development as a replacement for the Equity Focus Areas (EFAs). The CEI builds on the EFAs, which was Planning's first data-driven equity tool developed in 2018, to provide a more robust analysis of areas of disadvantage and advantage in the county. This information sheet and guide is designed to be a quick point of reference to help staff understand, use, and answer frequently asked questions about the CEI.

1. What is the Community Equity Index (CEI)?

The CEI is a *composite* measure of five indicators that helps users understand socio-economic conditions that drive *advantage and disadvantage* across the county. It measures the extent to which individual neighborhoods are representative of the socio-economic diversity of the county.

Five CEI Indicators

Indicator Metric	Equity Concept
% of population below 200% of the federal poverty level	Economic Insecurity
% of people who speak English "less than very well"	Barriers to inclusivity and resource access
% of people with less than a bachelor's degree	Earnings potential
% of rental housing units	Housing stability and wealth building
Per capita income	Income

Key Definitions:

Composite – combination of several indicators

Advantage and Disadvantage – How likely a person is to thrive based on the set of measurable socio-economic characteristics. Advantage means a person has characteristics that are statistically associated with outcomes like economic security, good physical and mental health, and a fulfilling social life, while disadvantage means having characteristics associated with outcomes like economic insecurity, poor physical and mental health, and loneliness or isolation. These associations are probabilistic, meaning that there are exceptions, but when aggregated up to the neighborhood level as the CEI does, they enable us to make educated guesses about the general level of advantage versus disadvantage in the neighborhood.

Proportionate – Having a socio-economic profile that is similar to the countywide profile, thus representative of Montgomery County's socio-economic cross-section. For example, the countywide rate of people living under 200% of the poverty level is 17.3%; tracts that have a similar rate are representative of the county in this metric. Disproportionate neighborhoods are those that are not representative of the county by having either excessive advantage or disadvantage.

2. How is the CEI different from the Equity Focus Areas (EFAs)?

The CEI and the EFAs are both indexes and are calculated in similar ways, but the table below shows key differences. The main differences are that the CEI includes more indicators, more recent data, and is a gradient of seven categories rather than the EFA's binary classification of "in or out." The CEI also does not include a race and ethnicity indicator while the EFAs do.

CEI to EFA Comparison

		CEI	EFAs
Cover whole county?		Yes	No
Most recent data		2021	2018
Number of categories		7 (gradient)	2 (in or out)
Number of Indicators		5	3
Indicators	Poverty/Low-Income Status	Yes	Yes
	English Speaking Ability	Yes	Yes
	Education Level	Yes	No
	Housing – Rent vs. Own	Yes	No
	Per Capita Income	Yes	No
	Race & Ethnicity	No	Yes

3. How do I access the CEI data?

The CEI GIS layer is available in three places for different analysis needs and GIS capabilities:

a) *CEI Explorer*: To explore the layer, overlay with several pre-defined layers, explore related data, and print out simple maps, visit the CEI Explorer.
b) *Desktop GIS*: For more complex maps and analysis, the CEI is available as a layer in the department's layer stack on the "Q" drive for use in ArcMap or ArcGIS pro desktop. Layer is called "Equity – Community Equity Index (MNCPPC 2023).lyr"
c) *ArcGIS Online (AGOL):* There is a CEI AGOL layer. Contact Colin McNamara at Colin.McNamara@montgomeryplanning.org for assistance adding the layer to an existing AGOL map.

4. How do I interpret the CEI?

The CEI includes seven color-coded categories that can be interpreted along two dimensions: **1)** socio-economic advantage/disadvantage and **2)** representative proportionality compared to the county's socio-economic cross-section.

Figure 1a illustrates the categories vertically stacked as they usually appear on map legends. However, this display can be misleading because while the two ends of the stack are far apart in terms of advantage, they are equal in representative proportionality. Figure 1b arranges the categories along the two dimensions of advantage and representative proportionality to better visualize the concepts underlying the CEI scale. As categories move farther up the vertical axis, they have higher levels of socio-economic advantage, while rightward movement along the horizontal axis signifies greater representativeness of the county's overall socio-economic characteristics.

For example, "Advantaged – Highly Disproportionate" tracts and "Disadvantaged – Highly Disproportionate" tracts are equally unrepresentative of the county's socio-economic cross-section, but very far apart in terms of advantage. The yellow "Proportionate" category most represents the county's socio-economic cross-section and contains the least advantage or disadvantage.

Figure 1a: CEI Categories

Figure 1b: Visual Conceptualization of CEI Categories
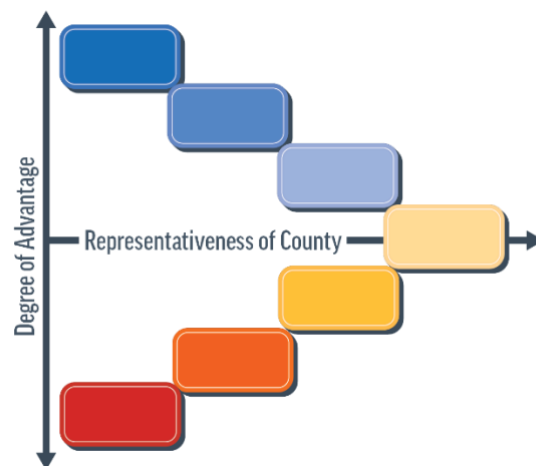
A. Definitions of categories by color codes:

Disadvantaged tracts (Red and Orange) are neighborhoods where socio-economic disadvantage is concentrated. Their concentrations of people in poverty, lacking English proficiency, lacking a bachelor's degree, and renting are significantly greater than the county's overall concentration of these characteristics, and the average income in these tracts is lower than the county's average income.

Advantaged tracts (Blue) are areas where socio-economic advantage is concentrated. Their concentrations of people in poverty, lacking English proficiency, lacking a bachelor's degree, and renting are significantly lower than the county's overall concentration of these characteristics, and the average incomes in these tracts are higher than the county's average income.

Proportionate tracts (Yellow) are areas that are socio-economically representative of Montgomery County. While they contain people with both advantaged and disadvantaged characteristics, neither are especially concentrated. Tract-wide average incomes are similar to the countywide average income.

B. Other components of CEI interpretation

Degree of Advantage/Disadvantage – As the colors move "away" from Yellow (Proportionate), they become darker to represent intensifying degrees of advantage or disadvantage.

Differential contributions of indicators – Because the CEI is an index, each individual indicator may contribute to different degrees to each tract's CEI score. CEI "Drivers" identify which indicator is the primary contributor to a tract's level of advantage or disadvantage. Contact Ben Kraft for an additional explanation if you need more detail about CEI drivers.

Conceptual Background of the CEI – Thrive Montgomery 2050 sets a goal of more socioeconomically diverse and integrated neighborhoods. ***The CEI was designed to account for the theoretical possibility that all neighborhoods can improve their socio-economic status while the county simultaneously becomes more geographically equitable.*** In the ideal (but unlikely) scenario, all tracts would have the same general socio-economic characteristics as the most currently advantaged (blue) tract in the county, but all would be proportionate (yellow) on the CEI map because the advantage would be equitably spread throughout the county. This approach to equity also allows for an increase in countywide equity in the form of more proportionate (yellow) tracts without any individual tract experiencing a decline in socio-economic characteristics.

5. How can I use the CEI?

The CEI can be used for many policy and planning purposes, including priority-setting, policy-making, and resource allocation.

When conducting geographically targeted projects like master plans, the CEI can be used to determine the extent to which advantage or disadvantage is distributed throughout the plan area (e.g. is one section more advantaged than another) or the extent to which the plan area overall is more or less advantaged than other parts of the county.

For countywide projects, the CEI can help focus efforts based on the location of advantage and disadvantage. For example, a project studying the need for park facilities may want to prioritize providing new or improved facilities in disadvantaged areas.

Disadvantaged areas (orange and red) may lack private wealth and political power, so prioritizing them for public investments may be appropriate. Further investigation to determine whether these areas lack resources or infrastructure may also be appropriate. For example, insufficient pedestrian infrastructure, green, open and recreational space, and healthy food access are often associated

with areas that have higher concentrations of socio-economic disadvantage and less political voice.

Advantaged (dark and light blue) areas are generally wealthier than the county overall and attract private investment more easily than less advantaged tracts. It may be appropriate in these areas to investigate whether people have sufficient access to benefits they provide. For example, do they have enough affordable and market-rate housing? If they are job-rich areas, how well does transit serve them? Policies and programs that encourage accessibility through strategies that encourage housing, mobility, and connectivity may allow more people to take advantage of the opportunities these places offer.

All types of investment may be appropriate in Proportionate (yellow) areas, and more detailed examinations of individual indicator scores (visible by clicking on individual tracts in the CEI Explorer) may be necessary.

The CEI has been used in several master plans to guide policies. For example, [The Great Seneca Plan: Connecting Life and Science,](#) used the CEI to identify a Highly Disproportionate – Disadvantaged neighborhood in its plan area and to recommend adding more affordable and market rate housing to increase diversity and prioritizing investment in environmental strategies to mitigate pollution from the nearby interstate (see pages 69-70).

6. Caution: What the CEI does not do

The CEI describes the characteristics of people in a neighborhood, but not the physical environment or levels of access to places or resources. The CEI can be used to infer non-socio-economic characteristics since neighborhoods of lower socio-economic status tends to correlate with poor access and infrastructure, but additional appropriate data sources should be consulted for other questions about specific conditions in neighborhoods.

The CEI is a generalized metric of concentration, meaning that it provides a high-level snapshot of a neighborhood's dominant socio-economic characteristics. There are people within each census tract whose socio-economic status does not match that of the tract's CEI score: some advantaged people live in disadvantaged tracts, and *vice versa*. Additionally, while the CEI uses census tracts as a proxy for neighborhoods, there can be several neighborhoods with different demographic characteristics within one census tract. More fine-grained assessment is necessary to determine whether and where these disparities exist within census tracts.

7. CEI Frequently Asked Questions

A. Will the CEI result in more affordable housing?

The CEI is not tied to any policy or program and does not mandate any outcomes. However, it does suggest that adding more affordable housing in advantaged areas can help to increase opportunities for disadvantaged residents.

B. Why is race and ethnicity not a part of the CEI?

There is no consensus on what variables or indicators should be in an equity or opportunity index. We designed the CEI to allow for two possible pathways for a neighborhood to change its score over time: 1) people moving and 2) people changing their socio-economic status. For example, a neighborhood can become more advantaged (or less disadvantaged) over a given timespan if people living there begin to earn more money. However, people cannot change their race or ethnicity, so the only way to change the index score based on this characteristic is via people moving into or out of the neighborhood. In this scenario, neighborhoods would in a sense be "penalized" or "rewarded" depending on which racial and ethnic groups were more likely to move into or out of neighborhoods.

C. Why doesn't the CEI have a component that reflects access to transportation, amenities, or services?

The CEI measures characteristics of people. The resulting categories can be overlaid with transportation and other physical, civic, and commercial infrastructure to determine the relationship between access and proximity to these things and the level of advantage or disadvantage of the people nearby.

D. Why are tracts advantaged or disadvantaged?

The terms "advantage" and "disadvantage" represent the effects of different levels of socio-economic status at a neighborhood level. Having lower socio-economic status (e.g. lower levels of education, lower incomes, a harder time communicating in English) presents challenges in navigating the economy and society that manifest as disadvantages relative to people and groups with higher socio-economic status. While these advantages and disadvantages occur on individual and neighborhood levels, the CEI is concerned with neighborhood-level advantages and disadvantages, For example, neighborhoods with higher concentrations of disadvantage are less likely to have the political power to secure desirable infrastructure—or block undesirable infrastructure—or the economic power to attract private investment like new housing and high-quality retail choices, especially relative to their more advantaged counterparts. The CEI identifies countywide disparities in advantage and disadvantage so that residents, planners, policy makers, and leaders can work to remedy them.

More questions?

Contact Ben Kraft
Research and Strategic Projects Division
Benjamin.Kraft@MontgomeryPlanning.org

◢ Montgomery Planning