

## **ITEM 9 – Information**

July 20, 2022

### Environmental Justice Analysis Phase 1: Update Equity Emphasis Areas

**Background:**

In preparation for the Environmental Justice analysis of Visualize 2045, staff have applied the TPB-approved methodology to update the Equity Emphasis Areas using the most recent American Community Survey data. The resulting map will be shared.



## **MEMORANDUM**

**TO:** Transportation Planning Board  
**FROM:** Sergio Ritacco, TPB Transportation Planner  
**SUBJECT:** Updated Equity Emphasis Areas (2016-2020 ACS), Environmental Justice analysis of Visualize 2045 Phase 1  
**DATE:** July 14, 2022

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## **SUMMARY**

In June 2022, the TPB staff updated the Equity Emphasis Areas (EEAs) using the approved TPB methodology. This updated data set will be used to conduct the federally required Environmental Justice (EJ) analysis of the approved Visualize 2045 plan, updated in 2022. While the methodology for identifying EEAs is unchanged, updates to the two main inputs has resulted in modifications to the location and number of EEAs identified. While some tracts dropped off and others were added, the difference at the regional level is nominal. This memorandum reviews the purpose, background, and methodology to produce the EEAs, and addresses common questions that might arise regarding the implications of this update.

## **PURPOSE**

Consistent with United States Presidential Executive Order 12898 and USDOT-FHWA Environmental Justice Order 6640.23A, the TPB is required to conduct an EJ analysis of its long-range transportation plan (LRTP). The purpose of this EJ analysis is to identify the impact of the LRTP and address disproportionately high and negative impacts from the projects, programs, and policies on low-income and historically disadvantaged racial and ethnic population groups. This memo provides the results of phase 1 of this work, updating the Equity Emphasis Areas, which are small geographic areas in our region with high concentrations of low-income and historically disadvantaged racial and ethnic population groups. In addition to its use in conducting the EJ analysis of the LRTP, the EEA framework provides an important tool for the Transportation Planning Board (TPB), Metropolitan Washington Council of Governments (COG), local jurisdictions, and stakeholders to advance and consider equity in everything we do and all people we serve. In identifying the locations with higher concentrations of these populations, planning and implementing agencies can elevate the sensitivity to specific needs or concerns of these populations when advancing plans, policies, projects and programs.

## **BACKGROUND AND CONTEXT**

The TPB completed the EJ analysis of its 2018 LRTP, Visualize 2045, in December 2018.<sup>1</sup> As part of this effort, the TPB developed an enhanced methodology through a consultation process with the TPB, COG's Planning Directors Technical Advisory Committee, TPB's Access for All Advisory

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<sup>1</sup> Visualize 2045 Environmental Justice Analysis Executive Summary and Report:  
<https://www.mwcog.org/documents/2018/10/17/visualize-2045-environmental-justice-analysis/>

Committee, and the TPB's Technical Committee. The methodology for its EJ analysis, adopted by the TPB in March 2017, includes two phases. Phase 1 identifies census tracts within the planning area with high concentrations of federally defined EJ population groups (low-income and historically disadvantaged racial and ethnic population groups), called Equity Emphasis Areas (EEAs). Phase 2 assesses if changes in mobility and accessibility associated with the impact of the LRTP are disproportionately high and adverse between EEAs and the rest of the region.

On June 15, 2022, the TPB adopted the latest LRTP, the 2022 update to Visualize 2045, and now staff has begun the EJ analysis of this plan. As part of phase 1, TPB staff has updated the EEAs using the latest available data and adopted methodology. No changes or modifications to the methodology for identifying EEAs have been made nor is staff seeking recommendations to modify the methodology.

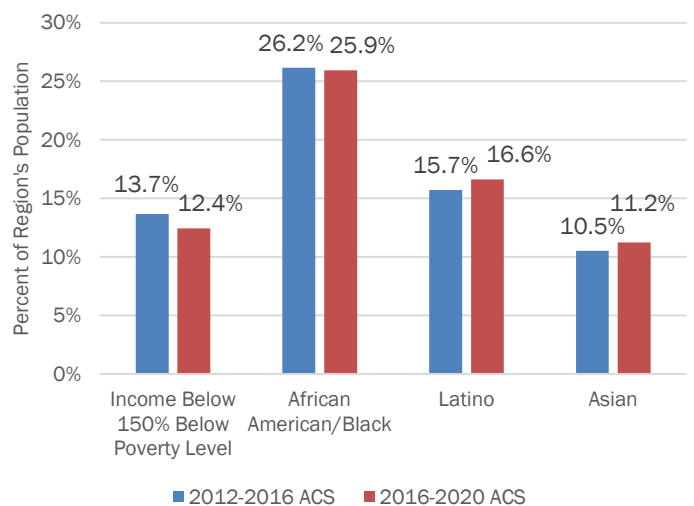
## INPUTS FOR UPDATING EQUITY EMPHASIS AREAS

The updated EEAs reflect the latest data for the two required elements of the methodology: U.S. Census tract boundaries and demographic data. The following section summarizes the general changes to these two elements:

**U.S. Census tracts in the TPB Planning Area:** Within the TPB Planning Area, a net 108 tracts (8.8% increase) were added between 2012-2016 ACS and 2016-2020 ACS. These additional tracts are associated with a one in every ten-year U.S. Census TIGER/Line boundary evaluation aligned with decennial Census updates (i.e., 2012-2016 ACS use 2010 TIGER/Line boundaries and 2016-2020 ACS use 2020 TIGER/Line boundaries). New tracts are identified, that is, split from an existing tract, when its population grows beyond 8,000 inhabitants (typically, a tract is to have around 4,000 inhabitants) or is consolidated with another when its population is less than 1,200 inhabitants. A comparison of changes between 2010 and 2020 tracts across the United States can be found here: <https://arcg.is/1aiWLu0>.

**Demographic data:** Demographic estimates are from the most recent U.S. Census' American Community Survey (ACS) for the 2016-2020 5-year period.<sup>2</sup> Because there is one year overlap with the data sampling and updated tract shapes between the 2012-2016 ACS EEAs and the 2016-2020 ACS EEAs, staff does not recommend making a complete "change overtime comparison" between the two datasets. However, while the region's population grew by over 200,000 (or 3.7%) between these two datasets, the share of individuals who self-identify with one of the historically disadvantaged racial and ethnic population groups or report household income below low-income (150% below the poverty level, in 2020, \$39,369 per year for a family of four) remained relatively constant.

**Figure 1: Share of Regional Population for EJ Population Groups (2012-2016 ACS & 2016-2020 ACS)**



<sup>2</sup> EEAs for the 2018 Visualize 2045 EJ analysis used 2010 U.S. Census tracts and demographic data from U.S. Census ACS 2012-2016 5-year averages.

Data from the 2020 decennial Census for all datasets were not available during production. Once it is released, staff intend to apply the EEA methodology and compare the results with EEAs identified with the 2016-2020 ACS to explore any differences. Staff expect to continue to use the ACS 5-year averages because of concerns on the accuracy and veracity of the 2020 decennial dataset during data collection, particularly response rates from historically disadvantaged racial and ethnic population groups.

## UPDATING THE EQUITY EMPHASIS AREAS

While the methodology for identifying EEAs is unchanged, updates to the two main inputs have resulted in modifications to the location and number of EEAs identified. Table 1, Table 2, and Figure 2 present summary data and depicts the changes in the EEAs (including new and discontinued) developed in 2018 and this update.<sup>3</sup> Figure 3 displays the updated EEA map for the TPB planning area. Appendix A provides more detail on the TPB-approved methodology.

The spatial patterns in the updated EEAs are like those identified using 2012-2016 ACS in 2018 and the clusters of EEAs remain generally unchanged. While some tracts dropped off and others were added, the difference at the regional level is nominal. Updated EEAs comprise 27 percent of tracts in the TPB Planning Area (361 of 1,330 tracts). This rate is slightly lower than the 29 percent of tracts identified using the 2012-2016 ACS EEAs (351 of 1222 tracts). Like the spatial patterns of EEAs, differences between totals and averages for EEA population groups and other traditionally disadvantaged population groups are modest, with differences ranging from -1.4 percent to 1.6 percent.

Staff recognizes committee members, members to the TPB, COG Board of Directors, and other stakeholders may have various questions regarding the implications of this update. The following are staff responses to some likely questions:

### **How does the demographic make-up of the region compare today to 5 years ago and how may it impact the identification of EEAs?**

In many ways the demographic make-up of the region is very similar to the 2012-2016 period; changes to the percent share of inhabitants who are low-income or one of the identified historically disadvantaged racial and ethnic population groups have changed modestly. Low-income declined by 1.2%, African American or Black declined by 0.2%, Hispanic or Latino increased by 0.9%, and Asian increased by 0.7%. Like the region's total population, all historically disadvantaged racial and ethnic EEA population groups similarly increased in total population over the two time periods and their respective percent share within EEAs remained relatively steady as a result.

### **There are an additional net 13 tracts identified as EEAs but the percent share of all tracts in the region has declined (from 28.7% to 27.4%), why is this?**

Through its decennial update to tracts, the U.S. Census has identified an additional 108 tracts in the TPB Planning Area (from 1,222 to 1,330). This is most often due to the growth of inhabitants in a tract going beyond the Census' 8,000 inhabitant threshold for a tract and needing to be split. As a result, in areas with an increase in inhabitants and density there are now likely more tracts providing greater geographic detail for staff to analyze. This results in more overall tracts in the region and more tracts identified as EEAs while still being a similar percent share.

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<sup>3</sup> Note that in Table 2 the differences in EEA tracts will not always total due to the changes to tracts between 2010 and 2020 TIGER/Line as noted in page 2.

**Why does the current set of EEAs discontinue some identified in 2018 while identifying others?  
Could you further explain why we see changes?**

There are many reasons why a tract in the region may have been discontinued, added, retained, or not considered as an EEA. Staff encourages members and stakeholders to use the EEAs to inform local conditions.<sup>4</sup> Two possible scenarios are provided below as examples:

1. The index scoring and thresholds established with the TPB methodology means that modest changes in the demographic make-up of a tract, particularly in ones that are/were near these thresholds, could cause it to drop or be added as an EEA (see Appendix A for method and thresholds).
2. Changes to local land use may impact an area in a myriad of way: displacement, large population growth, contraction in population, or other changes that impacts the concentration of low-income and traditionally disadvantaged racial and ethnic population groups.

**Are the 271 EEAs from 2018 that are unchanged in 2022 the exact same geographic spaces?**

In most cases and to the average eye, yes. Updated tract boundaries might have caused minor boundary changes or not been changed at all.

**My jurisdiction/agency is using the existing EEAs to advance our own equity considerations, how are we to use these newly defined EEAs and what will happen to the existing data?**

TPB staff is supportive of the use of the 2018 EEAs by its member jurisdictions to inform local decision making in efforts to address equity. Updating the 2018 EEAs to match with the 2022 designations should be informed by a review of how the EEA and its data is being used in local efforts. Staff will continue to house the existing EEAs in the TPB's [Regional Transportation Database Clearinghouse](#). Also, the TPB's EEA designations are a regional product and not explicitly approved by the FHWA, FTA, or any other federal agency. There is no requirement for TPB member to use the TPB's EEAs in any other federal program and/or grants.

**What do these changes mean to the EJ analysis of the Visualize 2045 update?**

Staff will need to complete the EJ analysis of the LRPT to be able to answer this question. The updated EEAs is one of a few inputs into the TPB's EJ analysis methodology, the others being the inputs that are part of the TPB's travel demand model (including the constrained element projects of the LRTP). These elements together will produce data on various mobility and accessibility used to analyze the impact of the LRTP on EEAs. Staff will be conducting the EJ analysis of the LRTP beginning in early-August with results presented in mid- to late-Fall. Documentation from the EJ analysis of the 2018 LRTP can be found here:

<https://www.mwcog.org/documents/2018/10/17/visualize-2045-environmental-justice-analysis/>

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<sup>4</sup> GIS layers and associated data will be made available at <https://www.mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas/>

## NEXT STEPS

Staff will prepare materials for briefing the TPB at its July 2022 meeting. After conducting this briefing, staff will continue presenting the update EEAs to other TPB and COG committees, including the Planning Directors Technical Advisory Committee, and other stakeholders. Staff will also begin work on the EJ analysis of Visualize 2045 for disproportionately high and adverse impacts on EEAs compared to the rest of the region. Staff expect to brief the TPB Technical Committee and the TPB between October and December on the results from this analysis. We will update stakeholders of the updated EEA GIS layers and associated data which will be made available at <https://www.mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas/>

**Table 1: Summary data collected for 2012-2016 ACS EEA and 2016-2020 ACS EEA**

	2012-2016 ACS 2018 EEAs		2016-2020 ACS 2022 EEAs		Difference
	Total	Percent	Total	Percent	
Total Regional Population	5,425,389		5,626,505		201,116 (+3.7%)
<b>Summary for Equity Emphasis Areas</b>					
Total tracts analyzed	1,222		1,330		+108
Equity Emphasis Areas	351	28.7%	364	27.4%	+13 (-1.4%)
<b>Regional Total and Averages for Equity Emphasis Areas Population Groups</b>					
Below 150% Poverty Level	740,886	13.7%	688,041	12.4%	-1.2%
Black or African American Alone	1,419,478	26.2%	1,459,501	25.9%	-0.2%
Hispanic or Latino	852,566	15.7%	935,089	16.6%	+0.9%
Asian Alone	570,951	10.5%	632,302	11.2%	+0.7%
<b>Percent of Region Population within EEAs</b>					
Below 150% Poverty Level		54.8%		55.5%	+0.69%
African American/Black Alone		45.1%		43.2%	-1.90%
Hispanic or Latino		46.7%		43.3%	-3.38%
Asian Alone		22.1%		20.1%	-2.03%
<b>Regional Total and Averages for Additional Traditionally Disadvantaged Population Groups</b>					
Speak English "less than" very well	559,739	11.1%	603,979	11.5%	+0.4%
Older Adults (65 yod or greater)	613,164	11.3%	727,393	12.9%	+1.6%
Person with a Disability	430,244	8.0%	473,560	8.5%	+0.5%

**Table 2: Changes in Equity Emphasis Area Tracts by Jurisdiction**

	EEAs (12-16 ACS)	EEAs (16-20 ACS)	Same	New	Removed (2020 TIGER)
Alexandria City, VA	9	12	9	3	2
Arlington County, VA	12	8	5	3	8
Charles County, MD	5	7	4	3	1
District of Columbia	97	93	80	13	23
Fairfax City, VA	0	0	0	0	0
Fairfax County, VA	43	44	29	15	13
Falls Church City, VA	0	0	0	0	0
Fauquier County, VA	0	0	0	0	0
Frederick County, MD	9	11	8	3	2
Loudoun County, VA	5	6	2	4	4
Manassas City, VA	1	3	1	2	0
Manassas Park City, VA	1	1	1	0	0
Montgomery County, MD	49	53	39	14	19
Prince George's County, MD	103	104	81	23	18
Prince William County, VA	17	22	12	10	8
<b>Total</b>	<b>351</b>	<b>364</b>	<b>271</b>	<b>93</b>	<b>98</b>



Figure 2: Change in Equity Emphasis Areas (2012-2016 ACS to 2016-2020 ACS)

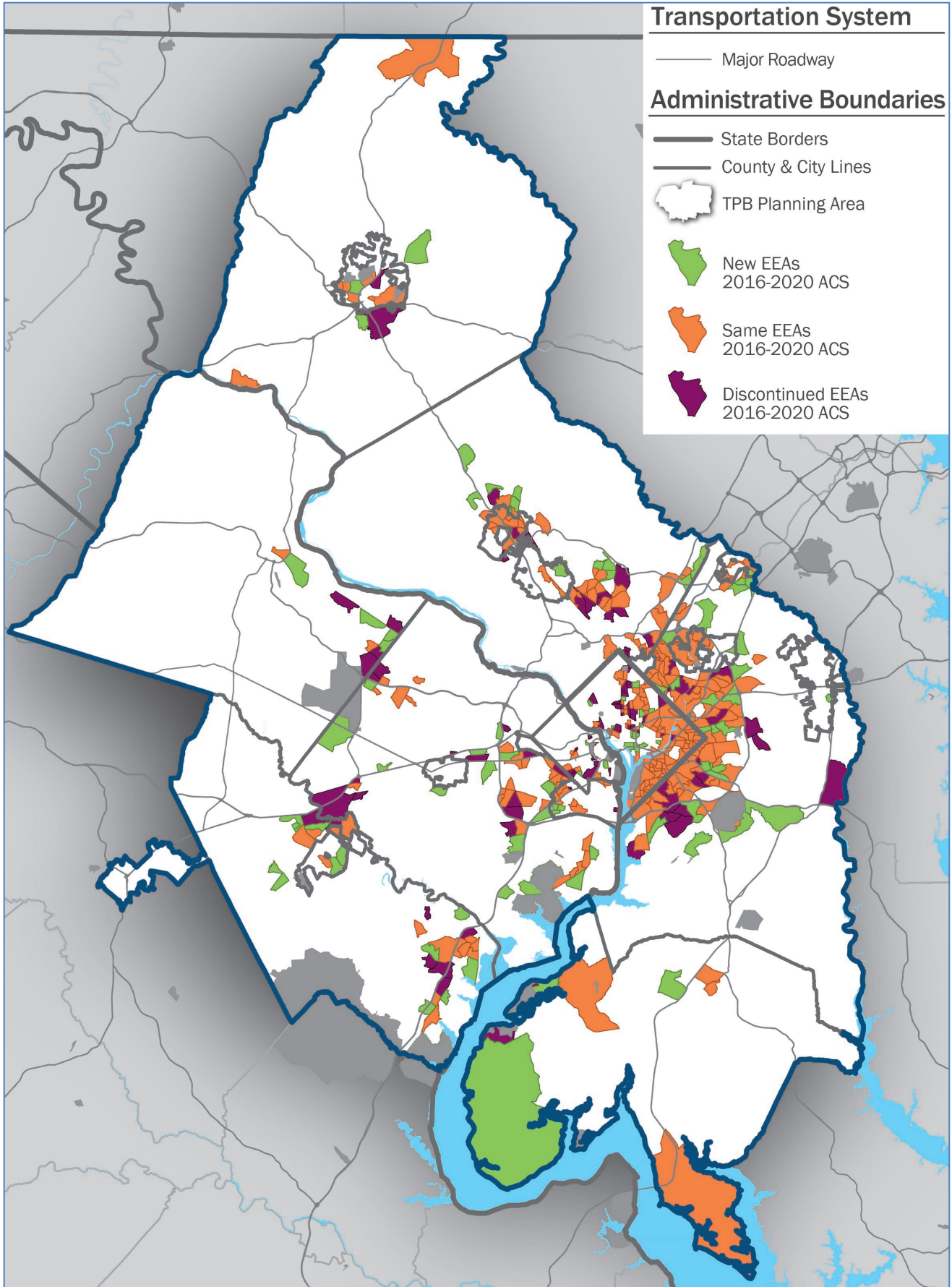
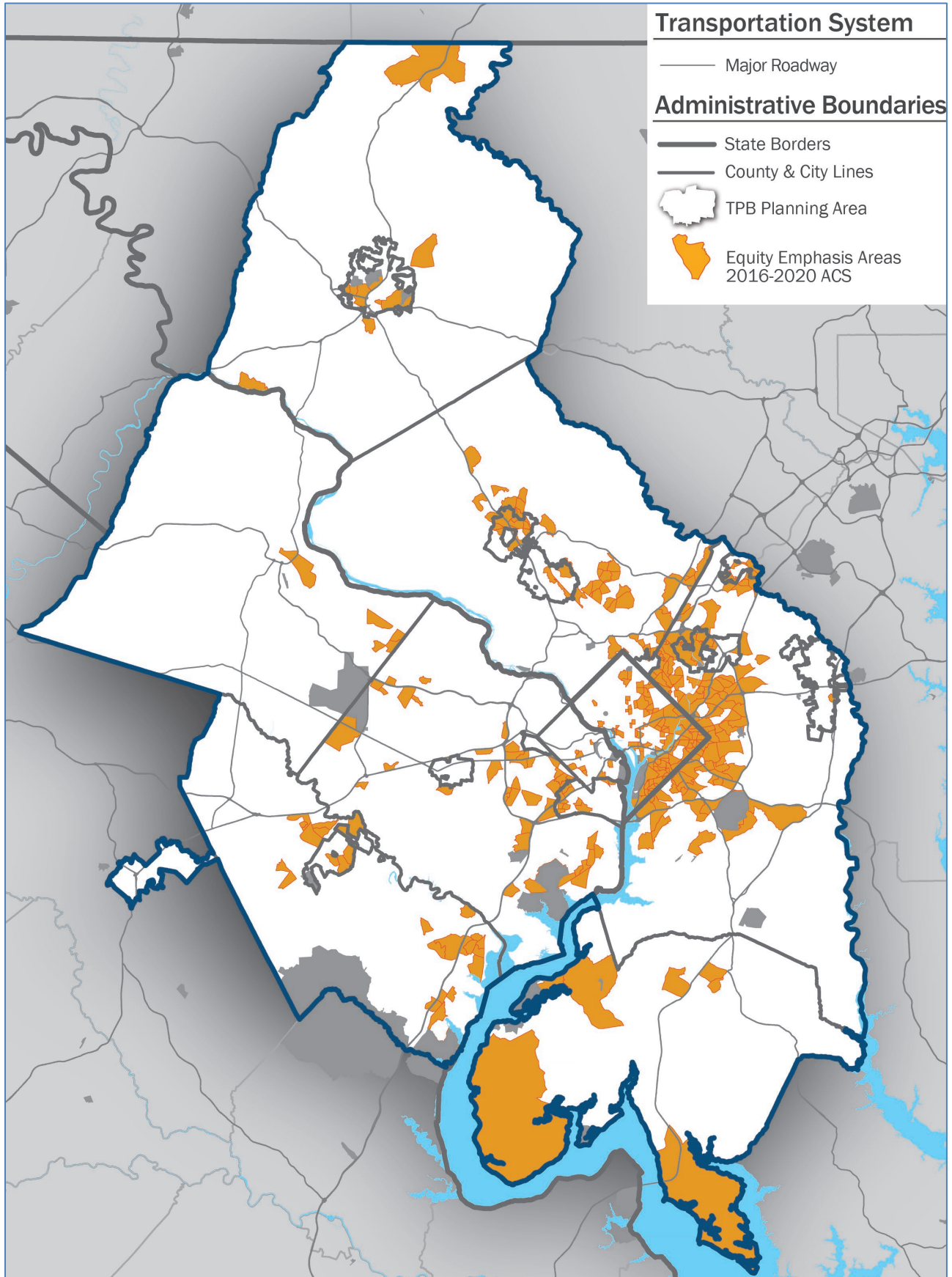




Figure 3: Equity Emphasis Areas (2016-2020 ACS)



## APPENDIX A: SUMMARY OF THE TPB APPROVED METHODOLOGY

The TPB-approved methodology relies on the U.S. Census Bureau data on income and race and ethnicity to determine what Census tracts are considered Equity Emphasis Areas.<sup>5</sup> A 5-year time series of ACS is used because ACS data are updated using a revolving geographic sample and using a 5-year series to ensure estimates for the entire region are included. Federal regulations require the TPB to consider both low-income and people of color populations when examining the long-range transportation plan for disproportionate impacts. Four population groups are considered: Low-Income, Black or African American, Asian, and Hispanic or Latino. To normalize and compare the data across the four population groups and in the region, the EEA methodology entails assigning a value to each of the demographic factors for every Census tract. Higher estimates of each of the demographic factors receive higher values. For each tract, those values determine the index score for each population group and then the index scores are added together, and the tract is an EEA if the total score exceeds an established threshold, see Figure 3. Income is weighted more heavily to reflect the assumption that income is a more significant predictor of an individual’s ability to access transportation than race or ethnicity.

**Figure 2: EEA Index Scoring Breakdown**

RATIO OF CONCENTRATION (ROC or times the regional average)	INDEX SCORE			
	Low-Income*	African American	Asian	Hispanic or Latino
Less than 1.0	0	0	0	0
Between 1.0 and 1.49	1.0 to 1.49	0	0	0
Between 1.5 and 3.0	See Criteria 1 (4.5 to 9.0)	1.5 to 3.0	1.5 to 3.0	1.5 to 3.0
Greater than 3.0	See Criteria 1 (9.0)	3.0	3.0	3.0
Total Index Score	Index scores are totaled			
<input checked="" type="checkbox"/> Equity Emphasis Area (EEA) (Total Index $\geq$ 4.00) <input type="checkbox"/> Not an Equity Emphasis Areas (EEA) (Total Index $<$ 4.00)				

The TPB’s primary purpose for the EEAs is for use as an analytical tool to assess regional impacts of the planned transportation projects, programs and policies as reflected in the fiscally constrained elements of its LRTP, Visualize 2045, as whole. TPB compares changes in accessibility and mobility measures for the Equity Emphasis Areas collectively with the changes in rest of the areas within its planning boundary. The TPB also uses EEAs as a factor in assessing several its financial and technical assistance grants.<sup>6</sup>

The TPB designated EEAs has been formally adopted by the Metropolitan Washington Council of Governments (COG) and are an integral element of its new regional planning framework, [Region United: Metropolitan Washington Planning Framework for 2030](#), to advance equity considerations in all its multi-disciplinary work activities. These activities include scenario planning, regional program assessments and regional grants. Additionally, the EEAs are being used by COG and TPB members in the local planning and decision making in a variety of areas such as community services, housing, and health.

<sup>5</sup> The TPB-approved methodology can be found at: [mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas](http://mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas).

<sup>6</sup> These programs include Enhance Mobility, Regional Roadway Safety Program, Transportation Alternatives Set-Aside Program, Transportation Land-Use Connections Program, and Transit within Reach Program.

# **Update to Equity Emphasis Area Environmental Justice (EJ) Analysis Phase 1**

**Sergio Ritacco  
Transportation Planner**

**Transportation Planning Board  
July 20, 2022**

**Agenda Item #9**

**visualize  
2045** **A long-range  
transportation plan  
for the National  
Capital Region**

# Presentation Overview

- Update Summary / Takeaways
- Why update?
- What inputs were being updated?
- Details of primary changes
- Next Steps
- Frequently Asked Questions

# What are Equity Emphasis Areas (EEA) and how does the TPB use them?

- We identify small geographic areas with higher concentrations of four groups compared to the regional average:
  - Low-Income
  - Black or African American
  - Hispanic or Latino
  - Asian

Methodology: <https://www.mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas/>

- Helps us understand the impact of transportation improvements on these areas compared to the remainder of the region. COG and TPB also endorsed use of these areas to help highlight areas of the region to consider with additional sensitivity when developing plans, policies, and programs.

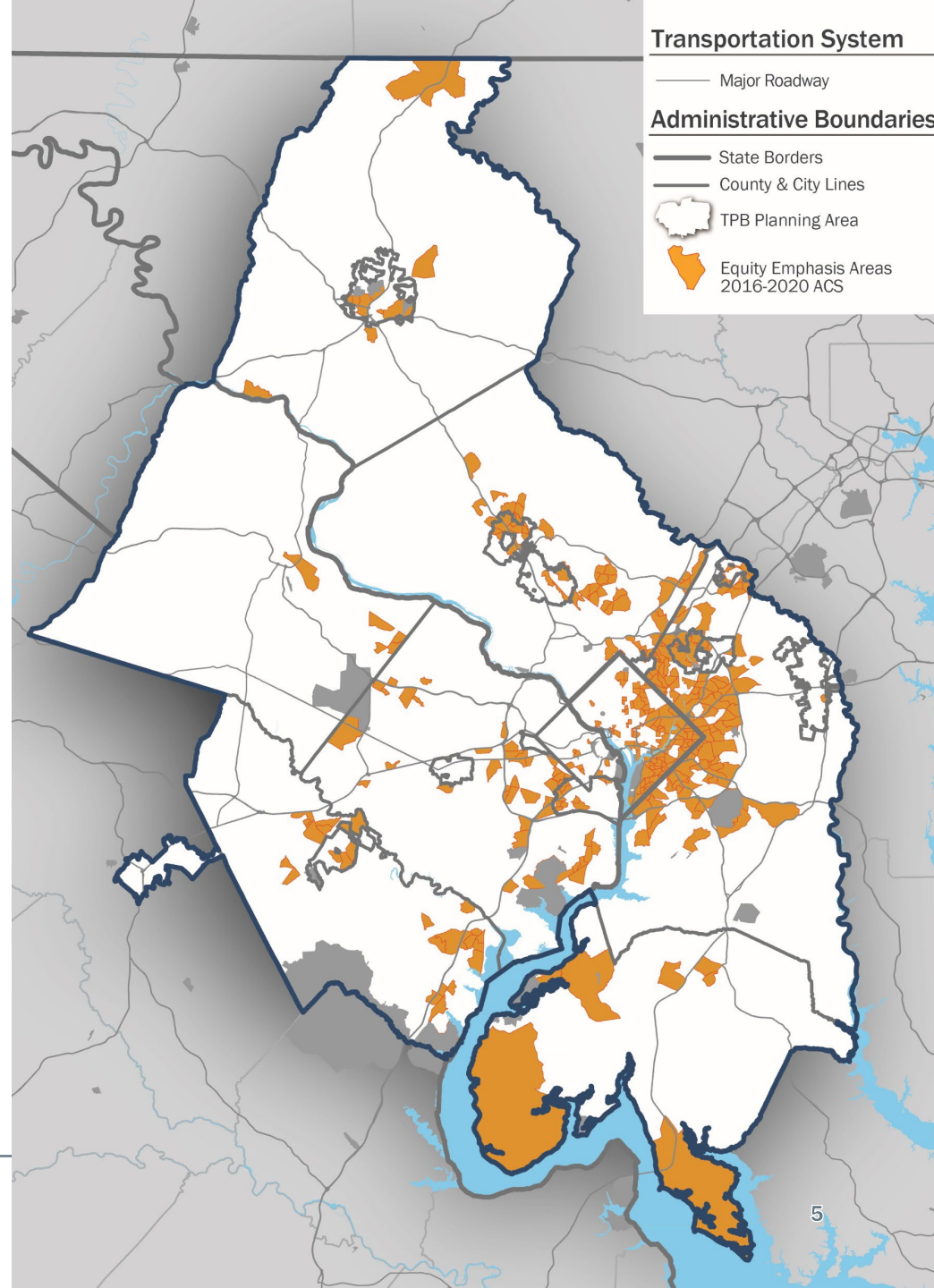
# EEA Update: Takeaways

- The 2022 update designates 364 of the region's 1,330 Census tracts as EEA
  - Number of tracts designated EEA increased (+4%): 351 to 364
  - Represents 27% of all tracts in the region – near the 29% from 2018
- Total number of census tracts in the region increased (+9%): 1,222 to 1,330
- No significant change in overall pattern of distribution of EEAs in the region
- No significant change in the overall composition of population groups within the EEAs



# Equity Emphasis Areas - Updated Overview Map

- Spatial distribution patterns similar to 2018 designations
  - East-West Divide
  - Inner-Suburban and Outer-Suburban clusters
  - Handful of large tracts in Outer-Suburban areas – artifact of methodology (sampling requirements for statistically significant data)



# Why the 2022 Update?

- TPB's analysis is part of federal Environmental Justice (EJ) requirements of its Long-Range Transportation Plan (LRTP)
- Analysis conducted with every major update
  - On June 15, 2022, TPB adopted an update to its 2018 LRTP (Visualize 2045)
  - Staff has begun an update of the 2018 EJ analysis using the 2022 edition of Visualize 2045
  - Part 1 is the EEA designation of the census tracts within the TPB's planning area

# What inputs are being updated?

- **In Phase 1: Equity Emphasis Areas**

- The number and boundaries of census tracts within the planning area (update from 2020 US Census data)
- The demographics of the population within each census tract (American Community Survey data for 2016-2020 period)

- **In Phase 2: Environmental Justice analysis**

- The above information will be used with updated transportation and land use data from the 2022 update of Visualize 2045
- There are no changes in the methodologies, used to designate EEAs and conduct the EJ analysis of the LRTP, adopted by the TPB in 2017

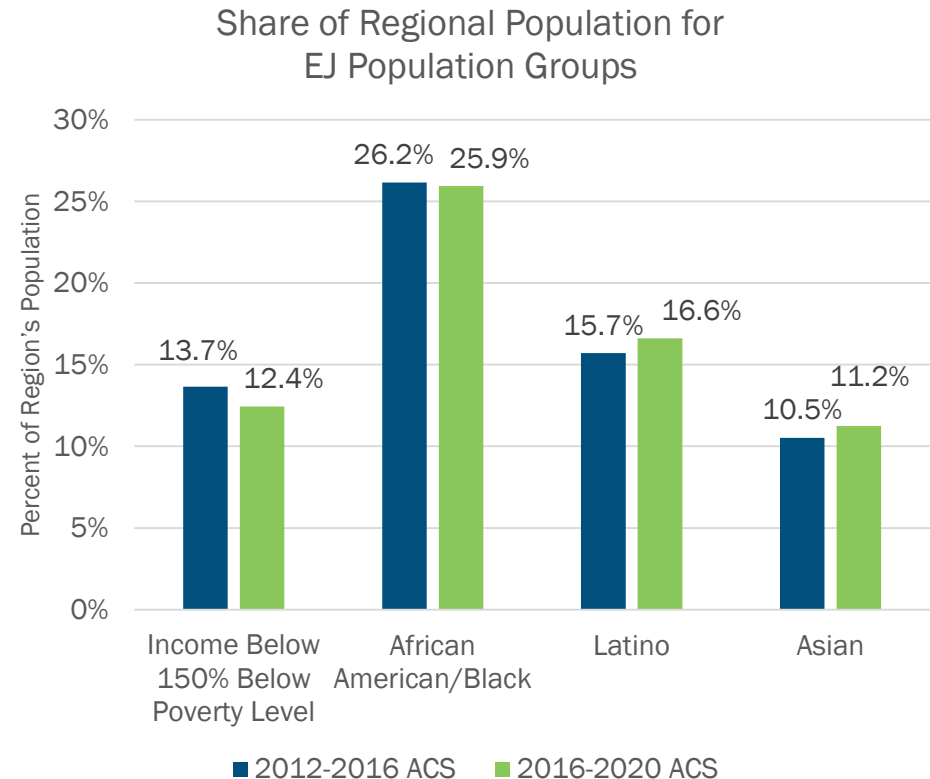
# Details of Changes: U.S. Census Tracts

- Average tract population 4,000
  - Minimum 1,200, Maximum 8,000
- Updated once every ten years to go along with the decennial Census
- Tract is split when population grows over 8,000 inhabitants
- Tract is consolidated with an adjoining one when less than 1,200 inhabitants

2018	2022
1,222 tracts	1,330 tracts

# Details of changes: Tract Demographics

- From 2012-2016 ACS to 2016-2020 ACS data sets
- Planning area population grew by over 200,000 between these two datasets
- Regionally, the share of individuals of the historically disadvantaged racial and ethnic population groups or low-income remained relatively constant



# Details of changes: Overall Representation

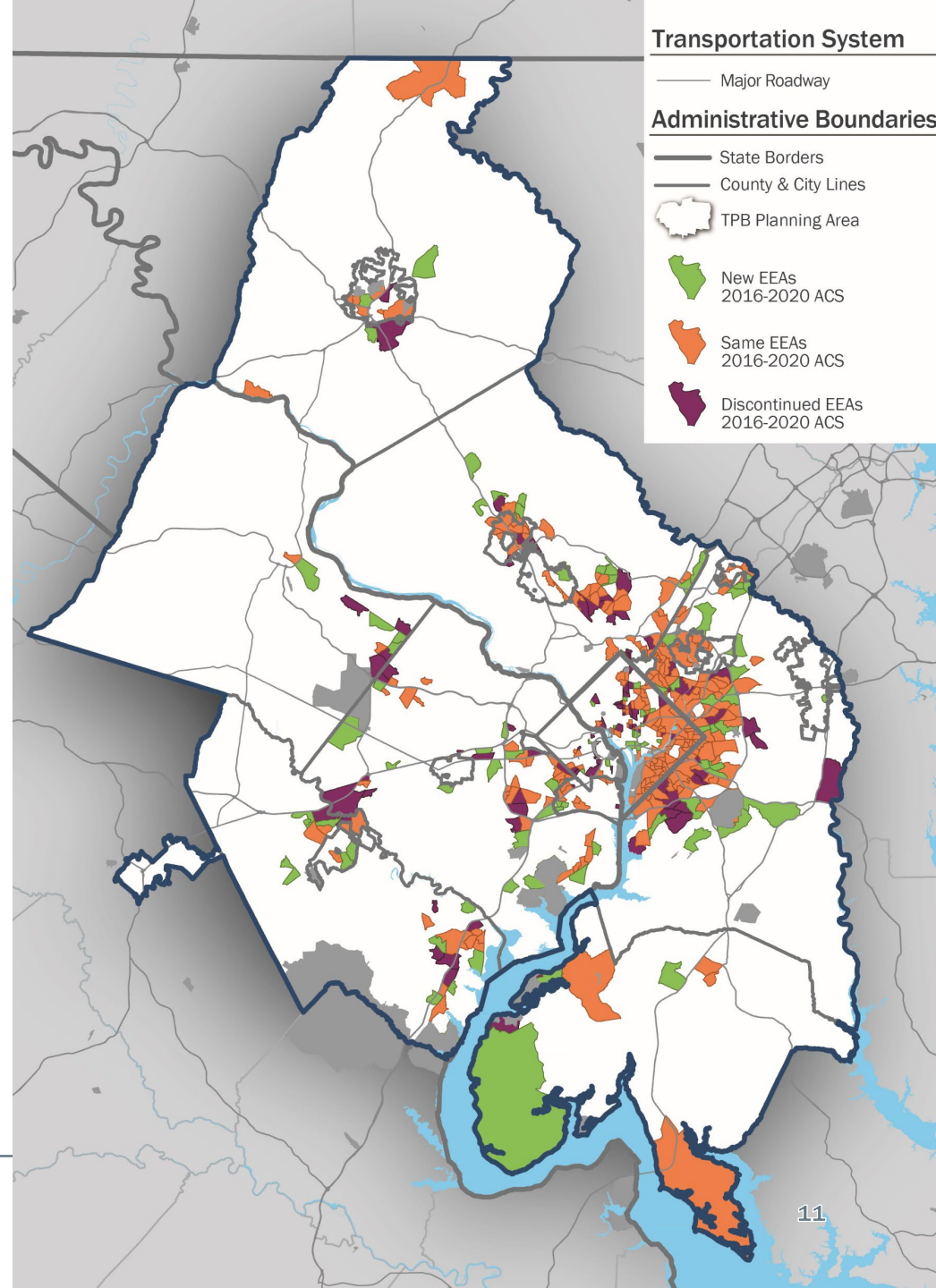
	2018	2022
<b>Equity Emphasis Areas</b>	<b>351 tracts 28.7% of region</b>	<b>364 tracts 27.4% of region</b>
Share of Low-Income	54.8%	55.5%
Share of Black or African American	45.1%	43.2%
Share of Asian	22.1%	20.1%
Share of Hispanic or Latino	46.7%	43.3%



# Details of changes: Number and Location of EEAs

- Spatial patterns similar trends to previous EEAs
- Total: 364 tracts
  - Same: 271 tracts
  - New: 93 tracts
  - Discontinued: 98 tracts

*Note: Changes between 2012-2016 ACS and 2016-2020 ACS may not nest due to changes in tract boundaries.*



# FAQs and response

- **Are the 271 EEAs from 2018 that are unchanged in 2022 the exact same geographic spaces?**

In most cases and to the average eye, yes. Updated tract boundaries might have caused minor boundary changes or no changes at all.

- **Could you further explain why some 2018 EEAs are not identified in 2022 while new ones appear?**

There are many reasons why a tract in the region may or may not be identified as an EEA:

1. TPB methodology relies on index scoring with thresholds. This means that modest changes in the demographic make-up of a tract, particularly in ones that are/were near these thresholds, could cause it to drop or be added as an EEA.
2. Changes to local land use impacting an area in a myriad of ways, including, displacement, increase or decrease in the tract's population, or other changes that impacts the concentration of low-income and traditionally disadvantaged racial and ethnic population groups.

# FAQs and responses

- **My jurisdiction/agency is using the 2018 EEAs to advance our own equity considerations, how are we to use these newly defined EEAs? What will happen to the existing data?**

TPB staff is supportive of the use of the 2018 EEAs by its member jurisdictions to inform local decision making in efforts to address equity. Updating the 2018 EEAs to match with the 2022 designations should be informed by a review of how the EEA and its data is being used in local efforts.

Data for the 2022 EEAs will be made available to member jurisdictions while the 2018 EEAs will remain available to member jurisdictions in the TPB's Regional Transportation Database Clearinghouse.

The TPB's EEA designations are a regional product and not explicitly approved by the FHWA, FTA, or any other federal agency. There is no requirement for TPB member to use the TPB's EEAs in any other federal program and/or grants.

# FAQs and responses

- **How does the demographic make-up of the region compare today to 5 years ago and how may it impact the identification of EEAs?**

Demographic make-up of the region is very similar to 2012-2016 ACS. Like the region's total population, all historically disadvantaged racial and ethnic EEA population groups similarly increased in total population over the two time periods and their respective percent share within EEAs remained relatively steady.

- **There are an additional net 13 tracts identified as EEAs but the percent share of all tracts in the region has declined (from 28.7% to 27.4%), why is this?**

With every decennial Census the U.S. Census updates tracts for the country. From the 2020 Census, this region now has an additional 108 tracts. This results in more overall tracts in the region and more tracts identified as EEAs while still being a similar percent share of all tracts in the region.

# EJ Analysis: Next Steps

- Conduct Phase 2: Analyze the 2022 update to Visualize 2045 for disproportionately high and significantly adverse impact on low-income and traditionally disadvantaged racial and ethnic populations. If found, develop mitigation measures.
- Staff expect to present the results of the analysis to TPB in early- to late-Fall 2022

## **Sergio Ritacco**

Transportation Planner

(202) 962-3232

sritacco@mwkog.org

**[mwkog.org/TPB](http://mwkog.org/TPB)**

Metropolitan Washington  
Council of Governments

777 North Capitol Street NE,  
Suite 300

Washington, DC 20002