

Environmental Justice Analysis

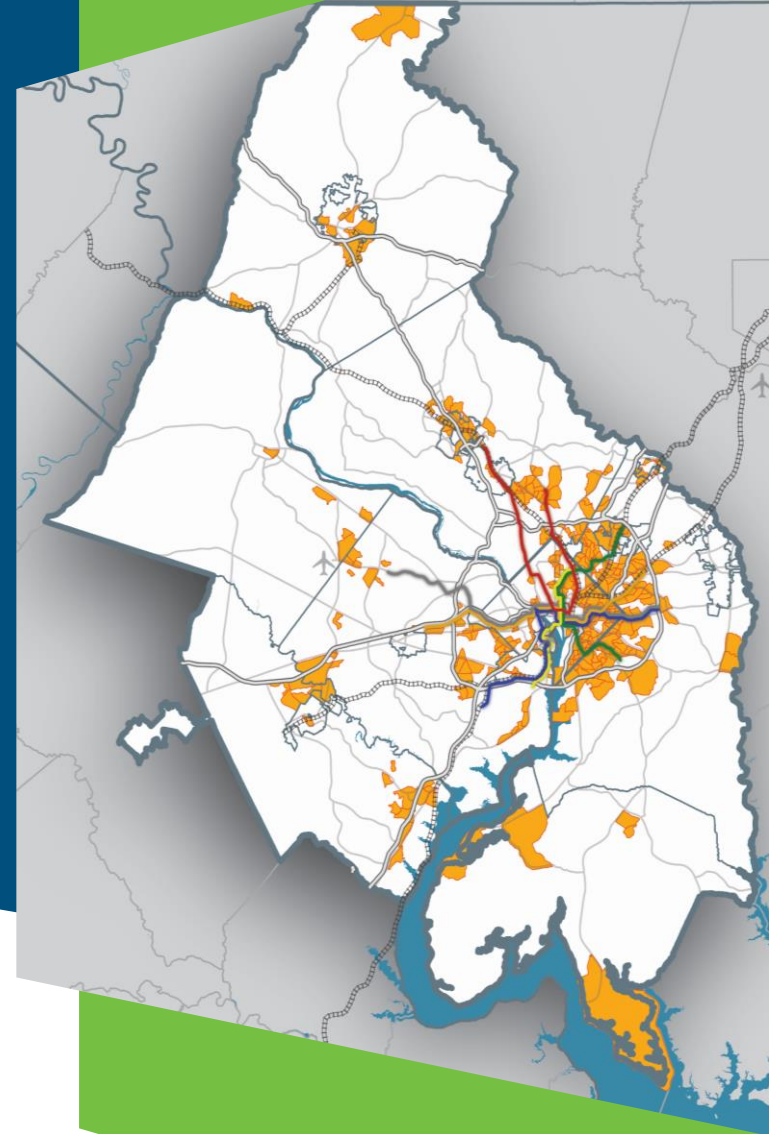
Sergio Ritacco
Transportation Planner

Transportation Planning Board
January 18, 2023

Agenda Item #9

visualize
2045

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



Environmental Justice (EJ) Analysis Requirements

- **What is the federal requirement?**
Analyze the impact of the LRTP (Visualize 2045) on “minority” populations and “low-income” populations (EJ population) to identify and address adverse ‘**disparate impact**’
- **What is a ‘disparate impact’?**
An adverse plan impact that will be predominately borne or suffered by EJ populations and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-EJ population
- **How does this fit with the TPB’s policy priorities?**
“...The TPB affirms that equity, as a foundational principle, will be woven throughout TPB’s analyses, operations, procurement, programs, and priorities...”

How does the TPB comply with its Environmental Justice requirements?

Today!

Phase I

- Identify small geographic areas in the region with high concentration of EJ populations called Equity Emphasis Areas (EEAs)
 - Methodology adopted in 2017
 - Latest mapping update July 2022

Phase II

- Use TPB's model to examine changes between today and 2045 in mobility and accessibility within EEA and non-EEA areas
- Determine if Visualize 2045 imposes a disparate impact on EEAs in comparison to Non-EEAs

EJ Analysis Phase II Methodology

- Use land use changes and transportation projects from our current LRTP (Visualize 2045 approved in July 2022)
- Analyze 35 accessibility and mobility measures to examine the impact of those land use changes and transportation projects
- Analysis assumes static location of EEAs, Medical facilities, and Higher-Ed institutions through 2045
- Analysis is limited to regional-level findings (EEAs as a whole vs non-EEAs) and not to any individual/subset of EEAs
- Typical uncertainties associated with forecast-like analyses

EJ Analysis Phase II Measures

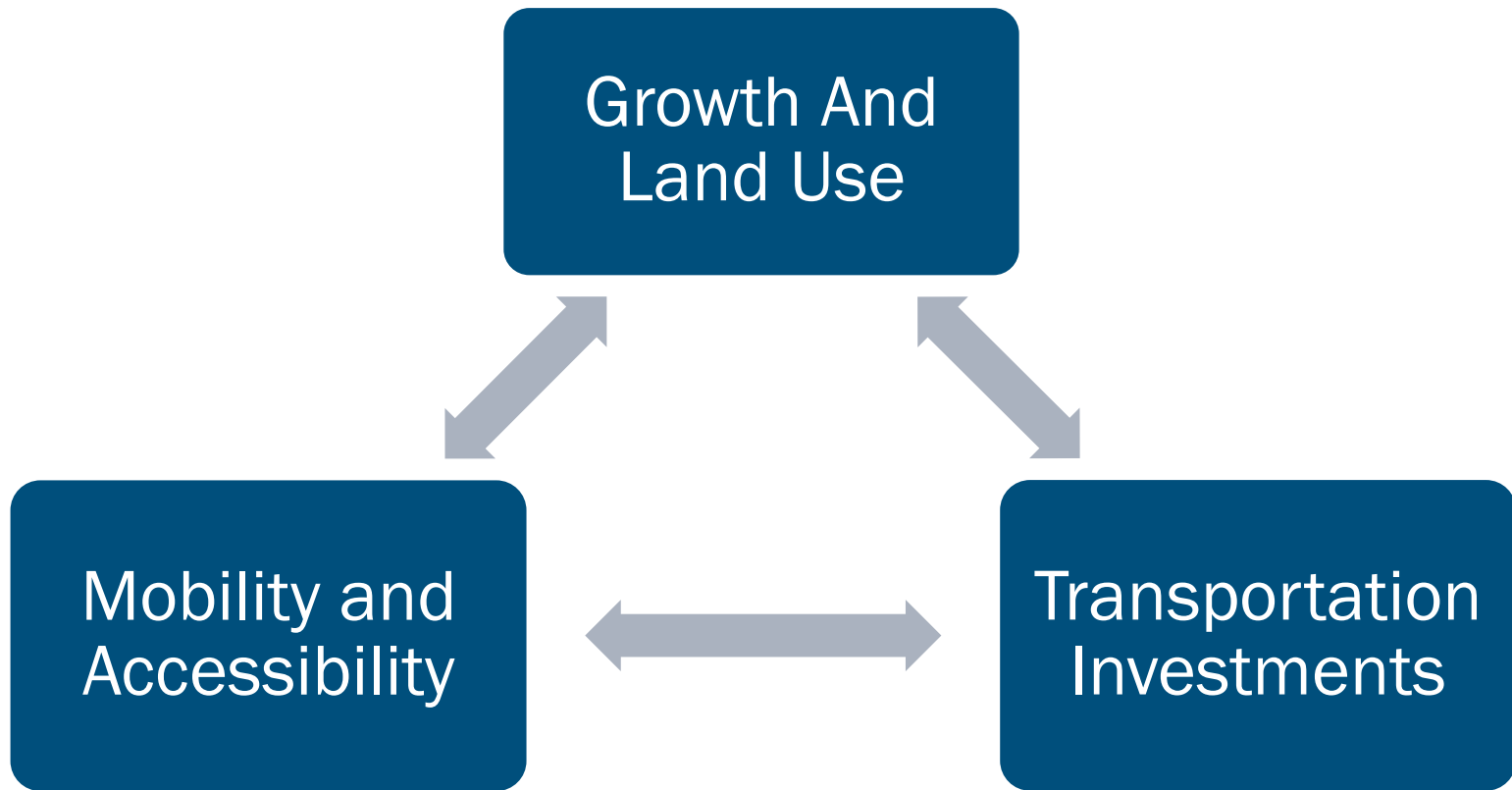
- 35 measures in total examining the impact of land use changes and transportation projects in various ways:
 - Access to All Jobs, Retail Jobs, Medical Facilities, & Higher Education institutions using various modal options and times of day
 - Commute times to work and travel times to Medical Facilities and Higher Education institutions using various modal options and times of day
 - Percent of Population with access to High-Capacity Transit and access to Bus service

Environmental Justice Determination

Visualize 2045 (2022 LRTP update)

- **Determination:** The 2022 LRTP, Visualize 2045, does not have an adverse disparate impact on “low-income” and “minority” populations
- The planned transportation projects of Visualize 2045 will have a positive impact on mobility and accessibility that would otherwise not take place
- Depending on the measure, the magnitude of change in burden or benefit are different between EEAs and Non-EEAs

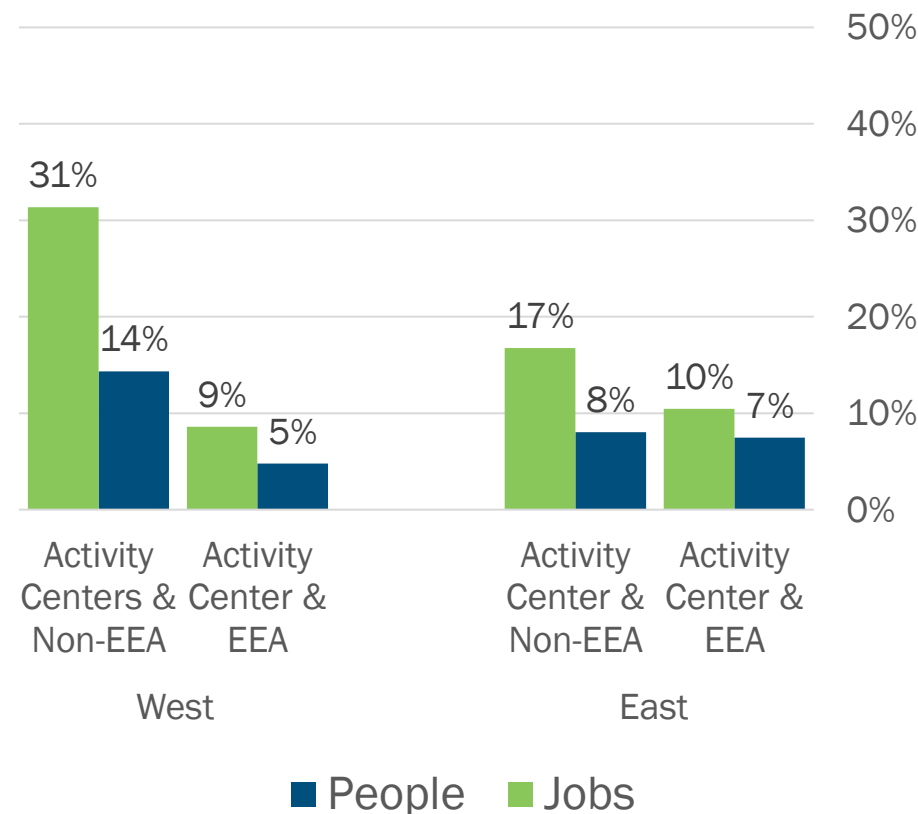
L RTP Elements and EJ Analysis



Land Use and Growth in LRTP

- Present: 5.7M people, 3.4M jobs, and 141 Regional Activity Centers (RAC)
- By 2045: Additional 1.3M people and 0.9M jobs
- By 2045: 67% of all jobs and only 35% of the population will be in RACs
- By 2045: 50% of all jobs and only 25% of people will be within ½ mile of a High-Capacity Transit stations
- Additionally, the distribution of this growth is uneven between the eastern and western parts of this region.

Share of Region's People and Jobs located within geography (2045)



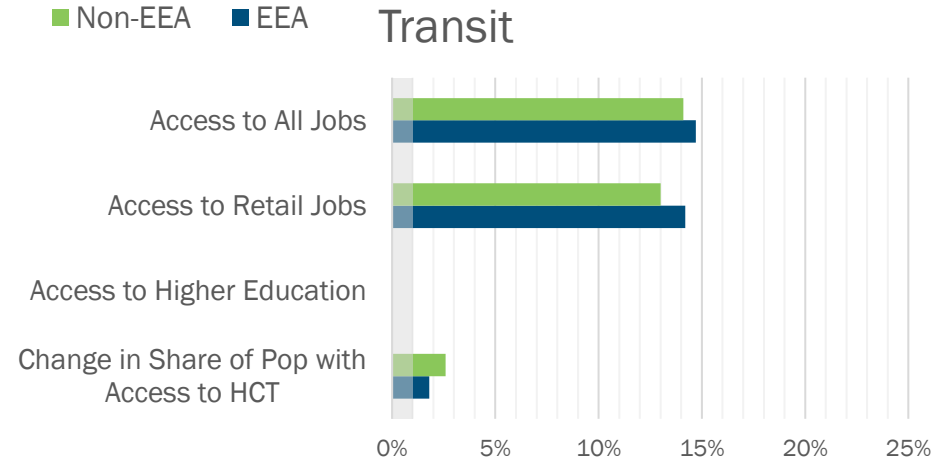
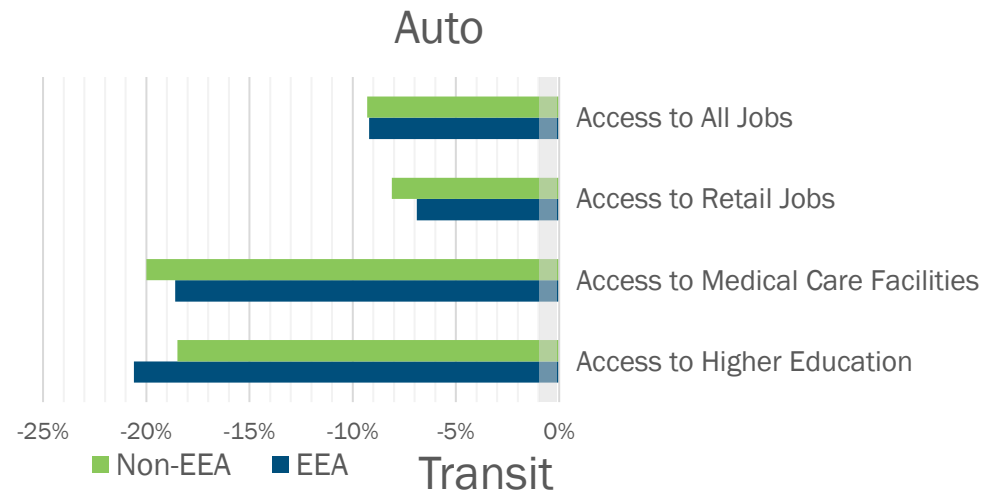
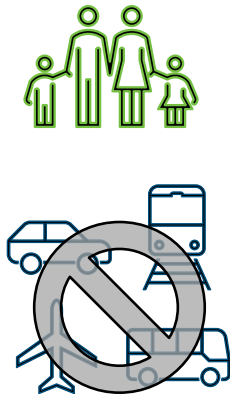
Environmental Justice Analysis Results

Growth Impact, Accessibility

Growth Impact Only

Burdens across all Auto measures

Transit measures see benefits as jobs & people are added close to existing transit



Decrease = **Burden** Increase = **Benefit**

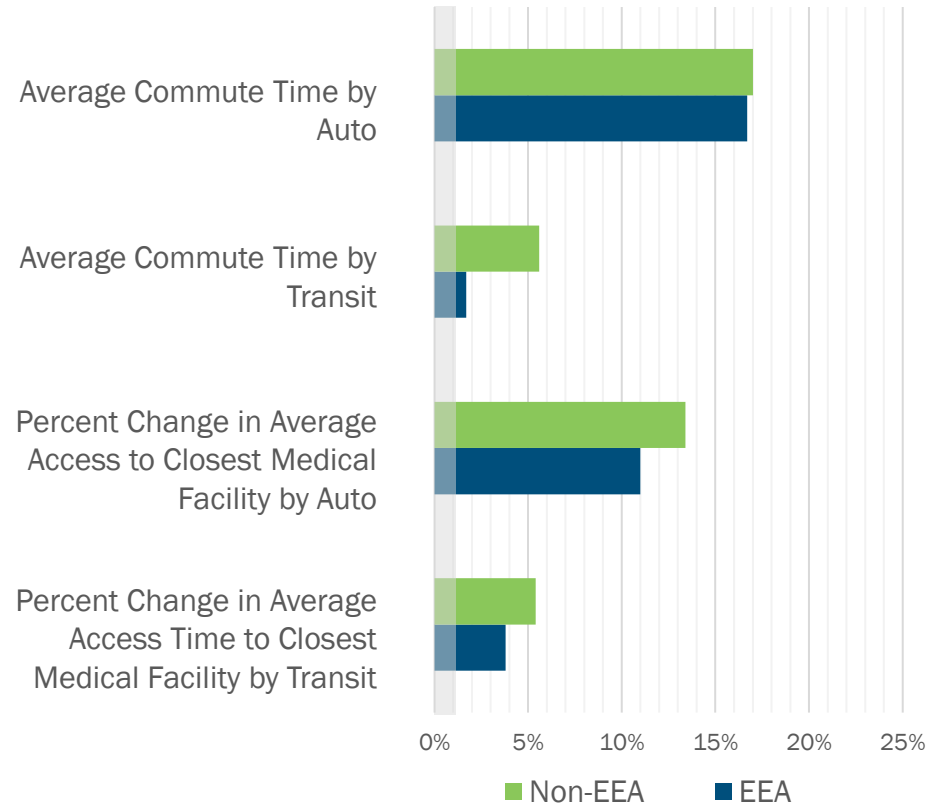
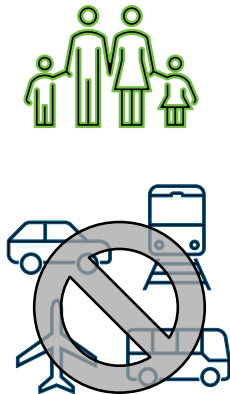
Environmental Justice Analysis Results

Growth Impact, Mobility

Growth Impact Only

Burdens across all Auto measures

Transit experiences crowding & delay as more jobs & people use existing transit



Decrease = Benefit

Increase = **Burden**

Environmental Justice Analysis Results

Transportation Investments

- In Visualize 2045, only 19% of expenditures are available for system expansion and enhancement, providing a 5% and 27% increase in roadway and high-capacity transit miles, respectively

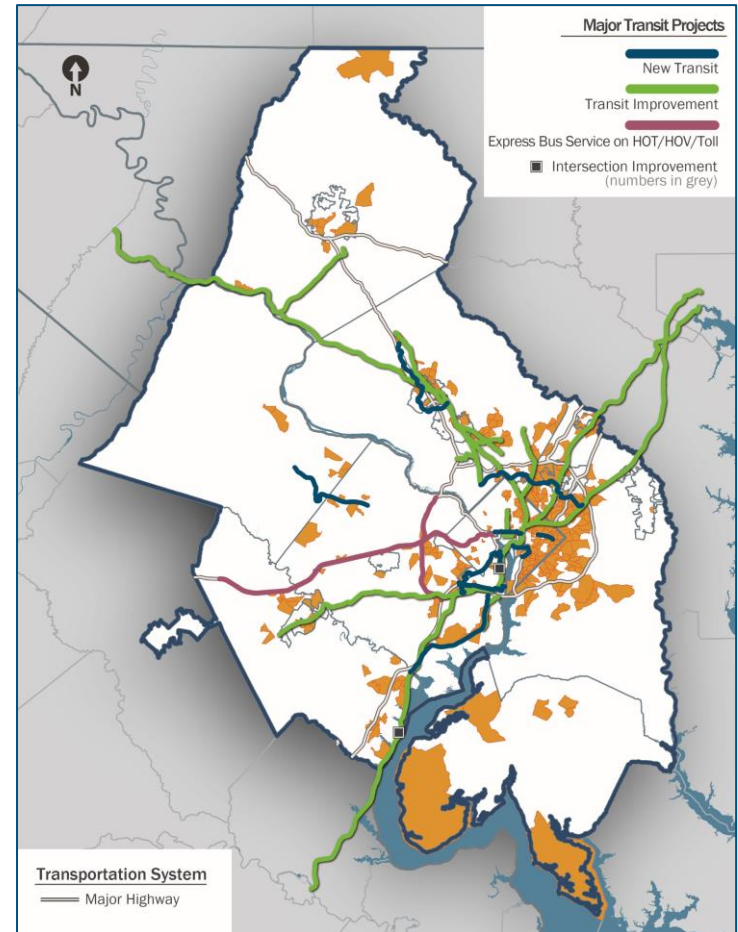
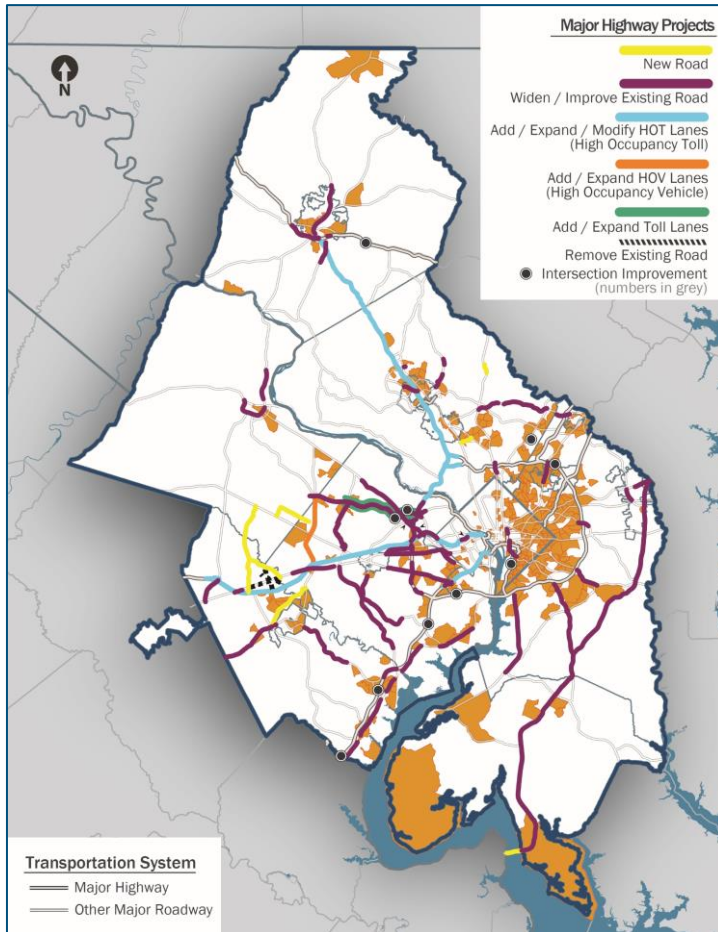
	System	Existing (2023)	Added by Visualize 2045 update	Total 2045
Roadway (Lane Miles)	Freeways/Expressways	3,802	682	4,484
	Arterials	13,479	211	13,690
	Total	17,281	893	18,174
Tolled Lanes (Lane Miles)*	Total	532	221	753
High-Capacity Transit (Miles)	Metrorail	129	0	129
	Light Rail/Streetcar	18	5	23
	Bus Rapid Transit	19	87	106
	Commuter/Regional Rail	173	**	173
	Total	339	92	431

* Tolled lanes are a subset of freeways/expressways

** An approximate additional 16 miles of rail are included in the plan, not presented in the table as they are not reflected in the model outputs.

Environmental Justice Analysis Results

Transportation Investments

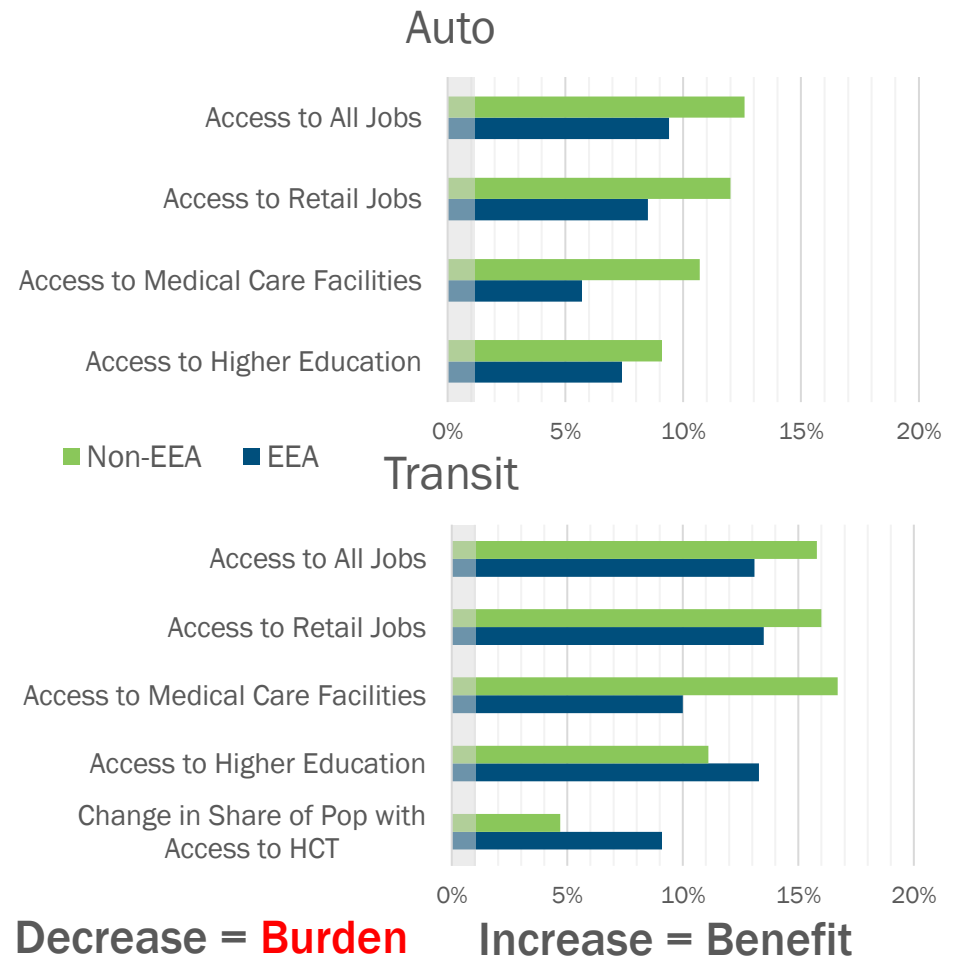
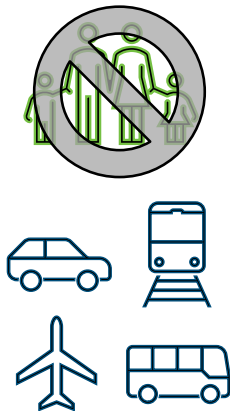


Environmental Justice Analysis Results

Projects Impact, Accessibility

Project Impact Only

Benefits across all Auto and Transit measures
Improved accessibility to jobs, medical care facilities, and post-secondary education



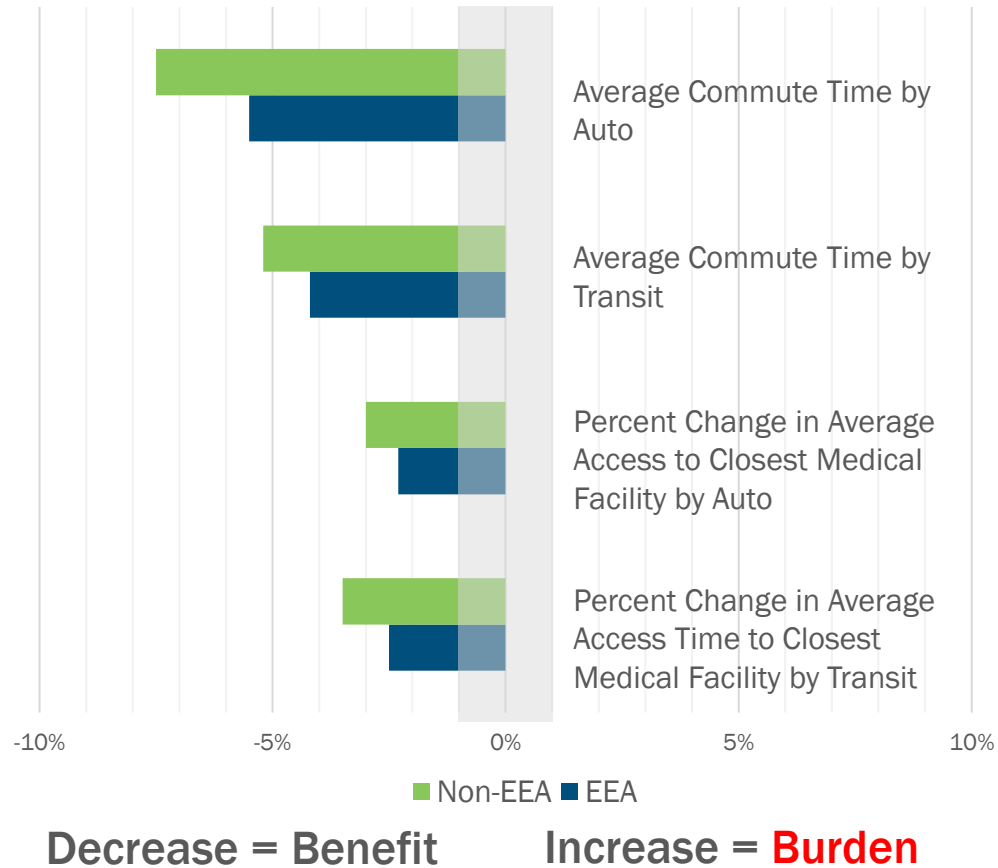
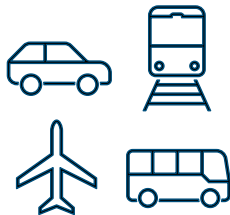
Environmental Justice Analysis Results

Projects Impact, Mobility

Project Impact Only

Benefits across all Auto and Transit measures

Help provide shorter travel times to commutes and nearest medical care



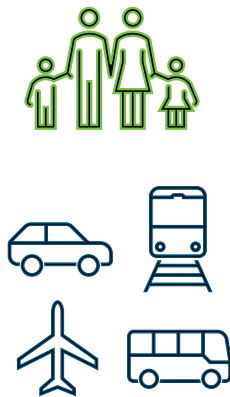
Environmental Justice Analysis Results

Visualize 2045 Impact, Accessibility

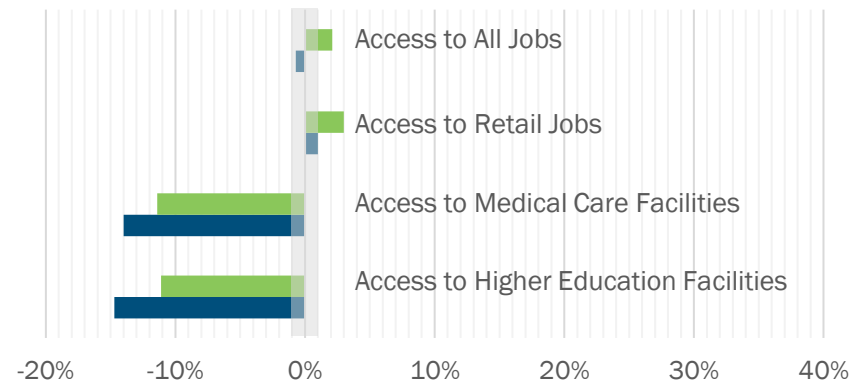
Visualize 2045 Impact

Congestion and delay negatively impact auto-based measures

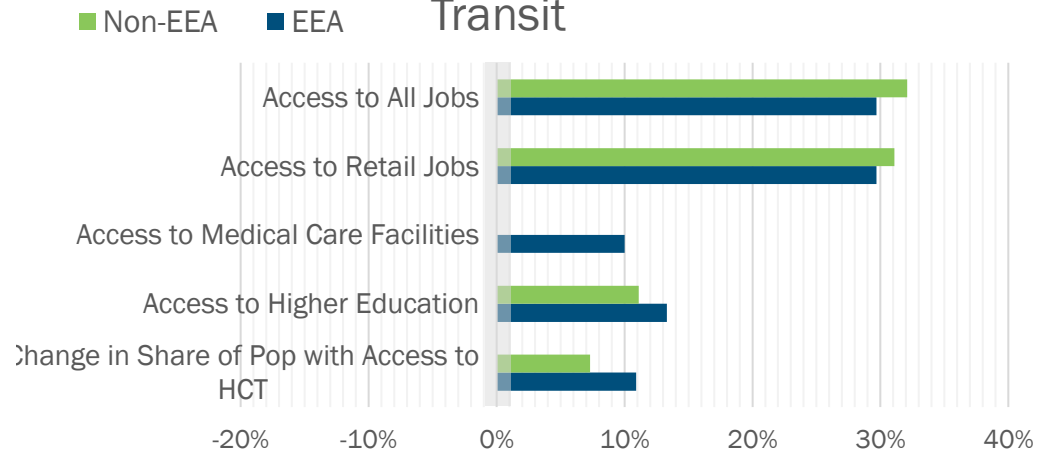
EEAs and Non-EEAs track similarly though EEAs often benefit slightly less and burden slightly more



Auto



Transit



Decrease = **Burden** Increase = **Benefit**

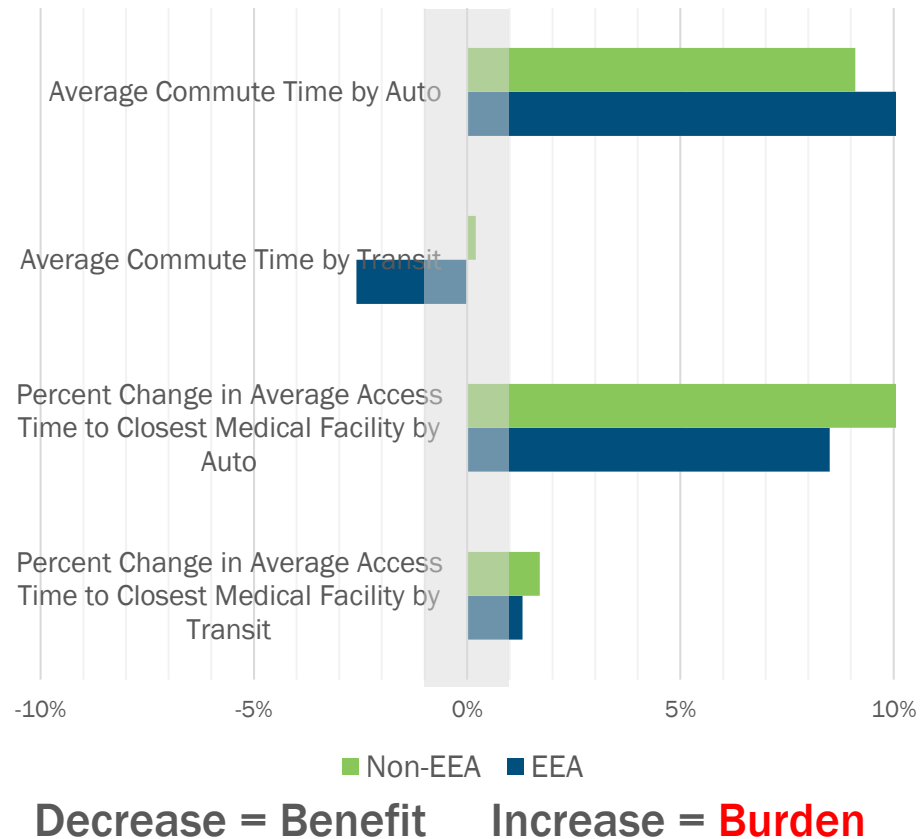
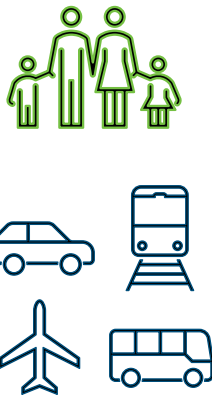
Environmental Justice Analysis Results

Visualize 2045 Impact, Mobility

Visualize 2045 Impact

Congestion and delay negatively impact auto-based measures

EEAs and Non-EEAs track similarly though EEAs often benefit slightly less and burden slightly more



Environmental Justice Analysis Summary

- Visualize 2045 complies with the federal EJ requirement for disparate impact on “minority” and “low-income” populations and the impact of its transportation projects are positive
- For auto-based travel, more people and jobs increases congestion and delay impacting EEAs ability to access and travel to where jobs are increasing
- For transit-based travel, accessibility and mobility are improving as the region maximizes the use of the existing system as well as adding more transit projects
- The interrelationship between land use changes and the transportation projects it aims to serve can lead to implicit regional equity challenges
- Assumptions used to conduct this analysis (future location of EEAs and confidence levels of model results) provide important context to results.

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