

Environmental Justice Analysis

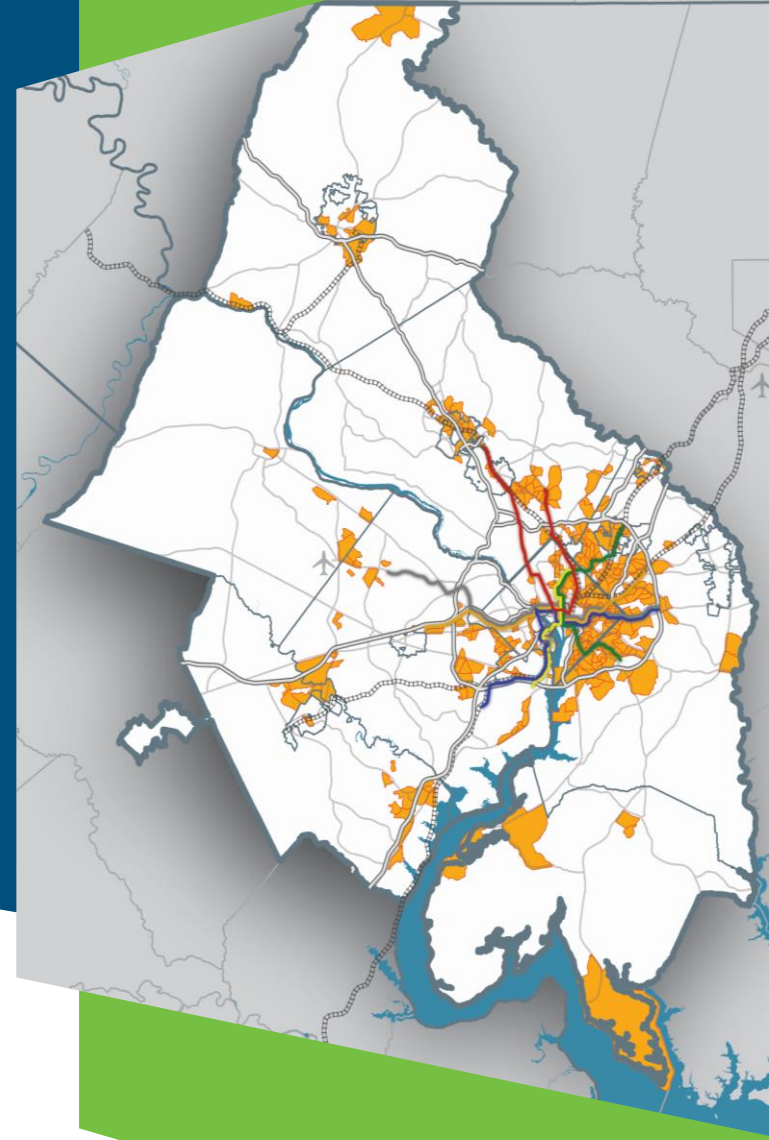
Transportation Planner

Transportation Planning Board
March 15, 2023

Agenda Item #9

visualize
2045

A long-range
transportation plan
for the National
Capital Region



Environmental Justice (EJ) Analysis Requirements

- **What is it?** Analysis to determine if the long-range transportation plan (Visualize 2045) will have an adverse ‘disparate impact’ on “minority” populations and “low-income” populations.
- **What is the test?** Will the planned transportation projects have an adverse ‘disparate impact’ on “minority” populations and “low-income” populations (EJ population).
- **What is a ‘disparate impact’?** An adverse plan impact that:
 1. Will be predominately borne or suffered by EJ populations, and
 2. Is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-EJ population

Environmental Justice Analysis of Visualize 2045

- 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 Equity Emphasis Areas (EEA) and Non-EEAs.

EJ Analysis: Methodology

Following federal guidance and the methodology adopted by TPB (2018):

1. Identify areas with high concentration of EJ population (EEAs)
2. Analysis: Changes in mobility and accessibility by 2045
 - Forecast change due to population and job growth (no change to transportation network or service)
 - Forecast change due to growth and the changes to transportation network and service
 - Isolate impact of changes to transportation network and service (B minus A)

EJ Analysis: Accessibility and Mobility Measures

Change in the number of: All jobs, retail jobs, medical facilities and higher-education institutions accessible within 45 minutes of travel:

- During peak period by (1) Auto, (2) Any form of Transit, (3) Bus (walking to bus stop), and (4) High-Capacity Transit (walking to station)
- During off-peak period by (1) Bus (walking to bus stop), and (2) High-Capacity Transit (walking to station)

Change in share of population with access to:

- High-Capacity Transit service
- Bus service during peak and off-peak periods

Change in commute time to Job:

- During peak periods by (1) Auto and (2) Any form of transit

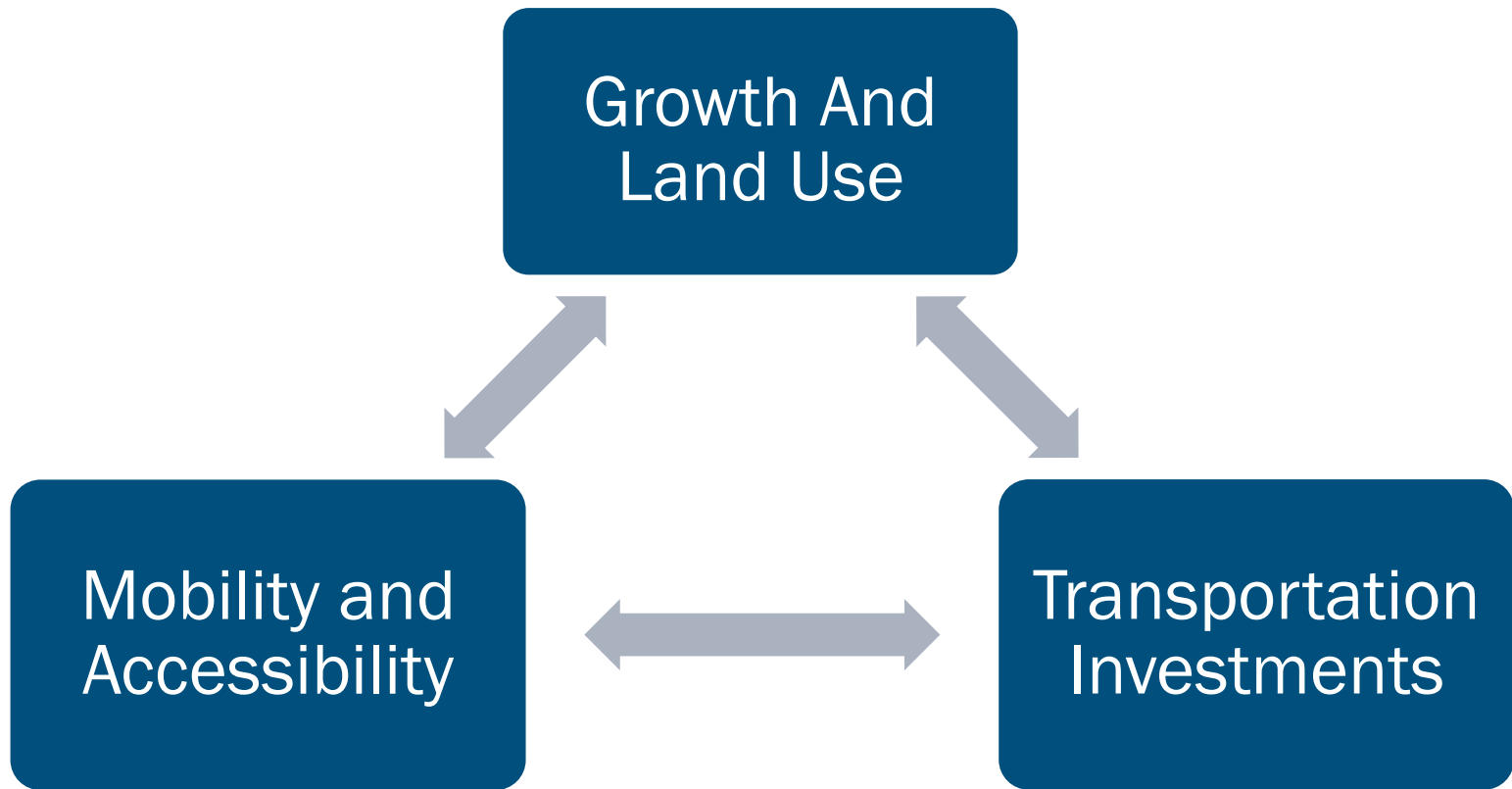
Change in average access time to medical facility:

- During peak and off-periods by (1) Auto, (2) Any form of transit and (3) High-Capacity Transit (walking to station)

EJ Analysis Inputs and Assumptions

- Inputs:
 - Forecast of population and jobs: COG's Cooperative Forecasts (Round 9.2)
 - Changes to transportation network and services as in Visualize 2045 (approved by TPB in July 2022)
- Assumptions:
 - Forecast changes in mobility and accessibility are at regional-level (EEAs as a whole vs non-EEAs as a whole) and not at individual or subset of EEAs
 - Analysis reflects impacts of all transportation projects
 - Locations of EEAs, medical facilities, and higher-Ed institutions remain unchanged through 2045

L RTP Elements and EJ Analysis

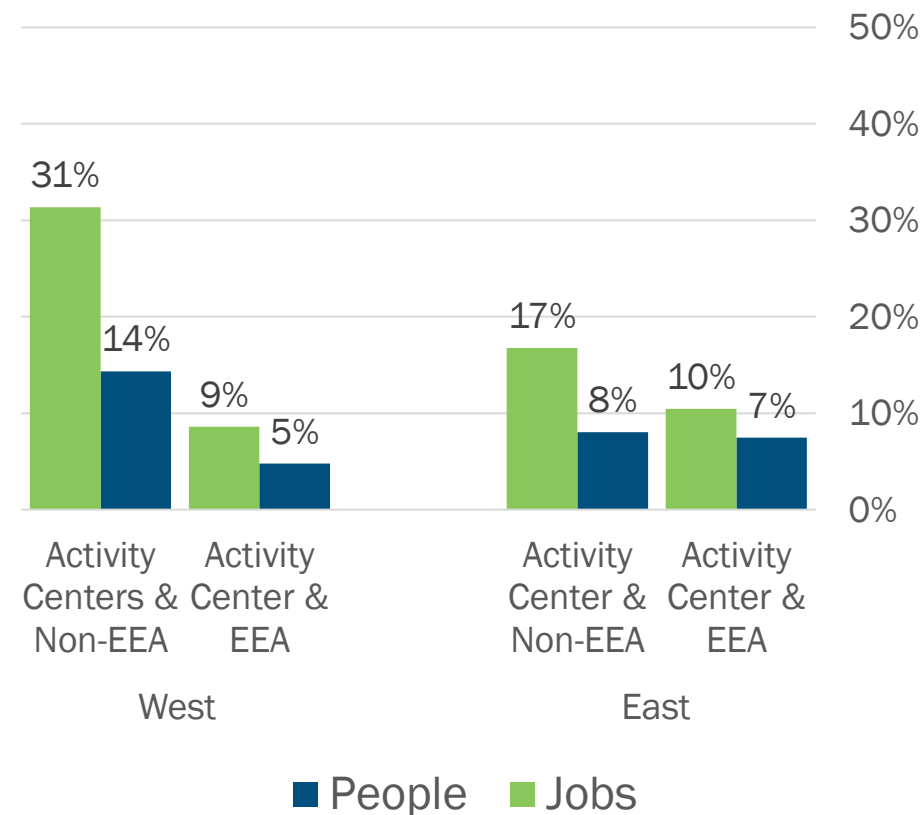


Visualize 2045 Forecast Growth and Land Use



- 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
- Uneven distribution of growth within and between the eastern and western parts of this region.

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

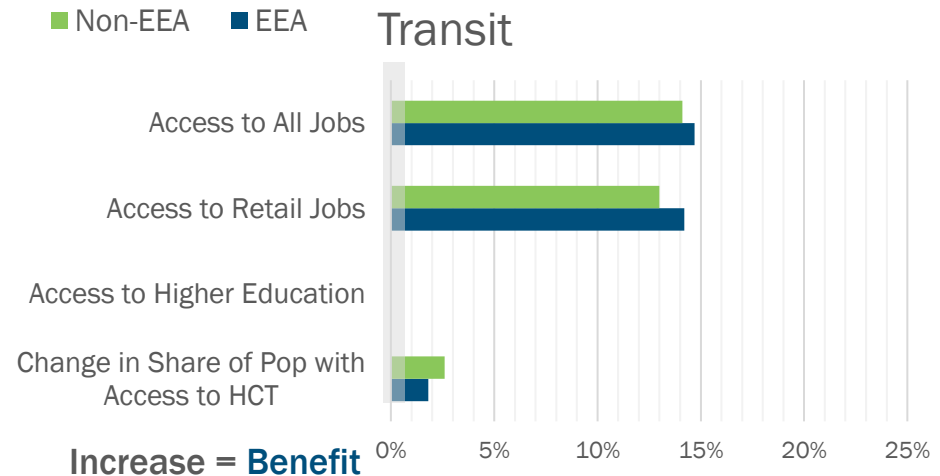
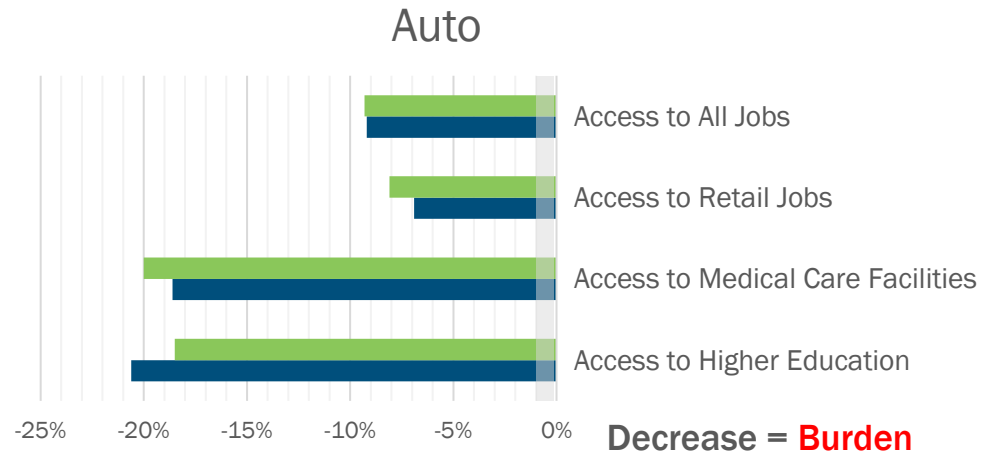
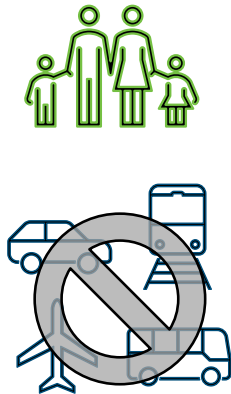


Accessibility Impact: Growth & Land Use

Growth Impact Only

Burdens across all Auto measures

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

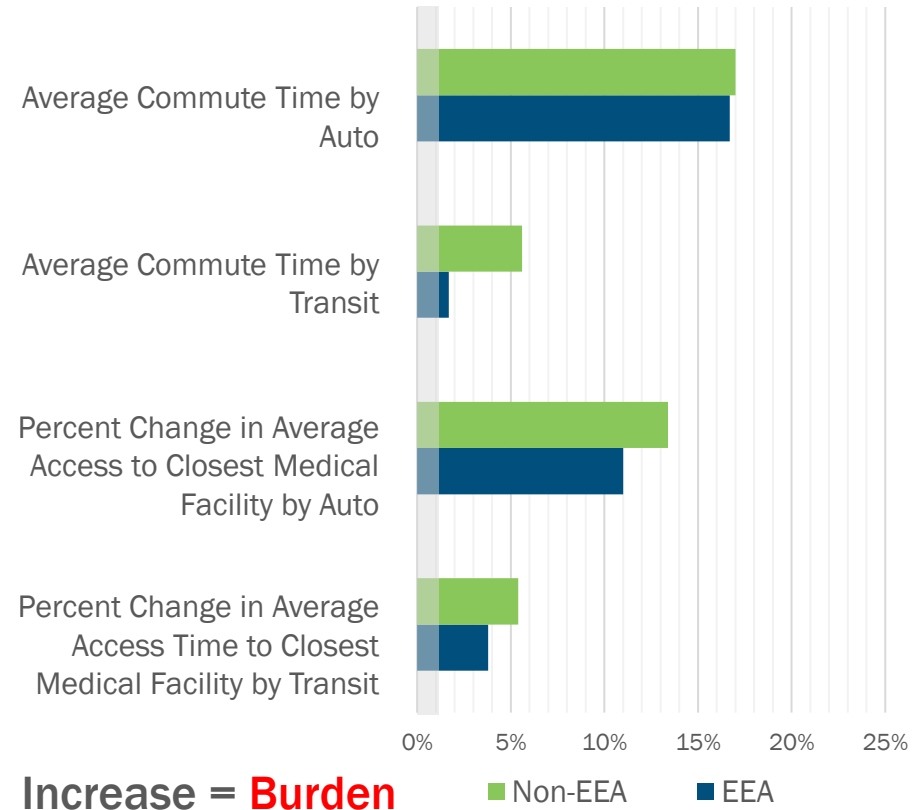
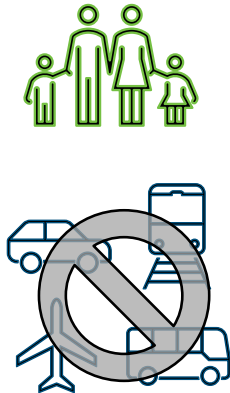


Mobility Impact: Growth & Land Use

Growth Impact Only

Burdens across all Auto measures

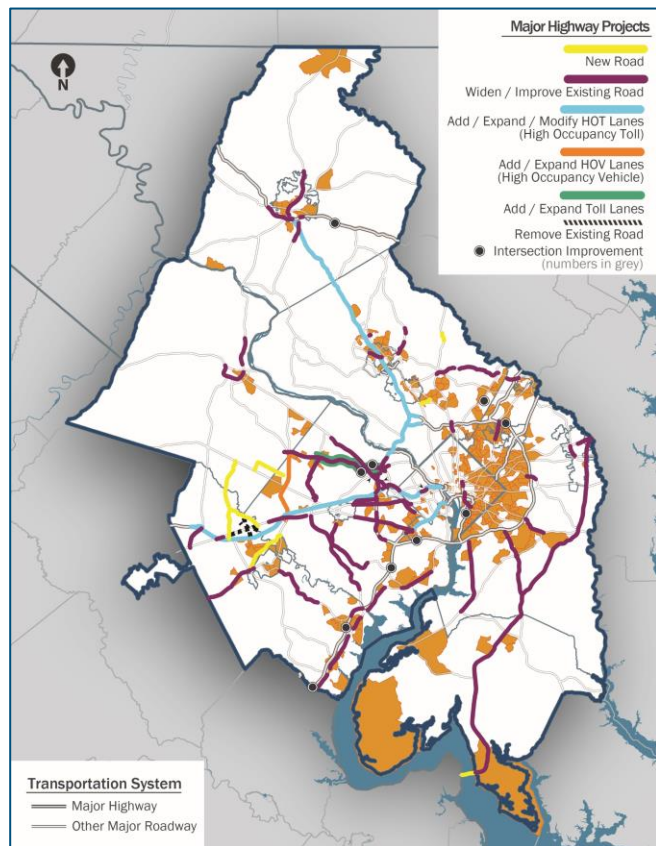
Transit experiences crowding & delay as more jobs & people use existing transit



Viz. 2045: Transportation Investments

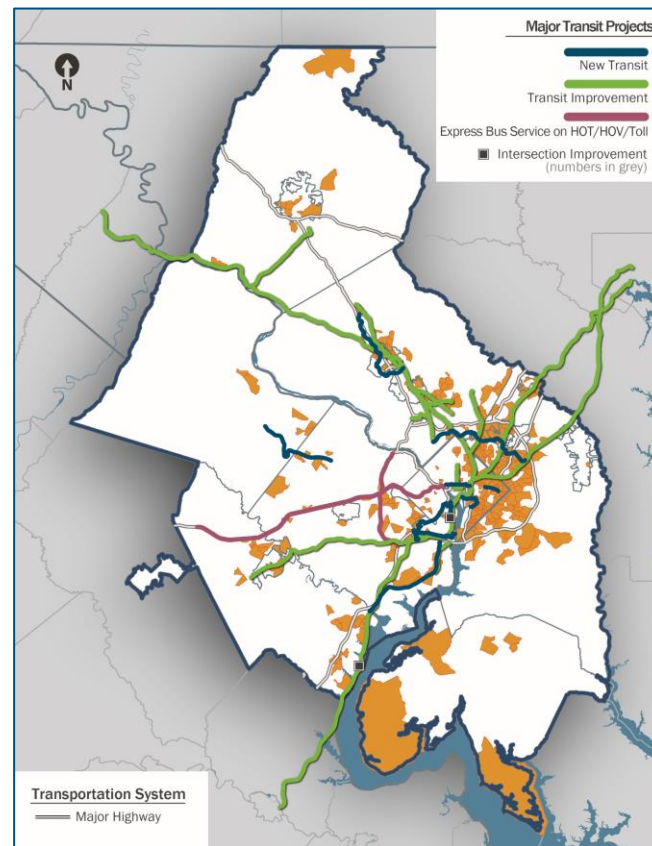


Highway



5% increase in roadway lane miles
42% increase in HOV/Toll lane miles

Transit



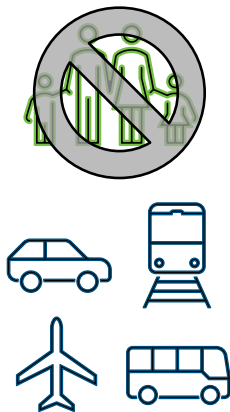
27% average increase in transit miles
(Over 450% increase in BRT miles)

Accessibility Impact: Transportation Projects

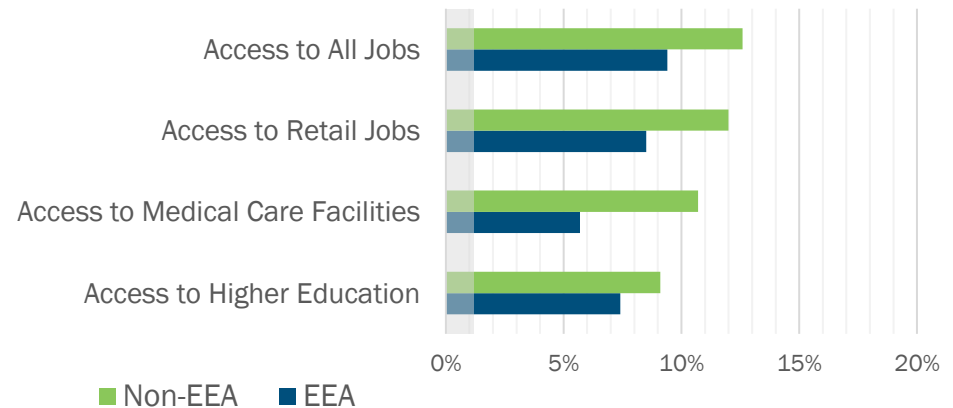
Project Impact Only

Benefits across Auto measures
(esp. Non-EEAs)

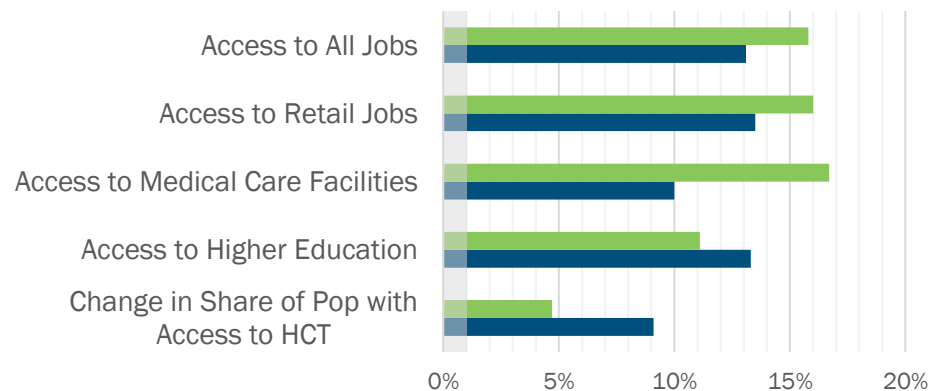
Benefits across Transit measures (esp. Jobs access)



Auto



Transit



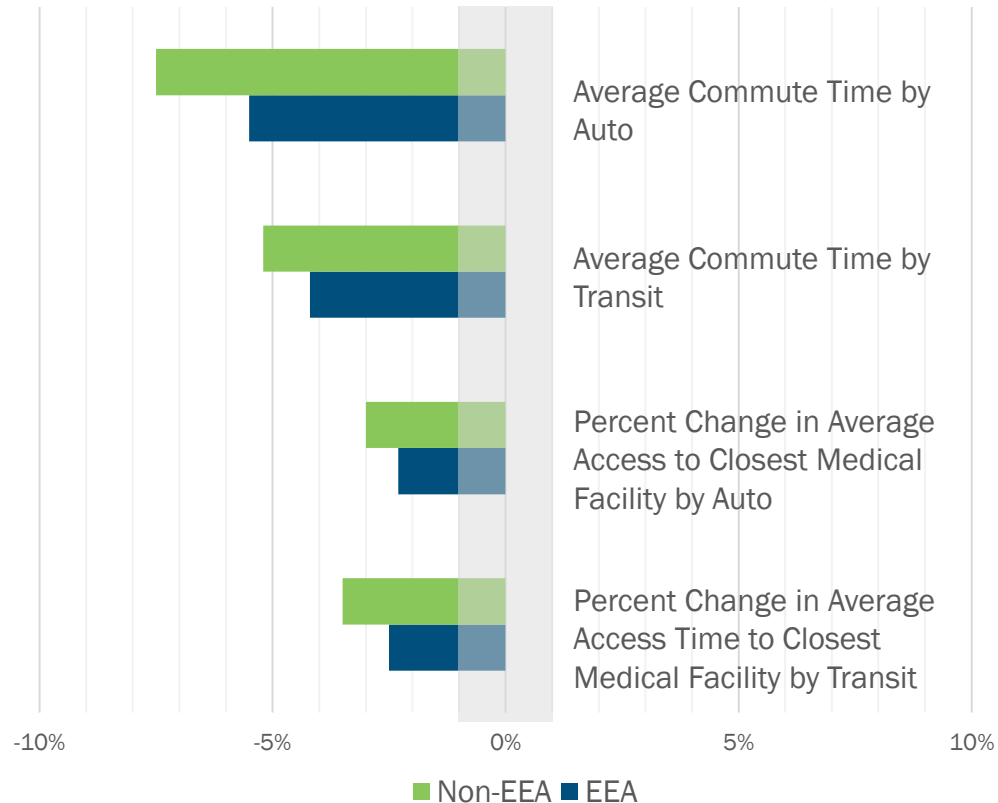
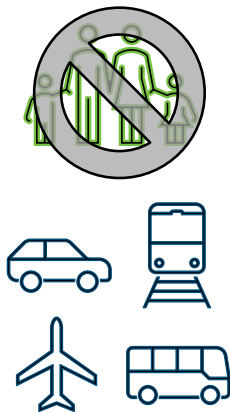
Increase = **Benefit**

Mobility Impact: Transportation Projects

Project Impact Only

Decreases in average
commute times

Less travel time to Medical
Facilities, on average



Decrease = Benefit

Accessibility Impacts: Growth And Projects

Visualize 2045 Impact

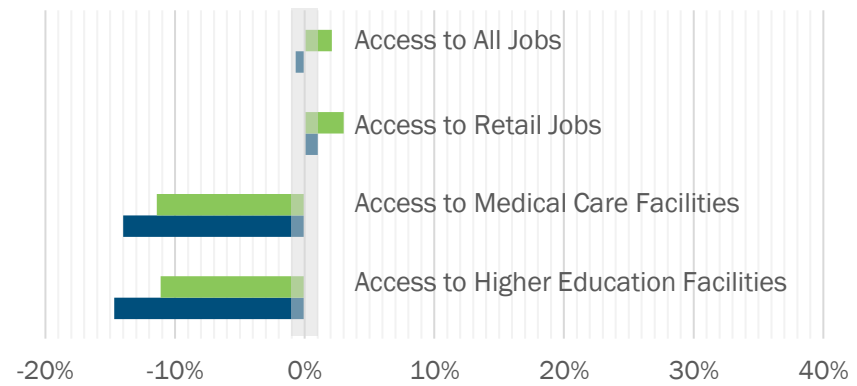
Congestion and delay negatively impact auto-based measures

More transit & people/jobs close to transit improves access

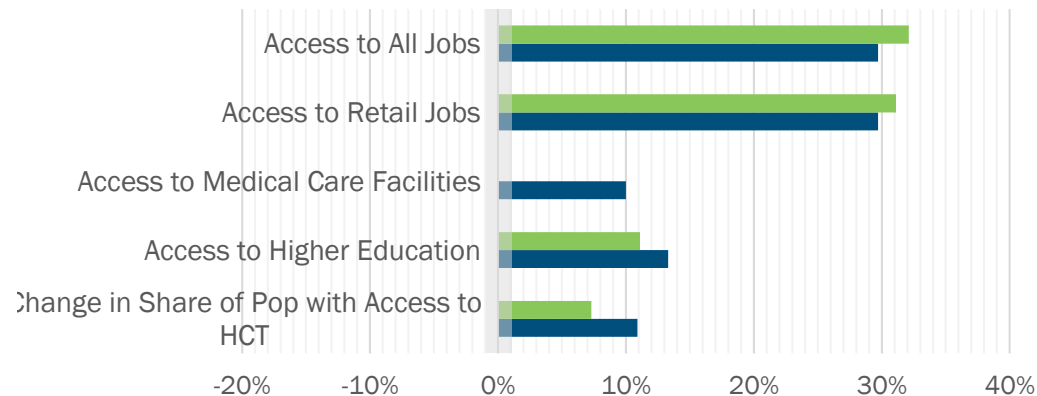
EEAs and Non-EEAs track similarly though EEAs generally benefit slightly less and burden slightly more



Auto



Transit



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

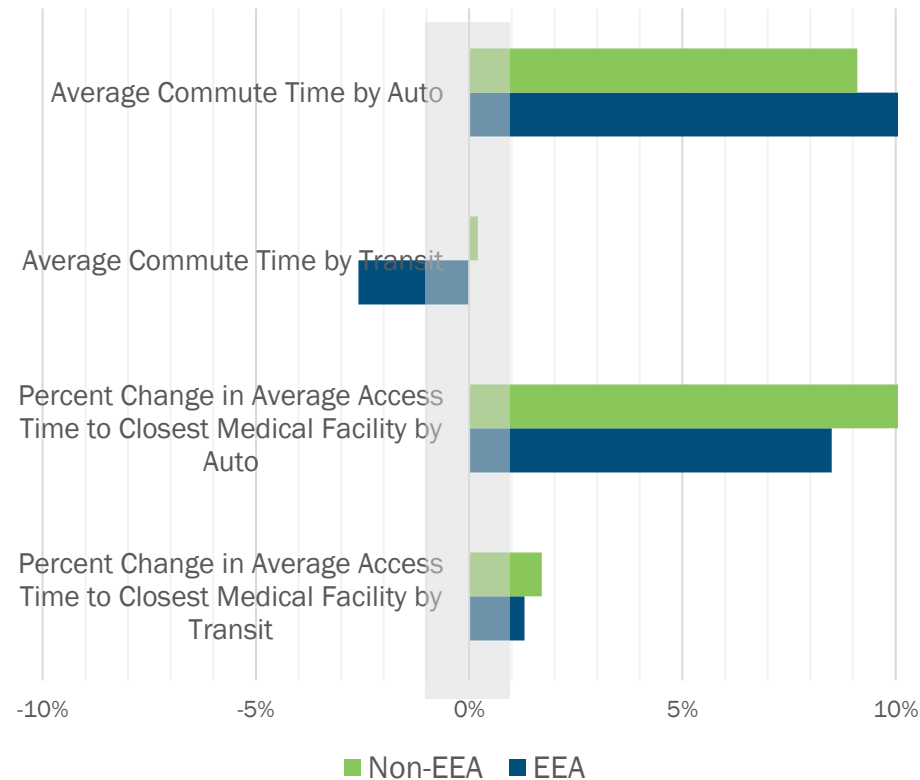
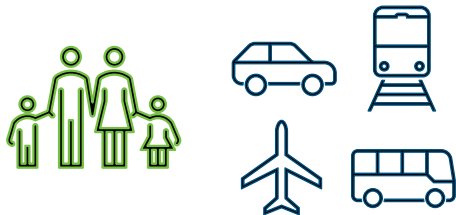
Mobility Impacts: Growth And Projects

Visualize 2045 Impact

Auto congestion and delay
increases commute time and
travel to closest med. facility

Transit commute times
decrease for EEAs

Transit travel times to closest
med. facility increase



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

Visualize 2045 EJ Analysis Summary

- The 2022 LRTP, Visualize 2045, does not have an adverse ‘disparate impact’ on “low-income” and “minority” populations.
- The transportation projects of Visualize 2045 will have a positive impact on mobility and accessibility that would otherwise not take place
- For auto-based travel, marginal improvement in access to all jobs and retail jobs even though commute times increase
- For transit-based travel, significant improvement in accessing all jobs and retail jobs, marginal improvement in commute time to EEAs
- Significant growth and the uneven distribution of growth and land use pose challenge to fully realizing benefits from transportation projects
- More jobs are accessible within 45 min. of travel on high-capacity transit systems, yet only 37% of the population within EEAs are close to high-capacity transit systems

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