Long-Range Plan Performance Analysis Measures Update

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TPB Technical Committee
Item 6
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visualize 2045

A long-range transportation plan for the National Capital Region

[Fort Belvoir Hospital]

Meeting Objectives

- Review the requirements and measures the TPB uses to analyze regional system performance

- Receive an update on the additional performance measures update study

- Review the additional performance measures

Performance Analysis Requirements

- Federal requirements:
  - Inform the investment needs to relieve congestion, improve regional mobility and accessibility, and attain performance targets;
  - Ensure adherence to regional motor vehicle emissions budget
  - Conduct Environmental Justice Analysis
- TPB looks to:
  - Assess progress towards regional goals and specific performance targets;
  - Inform transportation investment decision making;
  - Coordinate regional transportation, land use, and environment planning activities.

Existing Performance Measures (PMs)

- LRTP Performance Analysis   16 PMs

- Regional Air Quality Conformity Analysis   2 PMs

- Environmental Justice Analysis   10 PMs

- Congestion Management Report   6 PMs

- Performance Based Planning and Programming   18 PMs

- Long-Range Plan Task Force   18 PMs

Existing LRTP PMs

Percent change between Today and 2045 Build:

- All Trips by Mode, Today

- Work Trips by Mode, Today

- Vehicle Miles Travelled Per Capita (Today - 2045 Build)

- Percent of Daily Person Miles Traveled on Reliable Modes

- Number of Activity Centers with Access to HCT

- Percent of Population and Jobs in Proximity to HCT

- Change in Access to Jobs by Auto

- Change in Access to Jobs by Transit

- Multimodal Accessibility Index

Existing LRTP PMs (continued)

Percent change between Today and 2045 Build:

- Share of Total Lane Miles Congested

- 2045 Major Highway Congestion Map (AM Peak)

- Total Daily Vehicle Hours of Delay

- Average Minutes of Delay per Trip

- Volatile Organic Compound (VOC) Mobile Source Emissions and Budgets

- Precursor Nitrogen Oxide (NOx) Mobile Source Emissions and Budgets
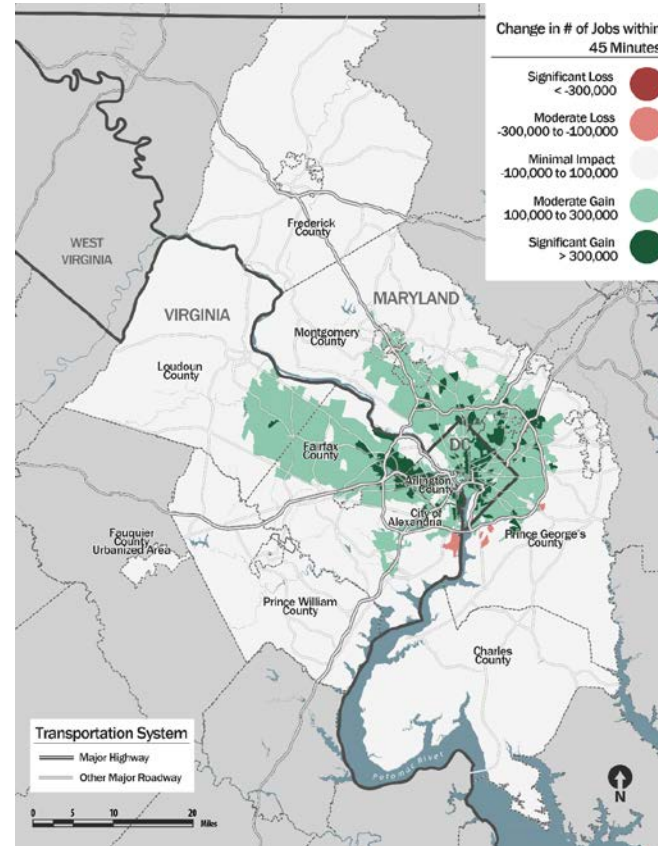
- Greenhouse Gas Mobile Source Emissions (CO_2e)

Land Use and Travel Demand - Access to Jobs by Auto and Transit

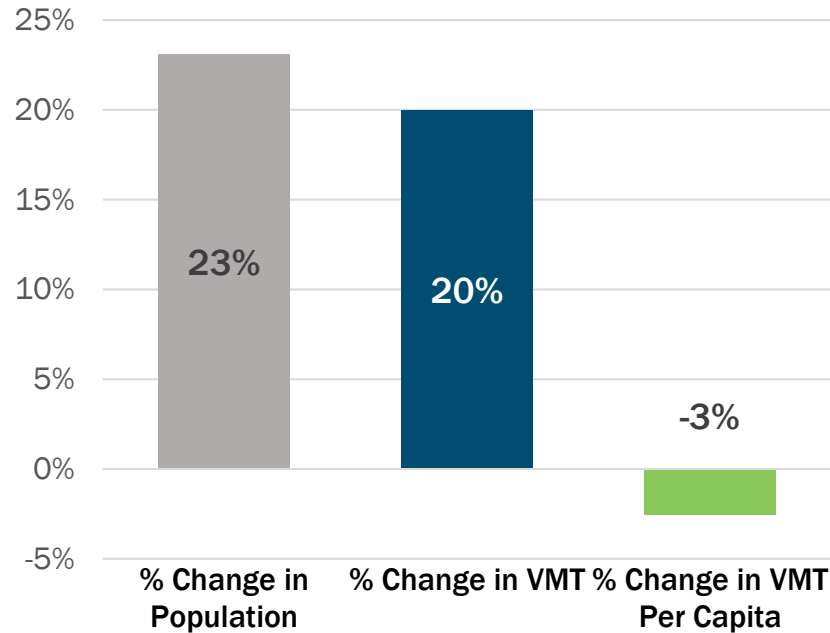## Visualize 2045 (2018) – 2045 Today to 2045 Build

Auto
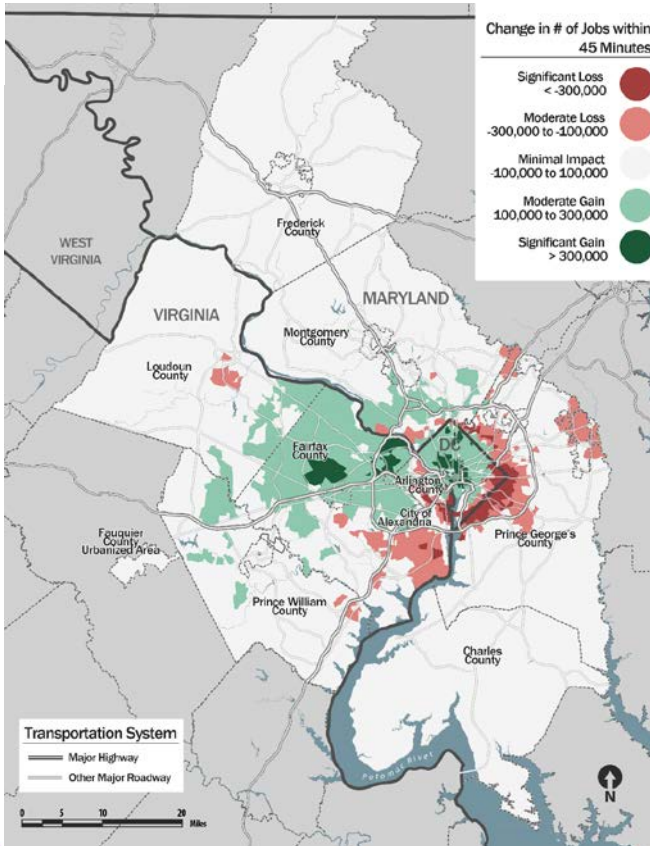
Transit

Vehicles Miles Travelled

Visualize 2045 (2018)

Total daily driving in the region is expected to grow but at a rate lower than population growth.

Vehicle Miles Travelled Per Capita
(Today - 2045)

	23%	20%	-3%
	% Change in Population	% Change in VMT	% Change in VMT Per Capita

Greenhouse Gas Mobile Source Emissions

2020 Amendment to Visualize 2045
Greenhouse Gas
Mobile Source Emissions
CO_2 and CO_2 e Per Capita
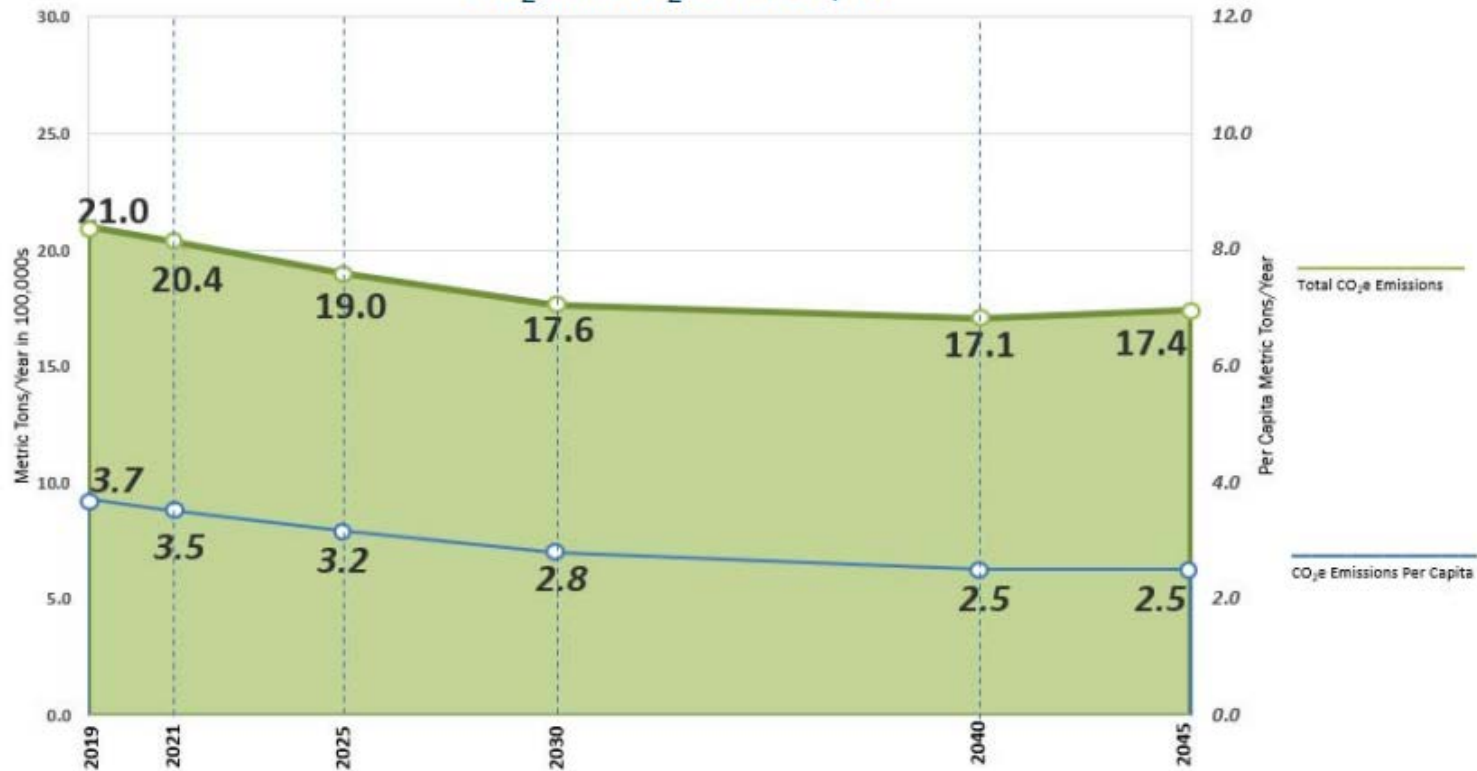
Project Charge and Purpose

- Review existing measures used to evaluate system performance against TPB policy framework

- Identify planning policy focus areas and the gaps in what we measure

- Identify and develop methodologies for a new set of performance measures that will be used to conduct the long-range transportation plan (LRTP) system performance analysis.

Project Process: Planning Policy
Focus Areas from TPB Policy Documents

Accessibility	Affordability	Air Quality Conformity	Comprehensive Multimodal System
Connectivity	Economy	Emerging Mobility and Tech	Environment / Resiliency / Sustainability
Equity	Land Use	Mobility	Operational Efficiency
Public Health	Reliability	Safety	State of Good Repair

Project Process: Evaluation Criteria

Policy	Technical
• Provide regional policy makers with information about how the long-range plan supports regional goals. • Measure areas that COG, TPB, and its partners can influence. • Help TPB tell a story about the region and our progress toward regional goals.	• Input data must be available/repeatable • Data must be capable of producing valid results at the required geographic level of detail • Method must use available tools • Measures must be completed within reasonable time period and level of effort

Measures Introduction

- The ten recommended performance measures address the TPB priority areas identified as under-addressed in TPB's policy framework. Nine of which staff are advancing in some way.

- Status of each measure varies based on meeting evaluation criteria requirements.

- These measures are each at varying stages of feasibility due to various limitations and staff vetting, testing, and resource allocation.

Accessibility: 15-minute Neighborhoods

Can you get to key destinations within 15-minute travel sheds for various modes within a small geography?

- **Why this measure?**
  - The 15-minute neighborhood concept seeks to bring common life destinations within a 15-minute reach of more residents.

- **What does it measure?**
  - The analysis would assess whether a resident of a given location (such as the center of an Equity Emphasis Area) can reach key life destinations, such as jobs, schools, healthy food, or medical services within 15 minutes without driving.

- **Next Step:**
  - Advancing for additional evaluation as part of future LRTP.

Accessibility: Access to Travel Options

Assesses access to existing (or planned and committed) transportation options and seek to identify opportunities for improving access to various travel options.

- **Why this measure?**
  - This measure can help TPB identify gaps in the region's comprehensive multimodal system.
- **What does it measure?**
  - How many travel options are available at a given location.
- **Next Step:**
  - Advancing for inclusion in Visualize 2045 update.

Multimodal Accessibility Index

Index measuring both the diversity of transportation modes available and the number of destinations accessible by those modes within a given travel time or distance.

- **Why this measure?**
  - To help TPB understand how the comprehensive multimodal system can improve access to jobs (or other destinations).
- **What does it measure?**
  - Both the diversity of transportation modes available and the number of destinations accessible by those modes within a given travel time or distance. It is similar to the existing measures on access to jobs, but it merges many modes into one measure.
- **Next Step:**
  - Advancing for inclusion in Visualize 2045 update.

Multimodal Accessibility Index, cont.

Accessibility by Mode and Index Score
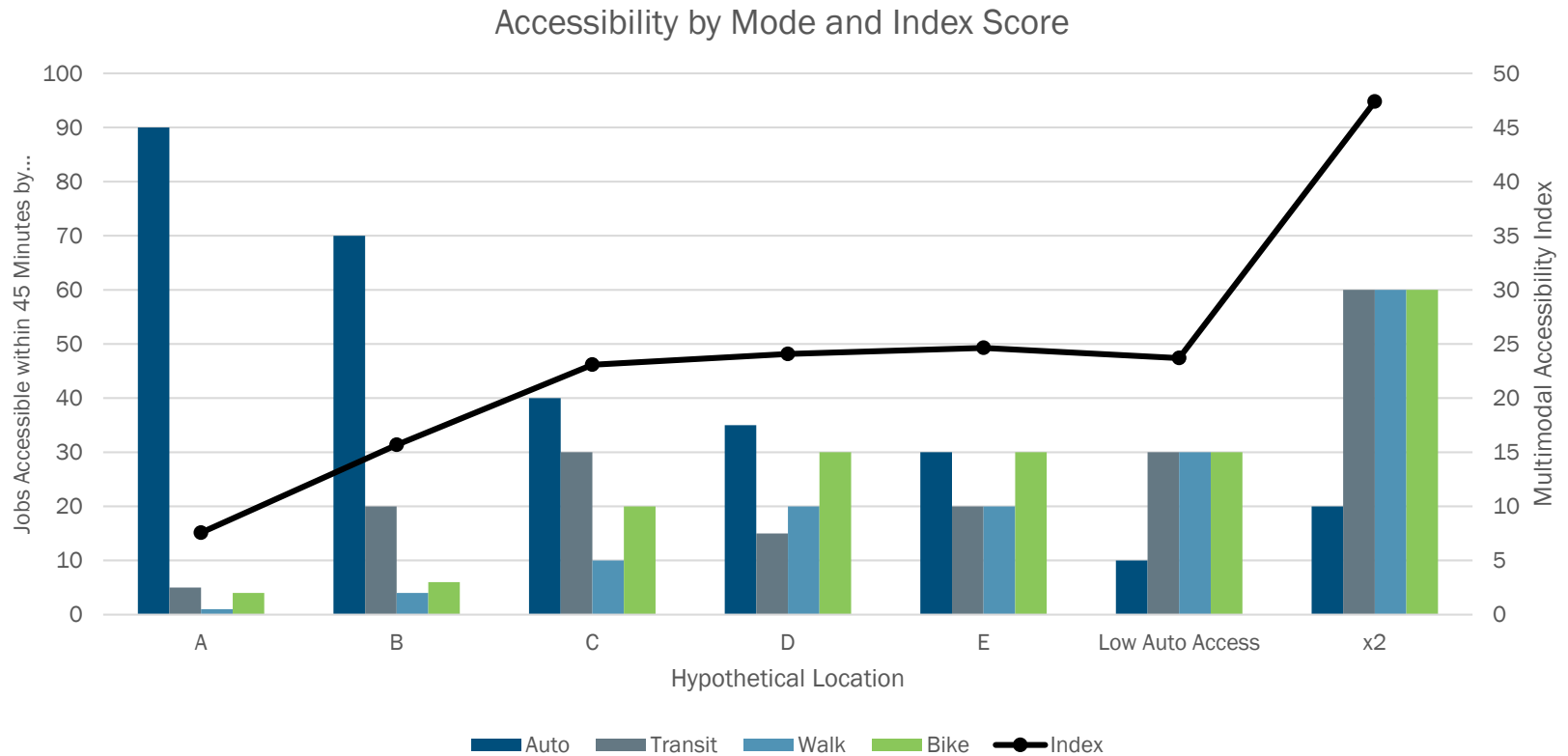
Cost of Travel

Using the Center for Neighborhood Technology "Housing + Transportation Affordability Cost Index," how can the TPB learn more about the costs of transportation as a potential tool for offsetting other costs that contribute to the region's cost of living?

- **Why this measure?**
  - To help TPB better understand affordability and to identify locations that might benefit from additional investments in lower-cost transportation options.

- **What does it measure?**
  - The Center for Neighborhood Technology already calculates the percent that households spend on housing and transportation, which makes this a relatively easy diagnostic measure for TPB to adopt.

- **Next Step:** <u>Advancing</u> by optimizing data for regional context and inclusion in Visualize 2045 update.

Exposure to Localized Transportation Pollution

How do environmental indicators related to mobile source emissions, as reported in EPA's EJScreen, perform in the TPB Planning Area?

- **Why this measure?**
  - Respond to TPB's new equity resolution and to the impacts of COVID-19 by studying how air quality varies throughout the region.
- **What does it measure?**
  - Areas in the region that have more air pollution from transportation than the regional average.
- **Next Step:** <u>Advancing</u> for inclusion in Visualize 2045 update.
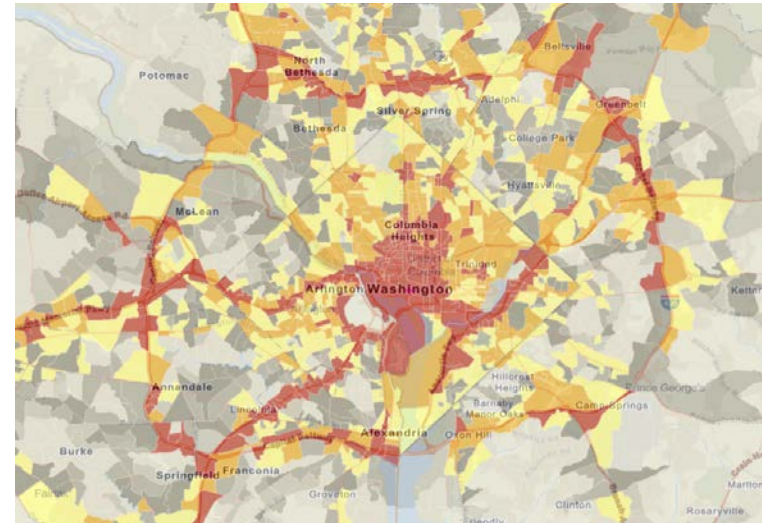
Green Infrastructure: Percent Green Land Cover

What is the percent of impervious surface and/or extent of green cover in the region?

- **Why this measure?**

  - To inform future decisions about where to site new infrastructure and how to design or use transportation rights-of-way.

  - Green land cover can deliver equity, environmental, social, health, and economic benefits.

- **What does it measure?**

  - Percent of green land cover.

- **Next Step:** In coordination with COG partners, <u>advancing</u> for additional evaluation as part of future LRTP.

Forest Canopy [0 – 100%]

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Density and Open Space: Population-Weighted Density

Relative density of geographic areas within the region.

- **Why this measure?**
    - To help TPB understand how residents experience the region's density and inform future decisions about open space preservation.
- **What does it measure?**
    - Population-weighted density reflects the density experienced by the average resident of the region.
- **Next Step:**
    - Advancing for inclusion in Visualize 2045 update.

Infrastructure Exposed to Flooding

What transportation infrastructure in the region is near flood risk, flood zones, rising sea levels and storm surges?

- **Why this measure?**
  - Help TPB identify which transportation infrastructure and locations are at risk of flooding to influence decisions about project locations and design.
  - Help address the new federal planning factor on resiliency.
- **What does it measure?**
  - Overlays the region's transportation (existing and/or proposed) infrastructure with data on current and future flood risk.
- **Next Step:**
  - Advancing for additional evaluation as part of future LRTP.
  - Examining opportunities through TPB resiliency study next steps

Number of Projects That Incorporate Best Practices to Improve Resiliency

To what degree are projects in the LRTP considering resiliency best practices?

- **Why this measure?**

  - Recognize and celebrate actions TPB member jurisdictions are taking to increase resiliency.

- **What does it measure?**

  - The number of projects incorporating resiliency best practices, as reported on project submission forms.

- **Next Step:**

  - Examining opportunities through TPB resiliency study next steps

  - Including in Visualize 2045 update: responses to federal planning factors questions, noting count of projects considering resiliency/reliability.

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