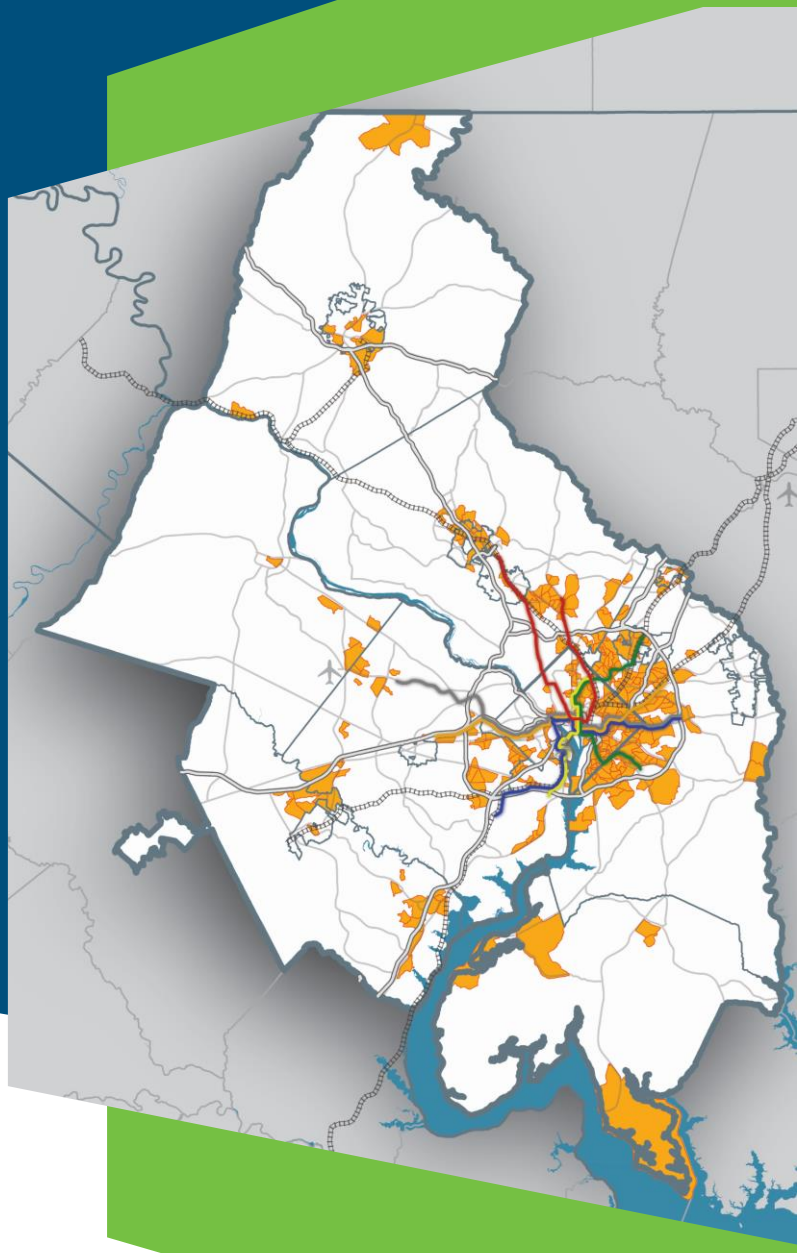
2022 Update to Visualize 2045, FY 2023-2026 TIP and the Air Quality Conformity Analysis

TPB Staff

Access for All Advisory Committee

April 8, 2022



visualize 2045

A long-range transportation plan for the National Capital Region

Presentation Overview

1. Overview of the Visualize 2045 update and FY 2023-2026 TIP

2. Financial Plan

3. Air Quality Conformity

4. Performance Analysis - Regional Transportation System

5. Get the Word Out: Visualize 2045

Top 3 Things to Know about the Visualize 2045 Update

1. The plan meets all federal requirements, including:

- ✓Technical Inputs
- ✓Fiscal Constraint
- ✓Air Quality Conformity
- ✓Implementation of TPB's Public Participation Plan, Title VI*
- ✓Performance-Based Planning Requirements

2. The plan includes $223.3 B projected for 2023-2045

- 81%: devoted to the operations and maintenance
- Modal Breakdown:
  - WMATA: 45%
  - Other public transportation:22 %
  - Highways: 32%
  - Stand-alone bicycle and pedestrian: 0.4%.

3. We make progress on our goals- but also face challenges

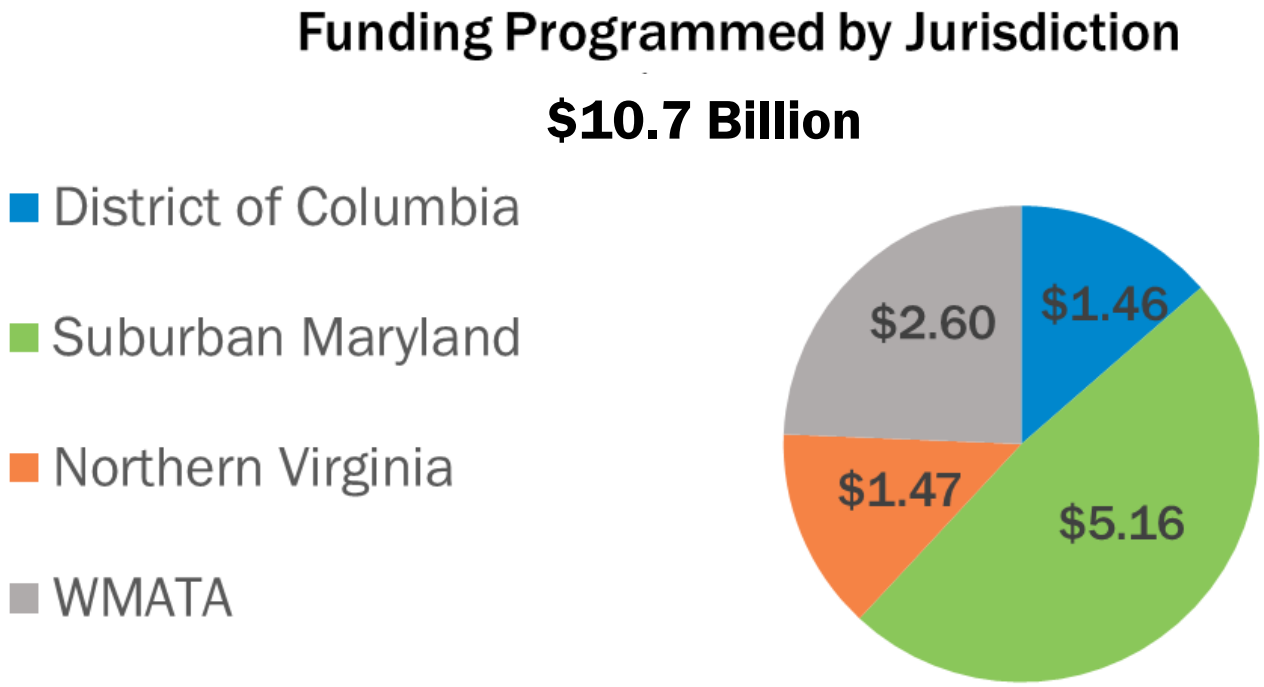
- Growth will increase demand, increasing delay and congestion
- Access to transit will increase
- More people, businesses and visitors will have increased travel options

*EJ Analysis will be conducted on the approved plan

1. Visualize 2045 and the TIP

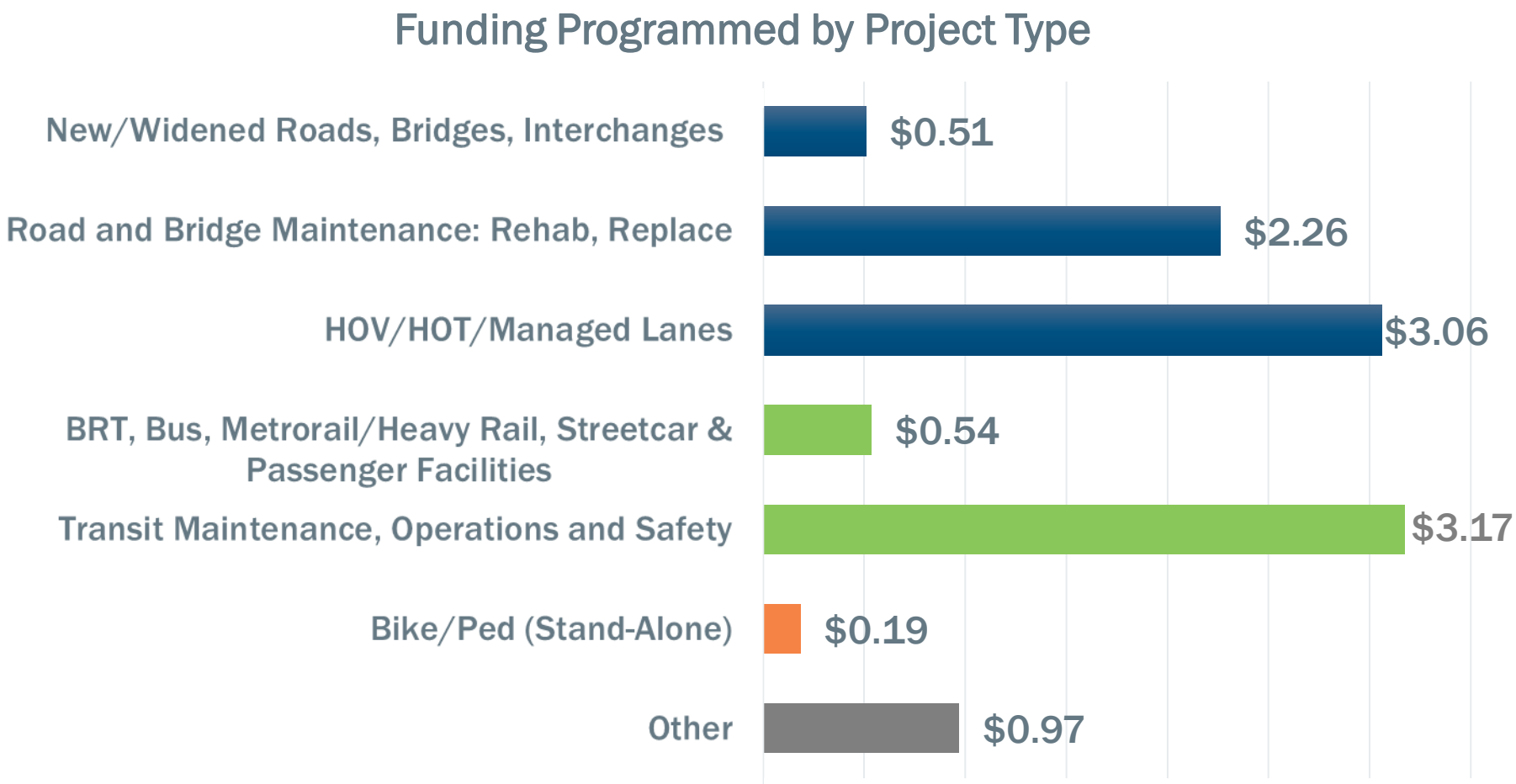
Draft FY 2023-2026 Transportation Improvement Program (TIP) Summary

The FY 2023-2026 Transportation Improvement Program (TIP) features more than 300 funding records for projects, programs, and project groupings throughout the region, totaling approximately $10.7 Billion.



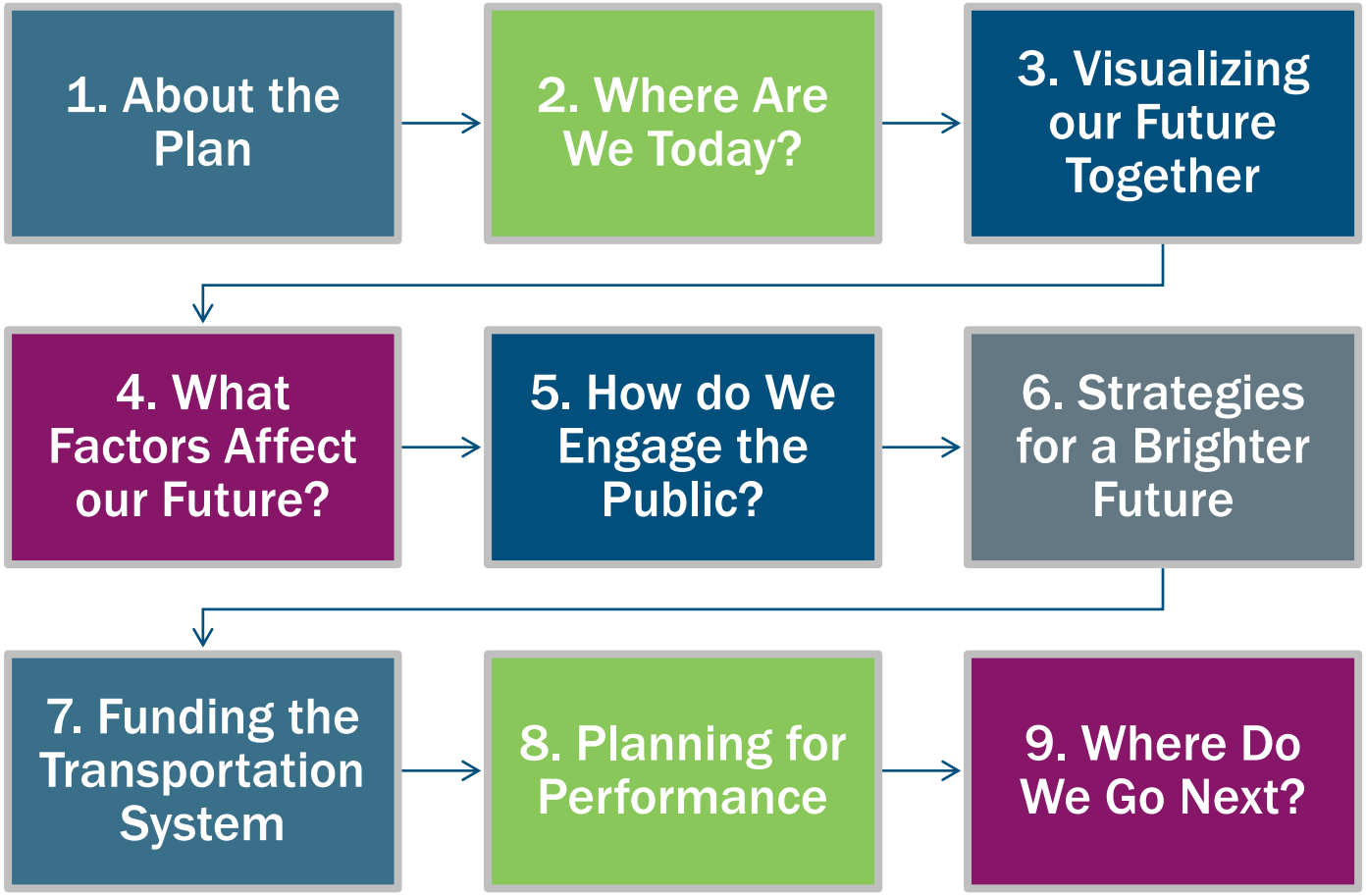
Note: DDOT and VDOT do not fully program past the first 2 years of the TIP, which is reflected in total programmed amounts in the chart.

Draft FY 2023-2026 Transportation Improvement Program (TIP) Summary



Plan Organization: Nine Chapters

Includes Climate Change Mitigation



Plan Appendices

- A. Financial Plan
- B. Summary of Projects in the Fiscally Constrained Element
- C. Air Quality Conformity Analysis
- D. Systems Performance Report
- E. Congestion Management Process – impact on plan development
- F. Safety Planning
- G. Environmental Consultation and Mitigation
- H. Public Participation Summary
- I. Summary of Public Comments
- J. Summary of Transit Plans (TDP/TSP) in Region
- K. Federal Compliance Checklist
- L. TPB Resiliency Study Whitepaper
- M. TPB Climate Change Mitigation Study

2. Financial Plan

The 2022 Update to Visualize 2045 long-range transportation plan meets the federal requirements for fiscal constraint.

visualize 2045

Financial Plan

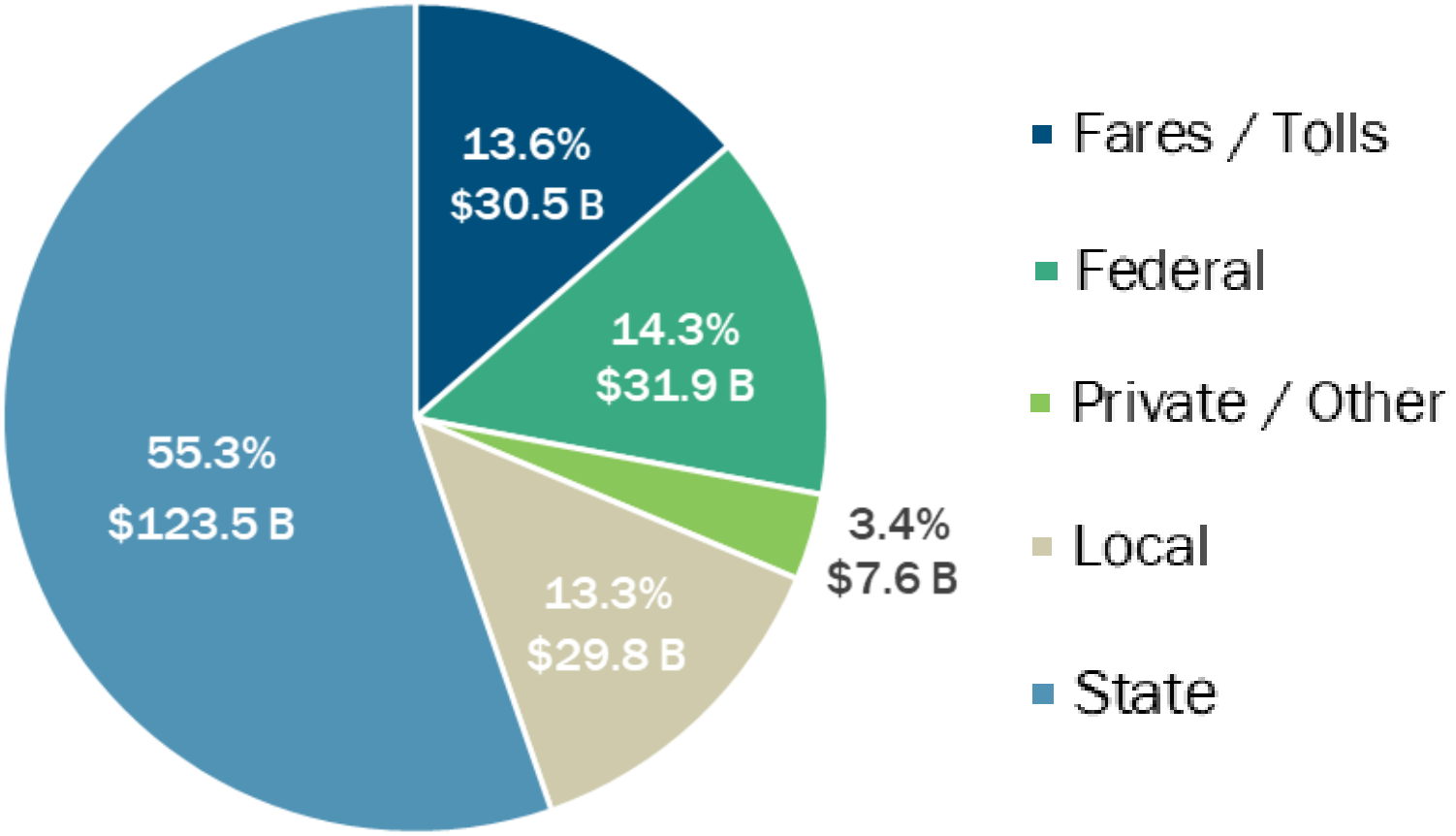
Federal regulations require a financial plan that demonstrates how the adopted long-range transportation plan can be implemented

Forecast year-of-expenditure (YOE) revenues must cover the estimated YOE costs of maintaining, operating, and expanding the highway and transit system

The plan demonstrates that the forecast revenues are reasonably expected to be available to implement Visualize 2045

Regional Revenues: Visualize 2045

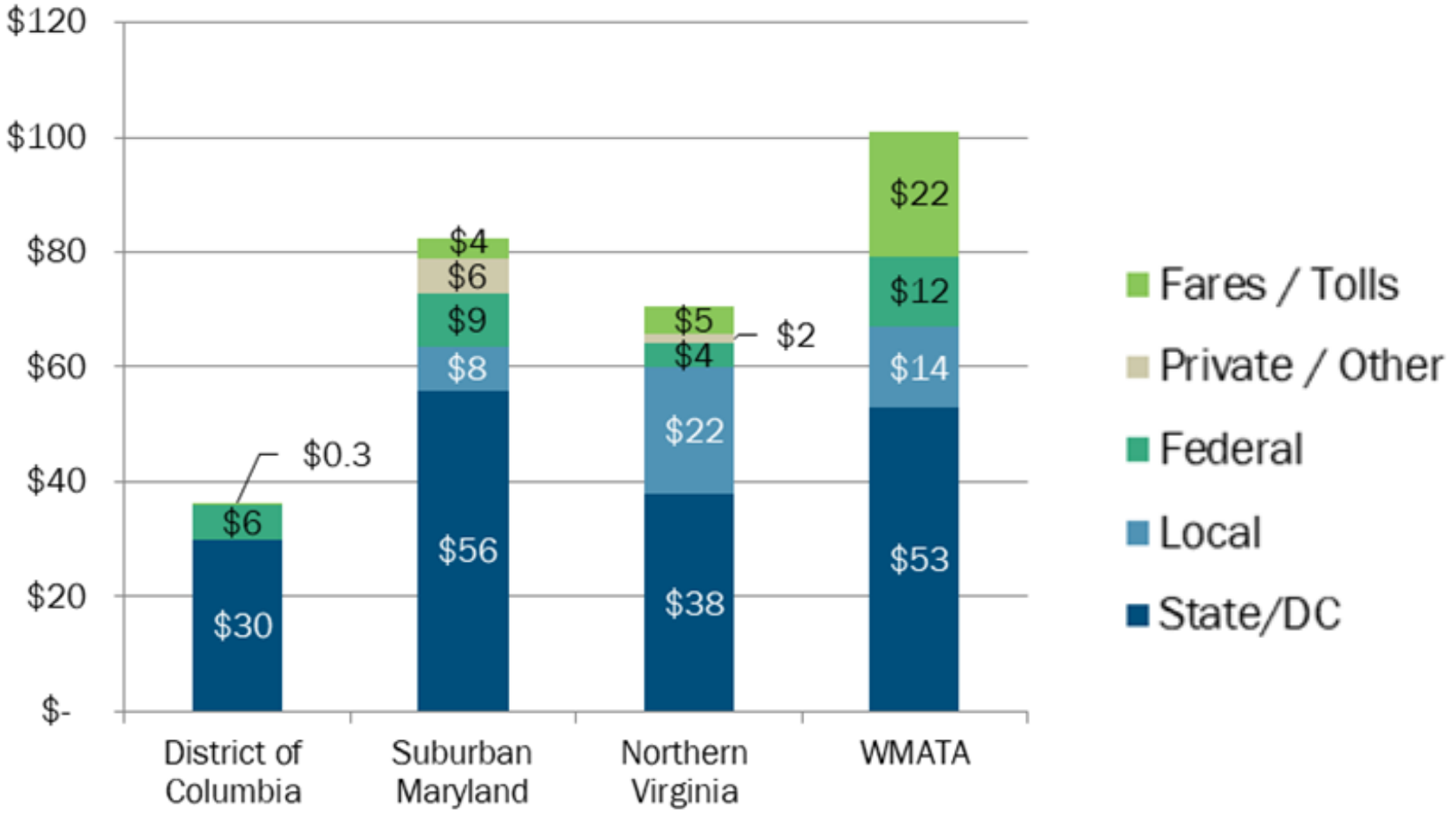
(2023-2045; Billions, in Year of Expenditure)



Total = $223.3 Billion

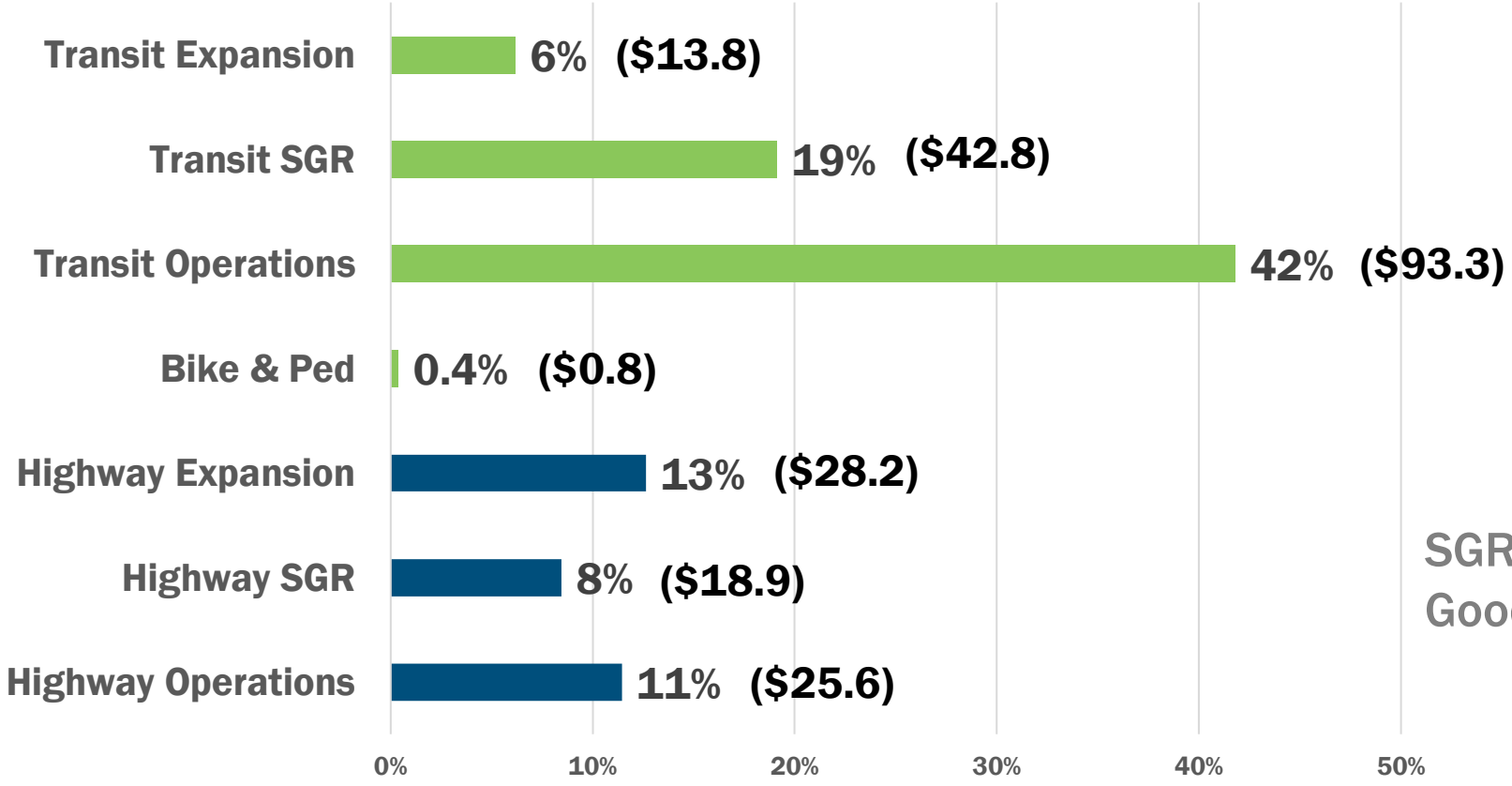
Regional Revenues Breakdown: Visualize 2045

(2023-2045; Billions, in Year of Expenditure)



Regional Expenditures: Visualize 2045

(2023-2045; Billions, in Year of Expenditure)



SGR: State of Good Repair

Total = $223.3 Billion

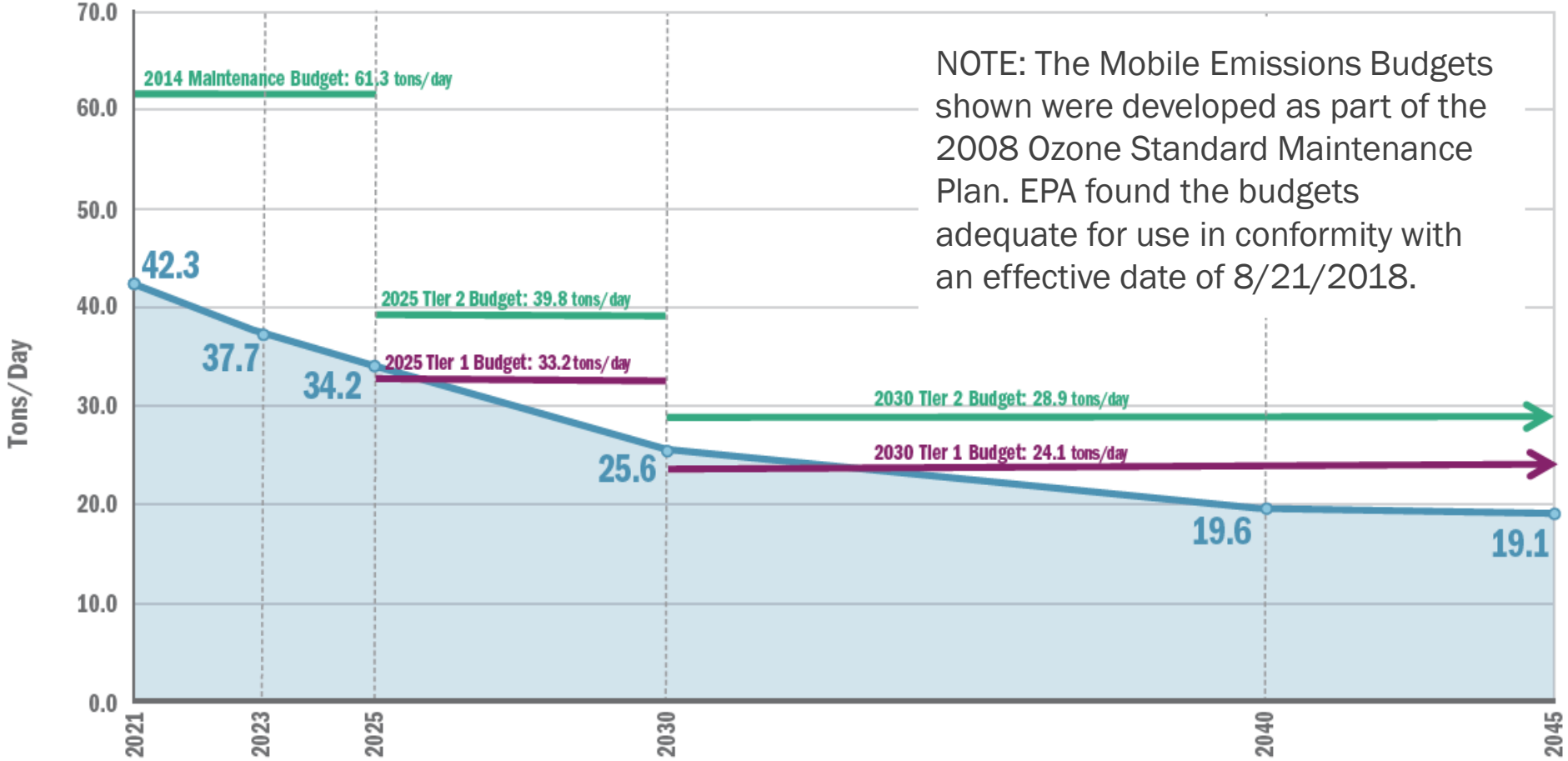
3. Air Quality Conformity

The 2022 Update to Visualize meets the federal Air Quality Conformity requirements—mobile source VOC and NOx emissions associated with the plan/TIP are below EPA approved motor vehicle emissions budgets.

visualize 2045

Air Quality Conformity

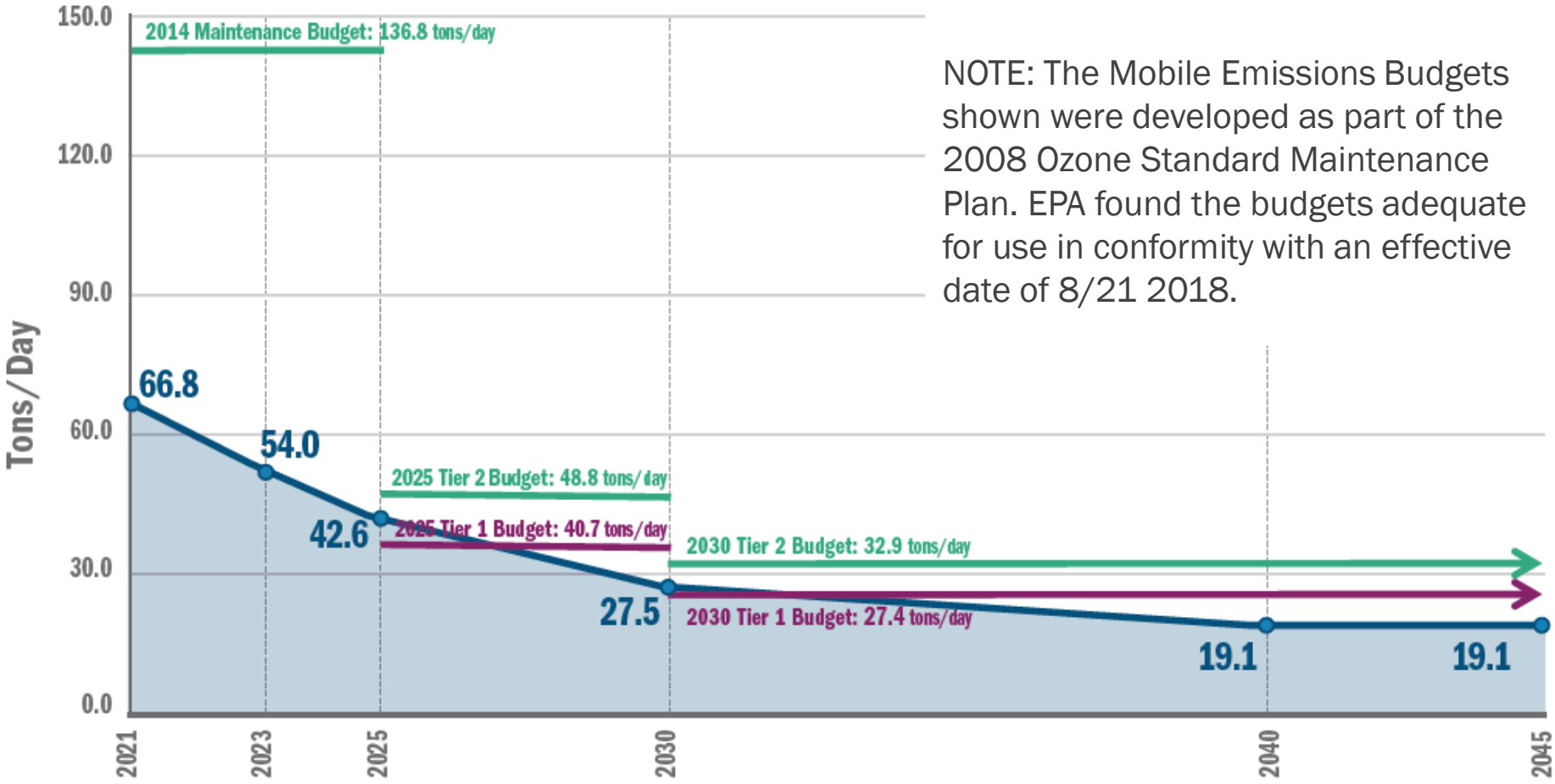
2022 Update to Visualize 2045 Air Quality Conformity Mobile Source Emissions and Mobile Emissions Budgets Ozone Season VOC



NOTE: The Mobile Emissions Budgets shown were developed as part of the 2008 Ozone Standard Maintenance Plan. EPA found the budgets adequate for use in conformity with an effective date of 8/21/2018.

Air Quality Conformity

2022 Update to Visualize 2045 Air Quality Conformity Mobile Source Emissions and Mobile Emissions Budgets Ozone Season NOx



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Air Quality Conformity

	Maintenance SIP Mobile Budgets	2022 Update to Visualize 2045 Conformity Emissions
Cooperative Forecasts	Round 9.0	Round 9.2
Vehicle Fleet	2014 VIN	2020 VIN
Travel Demand Model	Version 2.3.66	Version 2.4
Project Inputs	2016 CLRP	2022 Update to Visualize 2045
Metrorail Constraint	yes	no

4. Performance Analysis - Regional Transportation System

visualize 2045

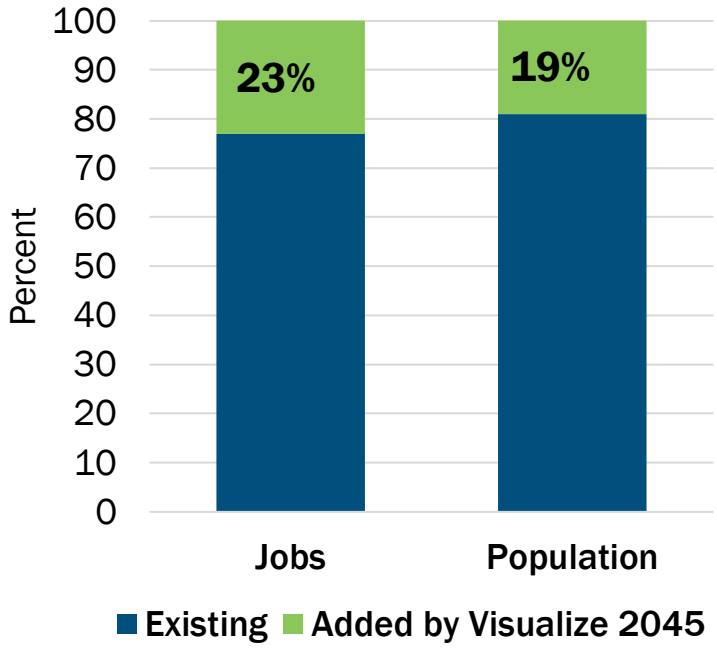
Key Takeaways

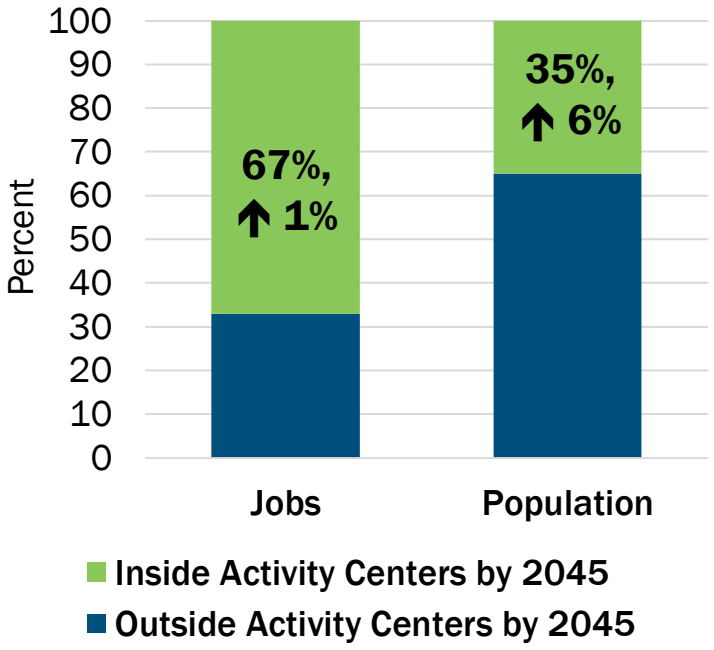
- Expected growth will likely **increase demand, increasing delay and congestion** and reducing job access for some parts of the region.
- Financial **obligations to maintain and operate** the existing system limits expansions and enhancements.
- **Future uncertainties** will impact the region between now and 2045.
- **Access to transit will continue to grow**, providing an important alternative.
- The region is forecast to **make progress towards its goals** -- despite demand from growth, and limited funds for transportation enhancements.
- More people, businesses and visitors will have **more travel options** which is reflected in forecast mode share.

Regional Growth and Policy Context

The Region Will Continue To Grow…

About 80% of 2045 land-use is already in place.
With more people and jobs, the transportation systems will need to continue handling its current and forecasted demand. Activity Centers will contain 67% of jobs (up from 66%) and 35% of the population (up from 29%)

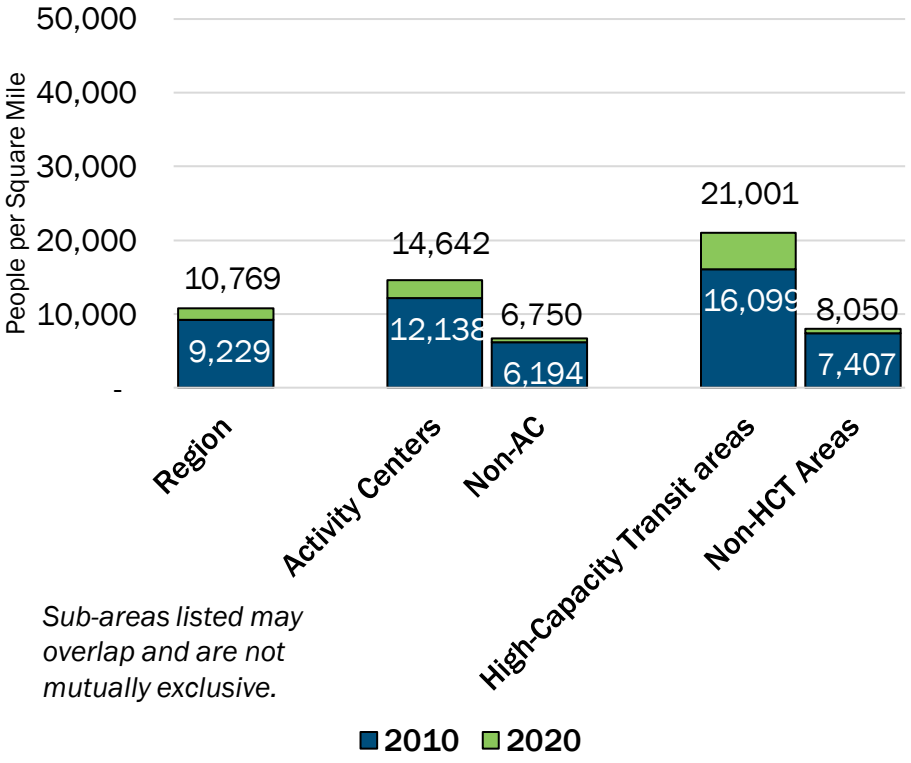




Note: Staff analysis of U.S. Decennial Census Block Groups

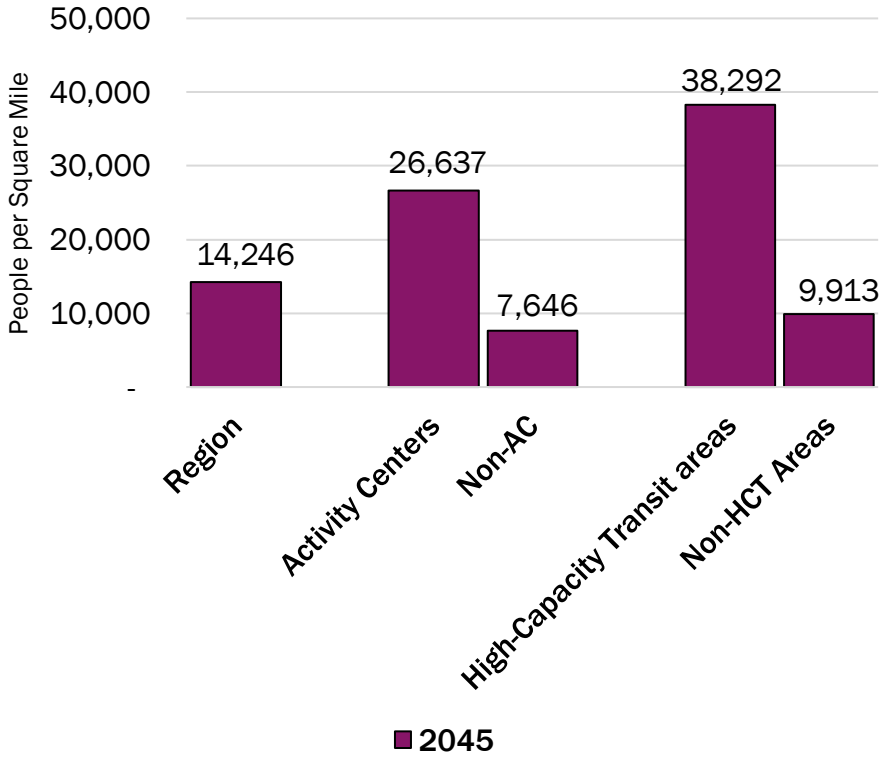
...and Increase in Density

Evidence suggests the region is making progress towards goal to concentrate land-use in the right areas, like Activity Centers and High-Capacity Transit areas.



Sub-areas listed may overlap and are not mutually exclusive.

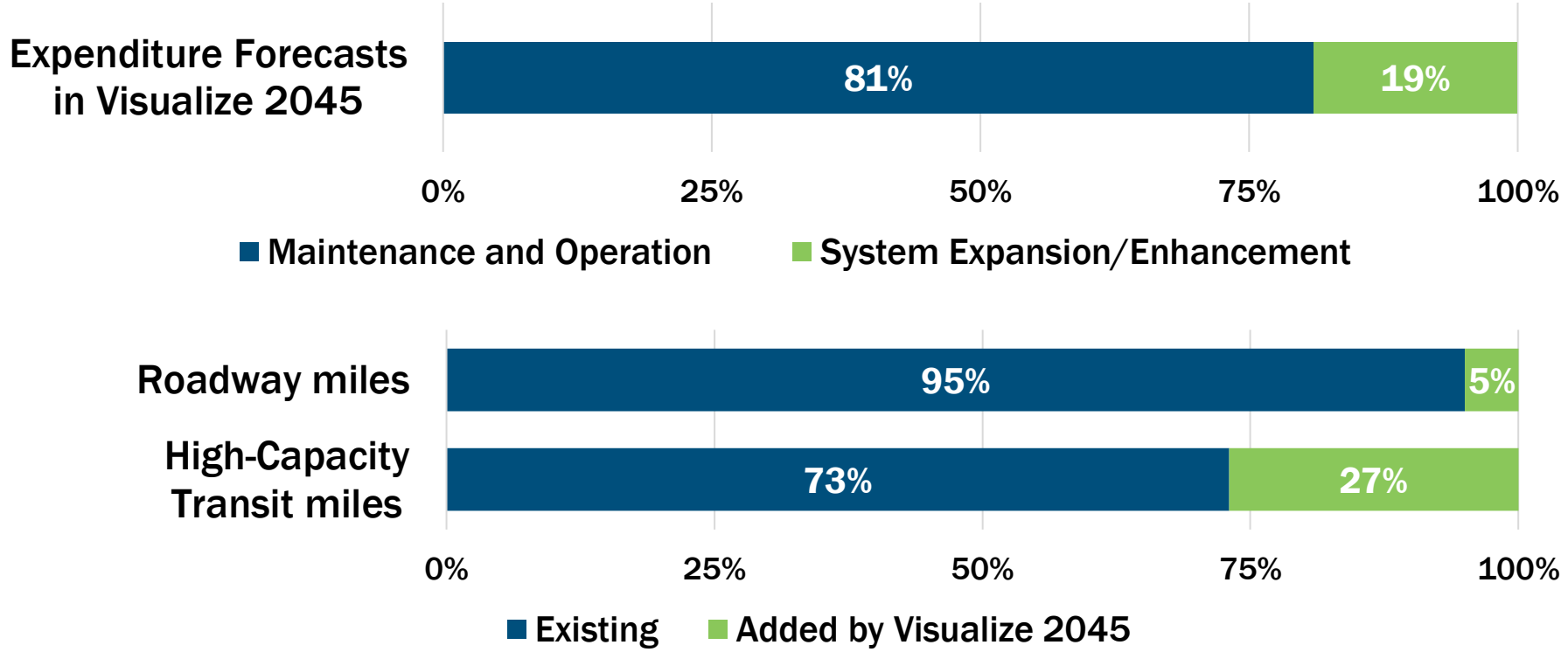
Note: Staff analysis of U.S. Decennial Census Block Groups



Note: Staff analysis of COG Cooperative Forecast Transportation Analysis Zones

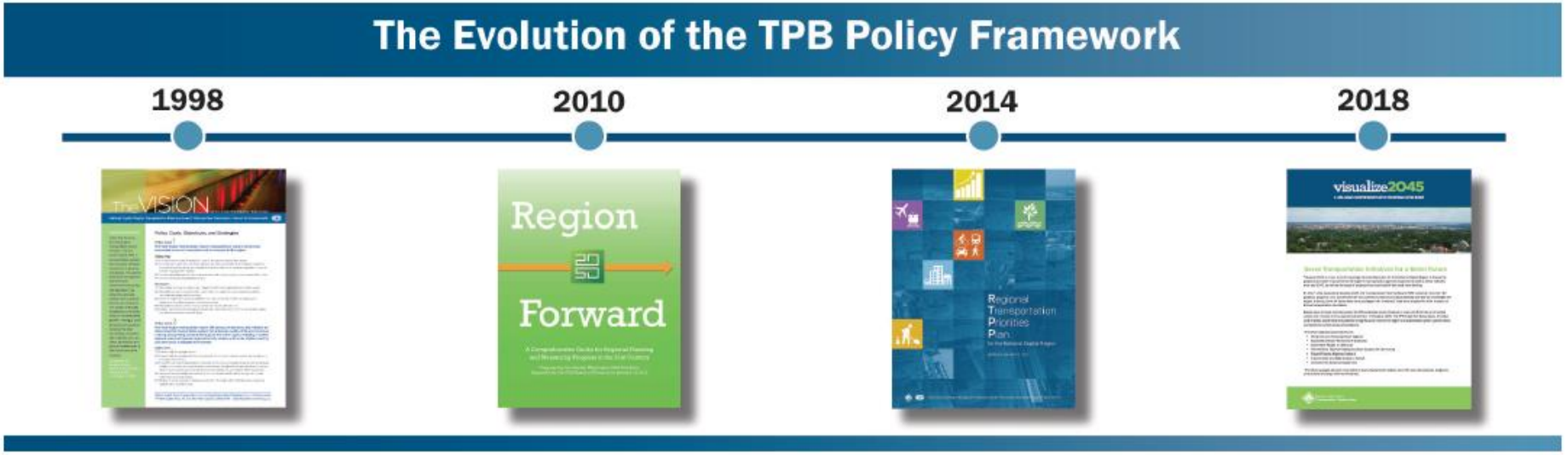
Funding for Expansion is Limited

Of the $223.3 Billion Year of Expenditure dollars in Visualize 2045, only 19% is available for the type of system expansion and enhancement projects that advance our shared goals. Resulting in an additional 5% of roadways and 27% of High-Capacity Transit.



Why the TPB Measures Performance

The TPB measures performance as one way of tracking progress on the goals and priorities presented in the TPB Policy Framework



Planning Policy Focus Areas

Planning Policy Focus Area Universe

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

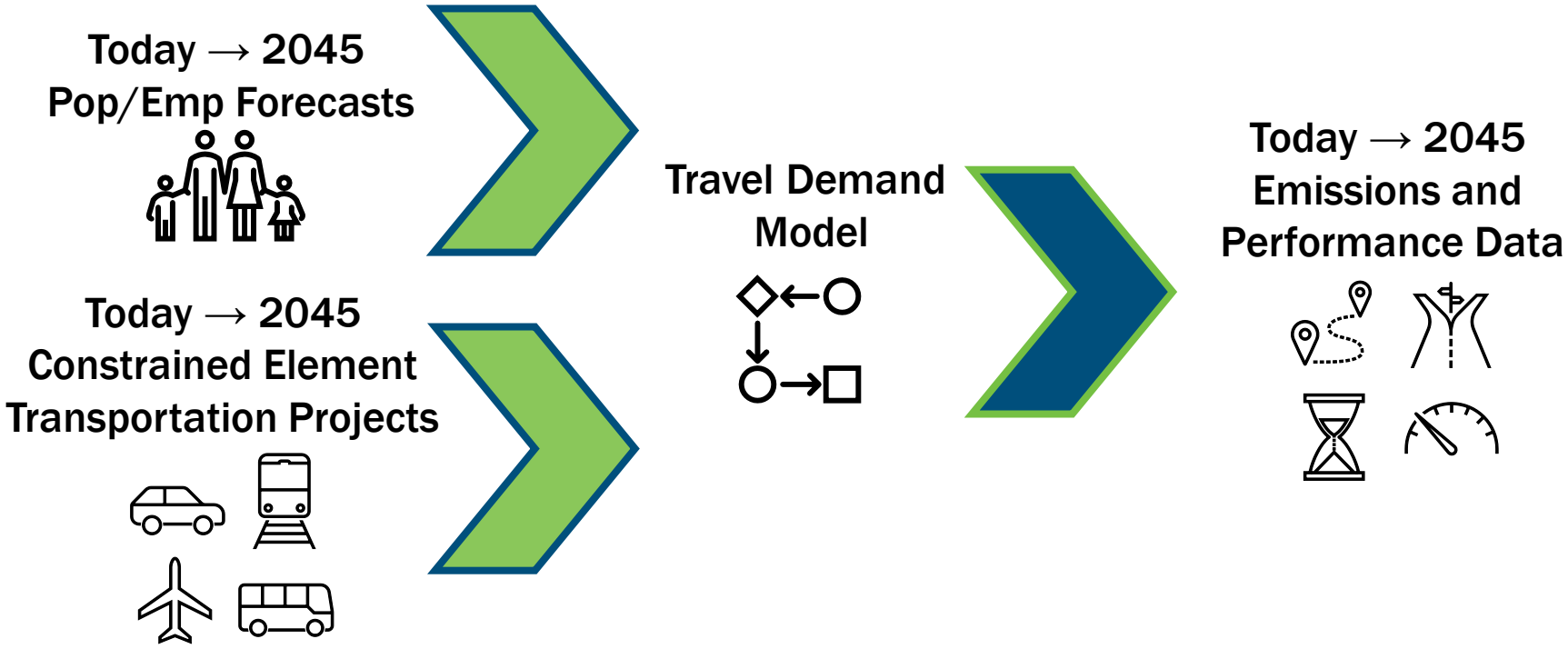
LRTP System Performance Measures

EJ Analysis and other EEA Insights	GHG	NOX, VOC	VMT Per Capita
Mode Share and Geographic Variance	Trips on "Reliability-Enhanced" Modes	Number of People Living Near HCT	Multimodal Accessibility
Daily Hours of Vehicle Delay	Average Delay per Trip	Congested Lane Miles	Population Density, Location of Growth
Traffic Proximity	Job Access by Driving	Transit Ridership	Job Access by Transit

The TPB Uses Performance Measures (PMs) for Many Planning Activities

- Regional Air Quality Conformity Analysis (2 PMs)
- Environmental Justice Analysis (10 PMs)
- Performance-Based Planning and Programming (26 PMs)
- Long-Range Plan Task Force (18 PMs)
- LRTP Performance Analysis (>20 PMs)
- And…more

Travel Demand Model Forecasts the Impact of Changes to Land-use and Transportation



- Round 9.2 Cooperative Forecasts
- Gen2/Version 2.4 Travel Demand Model
- Analysis of TPB Planning Area
- 2020 Vehicle Registration Data
- EPA's MOVES 2014b Mobile Emissions Model
- Other source noted on corresponding slide

Assumptions in the Travel Demand Model

- Validated and reflective of pre-COVID conditions
- Transit
  - The base transit reflects December 2019 schedules with transit service projects built upon it
  - Transit fares are current to June 2021
- Highway tolls in the travel model are current to January 2021
- Vehicle fleet data are current to December 2020

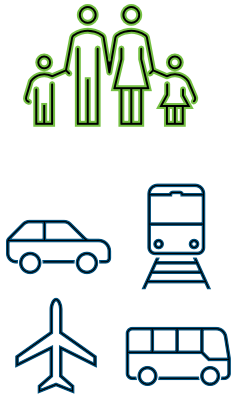
Three Scenarios

Scenarios enable us to isolate for the impact of the new set of transportation projects, programs, and policies.

Today (2023)

Today's households and jobs

Transportation projects on the ground in 2023



2045 No Build

Forecast growth for 2045 households and jobs

No new transportation projects beyond 2023

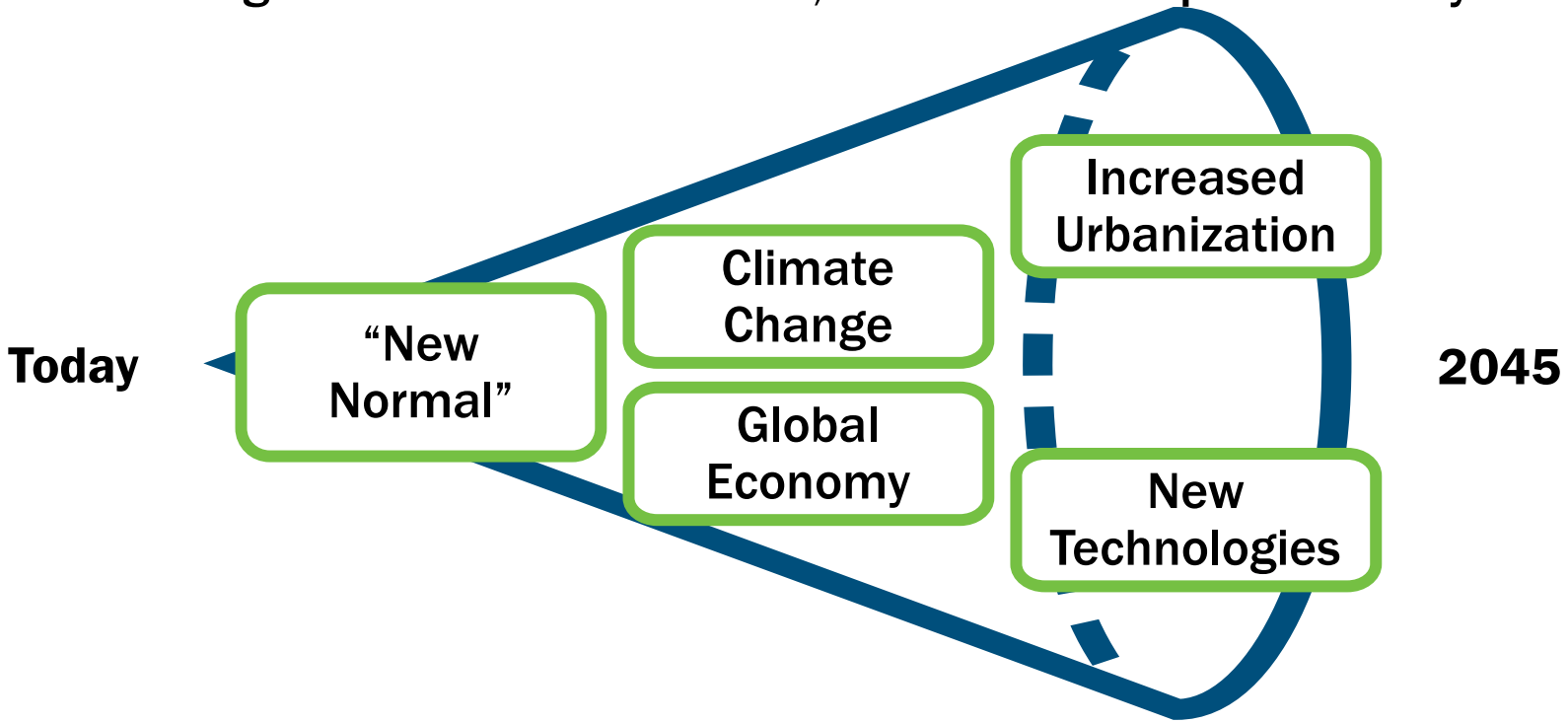
2045 Planned Build (2045 Build)

Forecast growth for 2045 households and jobs

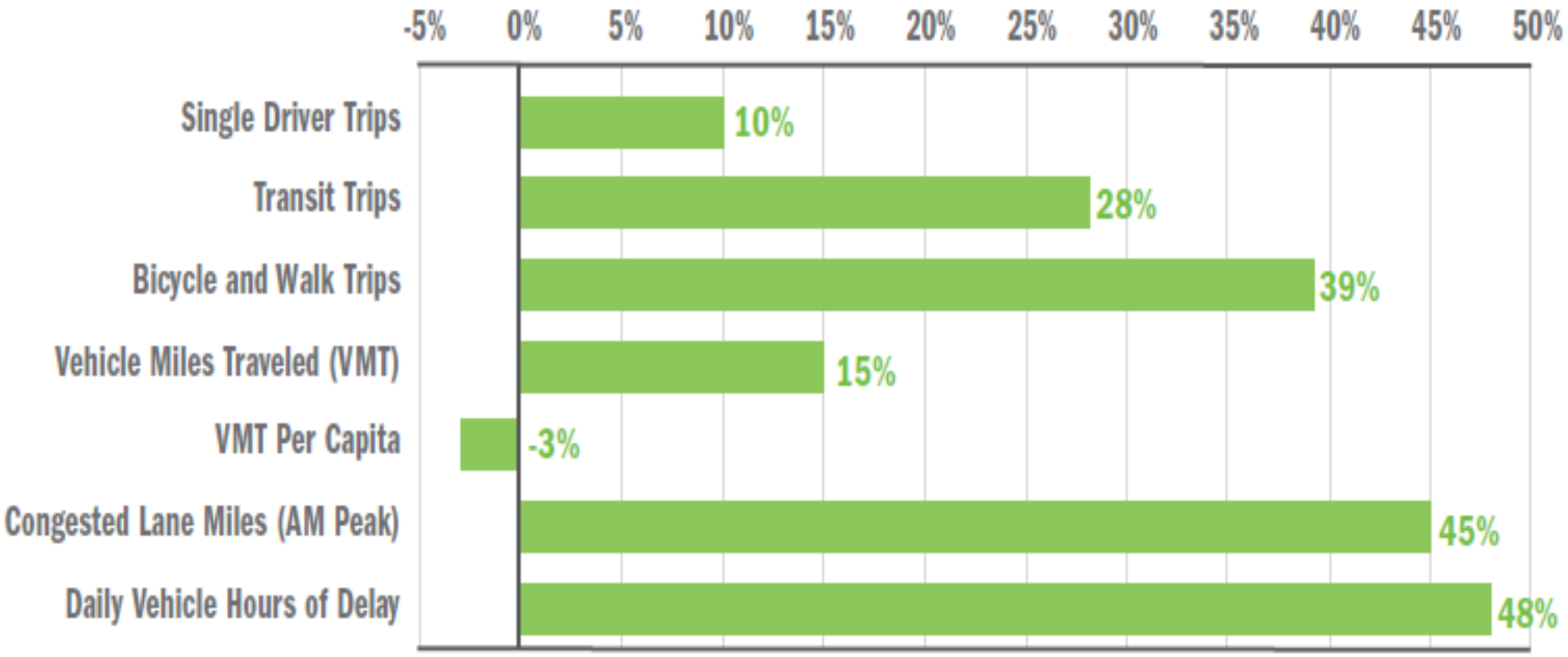
All transportation projects built by 2045

Planning Uncertainties that Will Likely Impact the Future of Travel

Where will the people and jobs be?
How will people travel?
What funding will we have to invest in, maintain and operate the system?



Performance Overview
Percent Change 2023-2045



How is travel expected to change in the region over time?

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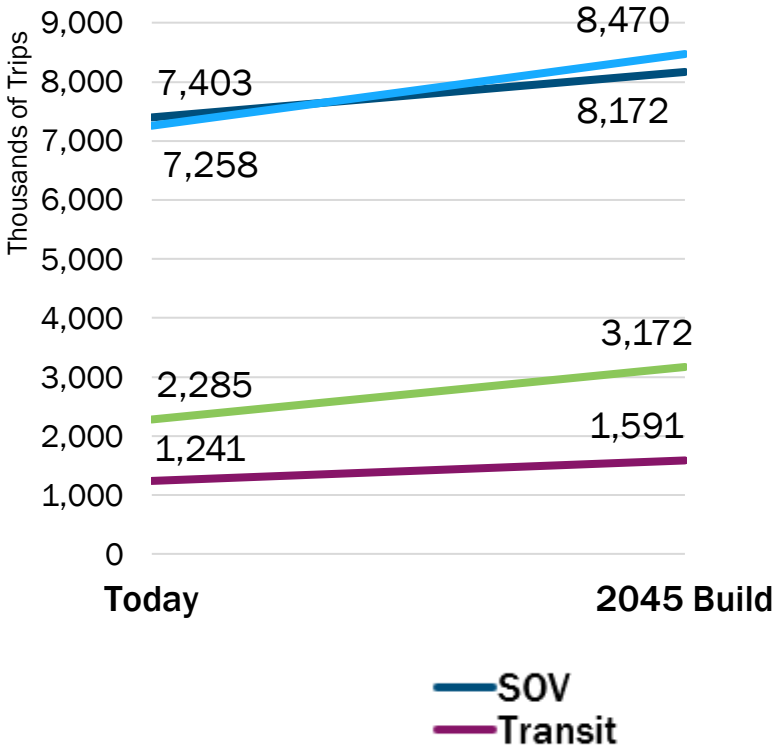
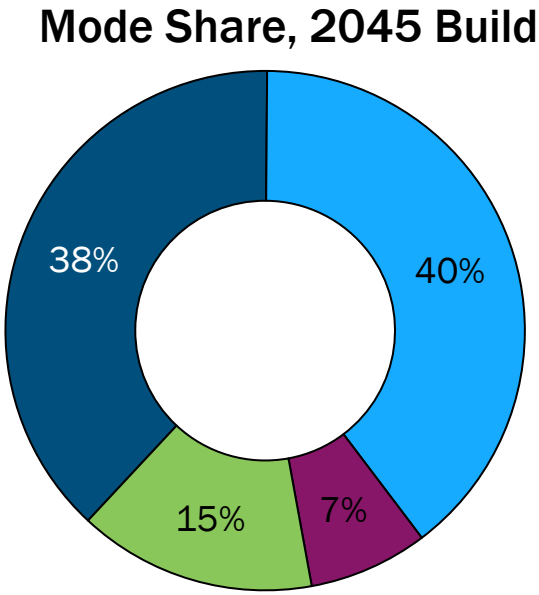
Region Continues to be Auto Dependent

Looking at All Trips, HOV and carpool expected to be more common than driving alone.
Percent increase in Walk and Bicycle is greater than any other Mode.

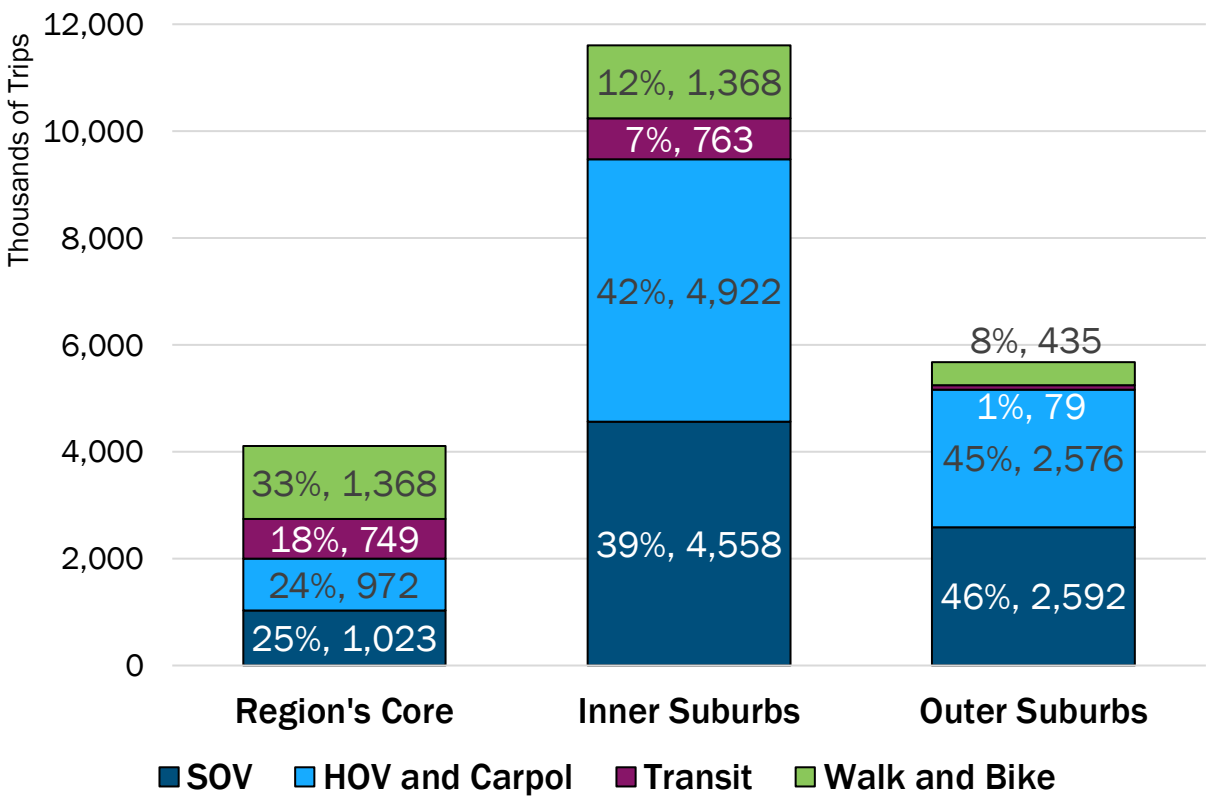




Single Occupancy Vehicle - SOV
High Occupancy Vehicle- HOV

Geographic Differences, All Trips (2045)

HOV and carpool will be as common as driving alone.
Where Transit is available, Transit and Walk and Bike trips are more common.



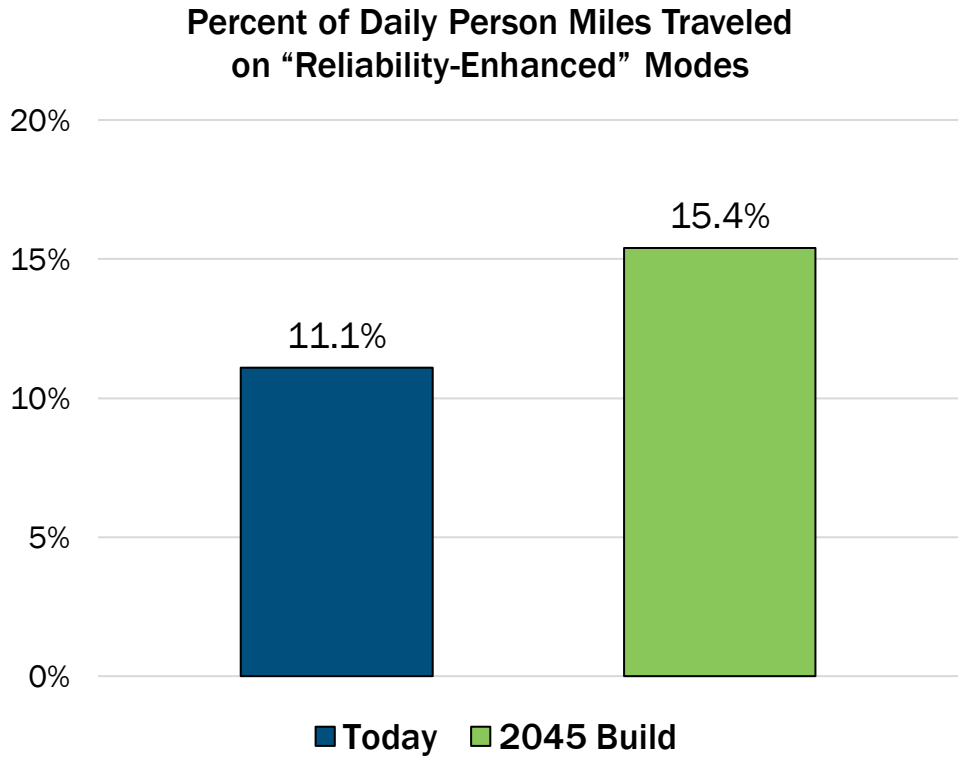
Regional Core:
District of Columbia
Arlington Co.
City of Alexandria

Inner Suburbs:
Montgomery Co.
Prince George's Co.
Fairfax Co.
City of Fairfax
City of Falls Church

Outer Suburbs:
Charles Co.
Frederick Co.
City of Frederick
Prince William Co.
Loudoun Co.
City of Manassas
City of Manassas Park
Fauquier Co. *(Urbanized Area)*

Avoiding Congestion and Delay: More Travel on Reliable Modes

A greater percent of travel in the region will be taken on reliable highway, transit, and walk/bike facilities/modes that are less impacted by congestion and delay.

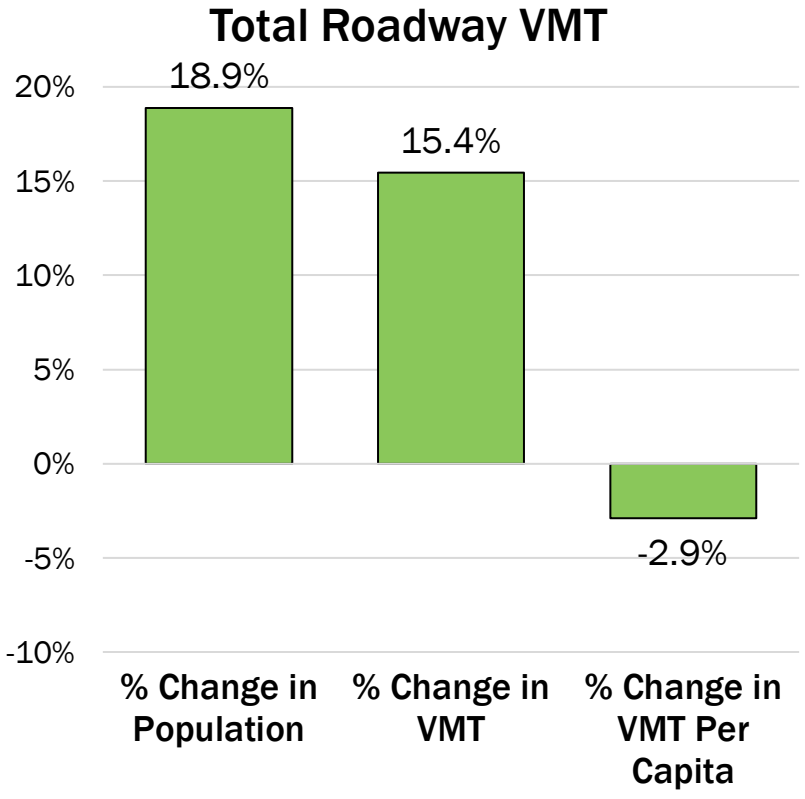


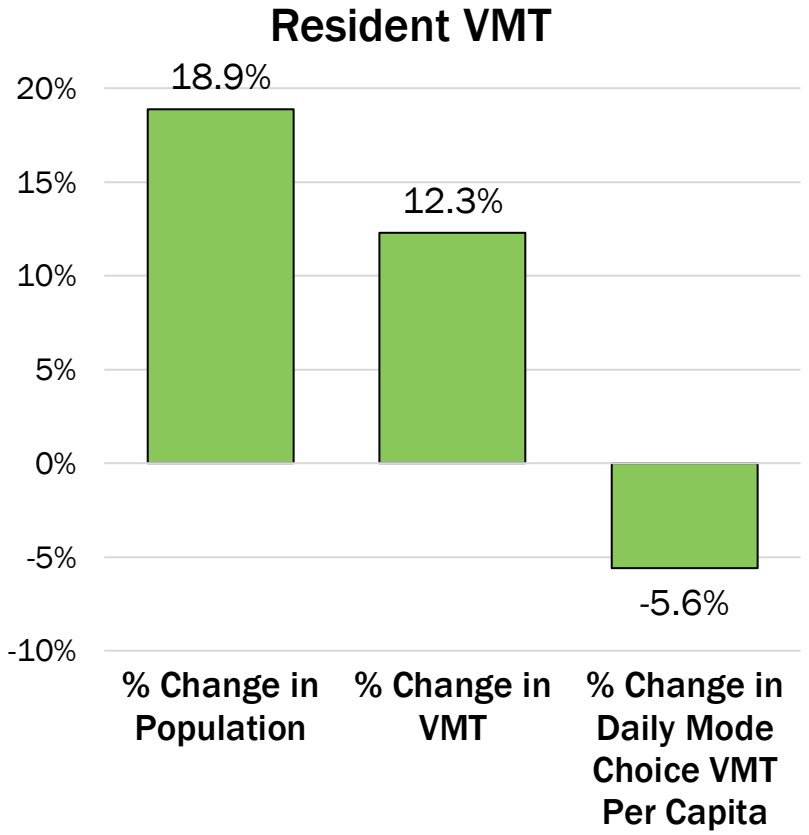
Reliable modes:

- Express toll lanes with dynamic toll rates
- HOV lanes
- Inter-County Connector
- Dulles Airport Access Road
- Metrorail, Commuter Rail, Light Rail, Streetcar
- Bus Rapid Transit
- Long-haul express buses
- Bike/Ped travel

Driving in the Region to Decline Per Capita

VMT per capita of region residents declines by more than 5%. Residential vehicle use has the most potential for change compared to other uses, such as commercial.





How does the plan support traveling to work?

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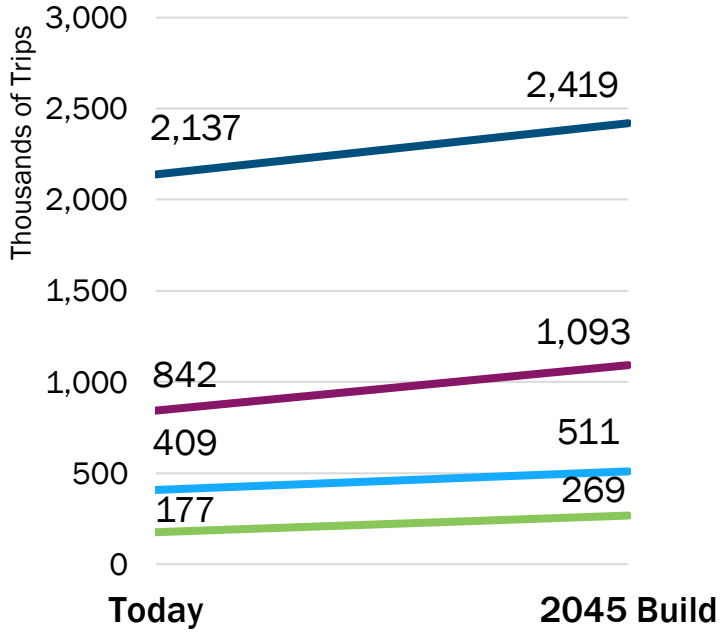
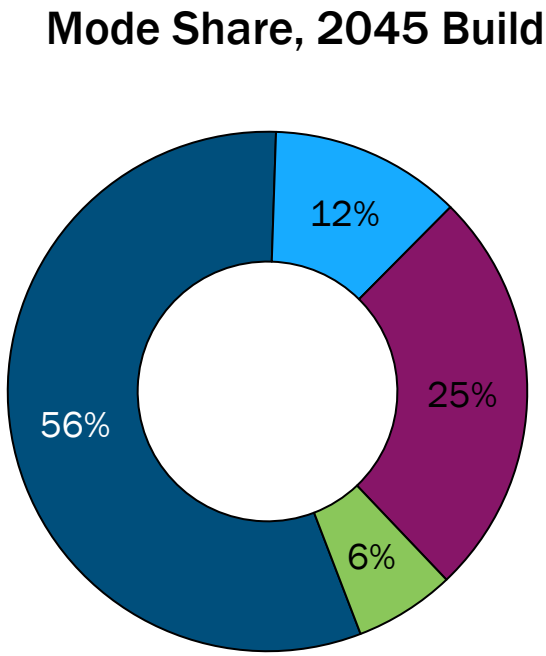
Most of Work Trips will be Driving Alone, ¼ of Work Trips on Transit

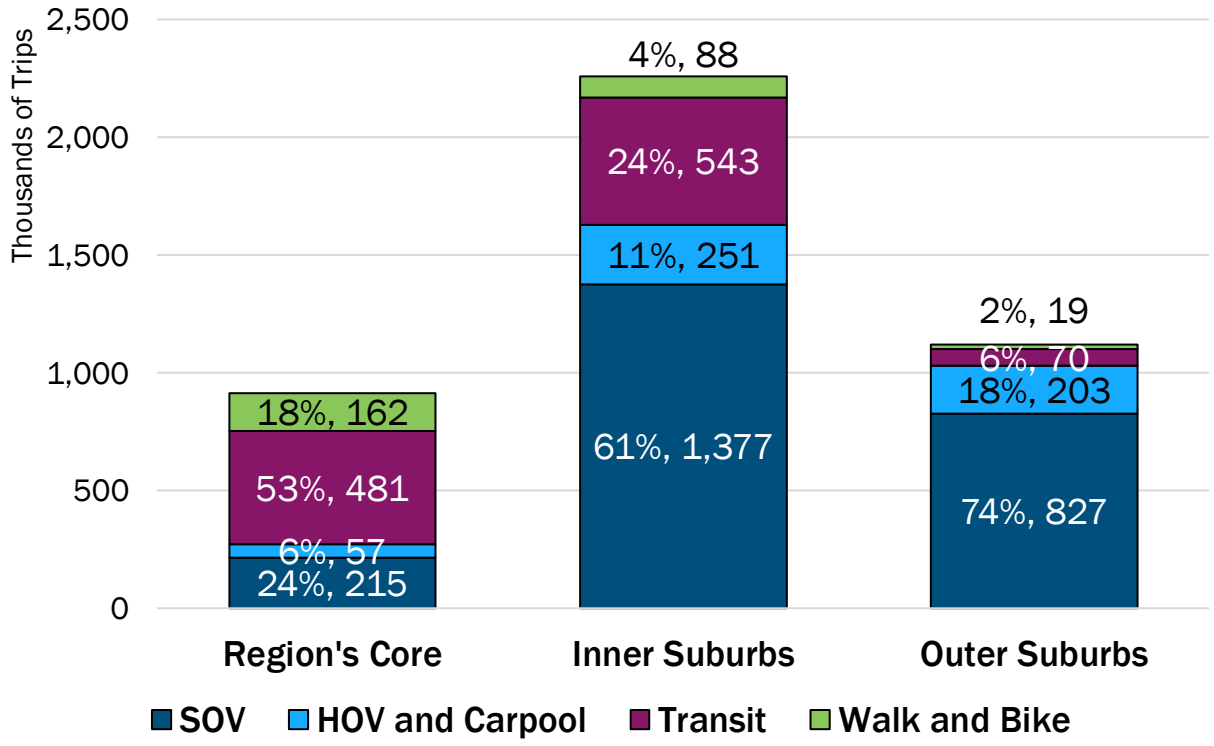




SOV
HOV and Carpool
Transit
Walk and Bike

Taking Transit to Work Increases When Readily Available

By 2045, in the Region's Core, majority of work trips will be on transit and nearly a quarter in the Inner Suburban jurisdictions.



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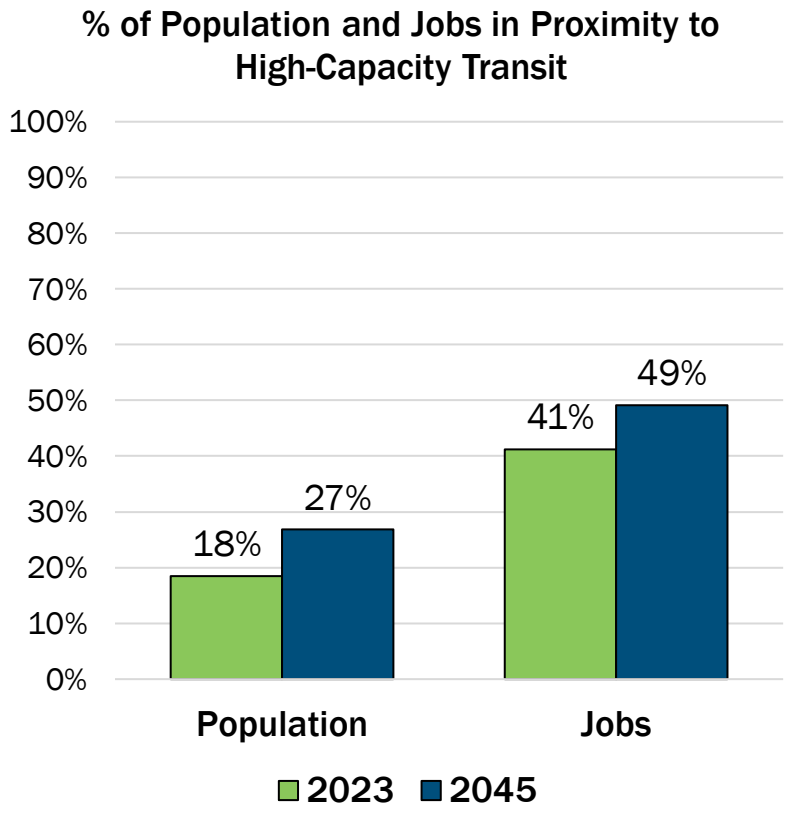
City of Manassas
City of Manassas Park
Fauquier Co. *(Urbanized Area)*

How are new transit projects forecast to impact the region?

visualize 2045

By 2045, More than ¼ of People and ½ of Jobs will be Close to High-Capacity Transit

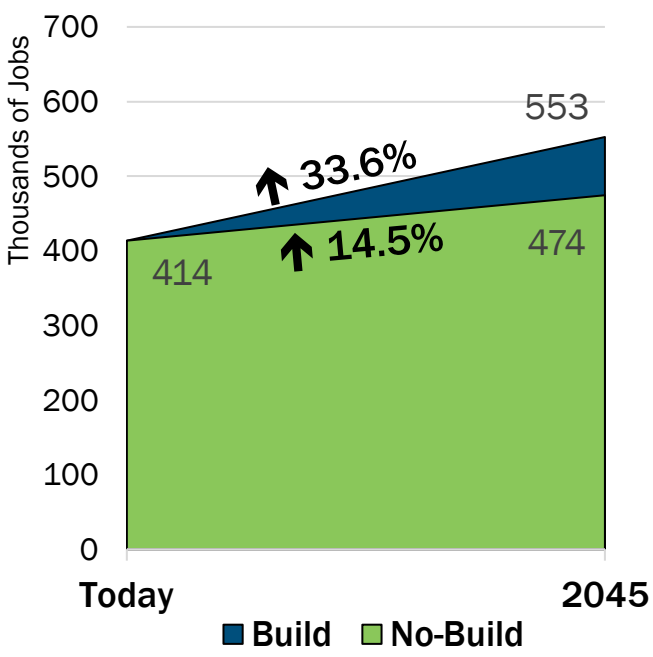


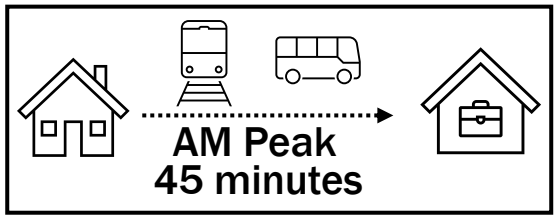
Proximity:
0.5-mile radius from High-Capacity Transit

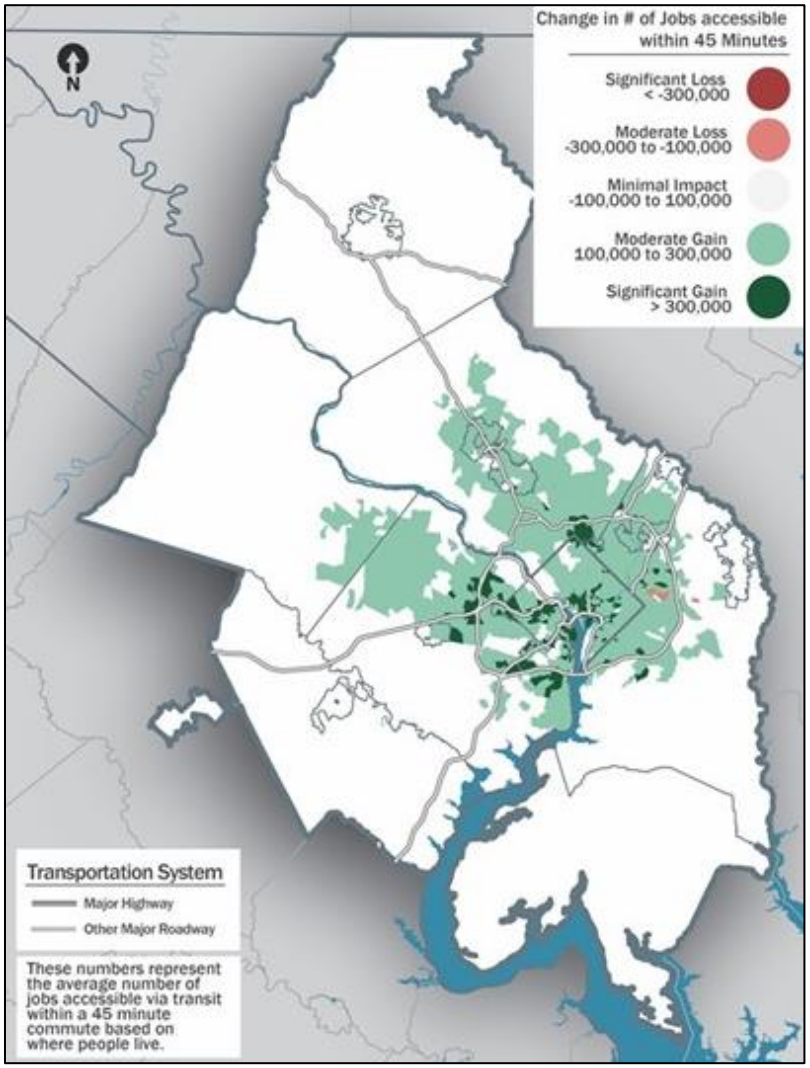
High-Capacity Transit:

- Metrorail
- Commuter Rail
- Streetcar
- Light Rail
- Bus Rapid Transit

Change in Access to Jobs, Transit





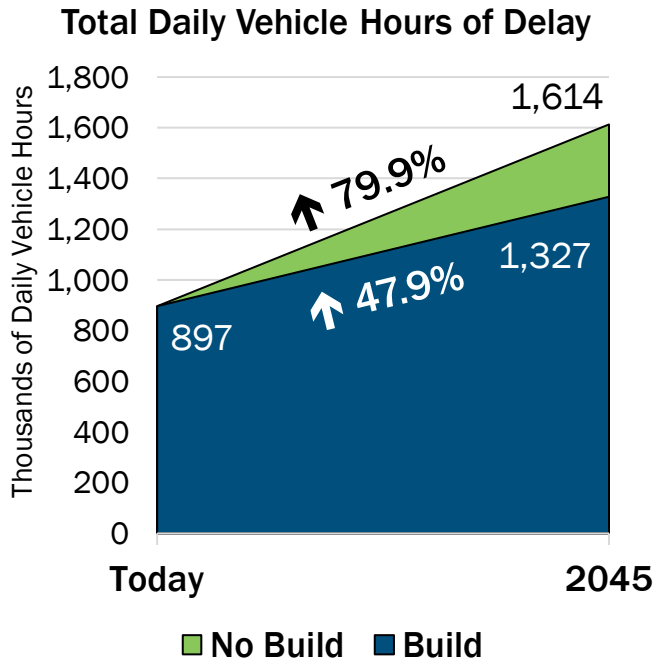


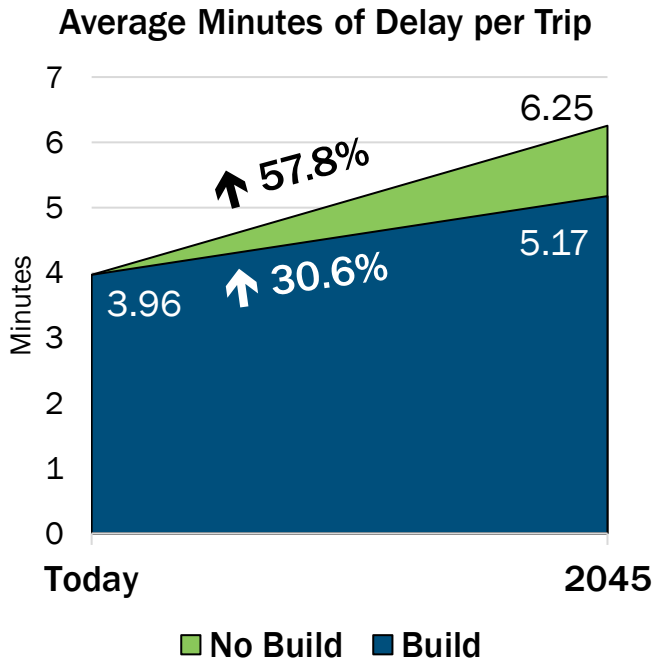
How will the highway network serve the region?

visualize 2045

Delay and Congestion Continue Impacting the Region

New roadway projects will make a difference, but delay and congestion will continue to be a part of life in this region.





Congested Lane Miles, AM Peak

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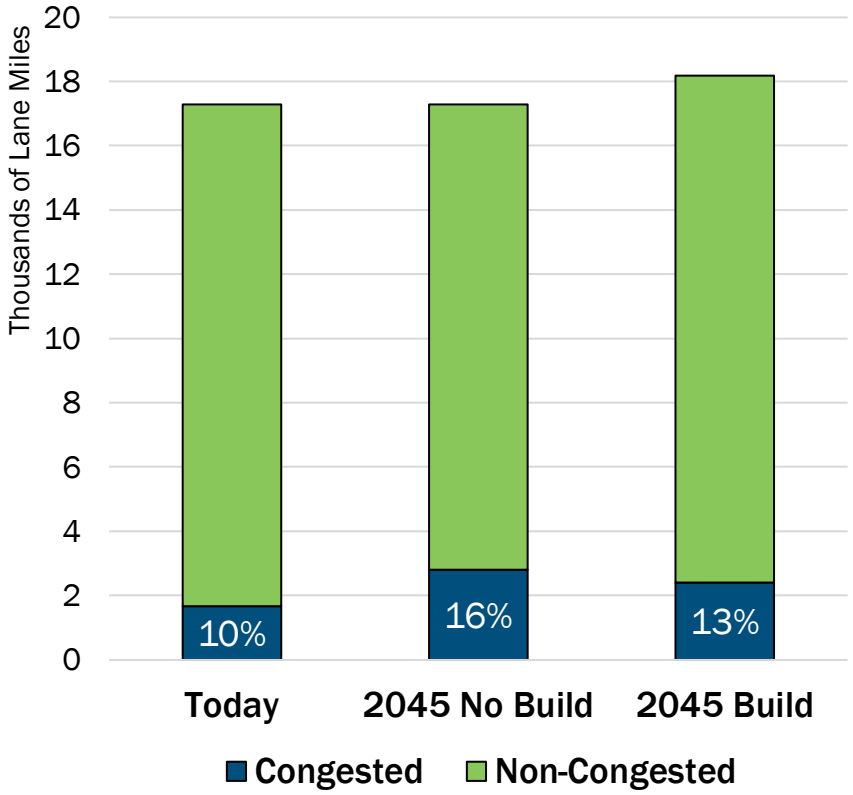
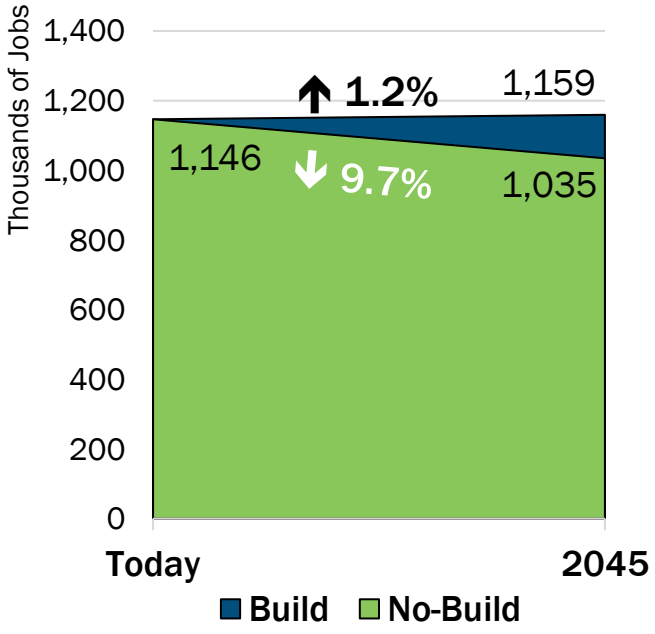
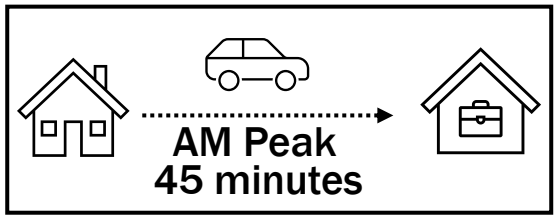
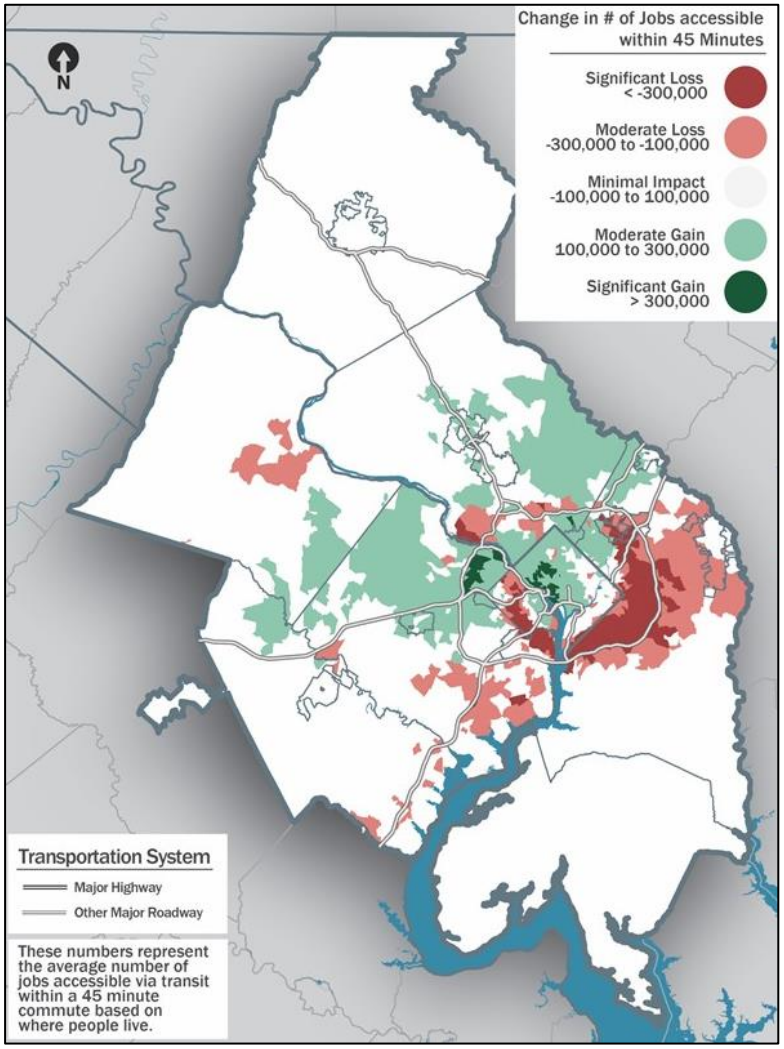


Change in Access to Jobs, Auto

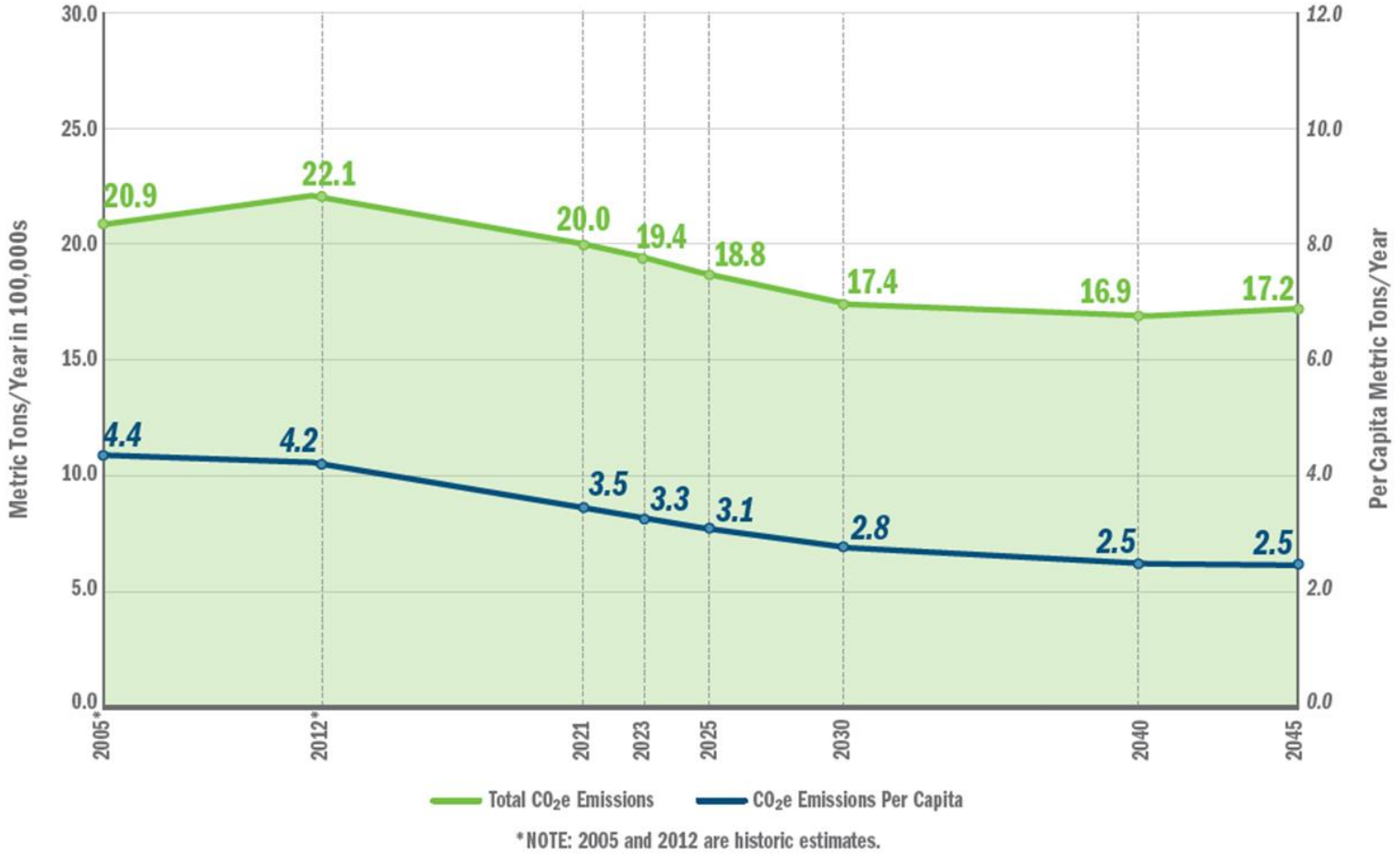




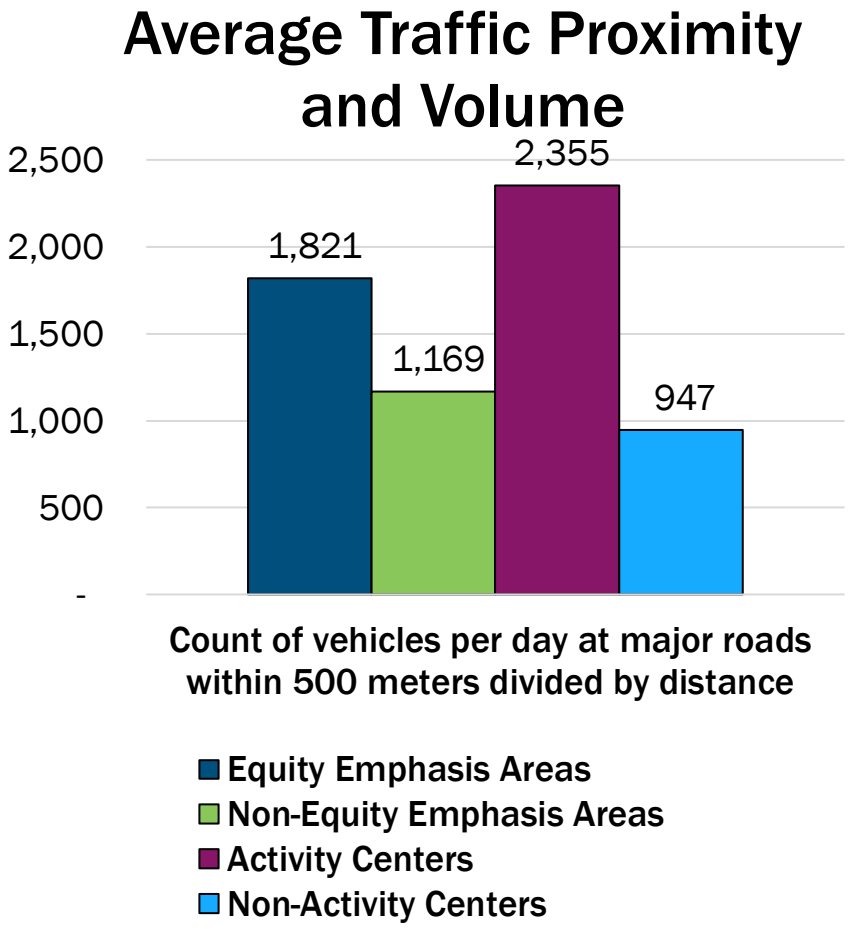


Forecast Greenhouse Gases

Greenhouse Gas Mobile Source Emissions CO2e and CO2e Per Capita

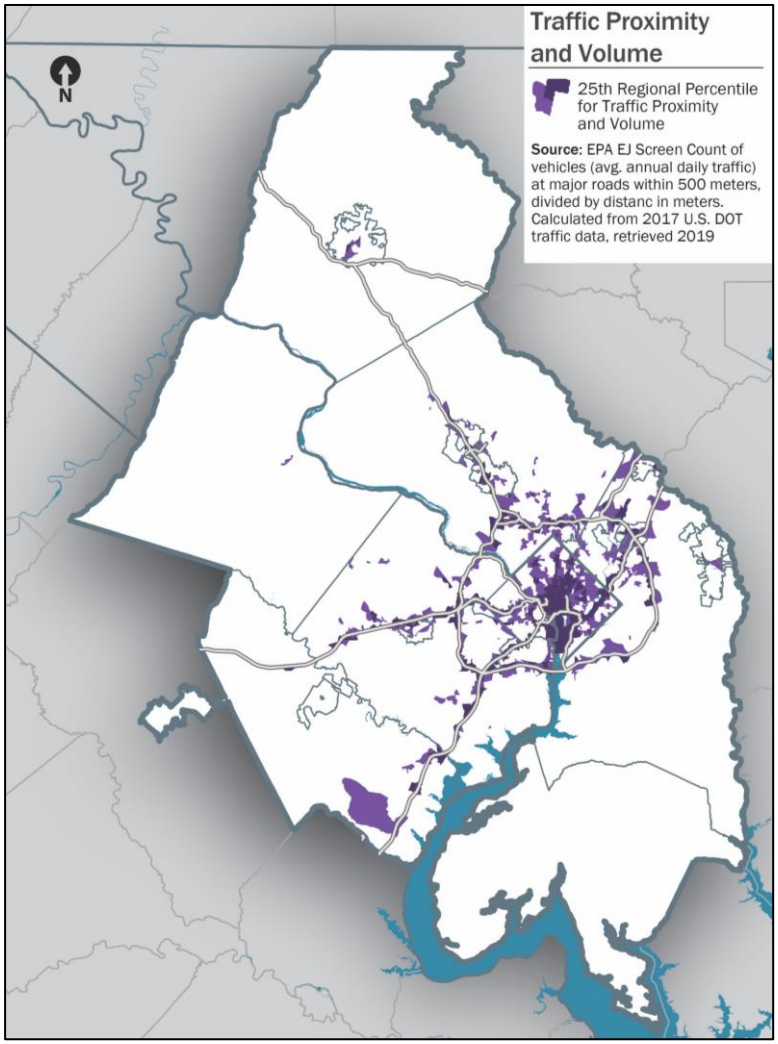


Proximity to Traffic, Today



Note: Sub-areas listed may overlap and are not mutually exclusive.

Source: EPA EJ Screen

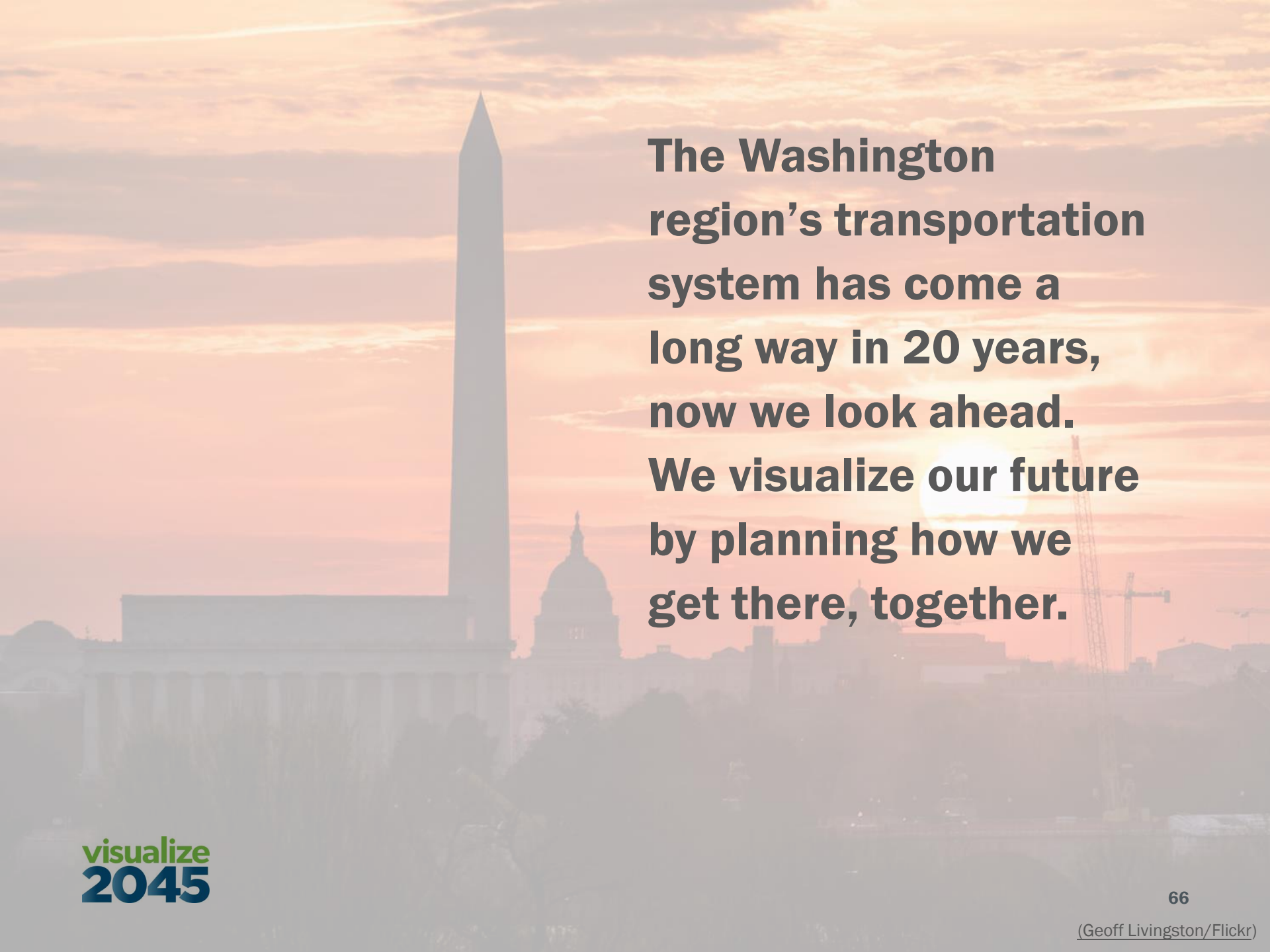


5. Getting the Word Out

Materials to View and Share:

- **visualize2045.org**
- **The Voices of the Region Story Map**
  - https://www.mwcog.org/maps/map-listing/voices-of-the-region/
- **The Visualize 2045 Interactive Project Map**
  - https://www.mwcog.org/maps/map-listing/visualize-2045-project-map/
- **Ambassador Kit includes:**
  - talking points
  - sample email/web posts
  - sample social media posts
- **Fact Sheet:** Board members have also received a fact sheet with key information about the plan

(Ted Eytan/Flickr)



The Washington region's transportation system has come a long way in 20 years, now we look ahead. We visualize our future by planning how we get there, together.

visualize 2045

(Geoff Livingston/Flickr)

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