UNFUNDED CAPITAL NEEDS

Looking at a financially unconstrained transportation future

Draft Presentation to the Long-Range Plan Task Force

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TPB Technical Committee
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Agenda Item 5

National Capital Region
Transportation Planning Board

Briefing Overview

- Task Force Background
- Scenarios – Inputs
- Scenarios – Analysis
- Next Steps

Long Range Plan Task Force

Goal:

Improve performance outcomes of the regional long-range transportation plan

Objective:

Identify and highlight unfunded capital needs as part of the regional long-range transportation plan

Approach:

- ✓ Inventory locally identified unfunded projects (inputs)
- ✓ Determine potential improvement in system performance from all unfunded projects (analysis)
- ✓ Identify a limited set of unfunded priority projects for inclusion in the long-range plan (next steps)

Inputs: Constrained vs. Unconstrained

Scenarios

- 2015 “Existing” transportation system and population & jobs
- 2040 “Planned Build” (PB)
  Region continues to grow (population and employment) with financially constrained increase in transportation system capacity (2015 CLRP)
- 2040 “All Build” (AB)
  Region continues to grow (same population and employment growth as “Planned Build”) with financially unconstrained increase in transportation system capacity (in addition to 2015 CLRP)

Future scenario assumptions

2015 to 2040	Planned Build (PB)	All Build (AB)
Population Growth [1]	24%	24%
Employment Growth [1]	36%	36%
New transportation projects [2]	372	550 *additional*
Funding for new projects [2]	$42 billion - $27 billion - highway - $17 billion - transit	$70-100 billion *additional* - $25-55 billion - highway - $45 billion – transit

1. COG Cooperative Forecast Round 8.4
2. TPB 2015 Constrained Long Range Plan (CLRP)

How do the constrained and unconstrained sets of projects advance the TPB's Regional Transportation Priorities Plan (RTPP)?

Regional Transportation Priorities Plan

For the National Capital Region

National Capital Region Transportation Planning Board | Metropolitan Washington Council of Governments

RTPP - Purpose

Priority Plan Process

REGIONAL GOALS

Based on the *TPB Vision*

CHALLENGES

Standing in the way of achieving our goals

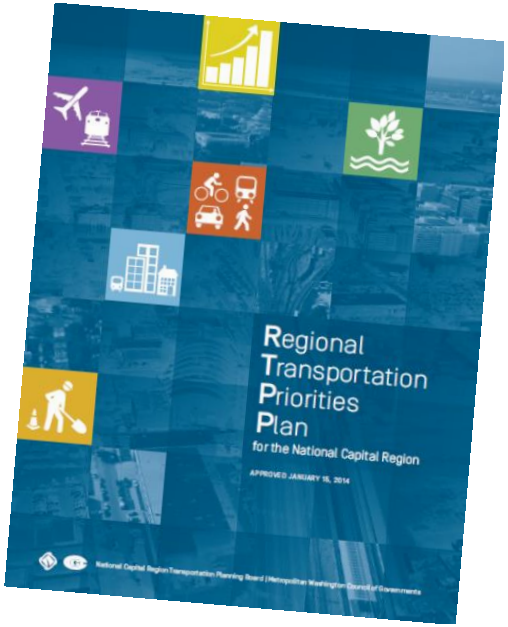
STRATEGIES

With the Greatest Potential to respond to challenges

- *Near Term Strategies*
- *On-Going Strategies*
- *Long Term Strategies*

RTPP strategies addressed by new All-Build projects

- Transit Improvements
- Targeted Congestion Relief
- Pedestrian and Bicycle Capacity
- Circulation in Activity Centers & Access to Transit
- Environmental Justice

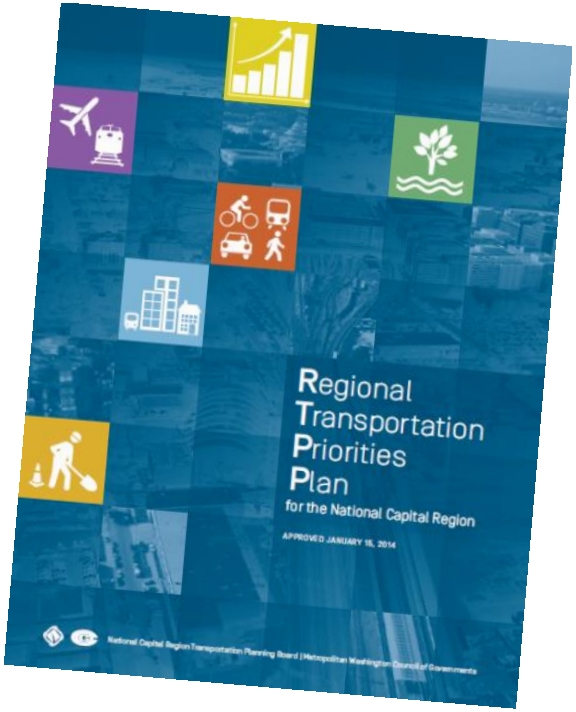


RTPP: Transit Improvements

The Regional Transportation Priorities Plan included several strategies for expanding the region's transit system in a cost-effective manner.

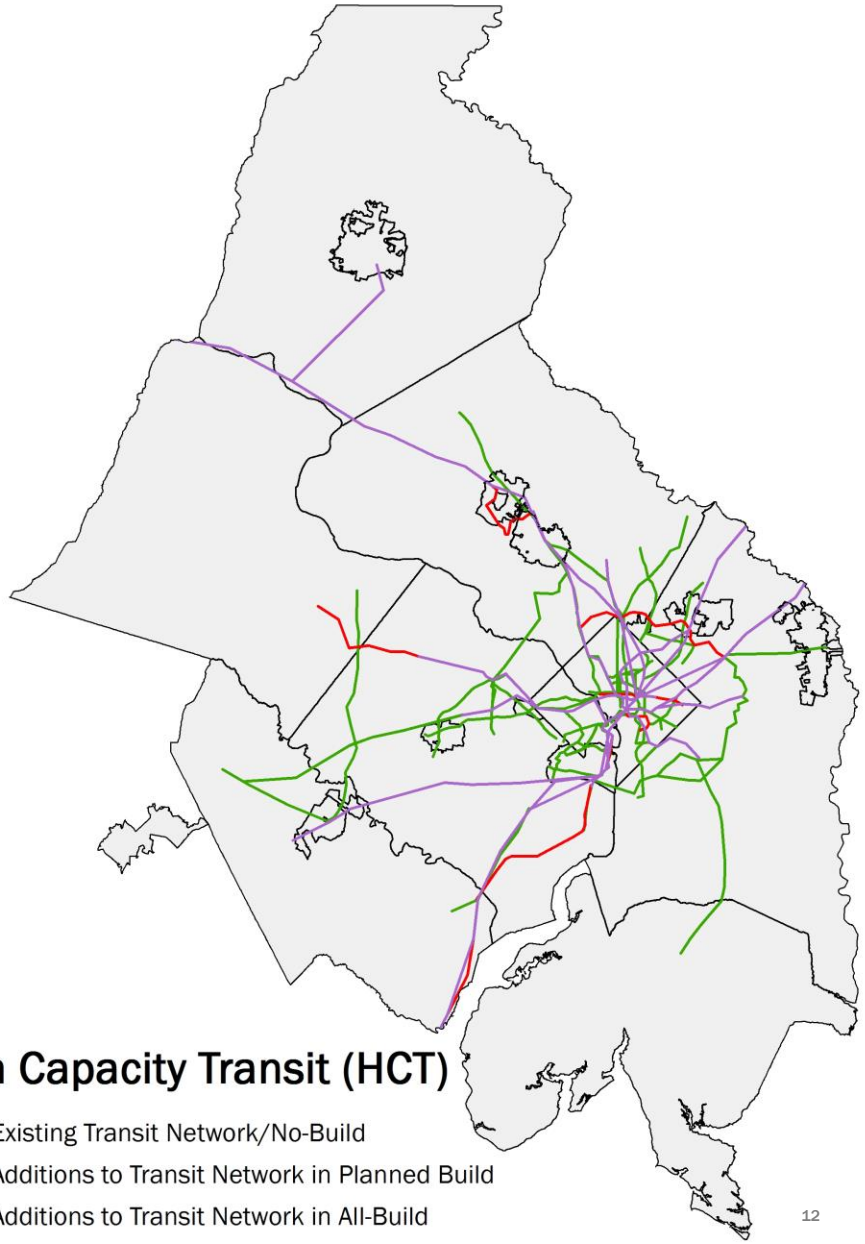
Relevant RTPP Strategies:

- *Provide additional capacity on the existing transit system*
- *Implement bus rapid transit (BRT) and other cost-effective transit alternatives*
- *Apply priority bus treatments*



Additional High-Capacity Transit

System	Existing	CLRP	All Build
Metro Rail	119 mi	+12 mi	+33 mi
Light Rail	0	+16 mi	+66 mi
BRT / Street Cars	5 mi	+36 mi	+259 mi
Commuter Rail	167 mi	+0	+10 mi
TOTAL	291 mi	+64 mi	+368 mi



Additional High-Capacity Transit

More Capacity on the Existing System

- Momentum 2025 projects
  - 8-car trains on Metro
  - Metrorail core station improvements
  - Rosslyn Tunnel
  - WMATA Priority Corridor Network (for bus priority service)
- Improvements on MARC and VRE (off-peak service, more frequent service, etc.)

Transit: Some highlighted examples

Metrorail Expansions

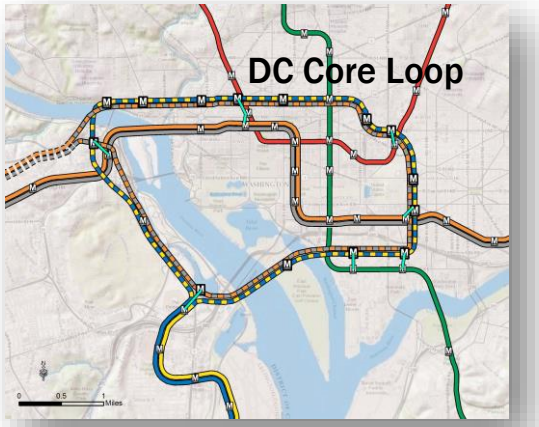
- D.C. Core Loop
- Orange Line extension to Gainesville*
- Yellow Line extension to Hybla Valley*

Light Rail

- Purple Line - New Carrollton to Eisenhower Avenue
- New LRT from Branch Avenue to White Plains (Charles County)
- New Rt. 28 LRT (Manassas to Dulles Town Center)

Bus Rapid Transit / Street Cars

- Montgomery County BRT
- Arlington/Alexandria Transitways
- DC High-Capacity Transit System



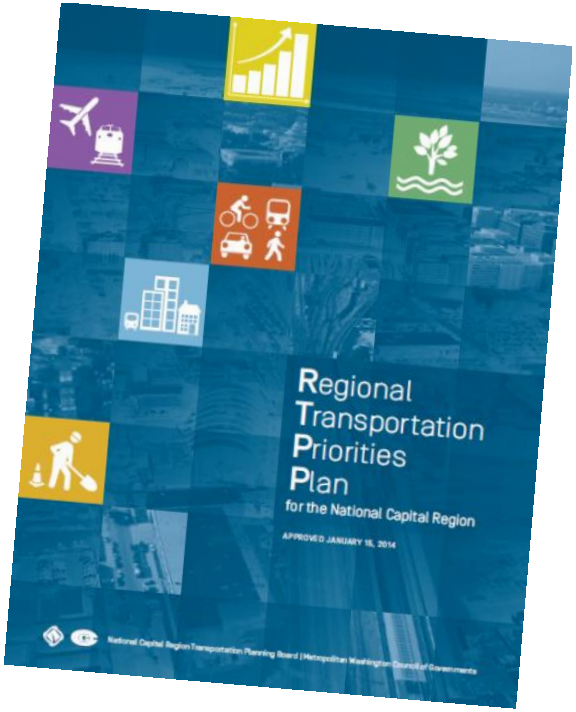
* Submitted by NVTA

RTPP: Targeted Congestion Relief

The Regional Transportation Priorities Plan called for targeted roadway improvements, including express toll lanes, to provide congestion relief for drivers.

Relevant RTPP Strategies:

- *Alleviate roadway bottlenecks*
- *Build/implement express toll lanes*



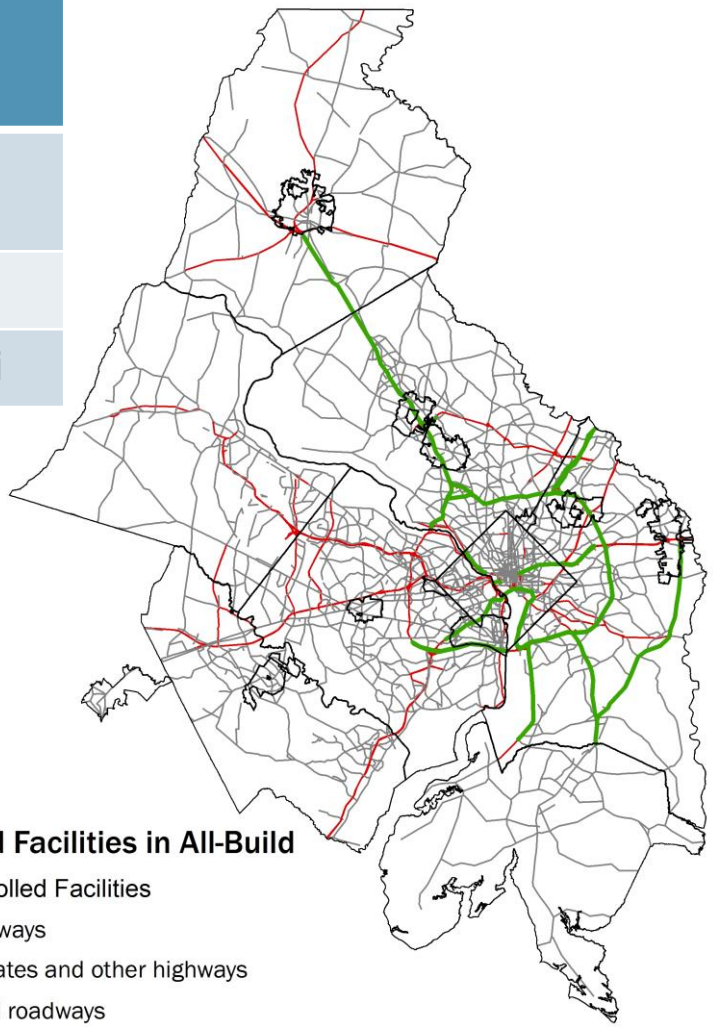
Congestion Relief – Roadway Projects

System	Existing	Planned Build (CLRP)	All Build
Freeways / Expressways	3,549 mi	+444 mi	+453 mi
Arterials	13,396 mi	+686 mi	+722 mi
TOTAL	16,945 mi	+1,130 mi	+1,175 mi

New road projects are derived from state/local planning processes and are focused on congestion relief or to accommodate growth.

System	Existing	CLRP	All Build
Tolled Lane Miles	394	+194	+419
Cordon Charge *	$0	$0	$6

36% of new lane miles would be tolled in All Build



Road projects: Some highlighted examples

New Highway Capacity

Maryland

- Frederick: US 15
- Prince George's: US 1, MD 193, MD 202, MD 223, MD 224
- Montgomery MD 27, MD 124

Virginia

- Loudoun: Loudoun County Parkway, VA 7, and Dulles Greenway
- Fairfax: Fairfax County Parkway and US 1
- Prince William: Prince William Parkway and Dumfries Road

Bing Maps

American Legion Bridge

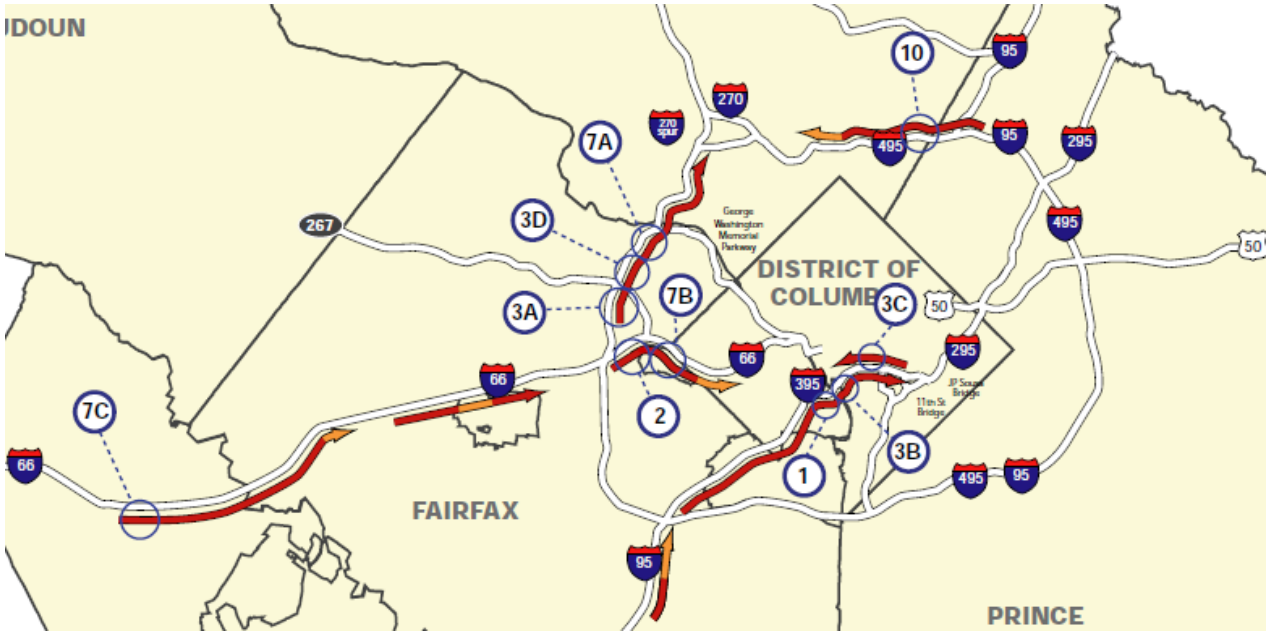
Toll Lanes

D.C.: I-66, New York Avenue, Clara Barton Parkway, I-295, I-395, Downtown Cordon Pricing

Maryland: Capital Beltway (including American Legion Bridge), I-270, I-95, US 301, MD 210, US 50 (inside Beltway), MD 5, I-370

Virginia: Capital Beltway (Springfield to Wilson Bridge), I-395 (Edsall Rd to 14th St Bridge)

Targeting bottlenecks



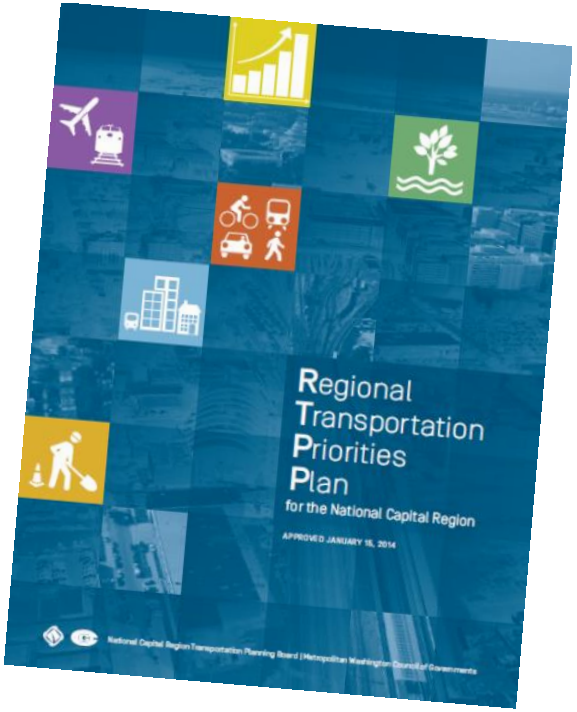
- Time wasted in the Top 10 Bottlenecks during peak periods accounted for 25% of total Vehicle Hours of Delay (VHD) in the region in 2015
- Many projects in the All-Build Scenario–both road and transit–will provide relief for these bottlenecks
- Freight movement is particularly affected by bottlenecks

RTPP: Pedestrian and Bicycle Capacity

The Regional Transportation Priorities Plan called for making walking and bicycling viable transportation choices for more people in more places.

Relevant RTPP Strategies:

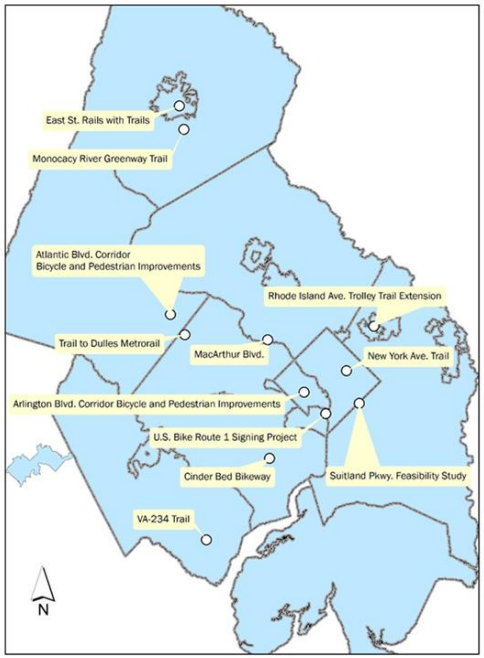
- *Expand pedestrian infrastructure*
- *Expand bicycle infrastructure*



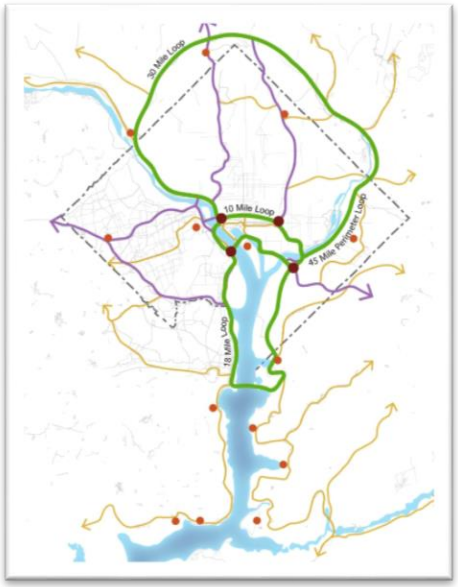
Ped/bike inputs to All-Build

- Regional paths & other bike infrastructure*
  - Existing: 645 miles
  - All Build: 1,340 additional miles
- Inputs from TPB's Regional Bicycle & Pedestrian Plan and other jurisdictional submissions
- Not accounted for in the travel demand model

Highlighted Examples



TPB Bike/Ped Subcommittee Top Priority Projects



National Capital Trail (Bicycle Beltway)

National Capital Region Transportation Planning Board

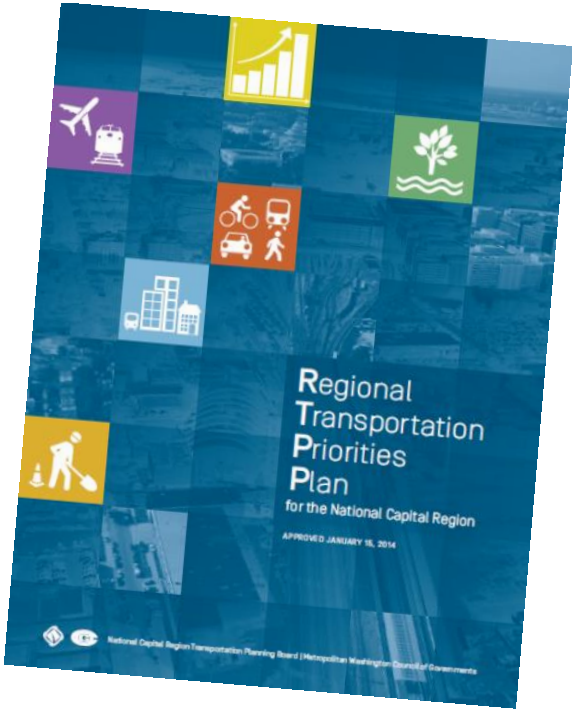
* Mostly off-street multi-use paths. Did not include most bike lanes and sharrows

RTPP: Circulation within Activity Centers & Access to Transit

The Priorities Plan called for small capital improvements to promote circulation within Activity Centers and to provide first- and last-mile connections to transit.

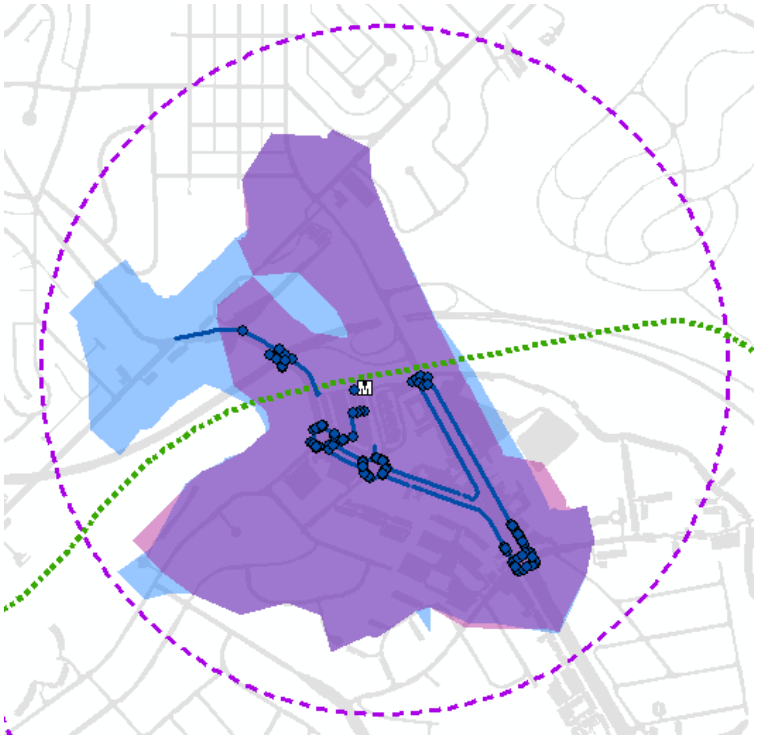
Relevant RTPP Strategies:

- *Improve access to transit stops and stations*
- *Enhance circulation within Activity Centers*



Ped/bike projects: Improving circulation and improving access to transit

- WMATA's Metrorail Station Investment Strategy provides an All-Build inventory of 900 miles of ped/bike projects
- The projects improve sidewalks, crossings and bike facilities near Metrorail stations to improve safety and expand the walkshed to reach more potential riders

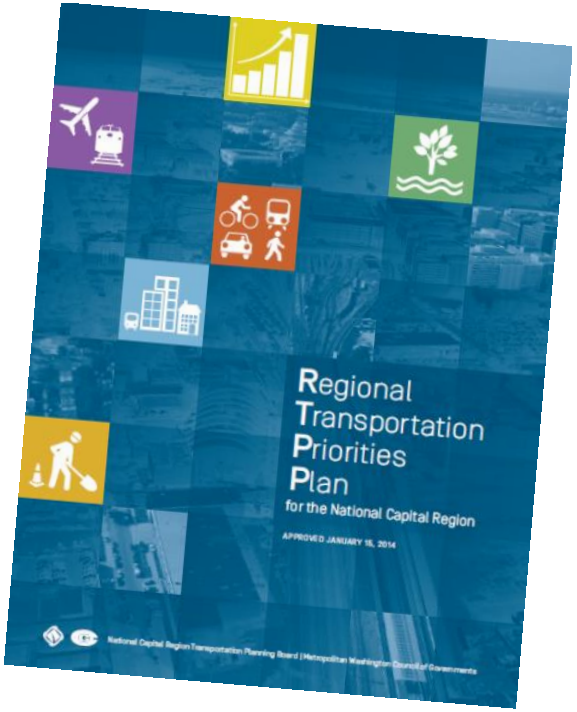


RTPP: Environmental Justice Considerations

The Priorities Plan said the region should provide improved transportation options for traditionally disadvantaged populations.

Relevant RTPP Strategies:

- *Ensure accessibility for persons with disabilities, low incomes, and limited English proficiency*



EJ analysis under development

- **Forthcoming EJ analysis on the CLRP (Planned Build).** Staff is developing a revised methodology to conduct an Environmental Justice analysis of the CLRP.

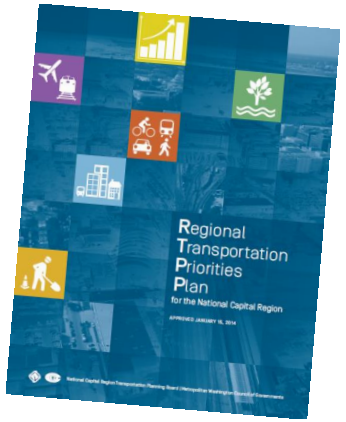
- **Analysis will identify the impacts of the CLRP on low-income and minority populations.** The new methodology will identify "Communities of Concern" with high concentrations of low-income and minority populations relative to regional averages. Staff analysis will examine the impacts of CLRP transportation investments on these communities compared to the rest of the region.

- **Potential application to other planning activities.** The Communities of Concern may be used to examine impacts of the All-Build Scenario on traditionally disadvantaged communities.

RTPP strategies not directly addressed by system capacity increases

The Priorities Plan included many vital strategies that are not directly related to the new projects (the "capacity increases") that were the focus of the All-Build Scenario. Therefore, those strategies are not reflected in the All-Build analysis. These strategies include:

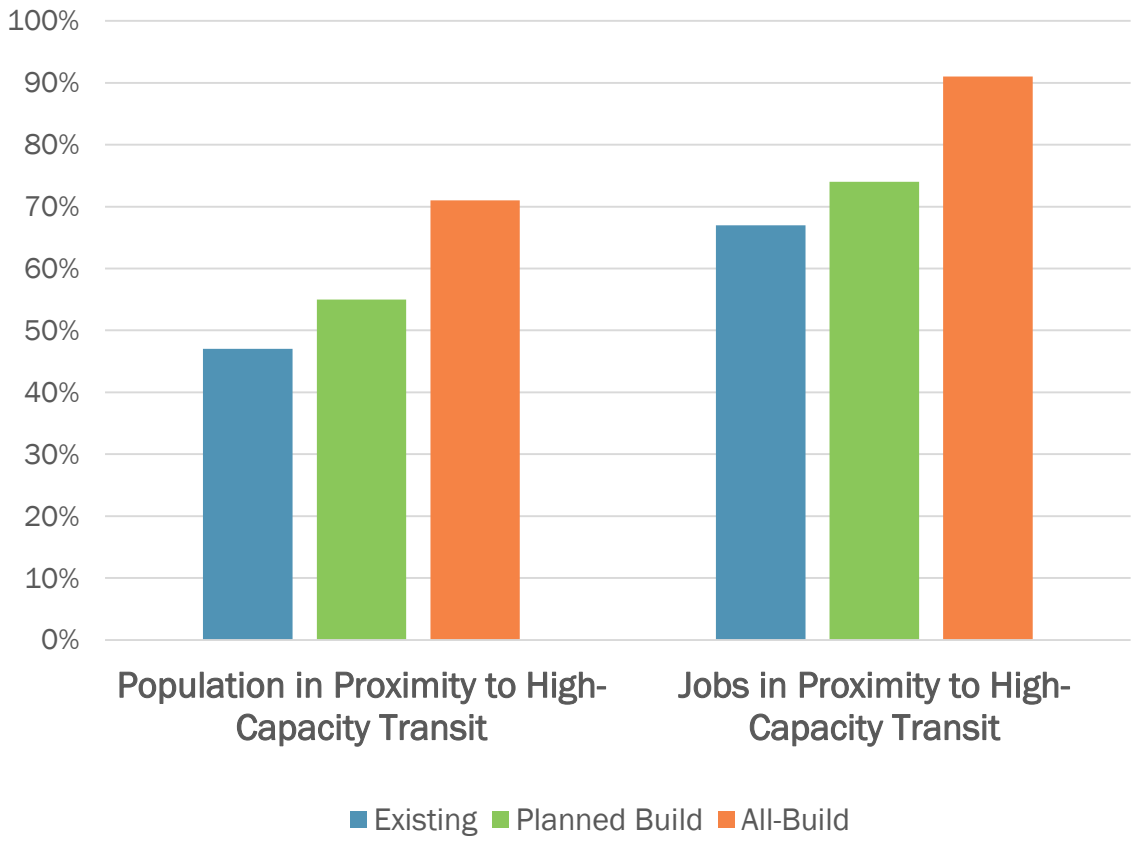
- Ensure maintenance of the transit system
- Ensure maintenance of roads and bridges
- Promote system efficiency through management and operations, and the appropriate use of technology
- Increase roadway efficiency
- Concentrate growth in Activity Centers
- Update and enforce traffic laws
- Support and promote electric vehicles
- Promote commute alternatives
- Engage and communicate with the public



ANALYSIS

How would the All-Build Scenario improve transit accessibility and connectivity?

More jobs and households close to high-capacity transit



Proximity to High-Capacity Transit

Existing:
- 47% of people
- 67% of jobs

Planned Build:
- 55% of people
- 74% of jobs

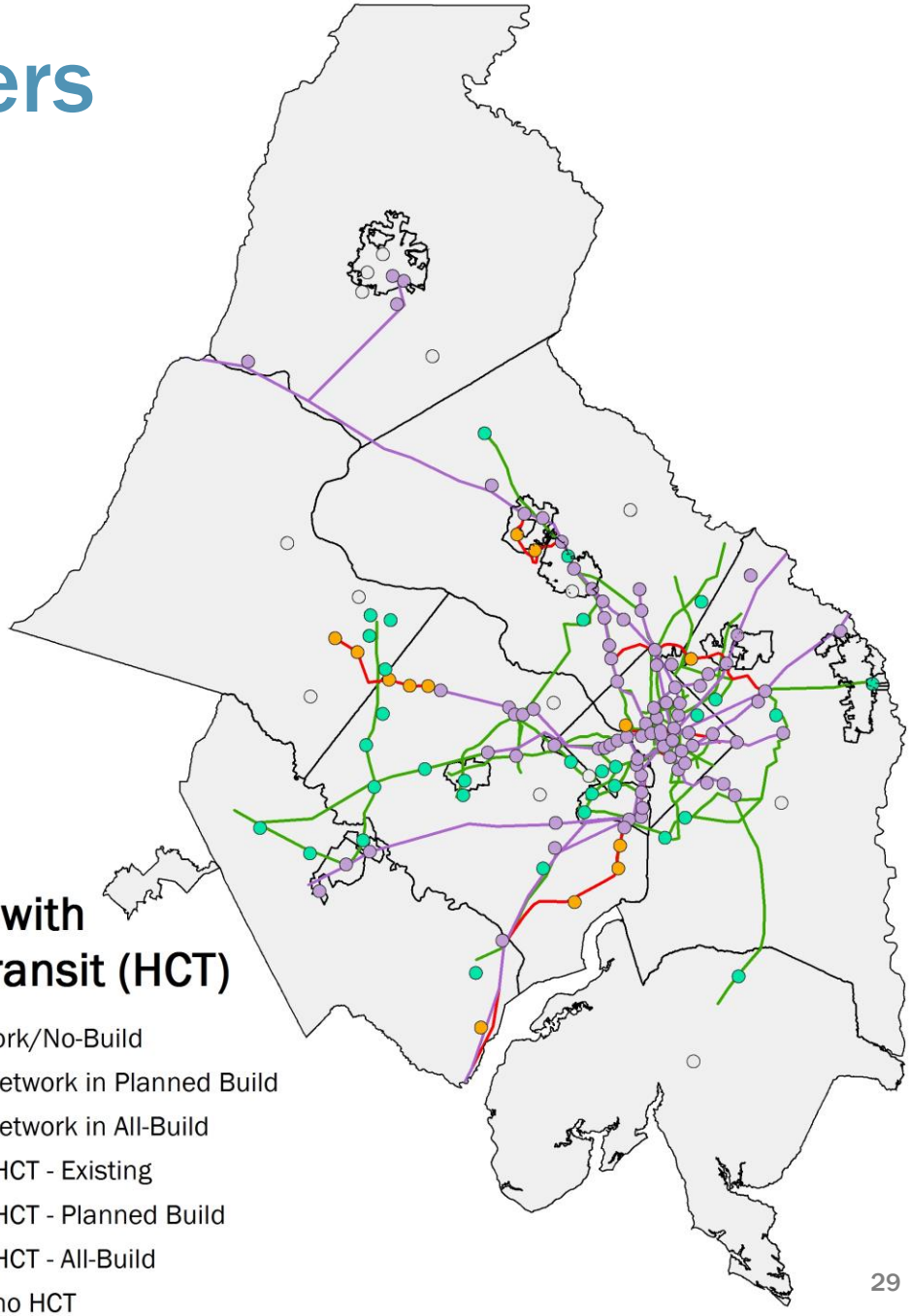
All-Build:
- 71% of people
- 91% of jobs

"Proximity" defined as within one mile of rail or within a ½ mile of BRT

More Activity Centers connected to high-capacity transit

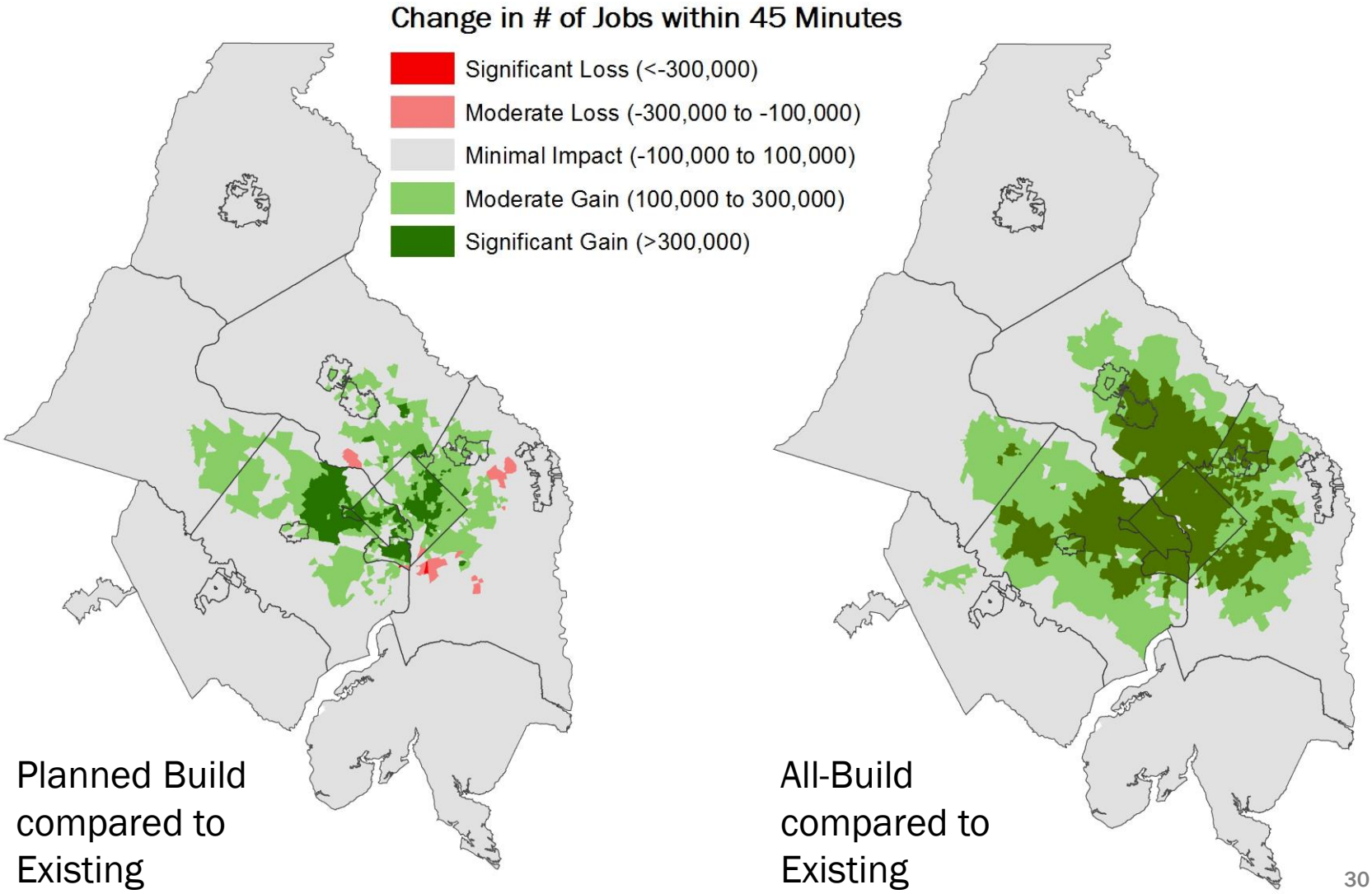
Percentage of Regional Activity Centers connected to high-capacity transit:

59% - Existing
68% - Planned Build
91% - All-Build



National Capital R
Transportation

Significant gains in jobs accessible by transit

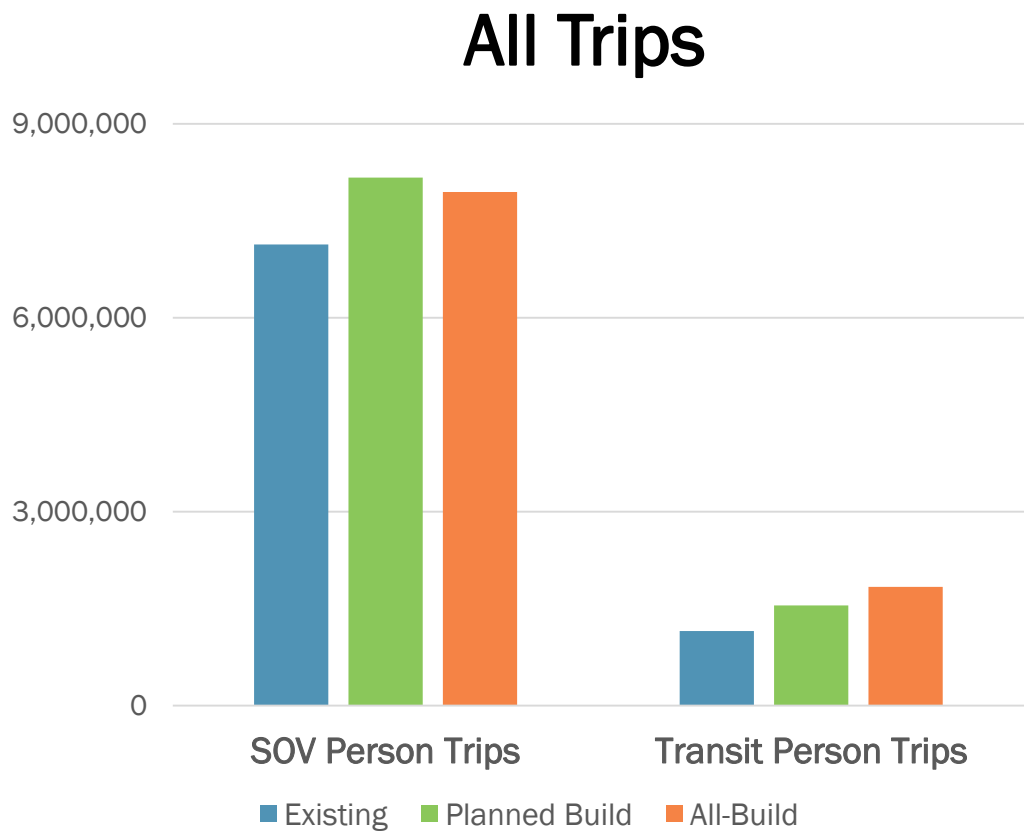


Planned Build compared to Existing

All-Build compared to Existing

How would the All-Build Scenario change transit usage, driving and other modes?

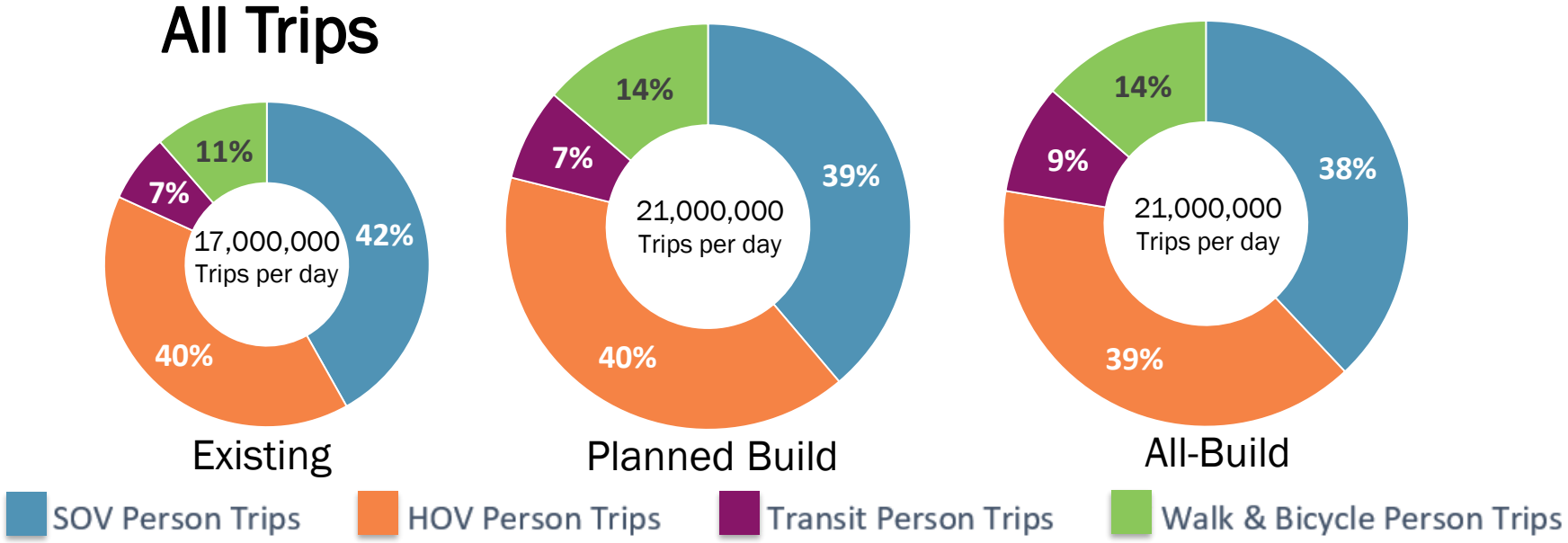
Big increase in transit; relative decline in daily SOV trips



Relative to 2015:

- Transit Trip increases
  - All-Build: 59%
  - Planned Build: 34%
- SOV Trip increases
  - All-Build: 11%
  - Planned Build: 15%

Driving will continue to be the dominant mode



- SOV driving and carpooling under all scenarios will comprise the vast number of all trips
- The share of SOV driving will decrease under the Planned Build and All-Build scenarios

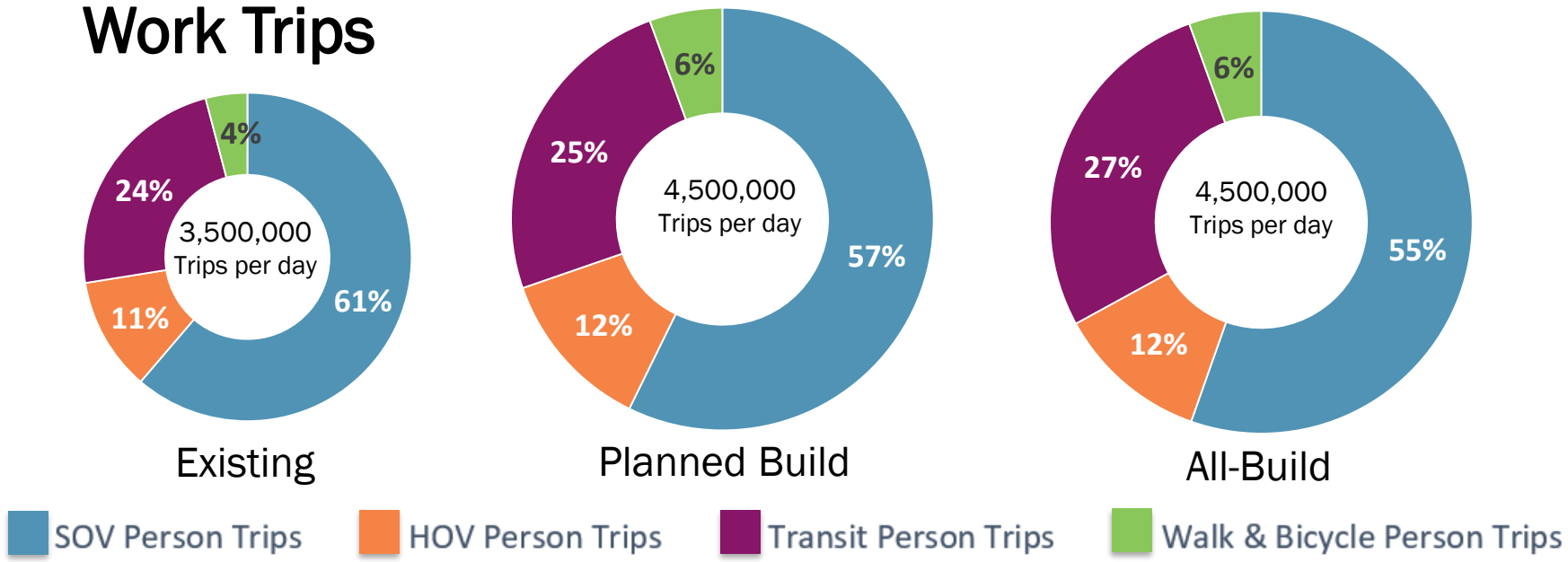
NOTE: Bike/ped paths presented later in this presentation are not incorporated into travel demand modeling and its results – changes in walk and bike trips here are due to changes in land use.

Commuting: Same trends as "all trips" but transit starting from a larger base

Relative to 2015:

- Transit trip increases
  - All-Build: 47%
  - Planned Build: 33%
- SOV trip increases
  - All-Build: 14%
  - Planned Build: 18%

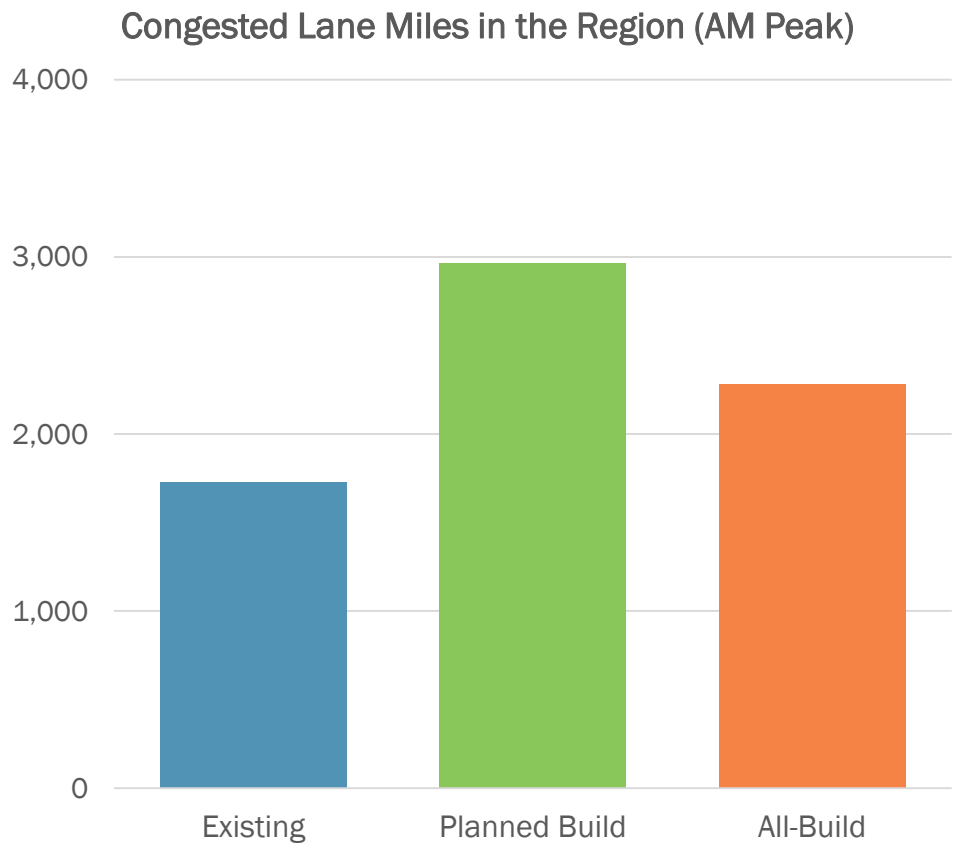
Steady growth in transit's share of commute trips



- Transit's share of work trips is already almost a quarter of commute trips and will steadily grow under the Planned Build and All-Build scenarios
- Transit and HOV commutes helps reduce road congestion

How would the All-Build Scenario affect roadway congestion?

System-wide congestion still increases, but at much slower rate

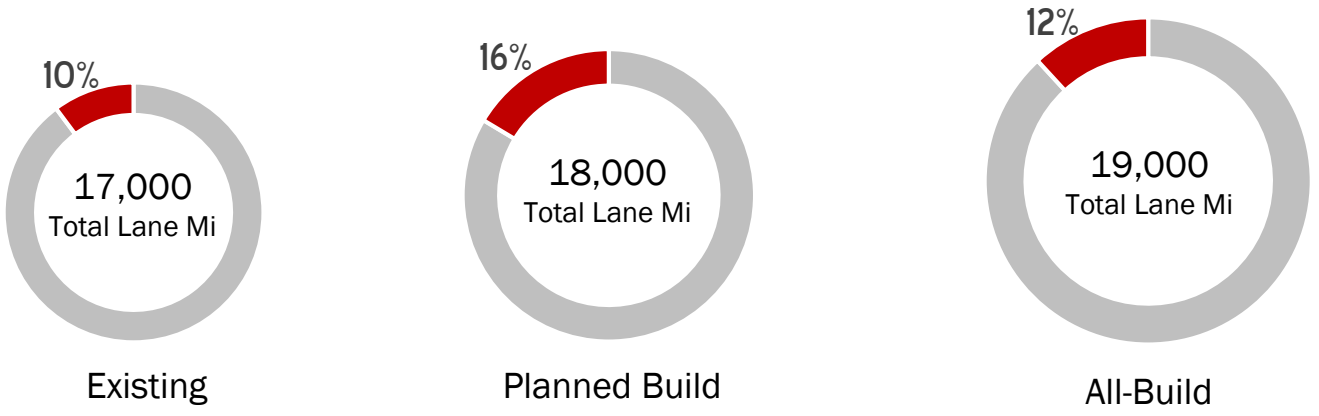


Both scenarios forecast an increase in the number of congested lane miles in the region from 2015 to 2040:

- Planned Build: 72% increase
- All-Build: 32% increase

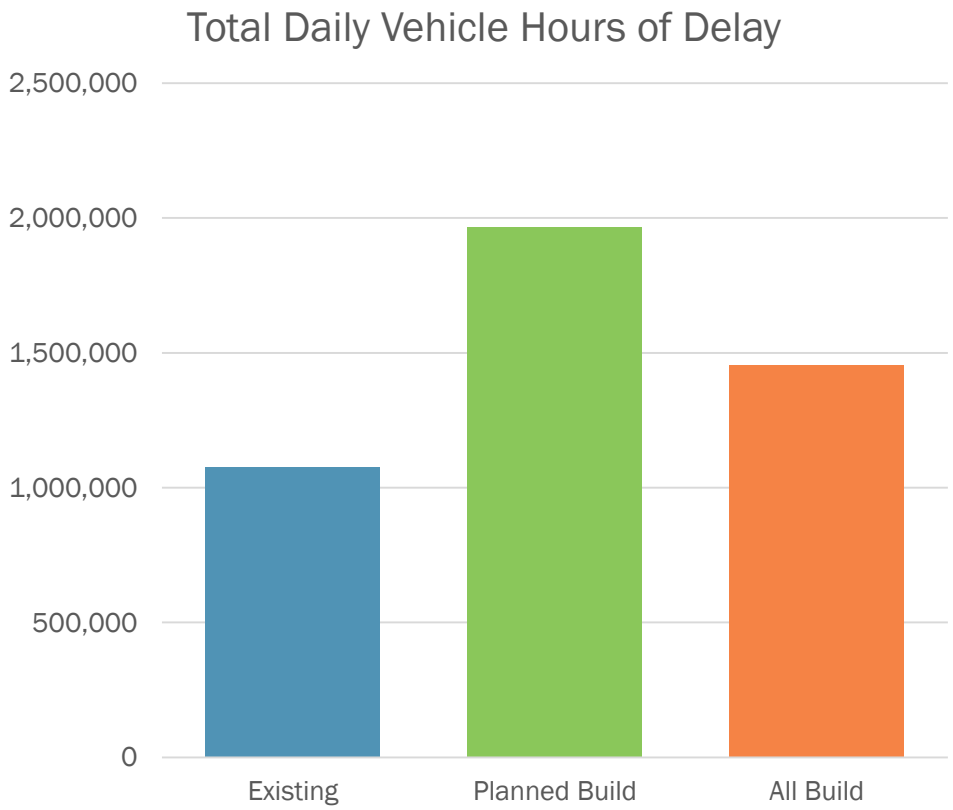
More roads, but a smaller percentage is congested relative to CLRP

Share of Lane Miles Congested (AM Peak)



- The All-Build road network is approximately 1,000 miles larger than the Planned Build, but the number of congested lane miles is smaller.
- Additionally, the percentage of congested miles in the All-Build road network is smaller than in the Planned Build.

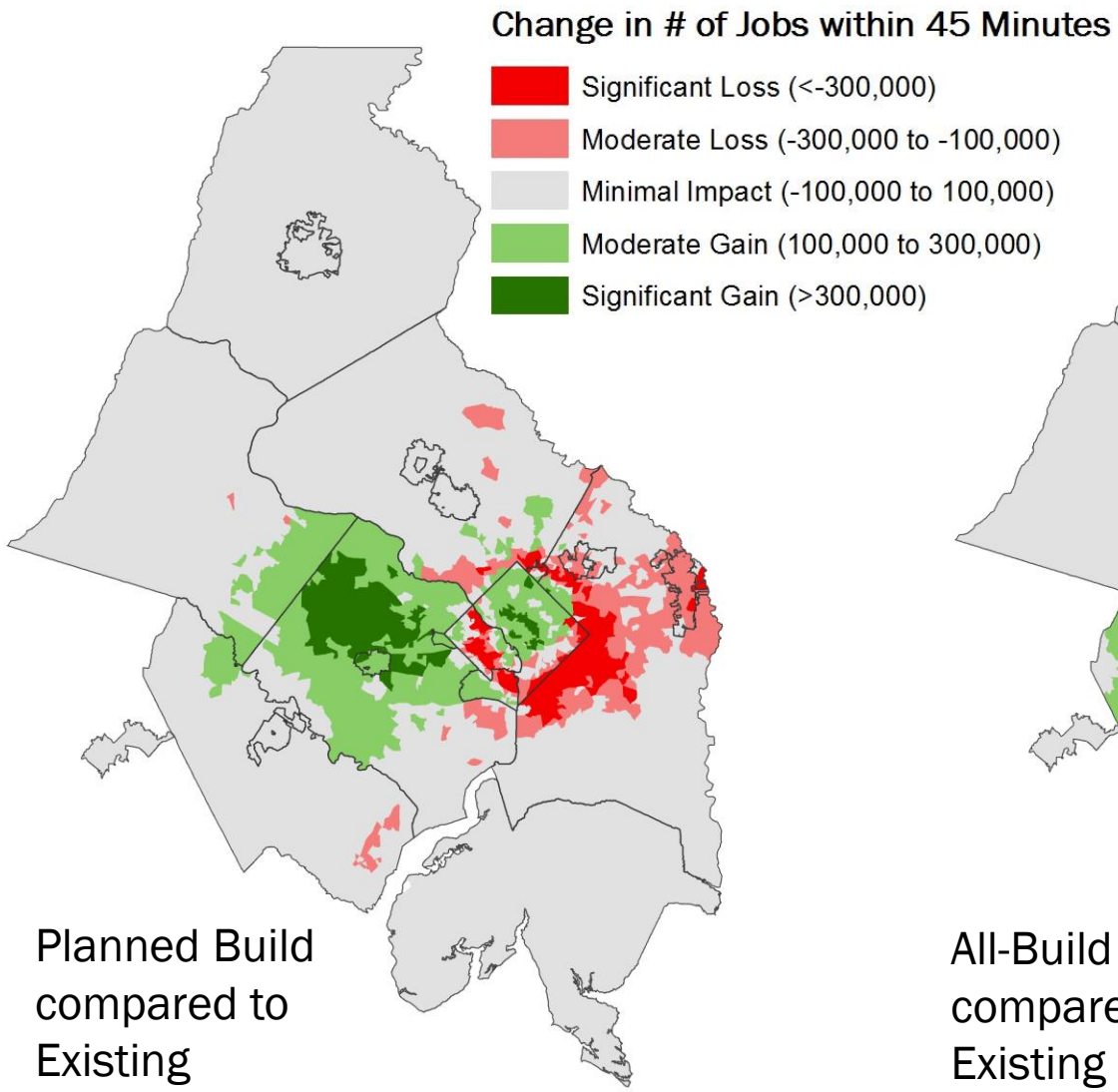
Time wasted in traffic still grows, but at a much slower rate



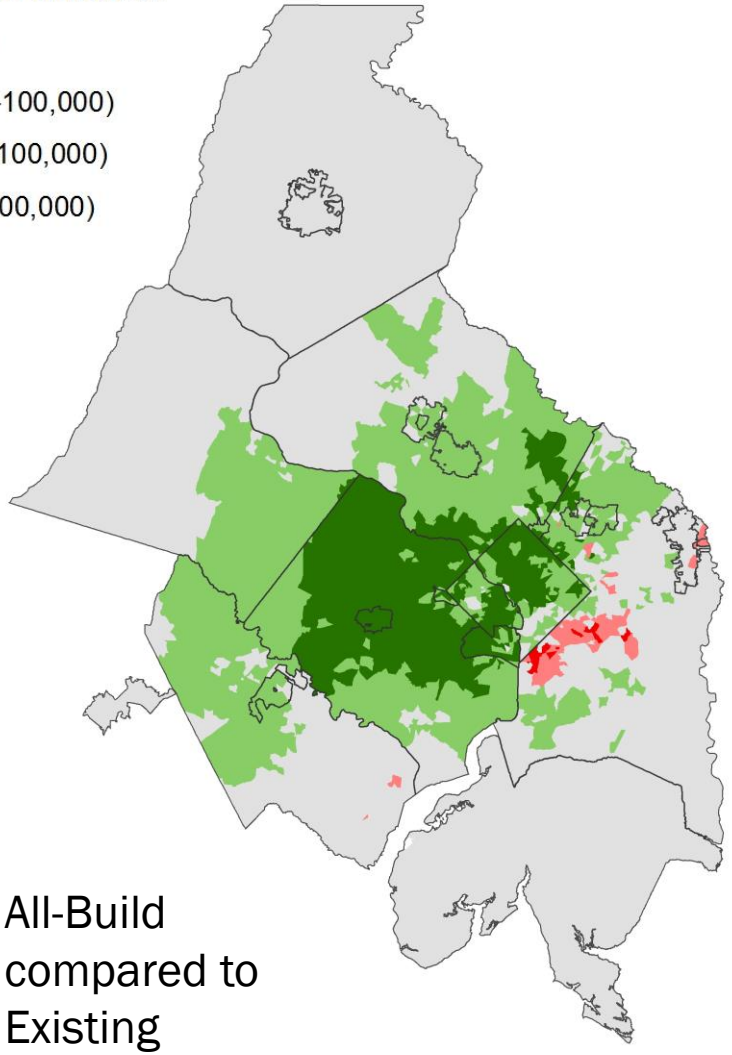
Increase in forecast vehicle hours of delay from 2015 to 2040:

- Planned Build: 82% increase
- All-Build: 35% increase

Significant increase in auto access to jobs including in eastern parts of the region

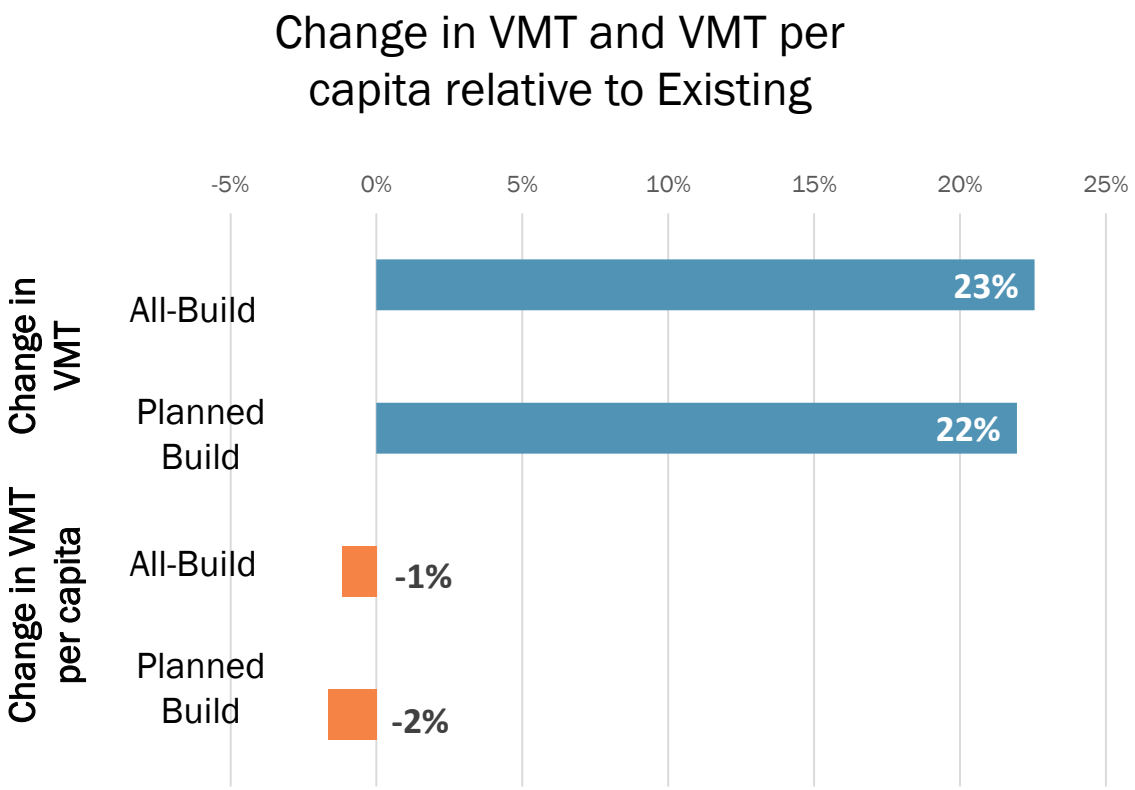


Planned Build compared to Existing



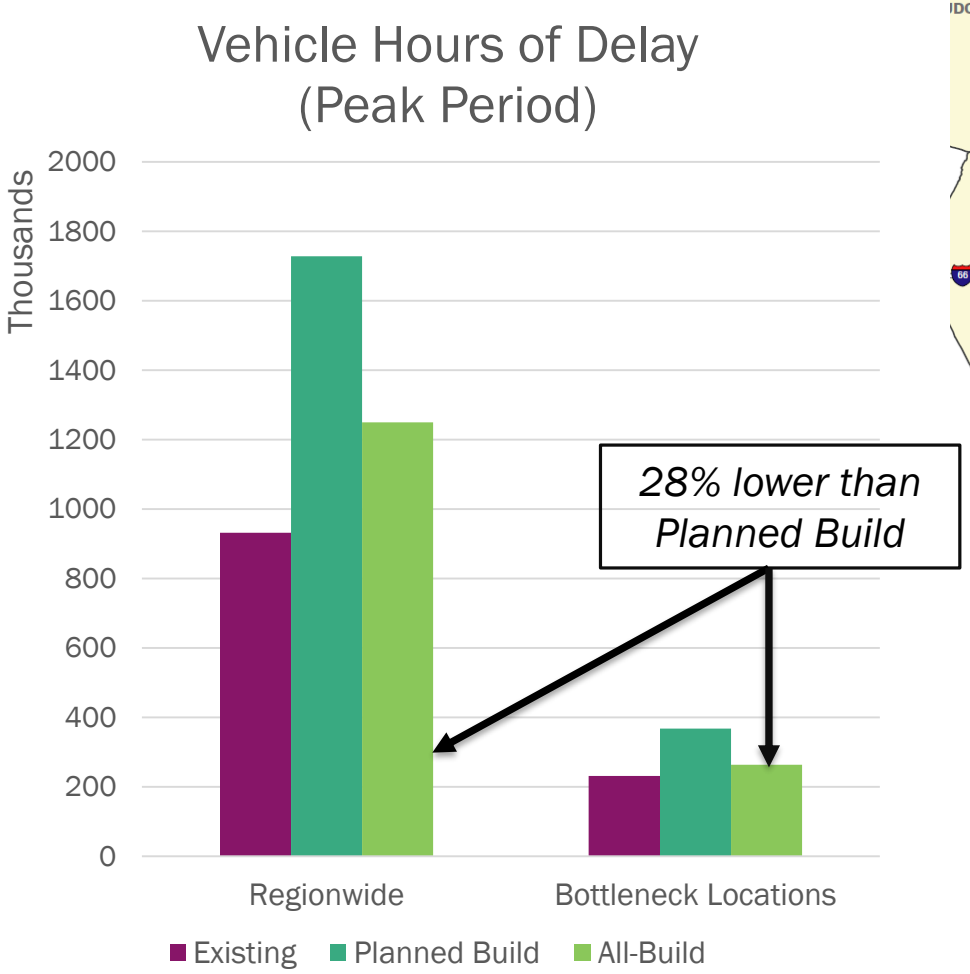
All-Build compared to Existing

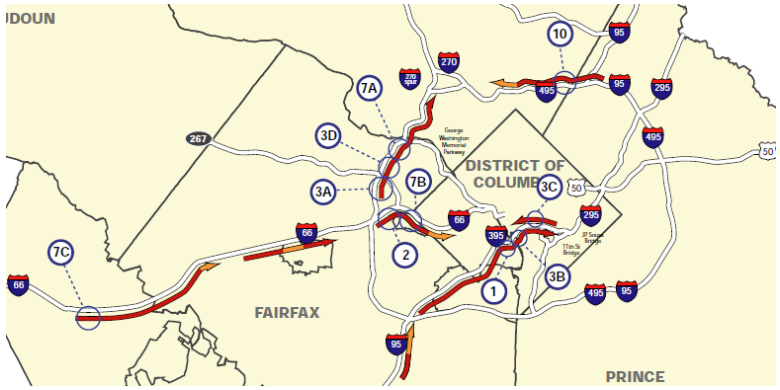
No significant effect on the amount of driving on the region's roads



- Under both scenarios, the amount of driving in the region (measured as vehicle miles of travel or VMT) will increase at a rate slightly slower than population growth. Therefore VMT per capita will decrease slightly.
- The All-Build scenario would increase VMT at a rate slightly greater than the Planned Build.

Relief for Top 10 bottlenecks





Compared to the Planned Build, peak-period vehicle hours of delay under the All-Build scenario would decrease:

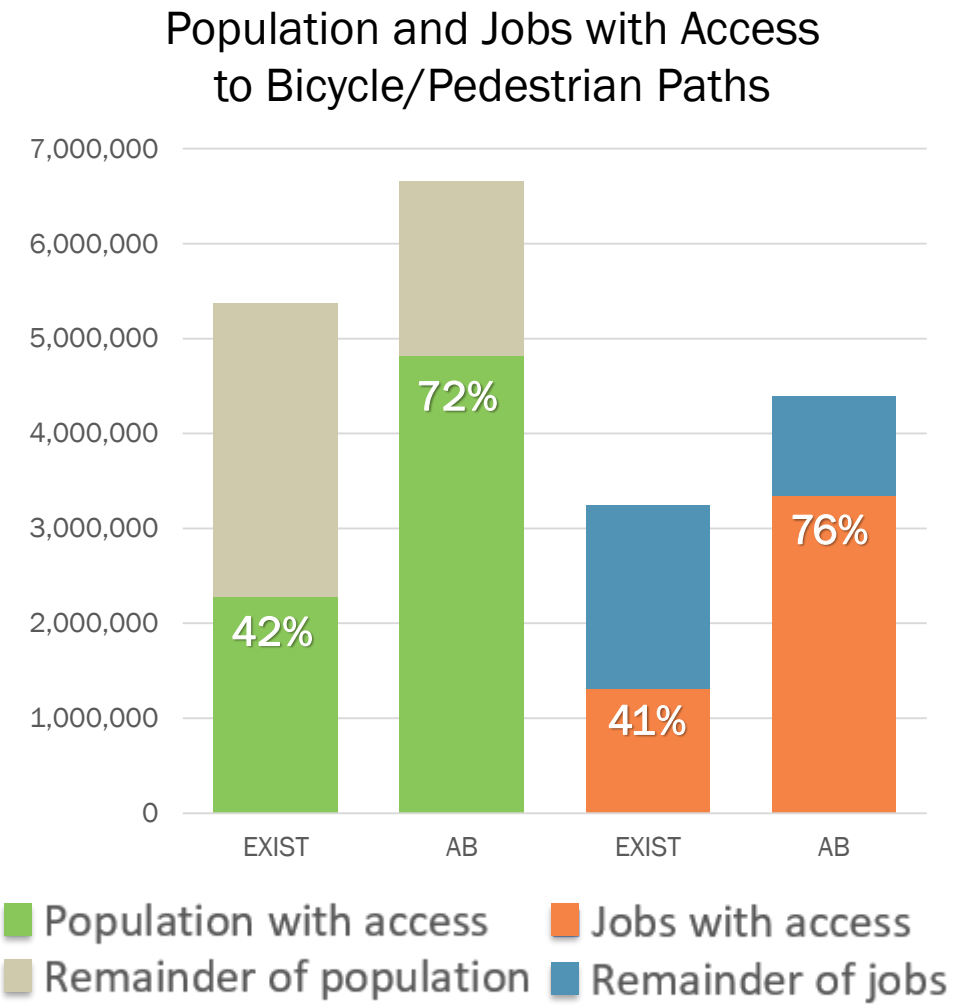
- 478,000 hours (28%) across the region
- 105,000 hours (28%) in bottleneck locations

How would the All-Build Scenario provide new opportunities for walking and biking?

Dramatic increase in access to bicycle/pedestrian paths

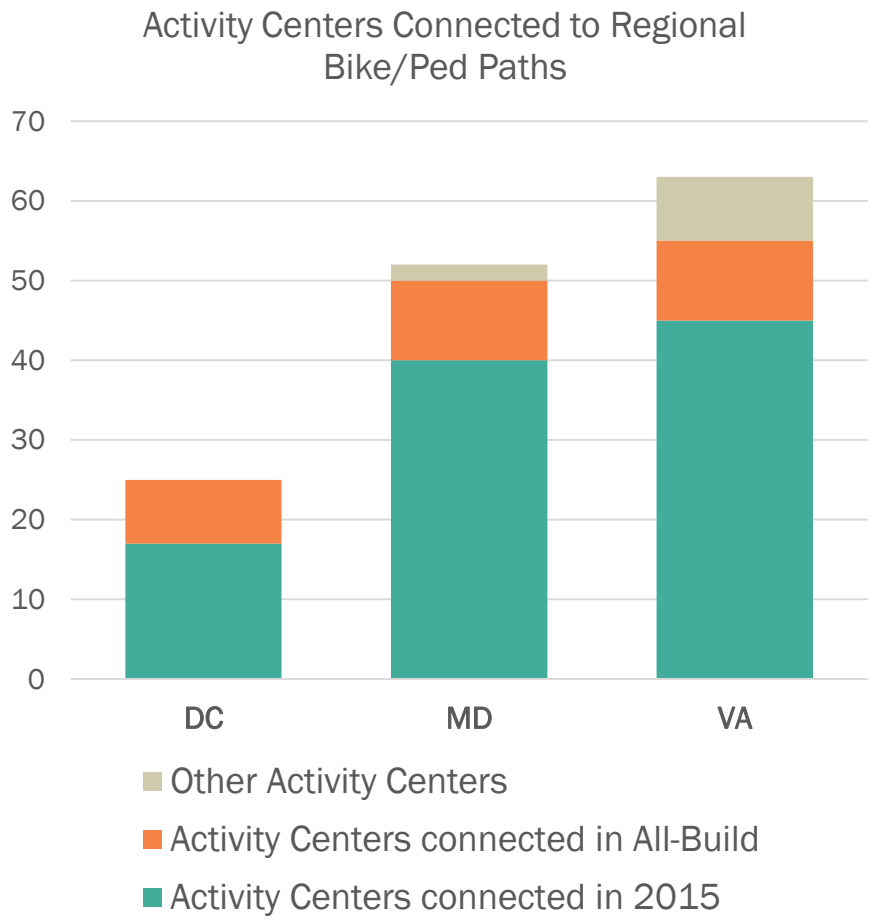
If we build all the projects in the Bike-Ped All-Build, 72% of people and 76% of jobs will be connected to paths in 2040.

- Regionwide population increases by 24% but population access to bike/ped paths increases at a higher rate of 112%
- Regionwide employment increases by 36% but job access to bike/ped paths increases at a higher rate of 155%



How would the All-Build Scenario enhance circulation within Activity Centers and access to transit stations?

Dramatic increase in Activity Center connection to high quality paths



If we build all the projects in the TPB's Regional Bicycle & Pedestrian Plan (All-Build), 92% of the region's Activity Centers will be connected to regionally significant bike-pedestrian paths.

Bike-ped connections to Activity Centers provide access to transit stations as well as increase circulation within Activity Centers themselves.

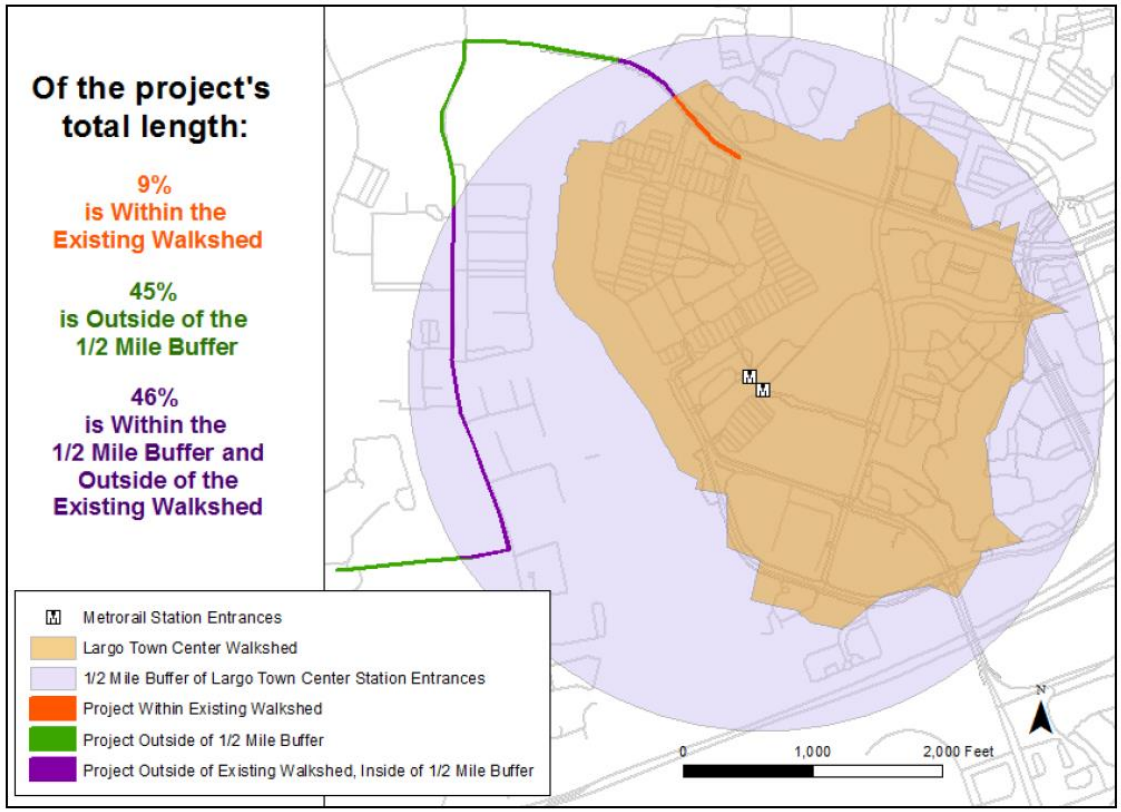
Opportunity for expanding walksheds around Metrorail stations

Region's unfunded projects inventory includes **122 additional miles** of walk or bike pathways that are within a half mile of a Metrorail station.

Jurisdictions with the most potential for walkshed expansion :

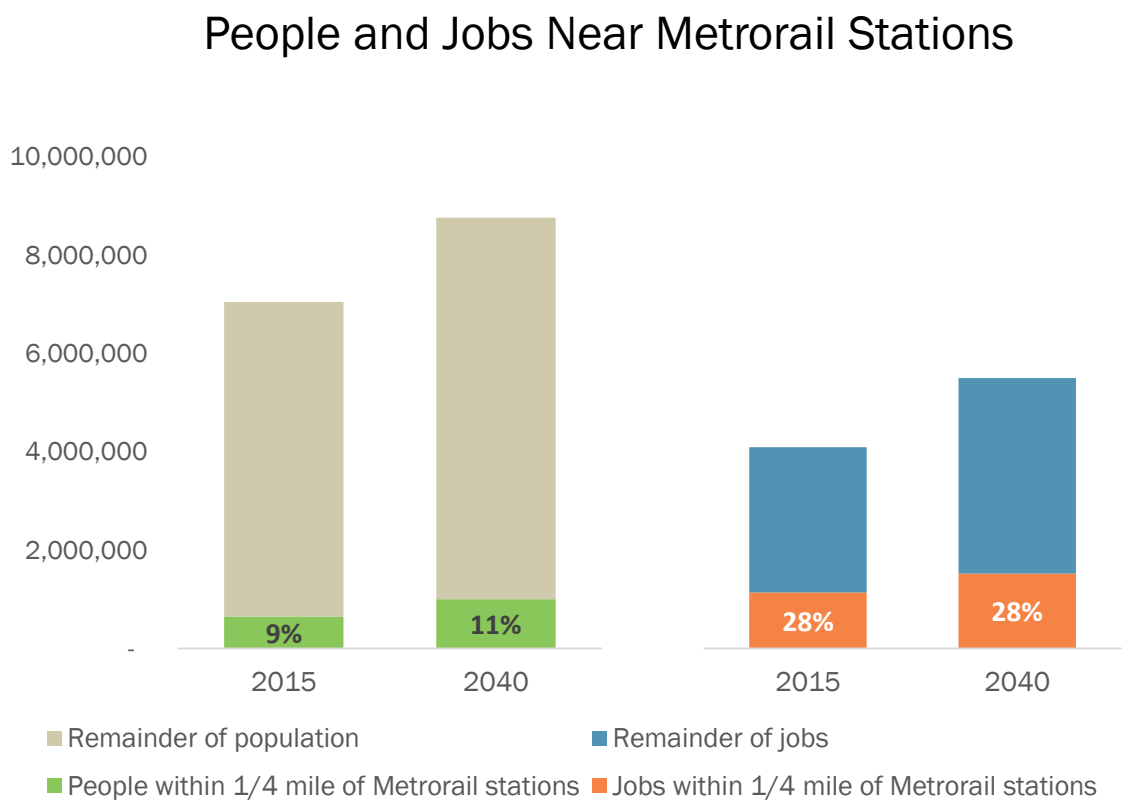
- Prince George's County (45 mi)
- Washington, DC (24 mi)
- Fairfax County (22 mi)

Percentage of Project in the 1/2 Mile Buffer and out of the Walkshed at Largo Town Center



Source: WMATA's Metrorail Station Investment Strategy

Opportunity for expanding walksheds around Metrorail stations



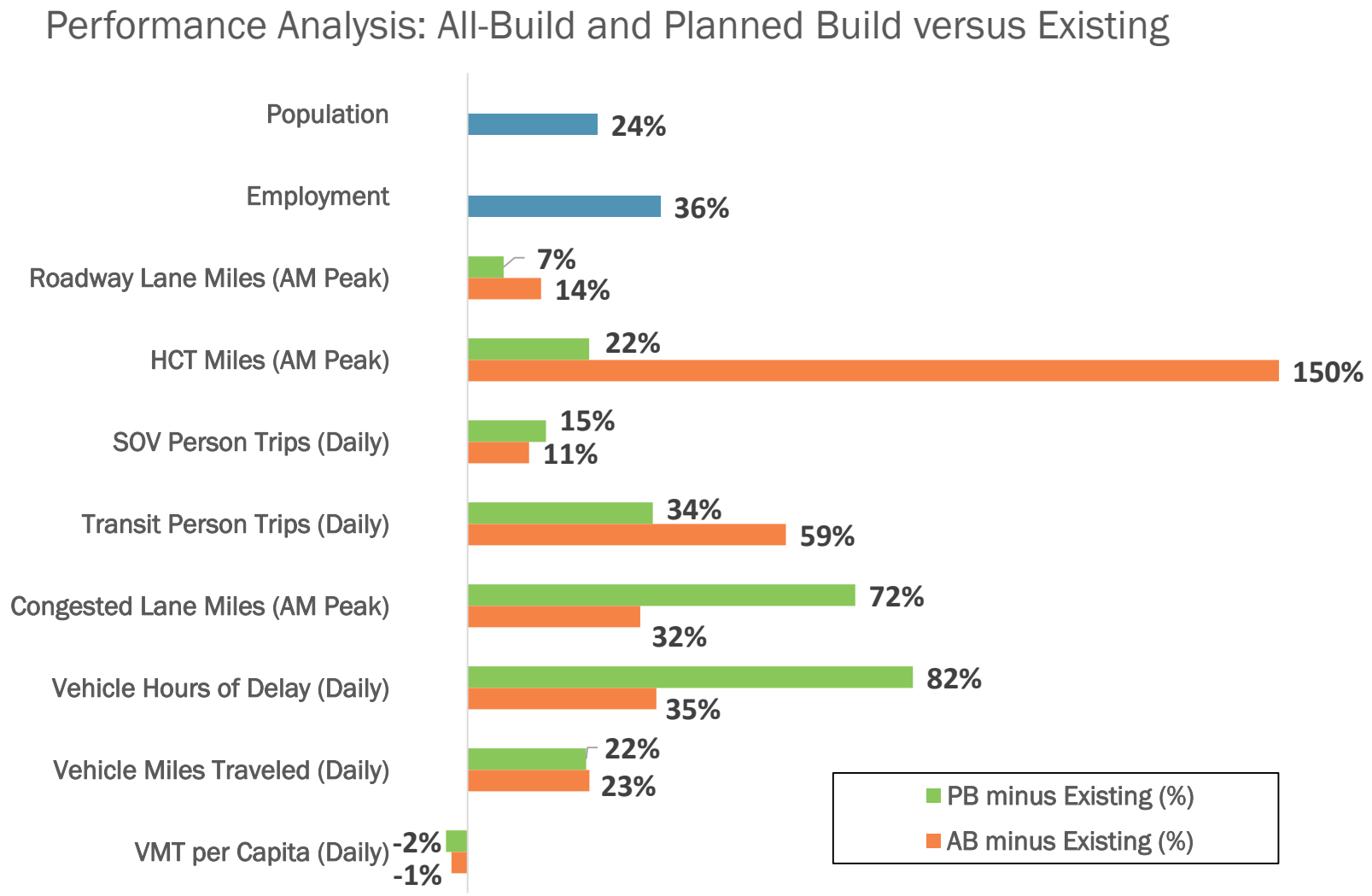
Expanding walksheds around Metrorail stations can help capture large portions of the population and employment in 2040:

- 11% of people will be within ¼ mile of Metro stations
- 28% of jobs will be within ¼ mile of Metro stations

With improved walksheds, more people will be able to walk safely to Metro.

Summary: How does the All-Build Scenario address regional priorities?

Impacts of the All-Build Scenario



Findings: Impacts of the All-Build Scenario

Looking at relevant RTPP strategies:

Transit Improvements

- Transit would be more widely available
- Transit would be much more extensively used
- The percentage of single driver trips will be reduced

Targeted Congestion Relief

- Congestion would still increase, but at a slower rate
- Bottlenecks would also be relieved (relative to "Planned Build")
- Accessibility on the eastern side of the region will improve
- Toll roads designed to manage congestion would be widely available throughout the region

Looking at relevant RTPP strategies (continued)

The All-Build Scenario would have the following impacts

Pedestrian and Bicycle Capacity

- Access to ped/bike facilities would be expanded throughout the region

Circulation in Activity Centers & Access to Transit

- Walksheds could be increased with small capital improvements

Environmental Justice

- Analysis still forthcoming

Next Steps

- Present the All-Build analysis to the Long-Range Plan Task Force on September 21
- Determine how the analysis can be used to inform the development of a limited set of regionally significant priority projects.