



# *DRAFT Maximize2045 Model Results*

Technical Committee

May 7, 2019

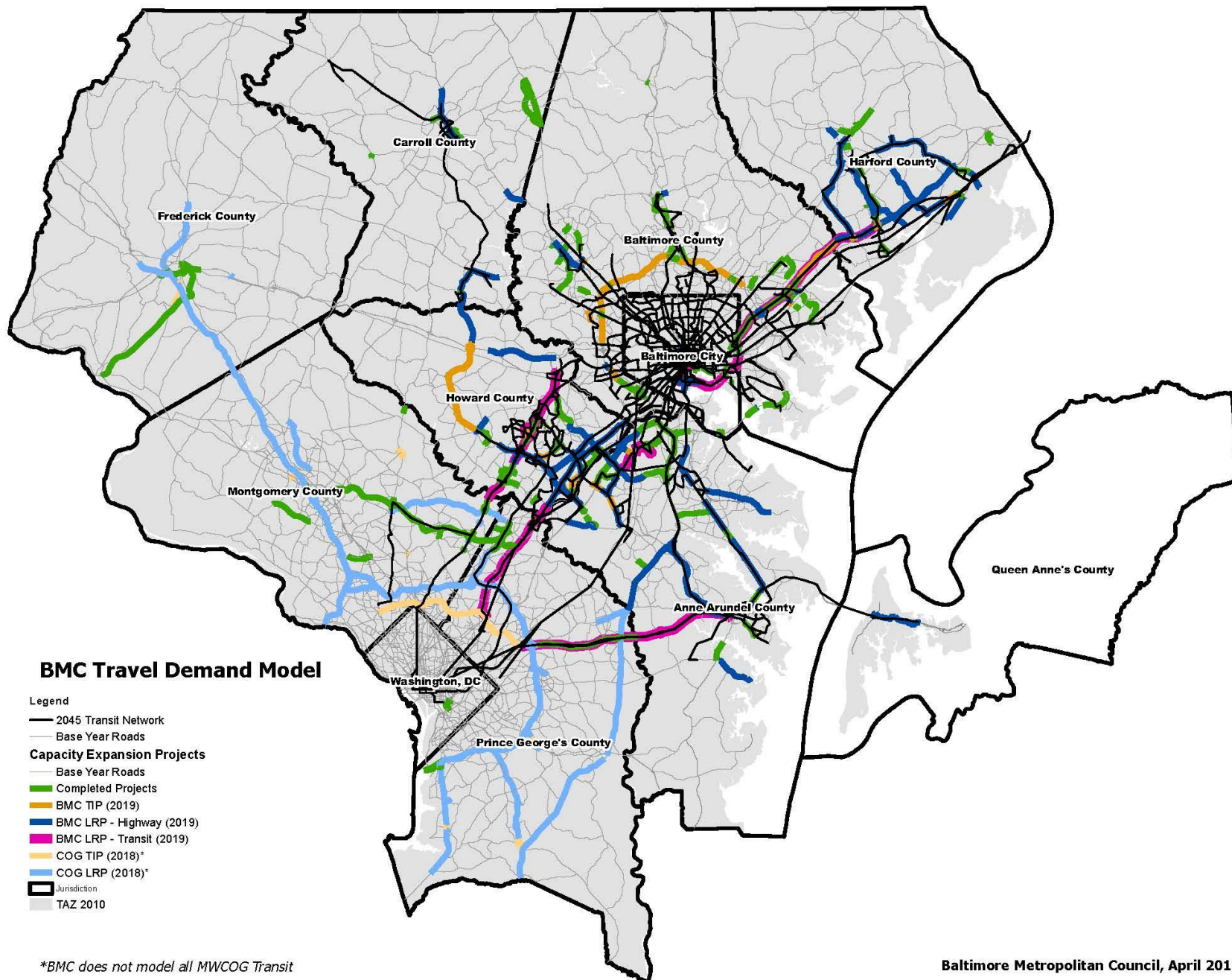


# Inputs

- **Transportation networks: highway and transit**
- **Transportation capacity expansion projects 2012-2045: TIP (2020-2023) & LRTP (2024-2045)**
- **Demographic data by transportation analysis zone (TAZ): population, households & employment**

# Outputs

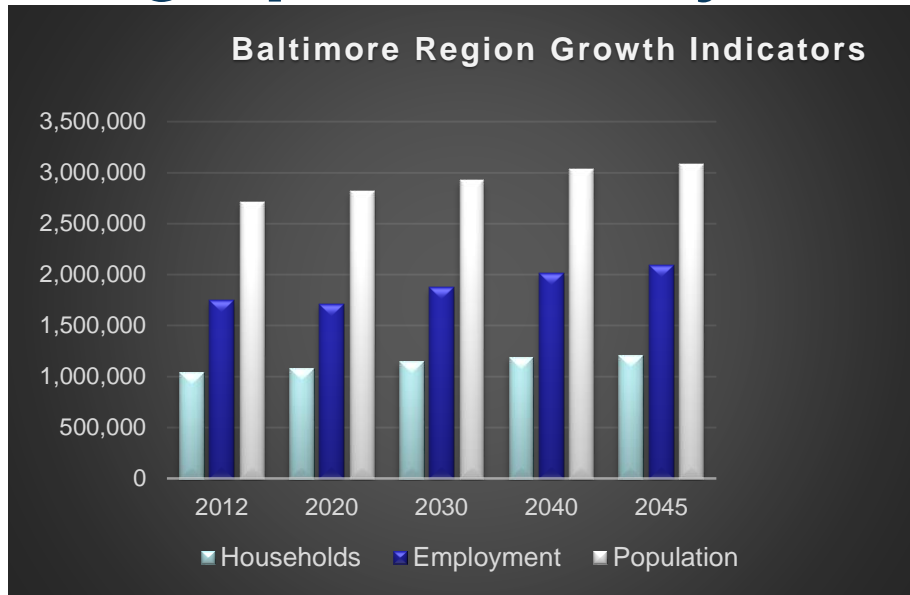
- **Travel projections 2012-2045: roadway volume and transit ridership**
- **Traffic conditions by road type:**
  - Severe congestion (volume to capacity ratio of 0.79 or greater)
  - Some congestion (volume to capacity ratio between 0.42 and 0.78)
  - Freeflow (volume to capacity ratio below 0.42)



\*BMC does not model all MWCOG Transit

Baltimore Metropolitan Council, April 2019

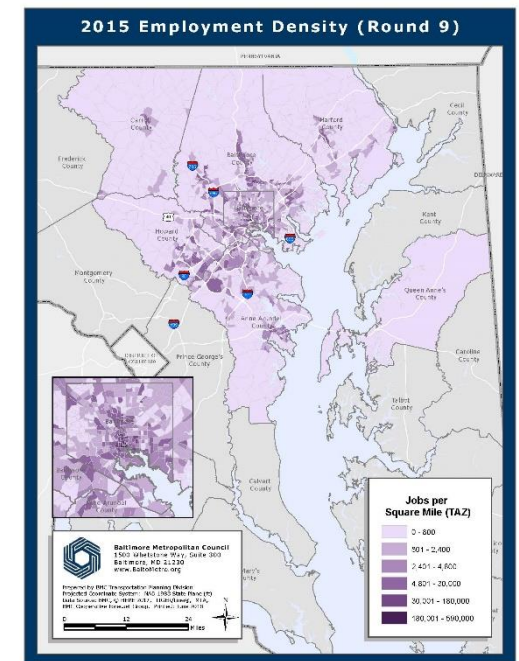
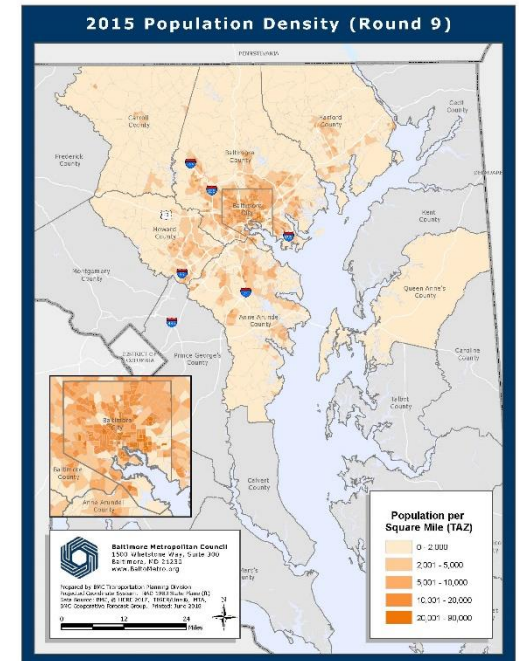
# Demographic Data by TAZ



## Change 2012-2045:

- Households:  
+170,191 or +16.4%
- Employment:  
+348,448 or +20%
- Population:  
+365,809 or +13.5%

**Source: Round 9 Demographic Data,  
Cooperative Forecasting Group**



# Trip Generation

- **Person Trip Productions**

## Work Trips – Motorized

- 2020: 1,704,782
- 2045: 1,790,958

## Change:

- +86,176
- +5.1%

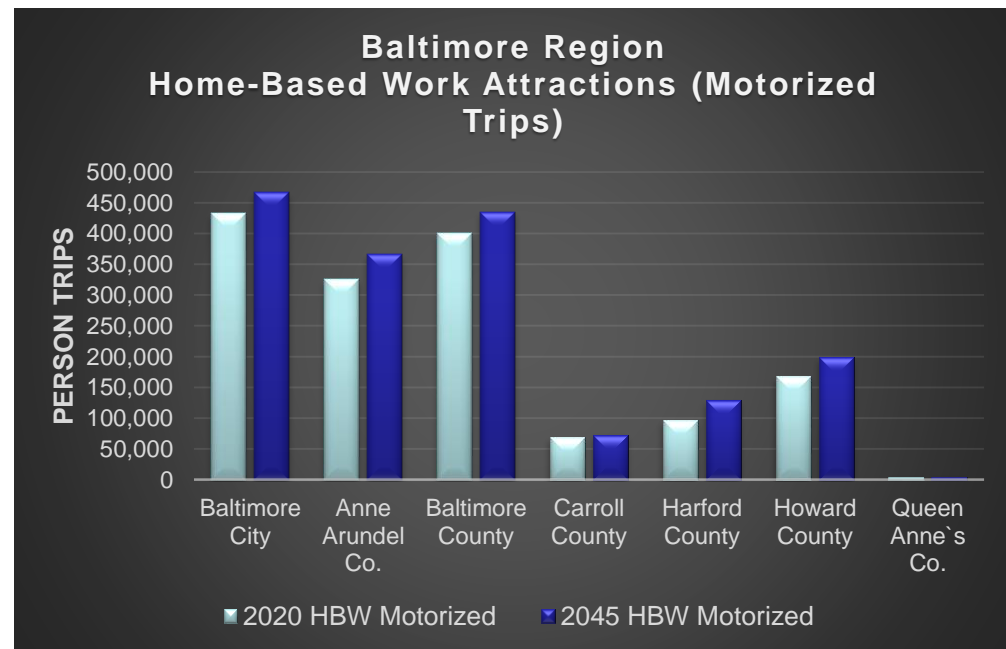
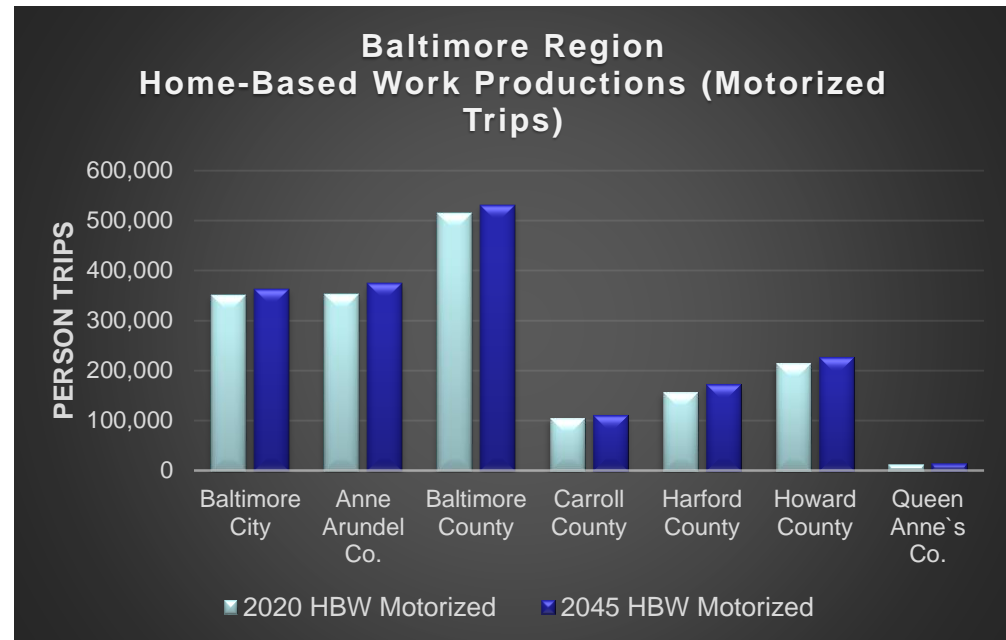
- **Person Trip Attractions**

## Work Trips - Motorized

- 2020: 1,494,747
- 2045: 1,671,925

## Change:

- +177,178
- +11.9%



# Trip Purpose

## Change 2012-2045

- Work: +9.4%
- Shop: +12.2%
- Home-Other: +12.1%
- School: +9.5%
- Work-Stop: +6.6%
- At Work: +8.6%
- Other: +12.6%
- All Trips: +11.1%



# Mode Choice

## Four modes in model

### Single Occupant Vehicle (SOV):

- HBW: +6.6%
- HBS & HBO: +13%

### High Occupant Vehicle (HOV) 2:

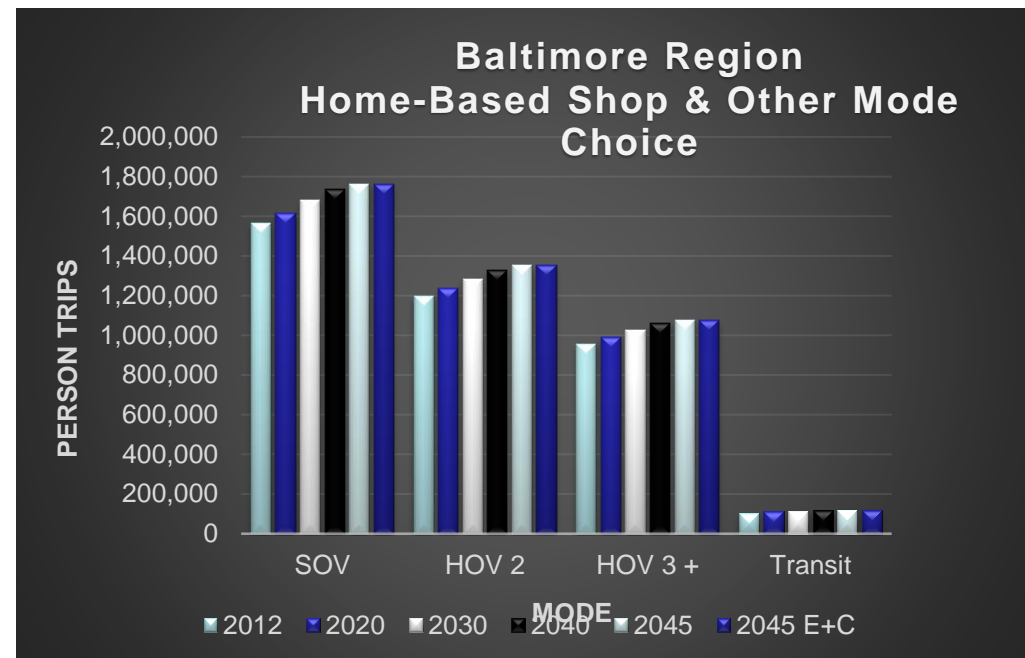
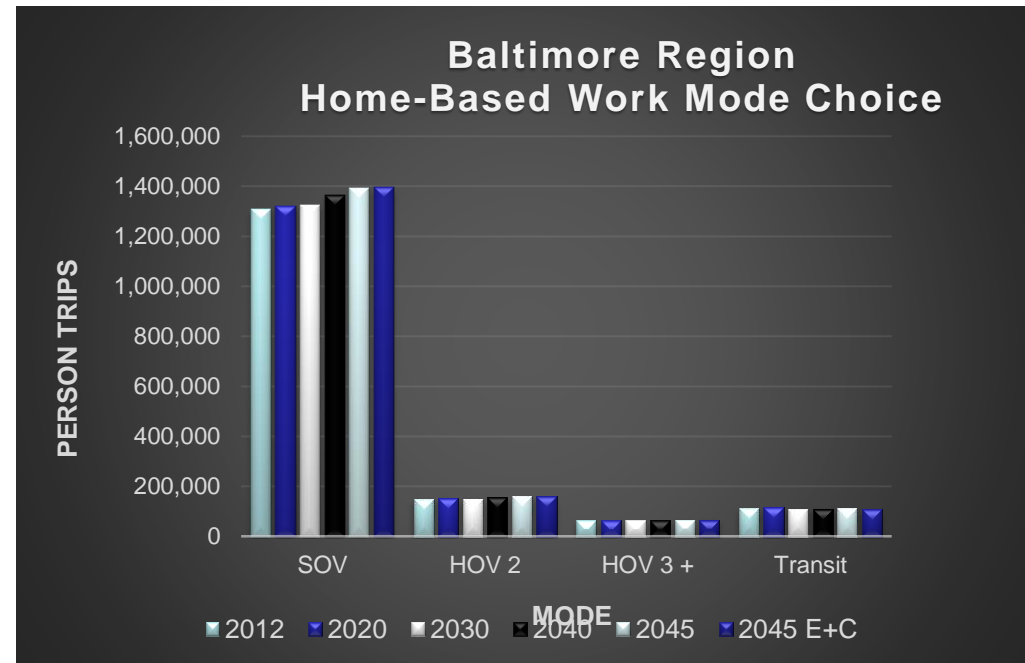
- HBW: +6.1%
- HBS & HBO: +13%

### High Occupant Vehicle (HOV) 3+:

- HBW: +5.8%
- HBS & HBO: +13%

### Transit:

- HBW: -0.2%
- HBS & HBO: +17%



# Vehicle Miles Traveled (VMT)

## Total VMT

2012-2045 Change:

- +15,264,661
- +23.5%

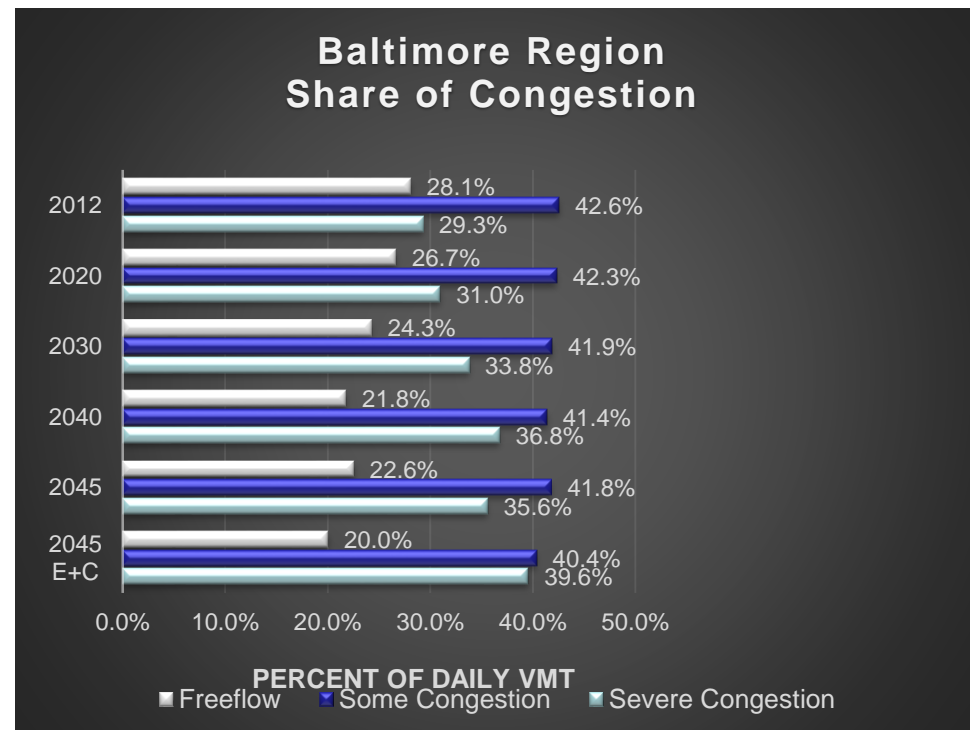
## Traffic Conditions

Freeflow:

- 2012: 28.1% of VMT
- 2045 E+C: 20.0% of VMT
- 2045: 22.6% of VMT

Severe Congestion:

- 2012: 29.3% of VMT
- 2045 E+C: 39.6% of VMT
- 2045: 35.6% of VMT



# Transit Ridership

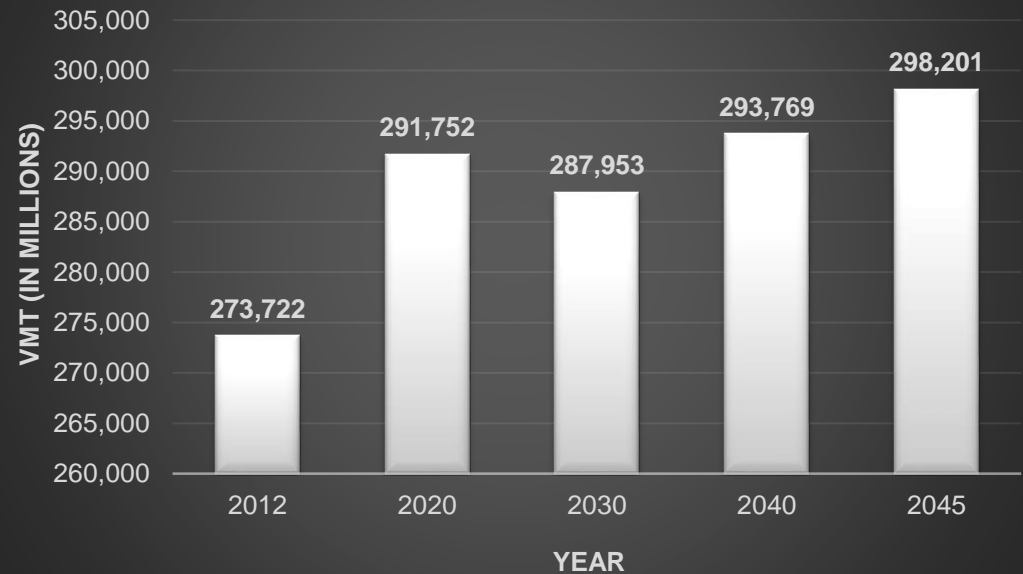
## Total Ridership

Change 2012-2045:

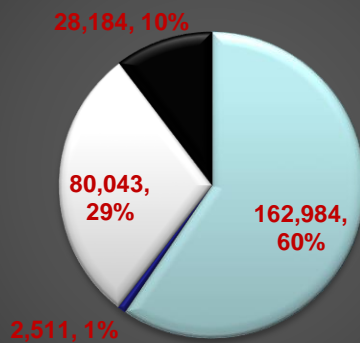
- +24,479
- +8.9%

## Transit mode split

Baltimore Region  
Transit Ridership (Daily)

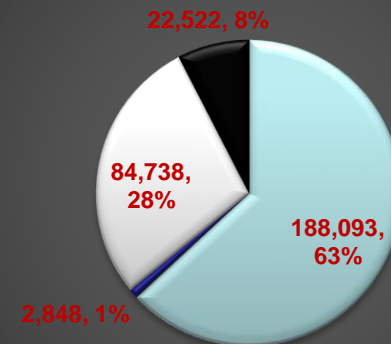


Baltimore Region  
Transit Mode Split 2012



Bus Express Bus Rail (Metro & Light Rail) MARC

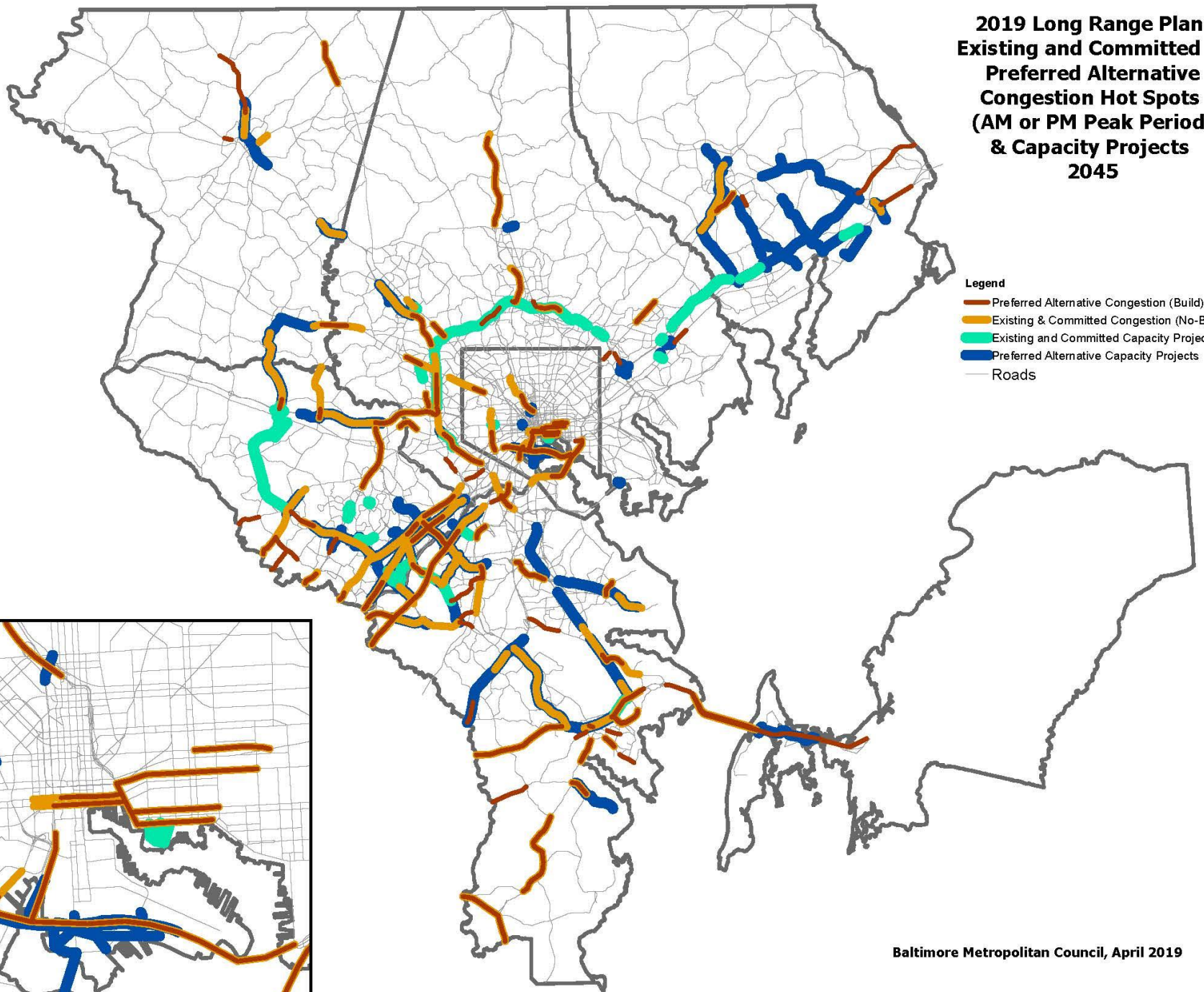
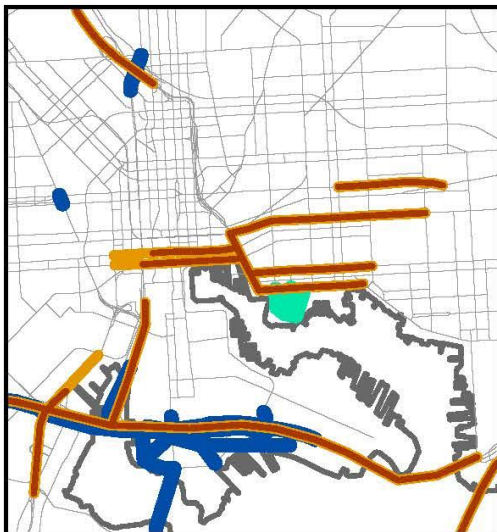
Baltimore Region  
Transit Mode Split 2045



Bus Express Bus Rail (Metro & Light Rail) MARC

**2019 Long Range Plan:  
Existing and Committed &  
Preferred Alternative  
Congestion Hot Spots  
(AM or PM Peak Period)  
& Capacity Projects  
2045**

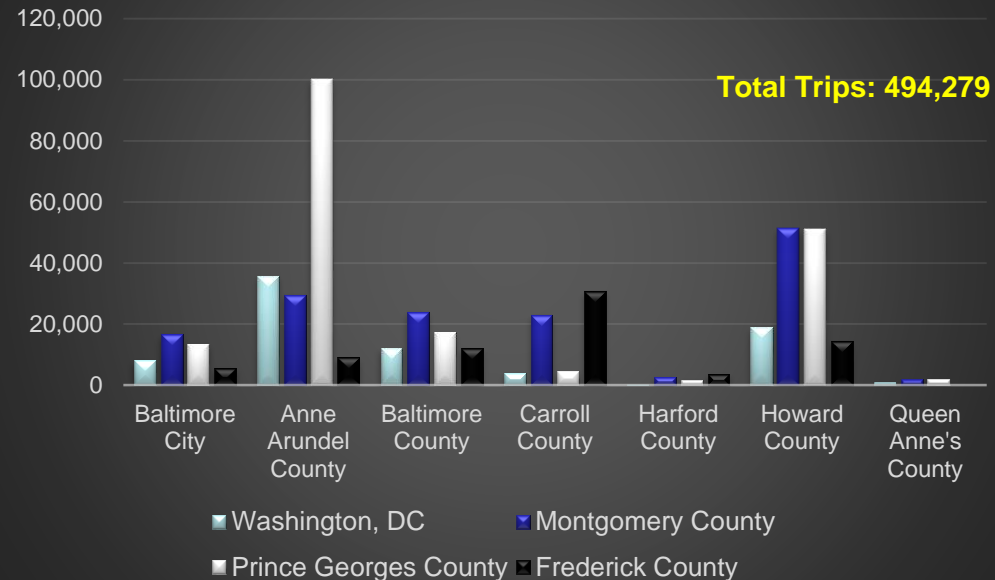
- Legend**
- Preferred Alternative Congestion (Build)
  - Existing & Committed Congestion (No-Build)
  - Existing and Committed Capacity Projects
  - Preferred Alternative Capacity Projects
  - Roads



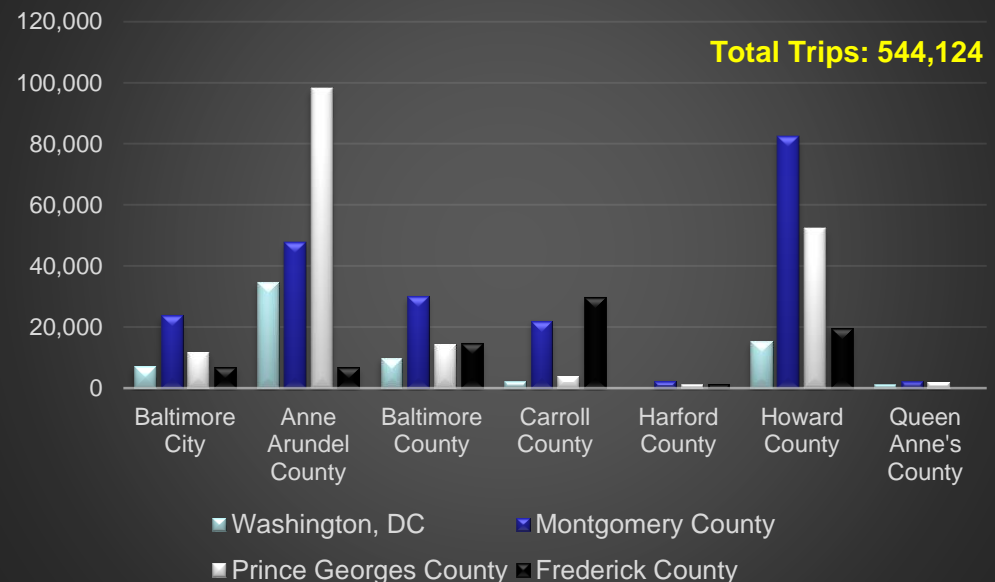
# Trips to Washington Area

- Daily trips to/from Washington area from Baltimore region
- Total Trips:
  - 2012: 494,279
  - 2045: 544,124
- Change:
- +49,845
- +10%

Baltimore Region  
Trips to Washington Area - 2012



Baltimore Region  
Trips to Washington Area - 2045



# Model Results

Performance Measure	Indicator of Travel Demand	2012 Base Year	2023 Existing & Committed	2045 Preferred Alternative	2012 to 2023 Change	2023 to 2045 Change	2012 to 2023 % Change	2023 to 2045 % Change
Congested VMT (LOS E and F)	Interstates	9,829,419	15,321,713	14,730,384	5,492,294	-591,329	55.9%	-3.9%
	Arterials	7,510,469	13,093,108	11,034,883	5,582,639	-2,058,225	74.3%	-15.7%
	Collectors	1,632,185	3,316,884	2,722,946	1,684,699	-593,938	103.2%	-17.9%
	All Roads	18,972,074	31,731,704	28,488,213	12,759,630	-3,243,491	67.3%	-10.2%
Percentage of Congested VMT (LOS E and F)	Interstates	29.69%	37.54%	35.22%			8%	-2%
	Arterials	28.83%	40.85%	35.15%			12%	-6%
	Collectors	29.39%	45.38%	40.31%			16%	-5%
	All Roads	29.32%	39.58%	35.62%			10%	-4%
	Total Transit Ridership (Linked Trips)	273,722	294,748	298,201	21,026	3,453	7.7%	1.2%
Auto Occupancy Ratio	Home-Based Work Trips	1.09	1.09	1.09	0	0	0.0%	0.0%
	Home-Based Non-Work Trips (Shop/Other)	1.52	1.52	1.52	0	0	0.0%	0.0%
	All Home-Based Trips	1.65	1.65	1.65	0	0	0.0%	0.0%
	Home-Based Transit Mode Share	4.17%	3.97%	4.03%			-0.2%	0.1%
Congested Speed (MPH) AM Peak Period	Interstates	47.7	41.4	43.8	-6	2	-13.2%	5.8%
	Freeways	46.2	38.1	41.2	-8	3	-17.5%	8.1%
	Principal Arterials	32.6	29.6	31.1	-3	2	-9.2%	5.1%
	Minor Arterials	30.3	27.7	28.8	-3	1	-8.6%	4.0%
	Collectors	30.3	27.5	28.6	-3	1	-9.2%	4.0%
	All Roads	36.9	32.6	34.5	-4	2	-11.7%	5.8%
Vehicle Hours of Delay	All Roads (AM Peak Period)	85,516	255,252	174,689	169,736	-80,563	198.5%	-31.6%
	All Roads (24-Hour Period)	271,492	834,051	583,480	562,559	-250,571	207.2%	-30.0%

# For More Information

---

**Brian Ryder** | Transportation Planner

410-732-0500 x1054 | [bryder@baltometro.org](mailto:bryder@baltometro.org) | [www.baltometro.org](http://www.baltometro.org)



@BALTOMETROCOUNCIL



@BALTIMORE METROPOLITAN COUNCIL



@BALTIMORE METROPOLITAN COUNCIL

