Reducing Maryland's Transportation Greenhouse Gas Emissions

Maryland Commission on Climate Change, Mitigation Working Group
August 23, 2022

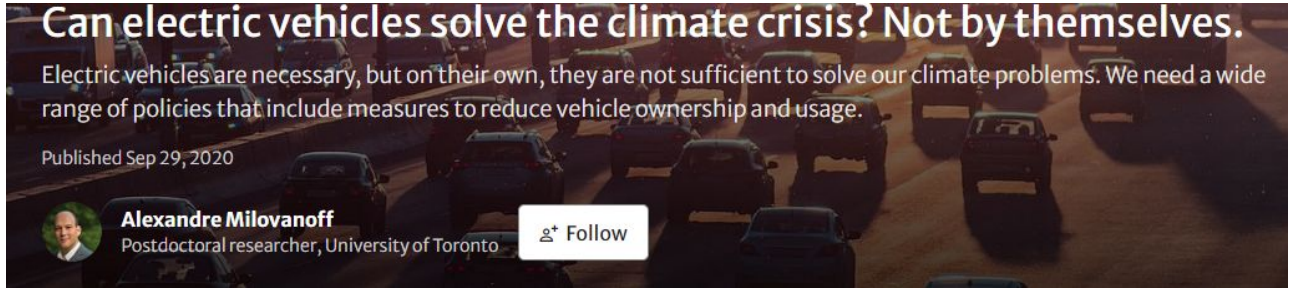
Jane Lyons, Coalition for Smarter Growth
Lindsey Mendelson, Maryland Sierra Club
Brian O'Malley, Central Maryland Transportation Alliance

Context

SEPTEMBER 28, 2020

New study shows converting to electric vehicles alone won't meet climate targets

by University of Toronto



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To Meet Climate Goals, Think Outside the Electric Car

The Biden administration is plugging EV adoption to help the U.S. meet its climate goals, but electrification alone won't do the job: We need to reduce vehicle use, period.

Article | Published: 28 September 2020

Electrification of light-duty vehicle fleet alone will not meet mitigation targets

Alexandre Milovanoff, I. Daniel Posen & Heather L. MacLean

Nature Climate Change **10**, 1102–1107 (2020) | Cite this article

Despite all the hype, electric cars are no easy fix for the climate crisis. Here's why

By Hiawatha Bray Globe Staff, Updated August 12, 2021, 7:00 a.m.

266

We cannot meet our greenhouse gas reduction targets with vehicle electrification alone.

Context - DC region (includes Charles, Frederick, Montgomery, and Prince George's Counties)

TPB's Climate Change Mitigation Study showed that the Greater Washington region must reduce per capita driving (light duty VMT) **15-20% below the 2030 baseline forecast** under the region's current transportation plan along with transition to EVs above 50% of sales by 2030 to achieve the regional climate plan targets

Source: National Capital Region Transportation Planning Board, Climate Change Mitigation Study of 2021

Maryland VMT & GHG Reduction from Transit, Bike, Pedestrian, Land Use, and TDM Investments

Passenger VMT reduction / Mode shift is a significant share of necessary MD transportation GHG reductions (green band in chart)

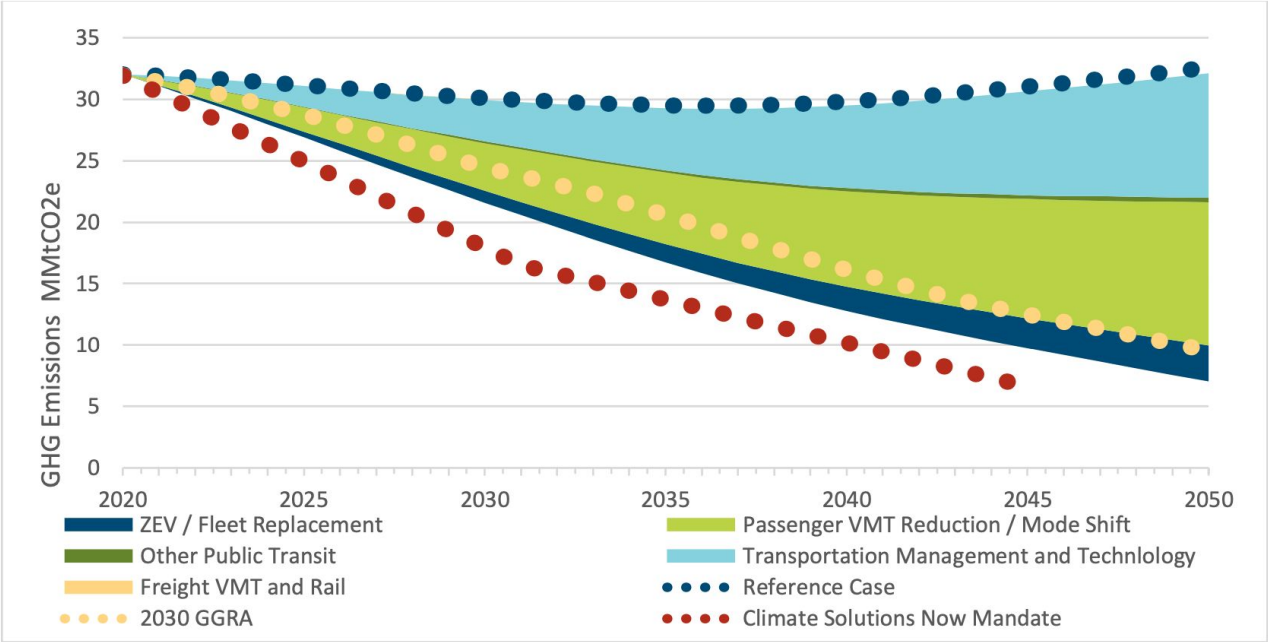


Figure 7. Emission Reductions for On-the-books + Emerging and Innovative Strategies Compared to GGRA and CSN Targets

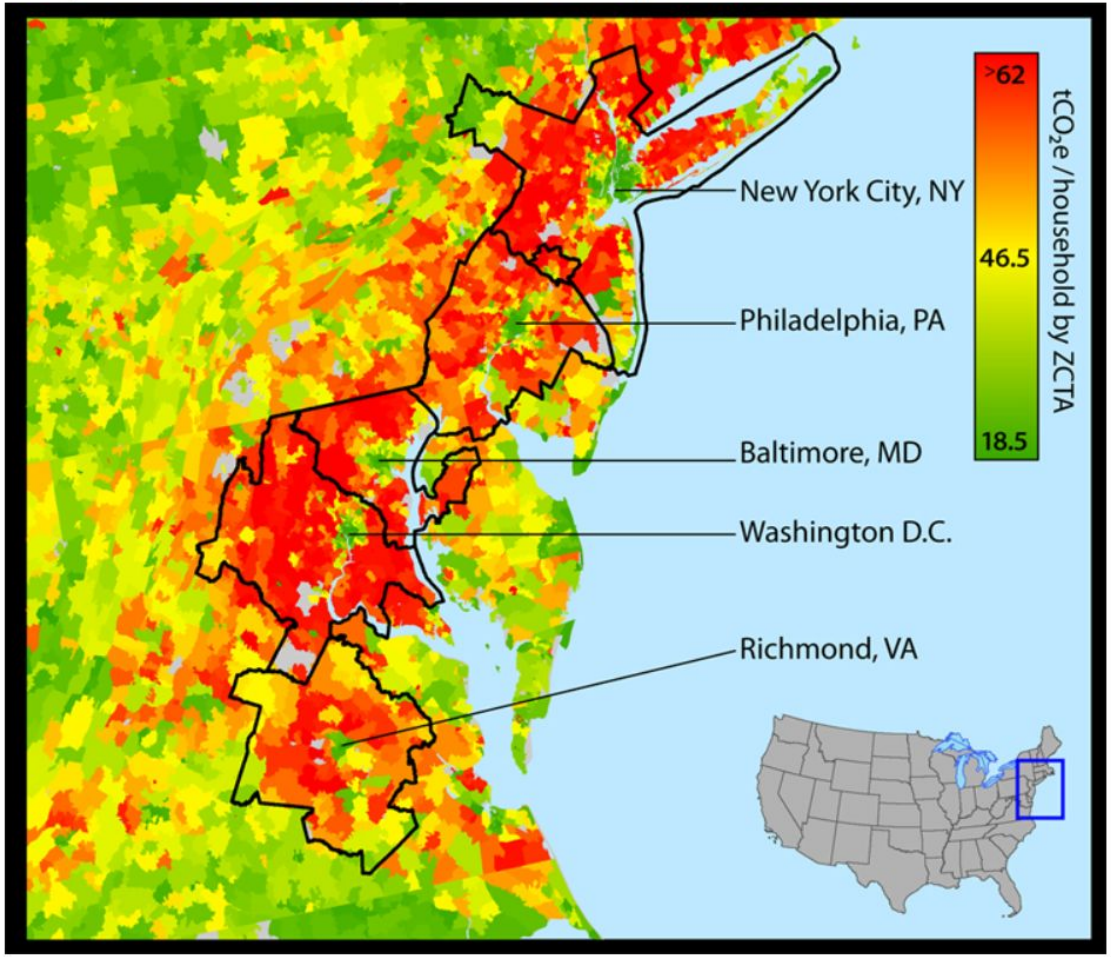
Source: 2030 GGRA Plan scenario modeling, analysis by The Center for Climate Strategies

When we talk about VMT, we have to talk about land use

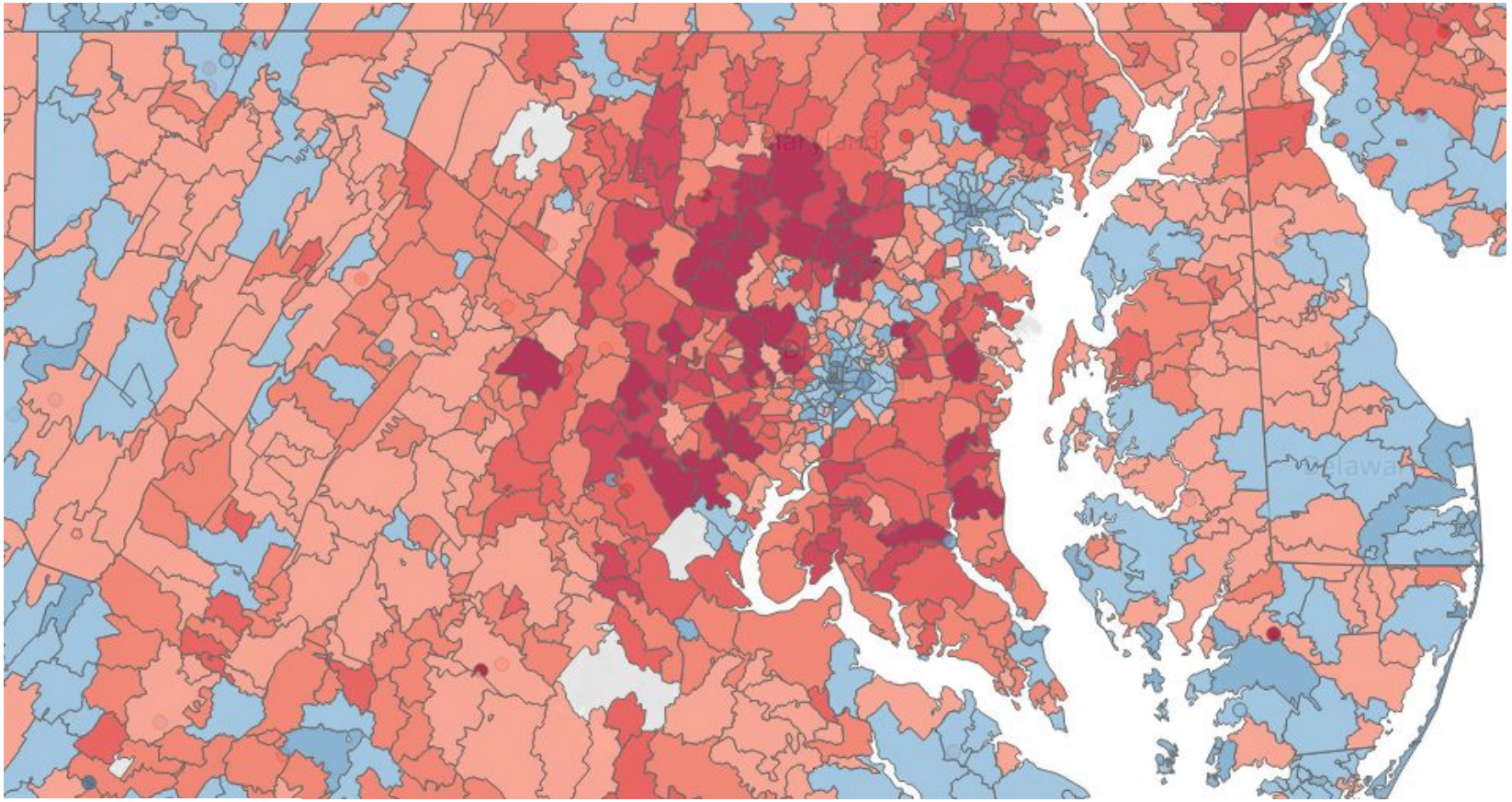
Separated community activities means driving for every trip

Source: Transportation for America, *Driving Down Emissions,* 2020

Average Household Carbon Footprint - Eastern United States

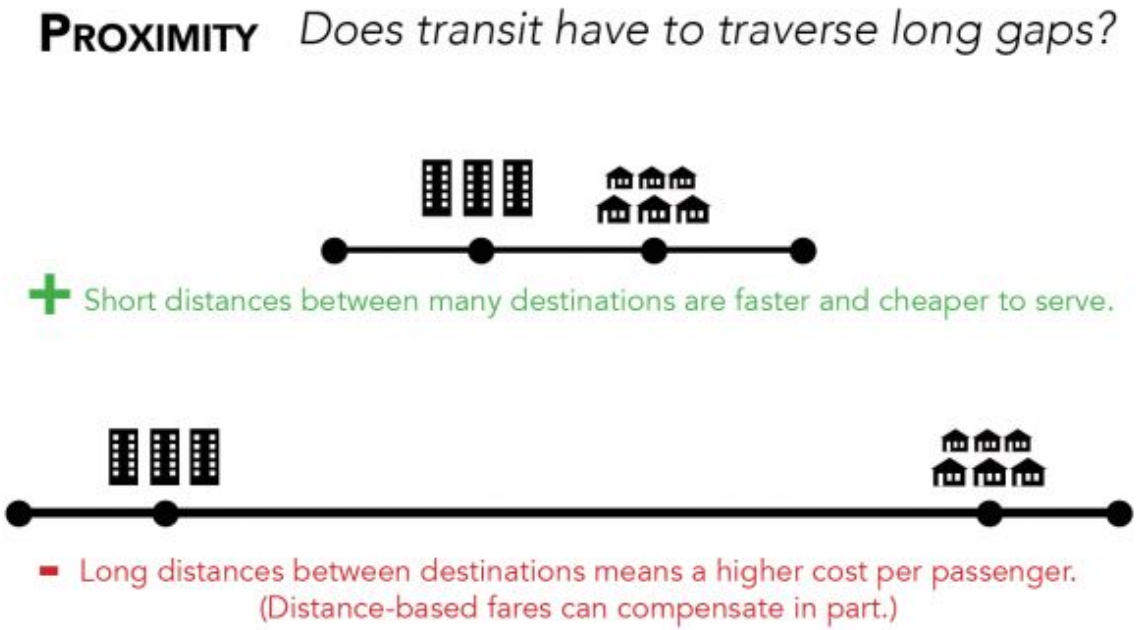


Source: UC Berkeley CoolClimate Network, Average Annual Household Carbon Footprint (2013)



Source: UC Berkeley CoolClimate Network, Average Annual Household Carbon Footprint (2013)

Sprawling land use undermines transit investments



Investment in Highway Capacity Causes VMT to Increase

“For every 10% increase in metropolitan lane miles, traffic increases 3% to 6% in the first few years and 6% to 10% in the following five to ten years. In other words, a road is likely to fill up long before it’s due for reconstruction”

- *2014 Report for the California Air Resources Board summarizing the findings from six studies*

Between 1982 and 2011 in the Baltimore region:

- freeway lane miles grew from 885 lane miles to 1,561 lane miles - a 76% increase
- population grew from 1.7 million to 2.5 million – a 48% increase

Freeway expansion far outpaced population growth, but it did not relieve traffic congestion.

In fact, by every measure congestion got worse.

- congested lane miles increased from 31% to 58%
- annual hours of delay per auto commuter quadrupled, from nine hours a year to 41 hours a year
- the annual cost of congestion increased from $96 million per year to $1.5 billion per year

Source: Texas Transportation Institute Urban Mobility Report

Throughout the 20th Century VMT per capita rose steadily in Maryland.

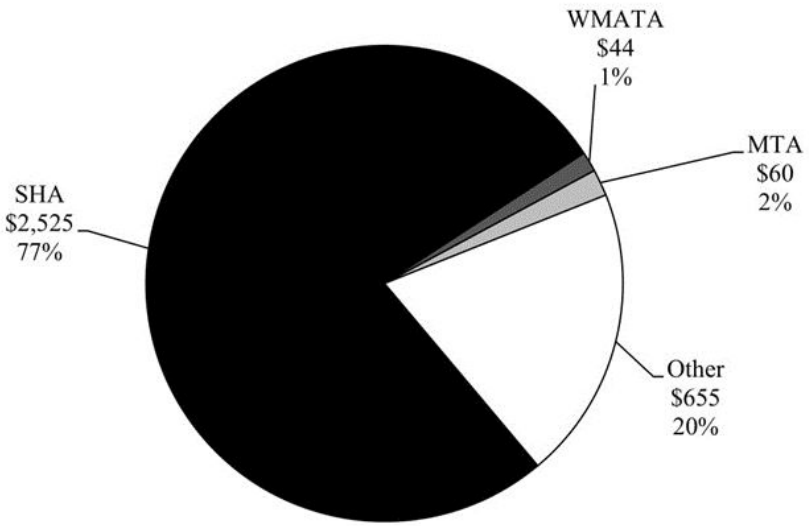
Then from 2004 to 2014 it went down.

In 2013 Maryland increased the gas tax and transit fares.

From 2014 to 2019 MDOT spent the vast majority of additional revenues on highways.

What happened to VMT per capita?

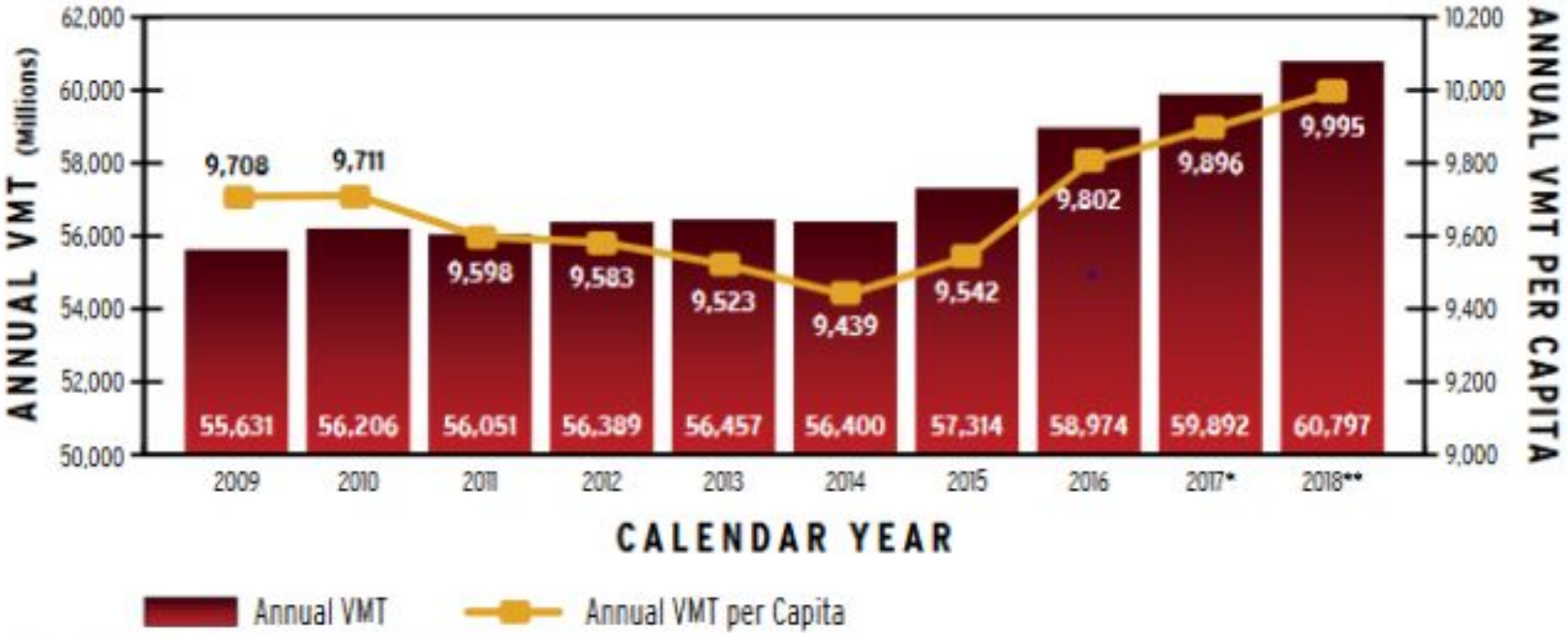
Exhibit 18
Capital Spending Above Fiscal 2013 Base
Fiscal 2014-2019
($ in Millions)



Total: $3.3 Billion

MTA: Maryland Transit Administration
SHA: State Highway Administration
WMATA: Washington Metropolitan Area Transit Authority

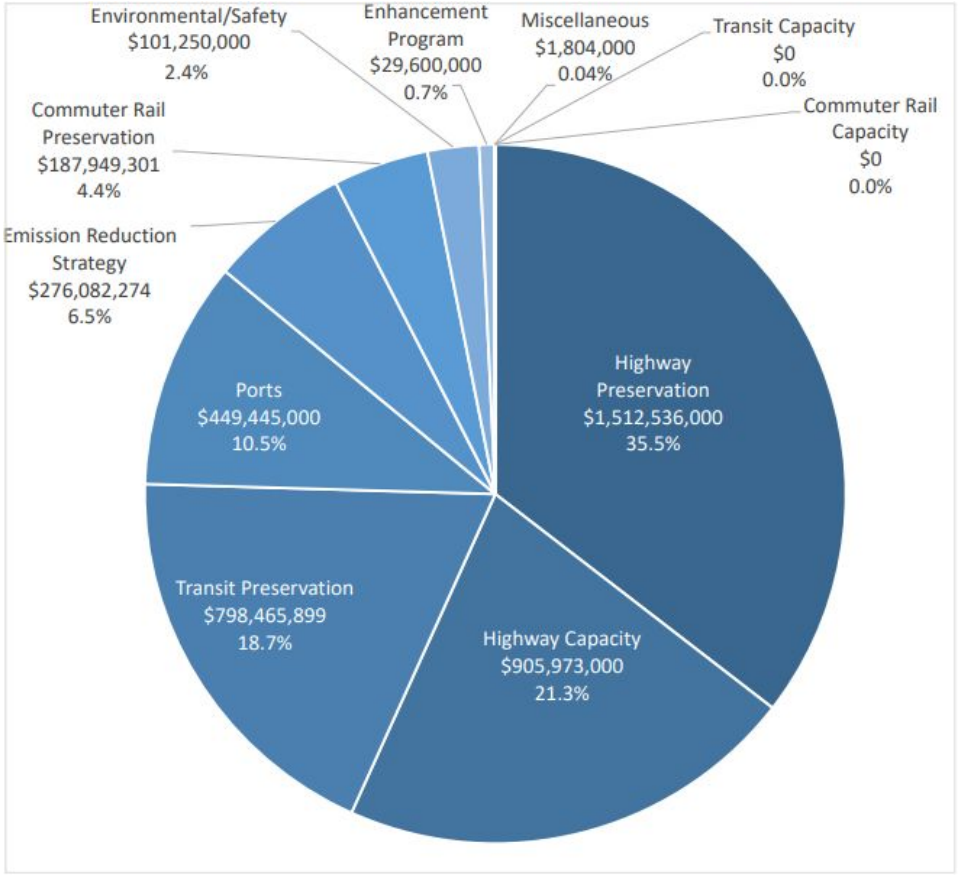
Source: Maryland Department of Transportation, Transportation Trust Fund Forecasts; Department of Legislative Services



* 2017 VMT data revised from previous report.

** 2018 data is preliminary and subject to change.

Source: Maryland Department of Transportation, 2019 Annual Attainment Report on Transportation System Performance.



Over the next four years, the Baltimore Region plans on spending over $4 billion dollars on transportation projects. Of that, $900 million will go to widen roads while ZERO will go to new transit options.

What do you predict will happen to VMT per capita?

Recommendations

1. Flex federal funds

The state should mandate that 50% of Surface Transportation Block Grant and National Highway Performance Program funds be used by state agencies and shared with cities and counties for public transit, bike and pedestrian infrastructure, and Transit Oriented Development programs.

". . . funding resources made available through the BIL should be used to repair and maintain existing transportation infrastructure before making new investments in highway expansions for additional general purpose capacity. State transportation departments should also be mindful of their ability to transfer resources to support transit projects that may be more consistent with these priorities."

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **Information: Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America**

Date: December 16, 2021

From: Stephanie Pollack
Deputy Administrator

In Reply Refer To: HPL-1 and HCC-1

To: Associate Administrators
Chief Counsel
Chief Financial Officer
Directors of Field Services
Division Administrators

Sent for printing:
Building a Better America – Policy Framework
(PDF - 3.99 MB)

The recently enacted Bipartisan Infrastructure Law (BIL), enacted as the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58 (Nov. 15, 2021), will deliver generational investments in our roads and bridges, promote safety for all road users, help combat the climate crisis, and advance equitable access to transportation. The BIL also presents the Federal Highway Administration (FHWA) with a unique opportunity: to exercise our stewardship and oversight responsibilities and evolve the century-old relationship with State departments of transportation and other stakeholders in a way that takes advantage of the tools Congress has provided and prioritizes investments that align with the underlying policies evident throughout the BIL to help our states and communities Build a Better America.

This guidance is intended to serve as an overarching framework to prioritize the use of BIL resources on projects that will Build a Better America. The intent of the guidance also is to ensure that the funding and eligibilities provided by the BIL will be interpreted and implemented, to the extent allowable under statute, to encourage States and other funding recipients to invest in projects that upgrade the condition of streets, highways and bridges and make them safe for all users, while at the same time modernizing them so that the transportation network is accessible for all users, provides people with better choices across all modes, accommodates new and emerging technologies, is more sustainable and resilient to a changing climate, and is more equitable.

The BIL creates two kinds of new resources that FHWA's State, regional, Tribal and local stakeholders can use to Build a Better America:

access telecommunications relay services.

Flexible Funding for Transit and Highway Improvements

Many federal-aid highway programs have specific eligible transit activities identified in legislation. In addition, funds from other programs that do not have specific transit eligibility may be transferred by states to other Federal-aid Highway programs that do have such eligibility.

- Congestion Mitigation and Air Quality (CMAQ) program - The CMAQ program provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act.
- Surface Transportation Block Grant (STBG) - The STBG program provides flexible funding to best address State and local transportation needs.
- Tribal Transportation Program - The TTP supports safe and reliable transportation and public road access to and within Indian reservations, Indian lands, and Alaska Native Village communities.
- National Highway Performance Program - NHPP provides support for the condition and performance of the National Highway System, supports the construction of new facilities, ensures that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets in a State's asset management plan, and supports activities to increase the resiliency of the nation's highways.

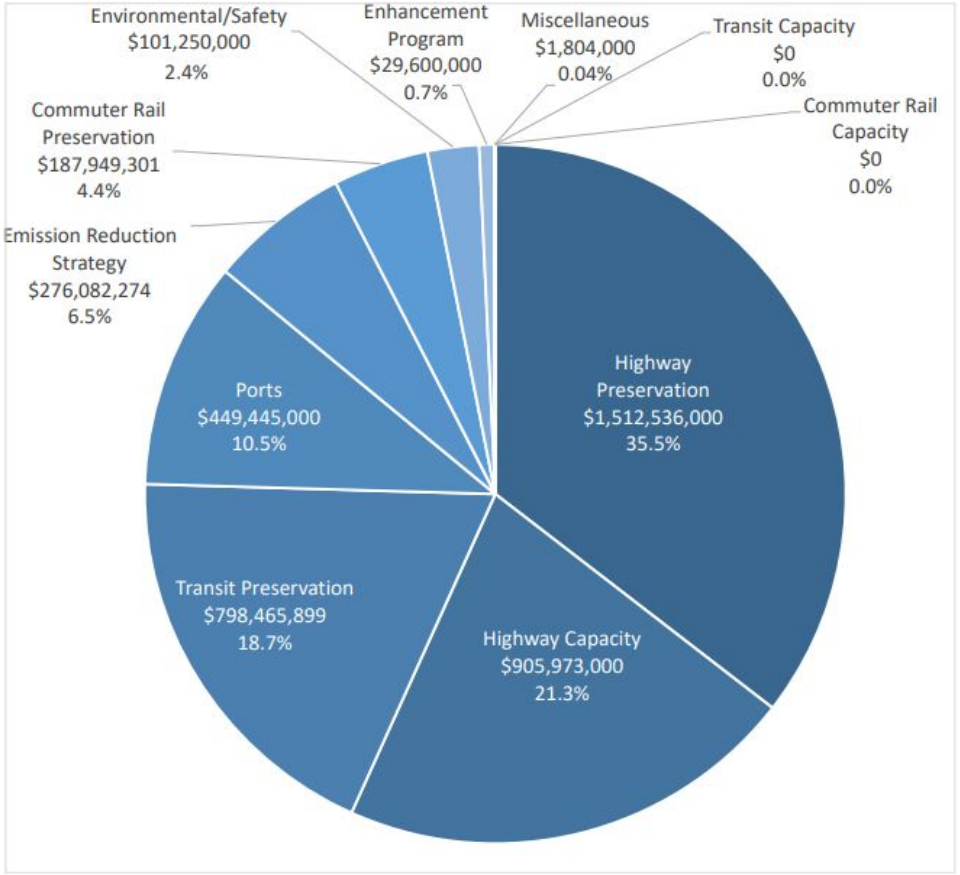
Summary of the FY 2023 Federal-Aid Annual Element (continued)

Sponsoring Agency	CMAQ	FRA	HSIP	NHFP	NHPPC	Other	STBG	TAC	Total
Anne Arundel County							$10,728		**$10,728**
Baltimore City					$12,880		$67,015		**$79,895**
Baltimore County							$9,200		**$9,200**
Carroll County							$946		**$946**
Harford County							$2,780		**$2,780**
Howard County							$7,216		**$7,216**
MTA - Commuter Rail									**$67,294**
MTA - Transit	$54,755								**$230,146**
Maryland Port Administration									**$3,480**
Office of the Secretary		$731							**$1,131**
SHA - Anne Arundel County					$1,592		$13,158		**$14,750**
SHA - Baltimore County				$10,486	$107,332		$7,002		**$124,820**
SHA - Carroll County							$4,515		**$4,515**
SHA - Harford County					$1,653		$429		**$2,082**
SHA - Howard County					$1,572				**$1,572**
SHA - Queen Anne's									**$0**
SHA - Regional	$3,960		$24,080		$105,560	$45	$125,800	$6,520	**$265,965**
Total Programmed	**$58,715**	**$731**	**$24,080**	**$10,486**	**$230,589**	**$45**	**$248,789**	**$6,520**	**$826,520**
FY 2023 Appropriation*	$57,462	$0	$18,087	$8,395	$111,118	$0	$81,758	$7,934	**$513,835**
Previous Funds Still Available*	$54,755	$731	$31,041	$17,890	$126,471	$45	$176031	$18,852	**$479,563**
MDOTs Total Federal Apportionment for the Baltimore Region*	$112,217	$731	$49,128	$26,285	$237,589	$45	$257,789	$26,786	**$993,398**

Source: Baltimore Regional Transportation Board, Draft FY23-26 Transportation Improvement Program

2. Increase transparency at MDOT

- Have MDOT's Consolidated Transportation Plan start including a breakdown of what percentage of total spending goes toward transit, walking and biking. Also have it include a breakdown of spending on new capacity versus system preservation
- Have MDOT's future budget show sources of all income including federal grants
- Have MDOT adopt and publish a definition of system preservation that excludes projects that extend left-turn lanes, widen shoulders, widen lanes, add lanes, or otherwise expand the capacity of transportation facilities



The Baltimore Regional Transportation Board tells us how much it will spend on “Capacity” versus “Preservation”.

MDOT does not.

In *Status of the Nation's Highways, Bridges and Transit, 23rd Edition*, October 2020, https://www.fhwa.dot.gov/policy/23cpr/, the Federal Highway Administration shows the average costs of road reconstruction and road resurface projects in various conditions. They distinguish between projects that included widening and those that did not.

Projects with widening cost between 29% and 85% more than projects without widening.

Category	Typical Costs (Thousands of 2014 Dollars per Lane Mile)					
	Re-construct and Widen Lane	Re-construct Existing Lane	Savings from Not Widening	Resurface and Widen Lane	Resurface Existing Lane	Savings from Not Widening
Rural						
Interstate						
Flat	$1,993	$1,302	**35%**	$1,128	$462	**59%**
Rolling	$2,234	$1,335	**40%**	$1,298	$492	**62%**
Mountainous	$4,235	$2,924	**31%**	$2,151	$728	**66%**
Other Principal Arterial						
Flat	$1,556	$1,042	**33%**	$941	$371	**61%**
Rolling	$1,757	$1,071	**39%**	$1,069	$413	**61%**
Mountainous	$3,412	$2,411	**29%**	$2,072	$583	**72%**

STATE HIGHWAY ADMINISTRATION

Construction Program	
Major Projects	240.3
System Preservation Minor Projects	791.3
Development and Evaluation Program	44.5
Highway User Revenue	276.5
SHA - TOTAL	1,352.6

State System Construction and Equipment	J02B0101	983.4
State System Maintenance	J02B0101	-
County and Municipality Capital Program	J02B0103	-
County and Municipality Program	J02B0103	71.9
Highway Safety Operating Program	J02B0105	-
County and Municipality Program HUR	J02B0105	276.5
Major IT Development	J02B0108	4.8
SHA Other Funds	Other	16.1
		1,352.6

In MDOT's FY22-26 Consolidated Transportation Program (CTP) system preservation minor projects are 59% of SHA's capital budget.

3. Set goal to reduce Vehicle Miles Traveled

Maryland should set a goal for reducing per capita light duty Vehicle Miles Traveled 20% under 2019 levels by 2030 and undertake modeling to determine the best alternative or combination of alternatives to reduce vehicle miles traveled.

The state should also put in mechanisms to **track and measure overall VMT** as well as measure VMT reduction potential for each proposed transportation project.

4. Boost transit-oriented development

The Maryland General Assembly should take legislative action to encourage transit-oriented development, especially transit-oriented affordable housing, to reduce Vehicle Miles Traveled. Such legislation could include:

- Require a study to evaluate the use and effectiveness of Priority Funding Areas (PFAs) and designated Transit-Oriented Development (TOD) areas. The study should review whether general plans, zoning, affordable housing funding, and other factors are aligned with PFAs and TOD designations.
- Create a mechanism to enforce counties' general plan housing targets and ensure alignment between the general plan's land use and PFAs.
- Encourage and allow accessory dwelling units and small multifamily housing in areas near transit centers.
- Place caps on parking minimums for all multi-use buildings near transit, including offices and multi-family residential housing.

5. Invest in existing transit and transit expansion to grow ridership

- **Increase the frequency and reliability of transit service**
  - More frequent transit service; actively recruit, hire, and train additional transit operators with necessary incentives including signing bonuses; ensure funding and completion of the B&P Tunnel Project

- **Expand transit service, bike and pedestrian access**
  - Examples: Red Line, MARC Cornerstone Implementation Study and Investment Program; I-270 Corridor Forward Plan; Southern Maryland Rapid Transit plan; and MARC run through service to Virginia and Delaware in Western MD; completion of the Purple Line, Harry Nice Bridge

6. Overhaul the Maryland Commuter Choice Program

MDOT should make major changes to the Maryland Commuter Choice program to increase the number of employers participating from 10 employers (in 2021) to at least 500 starting in 2024, including Maryland's top 32 employers that employ over 2,500 people. Maryland should consider a mandate, such as Washington D.C. and New Jersey have, that employers of a certain size must offer sustainable commuter benefit options.

Table 5: Maryland Commuter Tax Credit

Measure	2017	2018	2019	2020	2021*
# participating employers	5	21	25	24	10
# participating employees	130	880	1,260	912	551
Transit	107	846	1,217	876	548
Cash in Lieu of Parking	23	34	43	26	3
Vanpool	0	0	0	10	0
Company Guaranteed Ride Home	0	0	0	0	0

**As of 1.12.22*

Thank you! Questions?

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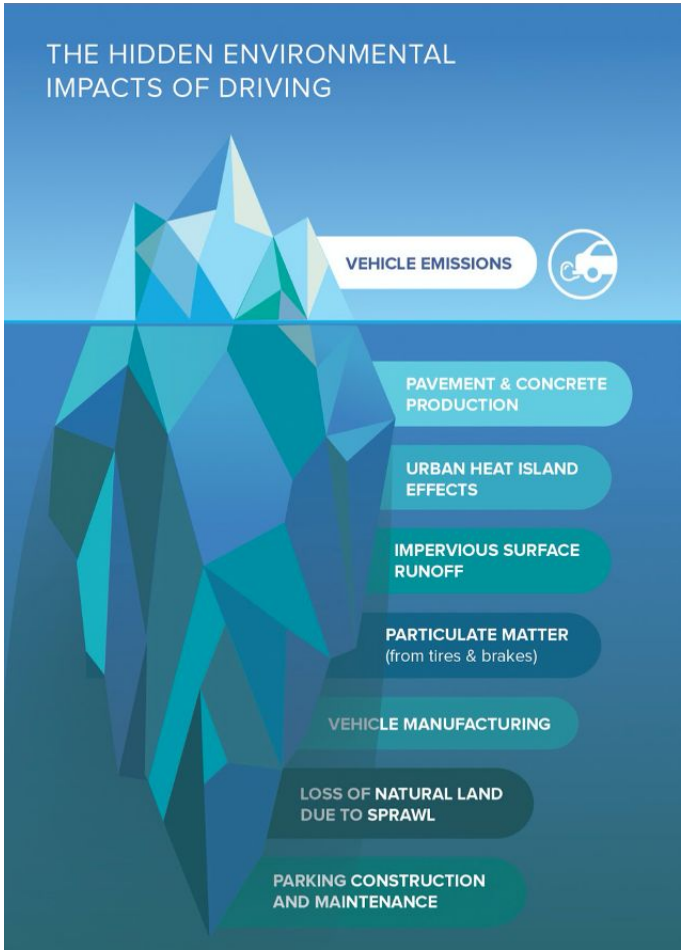
Brian O'Malley - bomalley@cmtalliance.org

High Co-Benefits of VMT Reduction and Mode Shift strategies that reduce car dependence

- Health
- Safety
- Equity
- Household expenses
- Economic development
- Travel time and congestion
- Public infrastructure and service costs
- Other sustainability benefits



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https://smartgrowthamerica.org/resources/driving-down-emissions/