

Transportation Sector Update

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May 12, 2020 Mitigation Working Group Meeting

Presentation Outline

- 2030 MDOT GGRA Plan Update
 - Update approach, organization, analysis status
- Reference Case Details
 - VMT Update, 2017 Baseline, 2030 Standards, EV Projections
- Policy Scenarios
 - Policy Scenario 1 – “On-the-books”
 - Policy Scenario 2 – “Unfunded, Emerging, and Innovative Strategies”
- What have we learned so far (COVID-19)
 - Data insights and view of trends and potential impacts on transportation
- Accomplishments Progress on MWG Workplan
 - Transportation Demand Management – Commute Choicer Maryland
 - Progress on MWG Workplan
 - MDOT Fleet Acquisition – Fleet Innovation Plan
- Next Steps (2020)

2030 MDOT GGRA Plan Update

How has our approach changed since 2018 and what impacts could these changes have on 2030 emissions?



2018 Approach & Results

2018 MDOT GGRA Draft Plan

- VMT Growth Rate (2014 Baseline) and 2018 MPO model forecasts
- EV Assumptions to reflect MDOT/MDE scenario of 600,000 EVs
- Based on 2018-2023 MDOT CTP and MPO LRTPs
- Federal Standards Rollback (Sensitivity Analysis)
- Strategies organized as “On-The-Books”, “Emerging”, and “Innovative”
- Included a Pricing Scenario (2015 TCI Revenue Analysis)

2018 Analysis Takeaways

- Funded plans, projects, and programs plus meeting Federal standards and ZEV Mandate goals...approached a **31% CO₂e reduction from 2006 by 2030**
- Estimated **over \$10 billion in spending** (with constant economic growth)
- Estimated **up to \$18 billion more** along with **aggressive technology adoption** to reach the 40% reduction goal

2020 Modeling Updates

2020 MDOT GGRA Final Plan

- VMT Growth Rate (2017 Baseline) and latest MPO model forecasts
- Updated demographics and transportation demand data
- Uses TCI's Reference Case for EV projections (consistent with MDE)
- Updated to 2020-2025 MDOT CTP and MPO LRTPs
- Safer Affordable Fuel Efficient (SAFE) fuel efficiency standards rollback
- Updated policy scenarios reflecting current status and revenue realities

Early 2020 Takeaways

- New CTP (2020-2025), updated MPO plans, recent significant project advancements, changing (beneficial) vehicle ownership and travel trends
- More uncertain economic growth and transportation revenue picture
- Picture mostly the same on widespread vehicle technology advancement (ZEVs, connected and autonomous vehicles)

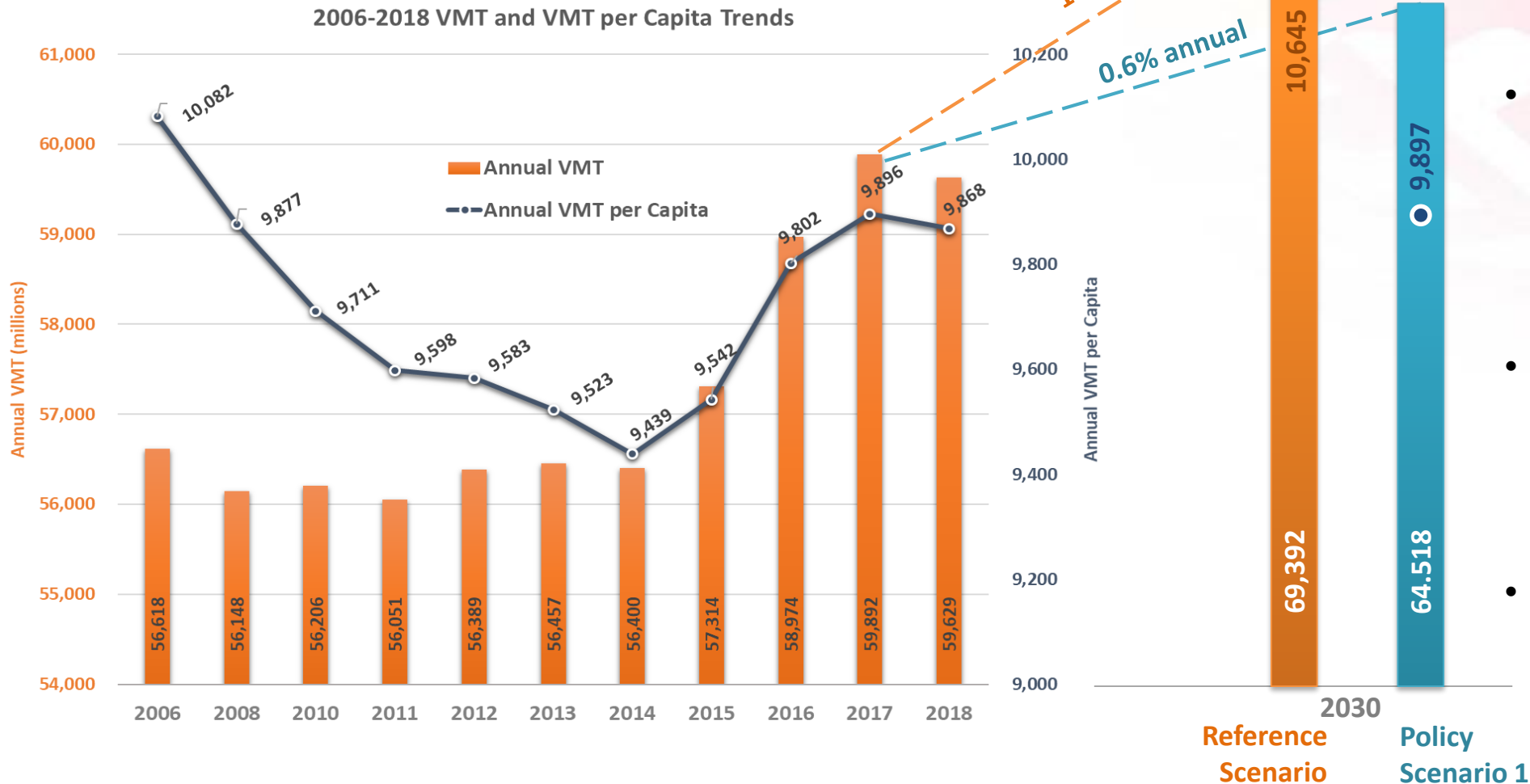
2030 Reference Case

Draft 2030 forecast update
How does it differ from the 2018 GGRA analysis?



2030 Reference Case & Policy Scenarios

VMT Growth Summary

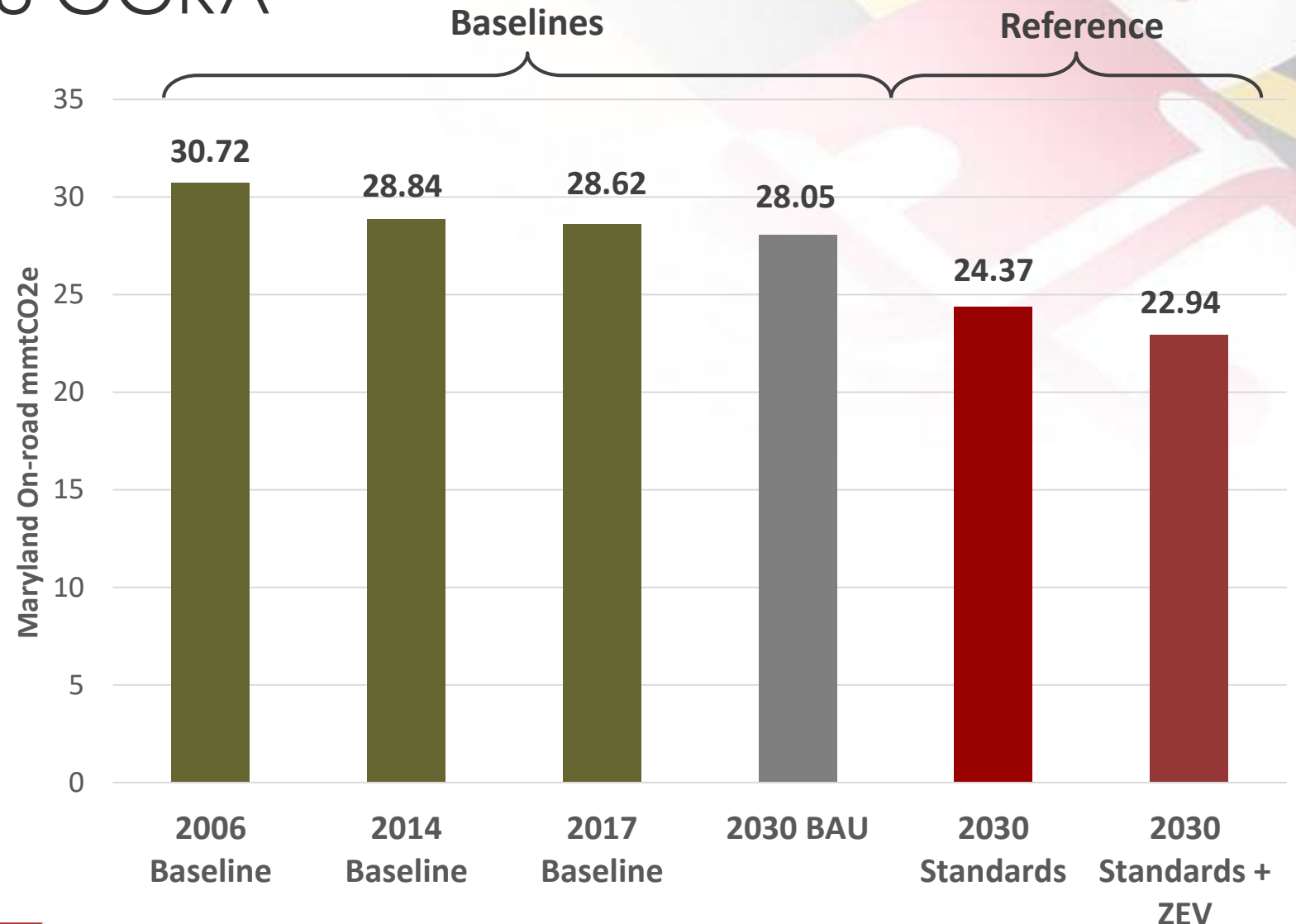


- Adjusted VMT base from 2014 to 2017
- County level projection changes (based on observed VMT trend)
- Creates a 2030 VMT forecast building from 2018 VMT
- Reflects mix of low and high VMT growth since 2010

Reference Case Breakdown

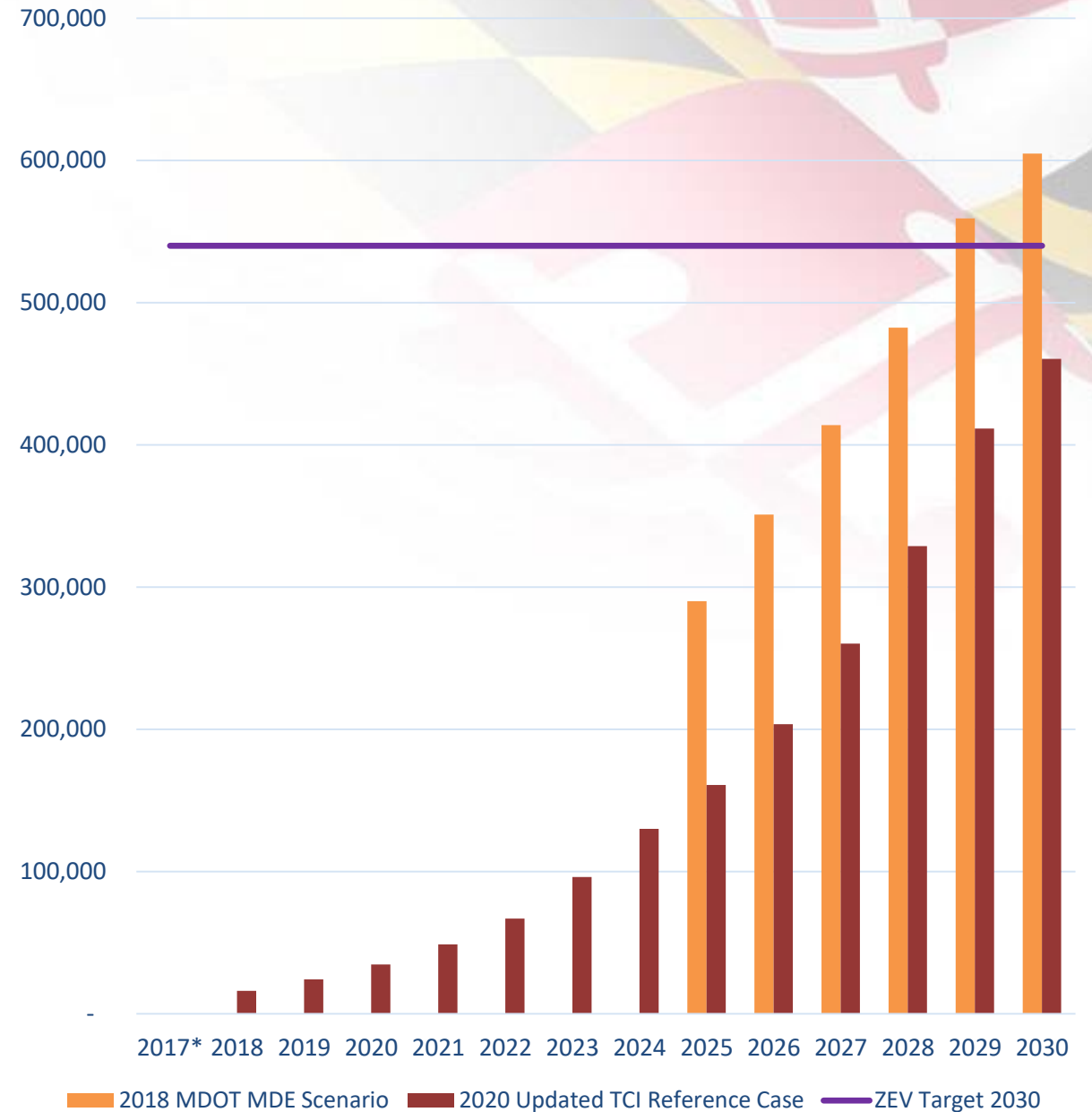
Change from 2018 GGRA

- 2006, 2014, 2017 do not change
- 2030 business as usual (BAU) decreases due to lower VMT growth
- 2030 Standards slightly decrease (by 0.3 mmt)
- 2030 Standards + ZEV slightly decrease (by 0.12 mmt)



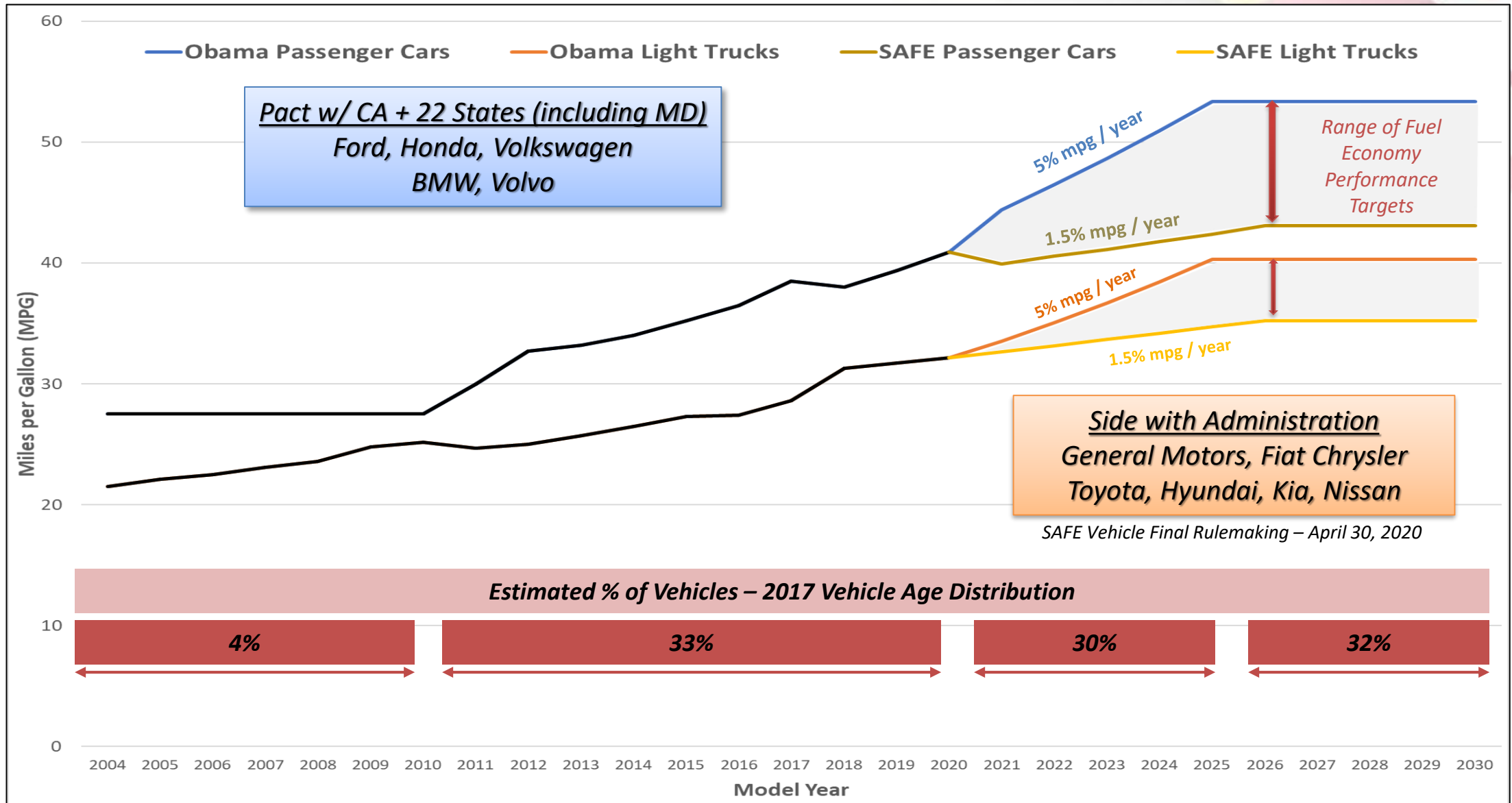
Reference Case EV Projections Update

- ZEV target **540,000 EVs by 2030**
- 2018 MDOT/MDE scenario estimated **604,840 EVs by 2030**
- 2020 scenario (based on TCI) estimates **460,366 EVs by 2030**
- Estimated 1.43 mmt reduction (compared to 1.62 MMTCO₂e reductions from 2018 modeling)



Reference Case Options

Comparison of Obama Era Fuel Economy Standards vs SAFE Vehicle Rule



2030 Policy Scenarios

How far can we get by 2030 based on current policies and funded programs and what are the options to meet the 40 by 30 goal?

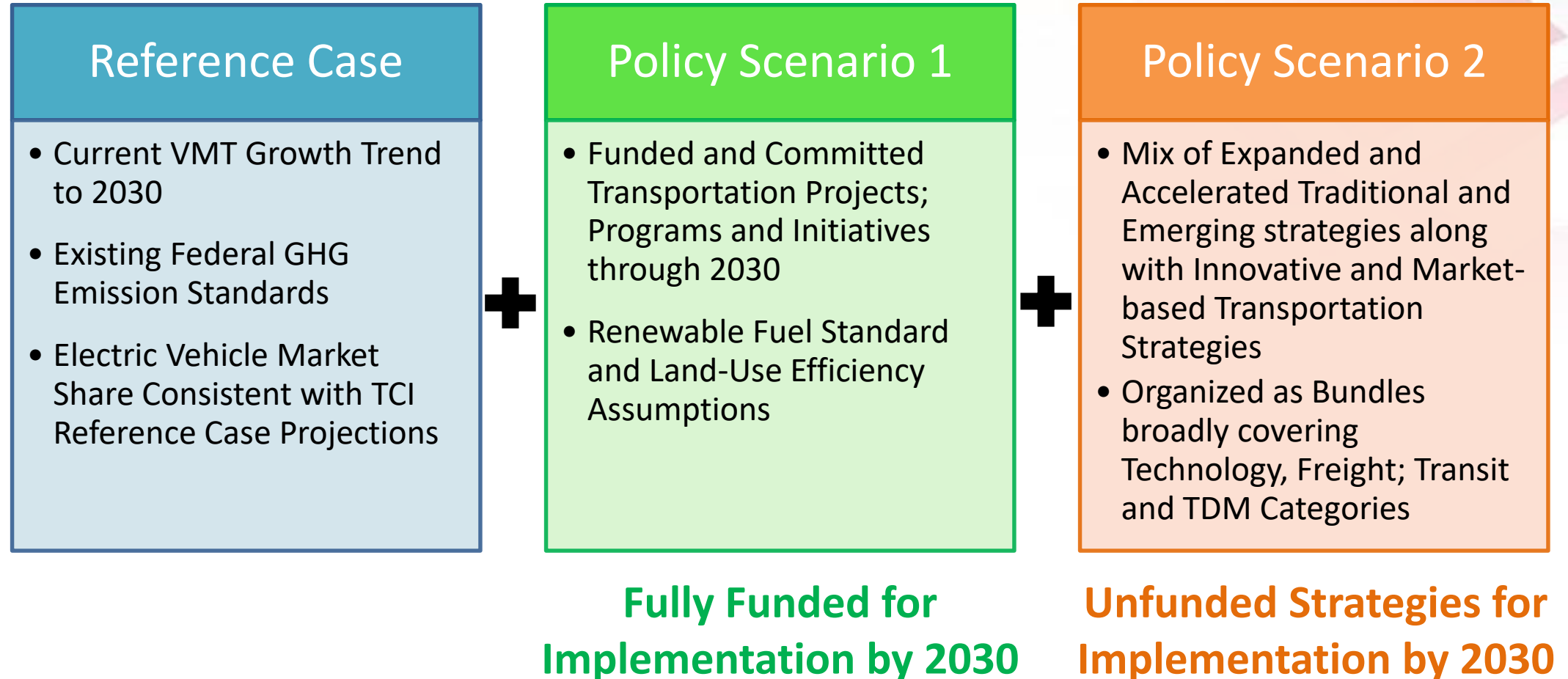


Policy Scenario Definitions

- **Policy Scenario 1** (On-the-books & funded under current revenue projections and outlook)
 - Currently Funded (documented in the 2020-2025 CTP, MPO plans)
 - Extension of current funding projection beyond 2025 for CTP
 - Projects/Plans/Initiatives funded and operational by 2030 from the MPO LRTPs
- **Policy Scenario 2** (Unfunded Expanded, Emerging, and Innovative Market-based Strategies)
 - Organized into bundles of similar strategies
 - Estimated reductions and costs in ranges based on level of uncertainty
 - All require additional funding from new / replacement revenue sources (TBD)

The MDOT Scenario Process

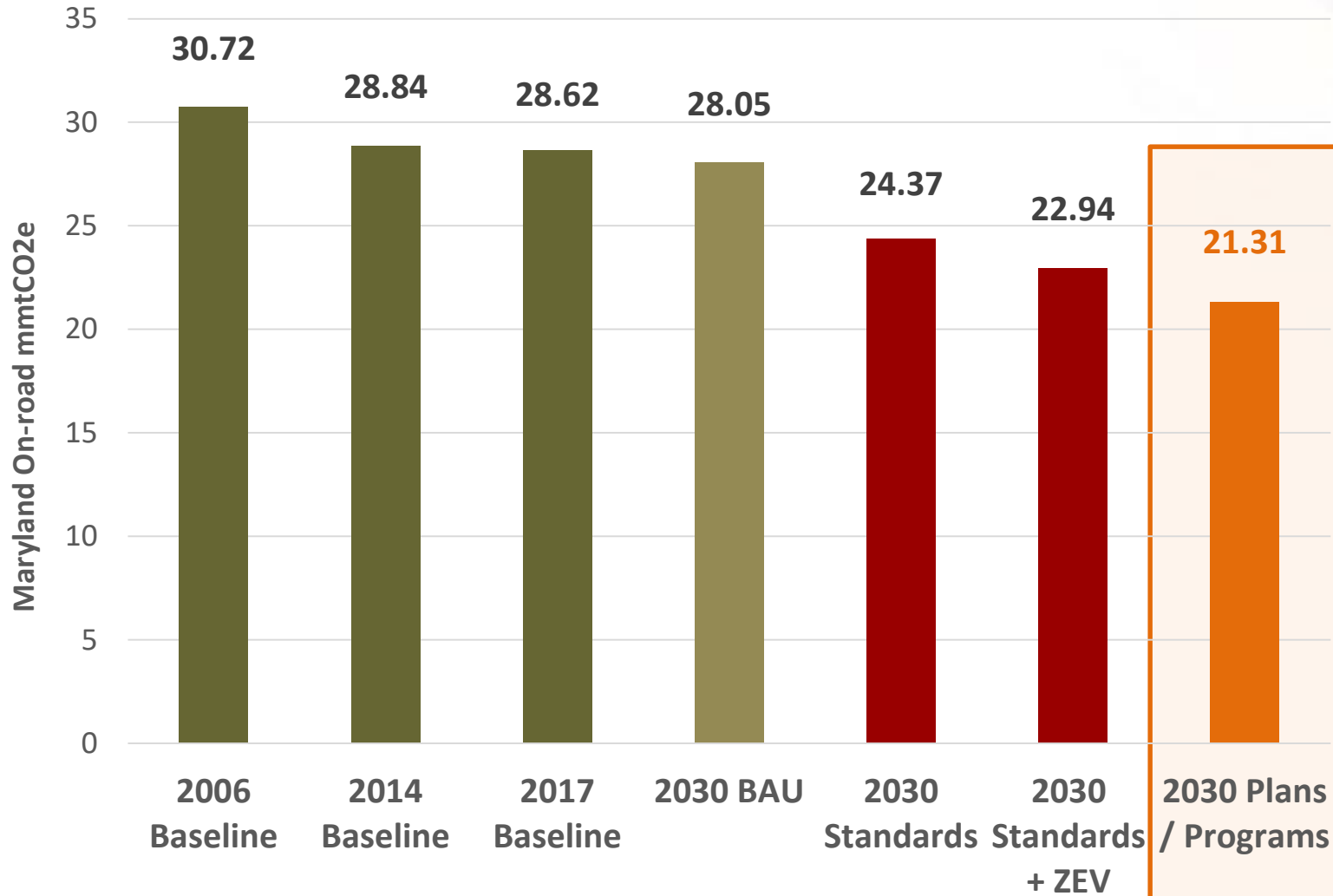
A Careful and Evidence Driven Approach to 2030



Policy Scenario 1 Update

2018 Policy Scenario 1	2020 Policy Scenario 1
Pre-2017 MPO Plans & Programs (1.4% VMT growth rate)	2018/2019 MPO Plans & Programs (0.6% VMT growth rate)
Renewable Fuel Standard (2% CO2 reduction from gasoline)	Renewable Fuel Standard (2% CO2 reduction from gasoline)
On-Road Technology (CHART, Traveler Information)	On-Road Technology (CHART, Traveler Information, plus new SHA Transportation Systems Management and Operations Plan)
Freight and Freight Rail Programs (MDOT MTA rail and National Gateway)	Freight and Freight Rail Programs (MTA rail projects, National Gateway, plus fully funded Howard Street tunnel)
Public Transportation (New capacity, improved operations, Bus Rapid Transit in MPO MTPs by 2030)	Public Transportation (New capacity, improved operations, Bus Rapid Transit in MPO MTPs by 2030 – some minor project changes)
Public Transportation (fleet replacement / technology based on current procurement approach)	Public Transportation (fleet replacement / technology based on current procurement approach, some minor changes)
TDM (Commuter Choice MD, Commuter Connections ongoing and expanding programs)	Transportation Demand Management (Commuter Choice MD, Commuter Connections ongoing/expanding programs)
Pricing Initiatives (MDTA conversion to All Electronic Tolling)	Pricing Initiatives (MDTA conversion to All Electronic Tolling)
Bicycle and Pedestrian Strategies (program continuation and expansion through 2030)	Bicycle and Pedestrian Strategies (continuation of State, regional, and local programs, some minor changes)
Land-Use and Location Efficiency (MDP assumptions)	Land-Use and Location Efficiency (consistent with MDP assumptions)
Port of Baltimore Dray Track Replacements	Fleet Replacements (Drayage Track Replacements, BWI Parking Shuttles, MDOT Fleet Innovation Plan, etc..)
BWI Airport parking shuttle bus replacements	

Policy Scenario 1 Update



Estimate based on Reference Case, with EVs, applied to 0.6% VMT growth rate

Need to add “off-model” estimates for program changes in prior slide

2018 Policy Scenario #1 result was 21.22 mmt CO₂e

Likely to go below this estimate following complete analysis

Policy Scenario 2

Unfunded Strategies Approach

Reorganized into bundles with a spectrum of strategies (and different levels of uncertainty)

- **Highway system operations and efficiency technologies**
Includes corridor operations and management and connected and autonomous vehicles
- **Freight mobility and commercial vehicle technologies**
Includes strategic capacity improvements, logistics pattern shifts, and commercial vehicle technologies
- **Multimodal (transit, bike/pedestrian, TDM, new mobility options)**
Includes full suite of multimodal strategies considered realistic for implementation by 2030 (assuming funding becomes available)
- **Vehicle technology (non-commercial)**
Includes accelerated EV market share, electrified transit, cleaner fuels

Policy Scenario Results

Can Transportation Make it to 40 by 30?

Good News:

- Likely that Policy Scenario 1 in 2030 will approach a **33 – 35% reduction**

Uncertainty:

- Short and long-term revenue and economic impacts of COVID-19
- Behavior Shifts

Opportunity:

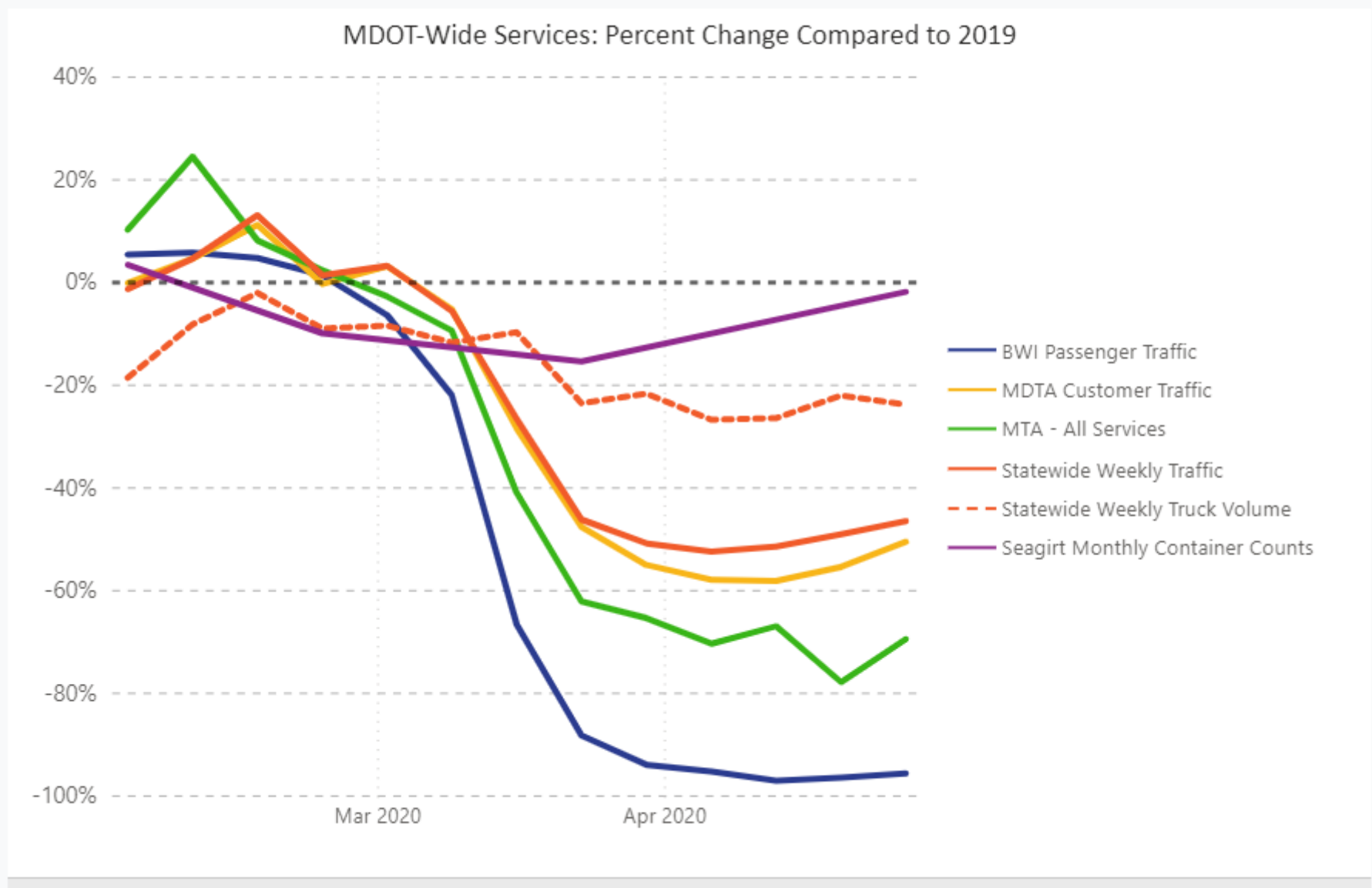
- Robust & Sustainable Strategies for Transportation Funding
- New Technologies / Innovation
- Telework / Flextime

COVID-19 Perspectives

And Relevance to Current and Future GHG Emissions in Transportation



Current Data [2/3 – 4/27]



Evolving Impacts

Immediate

- VMT
- Transit Ridership
- Enplanements
- Fuel Tax and Titling Revenues
- Cruise Ship Activity

Mid-Term (2020-2021)

- Revenue and Transportation Spending
- Economic Uncertainty/ Recovery
- Transit System Adaption
- Expansion of TDM and Telework

Longer-Term

- Future CTPs
- Long-range Plans
- Project Priorities
- Project/Urban Design

Accomplishments

Initiatives to date and upcoming efforts.



Emerging Technologies

- MDOT Fleet Innovation Plan
 - Developing Inventory and Targets
 - Target Conversion of LDVs by 2035 and Transit by 2040
- CAV Strategic & Scenario Planning
 - Stated Preference Survey
- Local Outreach
 - Working with MPOs and Local Governments on Emerging Technology Education & Preparedness
- Statewide ZEV Surveys & Planning

337

new EV registrations during the month of April brings the total to 25,758 Marylanders saying



I'm not pumped,
I'M CHARGED!

Travel Demand Management (TDM)



[Commuter Choice Home](#) > [Commuter Options](#)

Commuter Services

Commuter Choice Maryland has services and tools to support your commute. We want to make sure that you have all the resources you need in order to successfully enjoy and make the choice to making alternative modes of transportation a viable option for your daily commute.

TRANSIT	RIDESHARE CARPOOL VANPOOL	BIKE/WALK
TELEWORK FLEXIBLE WORK HOURS	COMMUTER COST CALCULATOR	GUARANTEED RIDE HOME

With many employees working remotely right now due to COVID 19, please check out these Telework Tips:

Telework Tips

- Create** a designated work space
- Avoid** distractions and interruptions
- Communicate** often with your boss and co-workers
- Stay organized**
- Take breaks**
- Check** your accomplishments at the end of each day
- Raise** laptop to avoid awkward neck posture
- using your thumb on your sms
- Utilize** cushions for better support if you are using a hard chair
- Shift** your eyes away from the compute

CommuterChoice Employee Benefits

- Walking and biking to work has been shown to improve health and reduce the number of sick days employees take.
- Commuting via bicycle reduces emissions, creating a cleaner world for everyone.
- Some employers offer preferential, dedicated parking spaces for vehicles used by employees for carpooling or vanpooling.
- Many employers offer **tax free or subsidized transit costs**. Check with your HR department today!
- Businesses that offer teleworking policies report **increased productivity and job satisfaction among employees**.

Next Steps

The 2020 Plan



2020 and Beyond

- 2019 GGRA Plan and MDOT Report Publication
 - Coordinate with MDE and Consultants on Reference & Policy Scenarios
- Develop a Better Understanding of Funding Needs & Impacts
https://fundingfinance.transportation.org/wp-content/uploads/sites/16/2019/02/Matrix_of_Funding_Options.pdf
- Scenario Analyses
- Improve Communication & Outreach on MDOT and Maryland Transportation Initiatives
- Track Progress through MDOT's State Agency Report, Annual Attainment Report, and MDOT Excellerator

Resources

MDOT's Response to COVID-19

<http://www.mdot.maryland.gov/coronavirus>

Maryland's Zero Emission Electric Vehicle Infrastructure Council

http://www.mdot.maryland.gov/newMDOT/Planning/Electric_Vehicle/About_the_Council.html

Maryland EV [@MarylandEV]

<https://marylandev.org/>

Commuter Choice MD

<http://www.mdot.maryland.gov/newMDOT/Commuter/Commuting>

MDOT Office of Planning & Capital Programming Newsletter

http://www.mdot.maryland.gov/newMDOT/Commuter/ccm/newsletter_webinar