MDOT – 2018 GGRA DRAFT PLAN STATUS

Presentation to the Mitigation Working Group, MCCC

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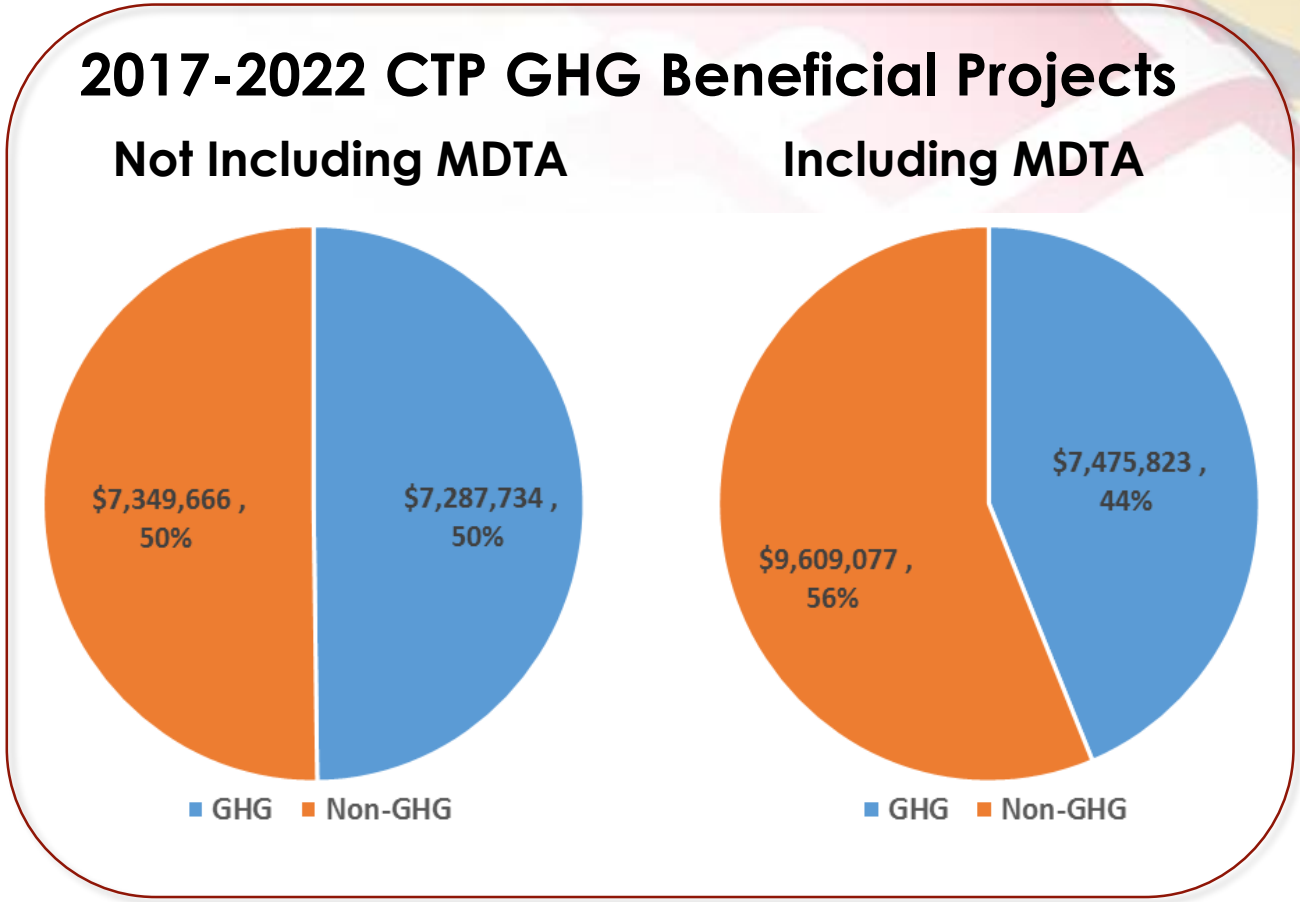
MDOT APPROACH TO GHG REDUCTION
OPPORTUNITIES / CHALLENGES

- Communication **technology advances** – EVs, CAV, & Smart Mobility
- **Economic recovery**, **low/stable fuel costs**, **VMT growth**
- Federal and State funding **remains a challenge**
- **Changing generational preferences** on transportation and development
- **Economics and logistics shifts** due to technology

These factors require MDOT to advance more complex and multimodal projects, deliver improvements ultra-efficiently with more partners, rely more on system optimization, and use emerging technologies

CONSOLIDATED TRANSPORTATION PLAN GHG-BENEFICIAL INVESTMENTS

- GHG beneficial investments:
  - **Reduce** single occupant vehicle travel
  - **Shift** to lower energy intensity modes of travel
  - **Improve** travel efficiency, vehicle efficiency and technology
- GHG Supportive: **50% (~$7.287 billion)** of MDOT's $14.637 billion six-year program
- Including MDTA (different funding sources), total share is **44%**
- $6.019 billion (**41%**) for system preservation



MDOT INITIATIVES - PERFORMANCE MANAGEMENT

- **Annual Attainment Report** – Statewide report on transportation system performance and strategies for improvement
- **MDOT Excellerator** – Summarizes tangible agency performance results on a quarterly basis to inform ongoing business decisions

Sample GHG Emission Indicators

- **VMT**
- **Transit ridership / transit service reliability**
- **Roadway congestion**
- **Traffic safety**
- **Quality of the bike and pedestrian system**
- **Agency fuel consumption**
- **% of tolls collected by cash**
- **Highway travel reliability**
- **Average highway incident duration**
- **MDOT fleet miles per gallon**
- **Conventional energy use**
- **Renewable energy generation**

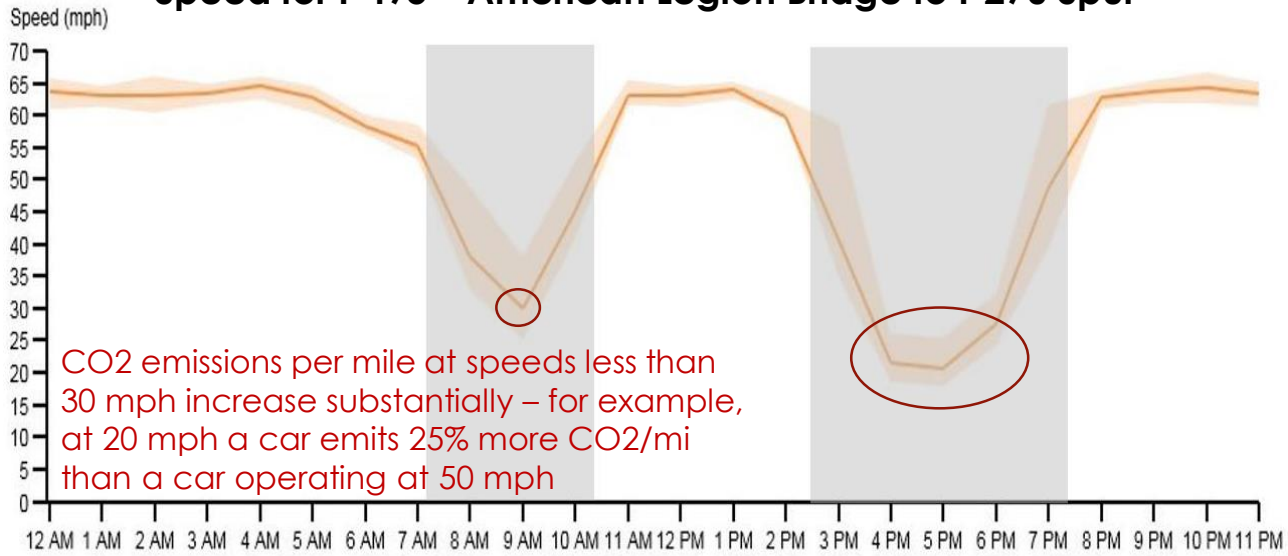
MDOT INITIATIVES – MULTIMODAL FOCUS

Adaptation & Resilience	**SHA Statewide Coastal Vulnerability Assessment** to inform planning, programming and design and **MTA Vulnerability Plan** supports development of adaptation measures and resiliency planning
Transportation Technologies	MDOTs leadership of the Electric Vehicle Infrastructure Council (EVIC) continues to promote EVs and the installation of EVSE. Total registered battery-electric and plug-in hybrid electric vehicles **approaching 12,000 vehicles in 2017**
	SHAs **CHART program** ensures the efficient management of incidents, traveler information, and other on-road infrastructure technologies that reduce delay and GHG emissions (**est. 70,000 metric tons of GHG in 2016**)
Public Transportation	Successful start-up of **BaltimoreLink** in results in a more efficient and accessible system, including an estimated **32% increase in the population within ¼ mile of transit service**
	Supported by two TIGER Grant awards from US DOT, MTA is working with Baltimore City to deliver the **North Avenue Rising** project and Montgomery County to deliver the **US 29 Bus Rapid Transit** project by 2022
	Groundbreaking for the Purple Line in August 2017
Transportation Pricing	MDOT and MTA continue to expand transportation emission reduction measures (TERM) programs (estimated **nearly 700 million VMT reduced annually**)
	MDTA continues to update the technical capabilities and efficient operations of toll facilities, including eventual shift to **all-electronic tolling**
Bicycle and Pedestrian	Since its inception in 2012, the **Bikeways Program has awarded $16 million to 130 local bicycle** projects including bike share, recreational trails program, and transportation alternatives program

MDOT INITIATIVES
INVESTMENT IN CONGESTION REDUCTION

- **Congestion challenge:**
  - 600,000 people daily
  - Average weekday congestion: 7 to 10 hours
- **Innovative Congestion Management (ICM) – I-270**
  - Programmed, open to traffic 2019
- **Traffic Relief Plan (TRP) – I-270 & I-495 – Express Toll Lanes**
  - Programmed, open to traffic 2025

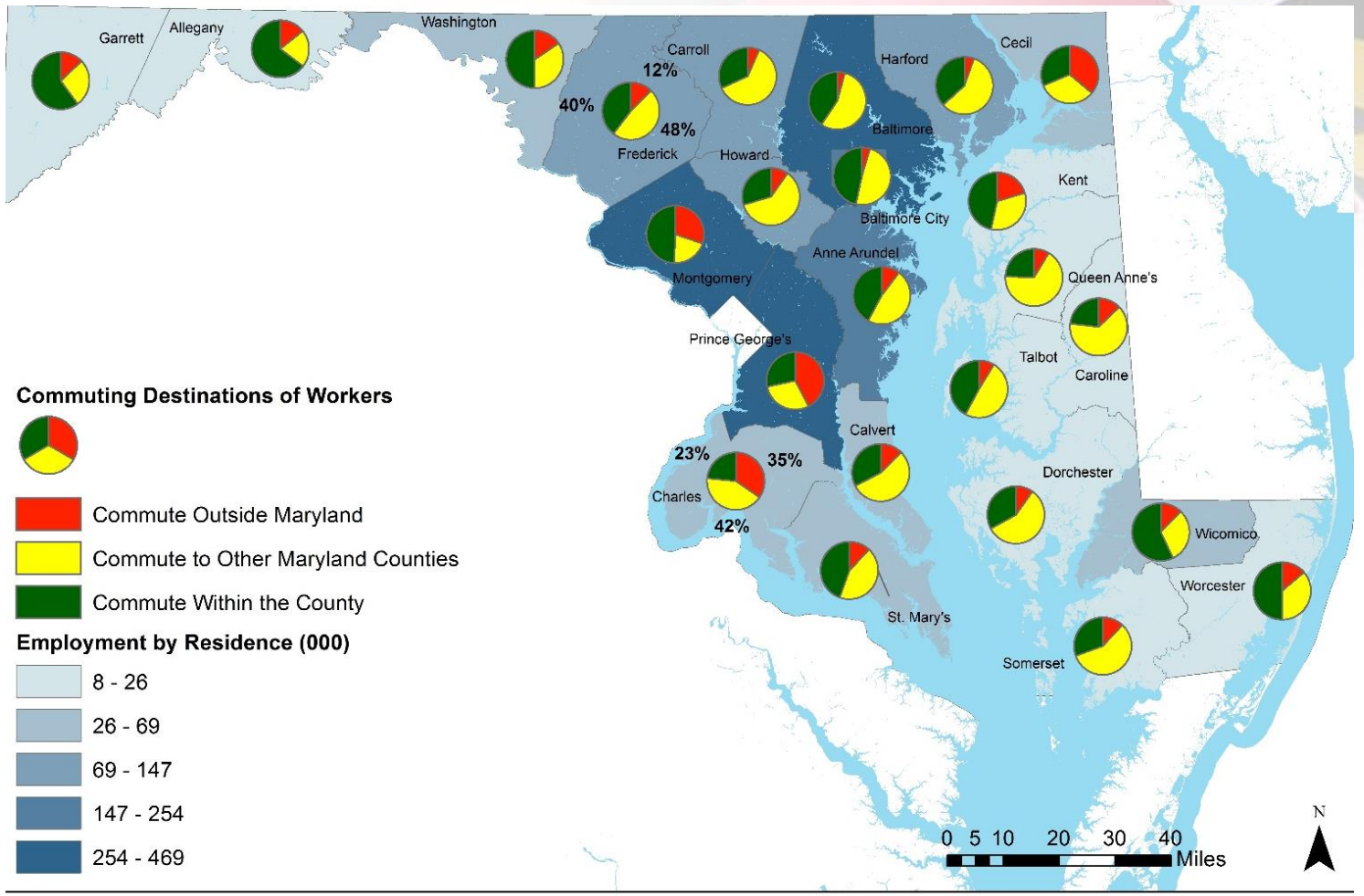
Speed for I-495 – American Legion Bridge to I-270 Spur



MDOT INITIATIVES – ANALYTICS FOR LOCAL DECISION MAKING

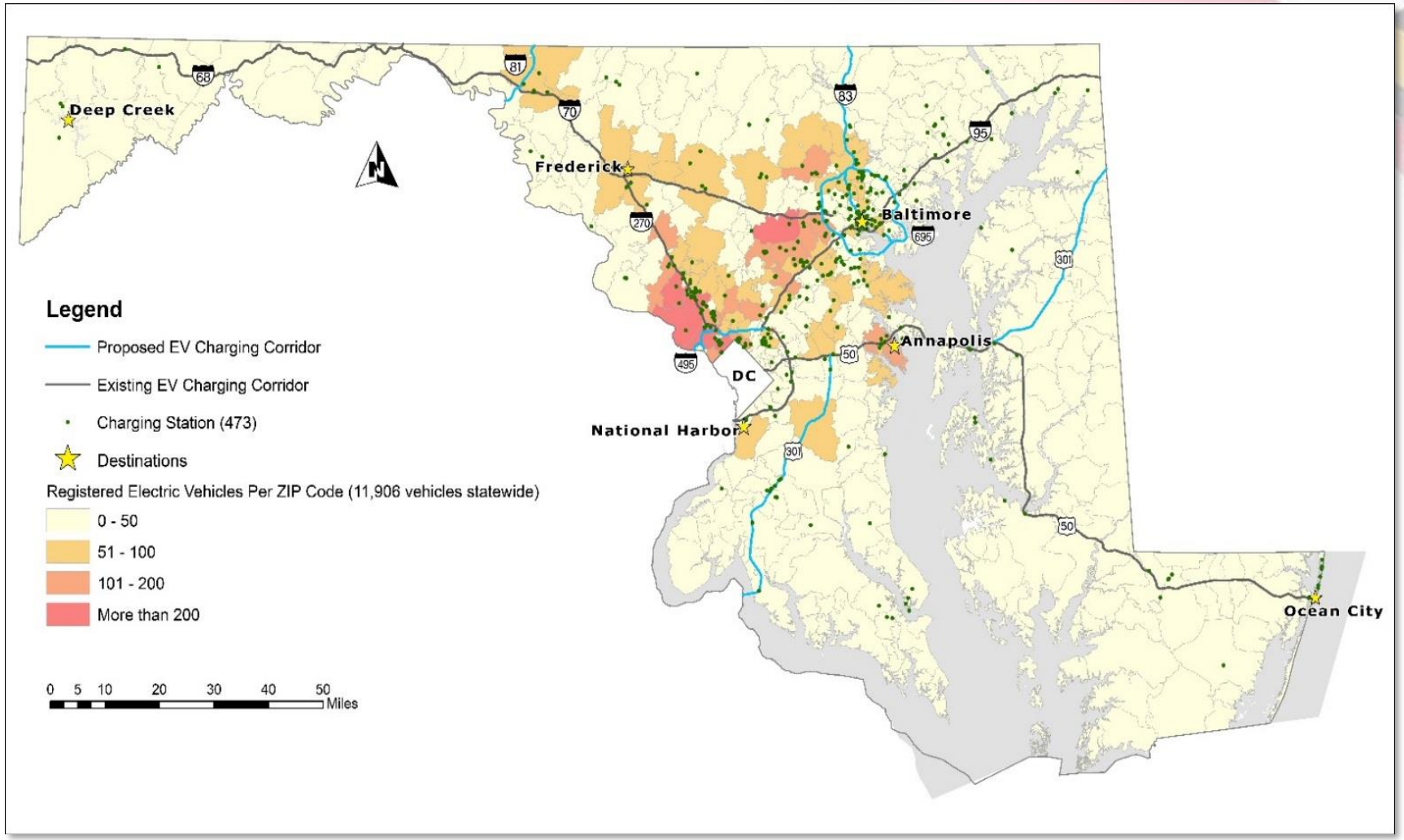
States with Highest Commute Times

Rank	State	Mean Commute Time (min)
1	**Maryland**	**32.3**
2	New York	32.3
3	New Jersey	31
4	D.C.	29.7
5	Massachusetts	28.7
6	Illinois	28.4
7	California	28
8	Virginia	27.9
9	Georgia	27.4
10	New Hampshire	26.9



ALTERNATIVE FUEL & ELECTRIC VEHICLES

- **10,355 EVs**
  [12/31/2017]
- **501 Stations**
- **1,283 Outlets**
- **MDOT Efforts:**
  - **Corridor Signage**
  - **State EVSE Data**
  - **Procedures**
  - **Outreach**



MDOT INITIATIVES – RENEWABLE ENERGY

- **Renewable Energy Facilities RFP Master Services Agreement – Model Initiative**
  - Six master contractors awarded
  - Secondary competition for tasks
  - Cooperative language for other government entities and non-profits
  - EV Charging Stations: 6 Level 2, 1 DC Fast, 10% of available parking make ready for L2 charging stations (at a minimum)
  - **Phase 1**: 35 sites
- Total Generation: 11,127,300 kWh
- Total CO2 Reduced: 33,422,000 lbs (15,160 MT)

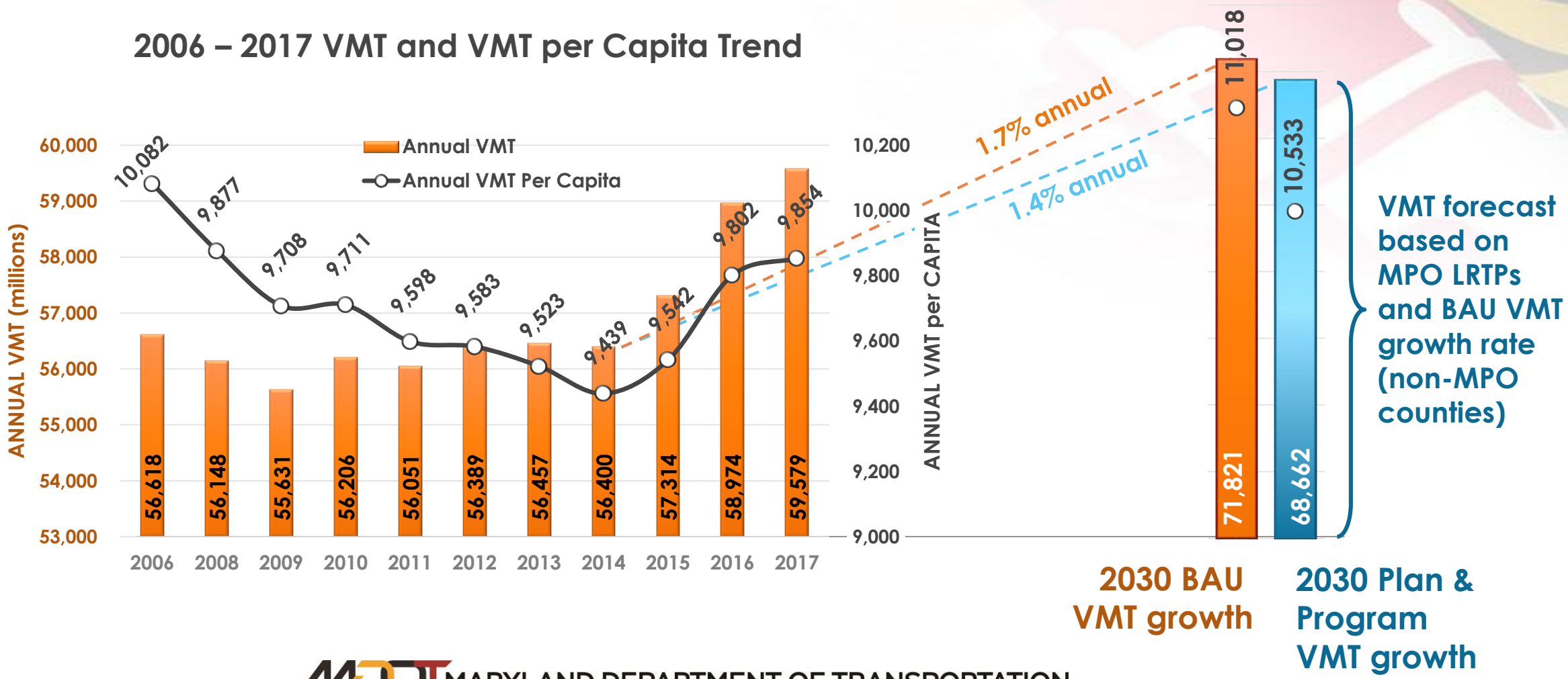
MDOT INITIATIVES – CLIMATE CHANGE ADAPTATION AND RESILIENCE

- Development of vulnerability assessments and resiliency plans
  - **SHA** – Completed a coastal vulnerability assessment, integrating into asset management and project planning
  - **MDTA** – Developing vulnerability assessment framework to identify adaptation measures
  - **MPA** – Completed Vulnerability Plan in 2016 and examining results for developing adaptation measures.
  - **MPA** - Coast Smart best management practices (BMPs) incorporated into design engineering for new terminals, structures and dredged material management
  - **MAA** – Participated in Coast Smart Construction Guidance. Martin State Airport, Airport Layout Plan (ALPs) Sea Level Rise (SLR) overlay for future planning

2018 DRAFT GGRA PLAN

- **MDOT Activities to Date**
  - VMT trend and projection research including coordination with MPOs and MDP
  - MOVES modeling
  - Coordinate with MDE on EV registration data and trends analysis
  - Strategies research and development

VMT TREND AND FORECASTS



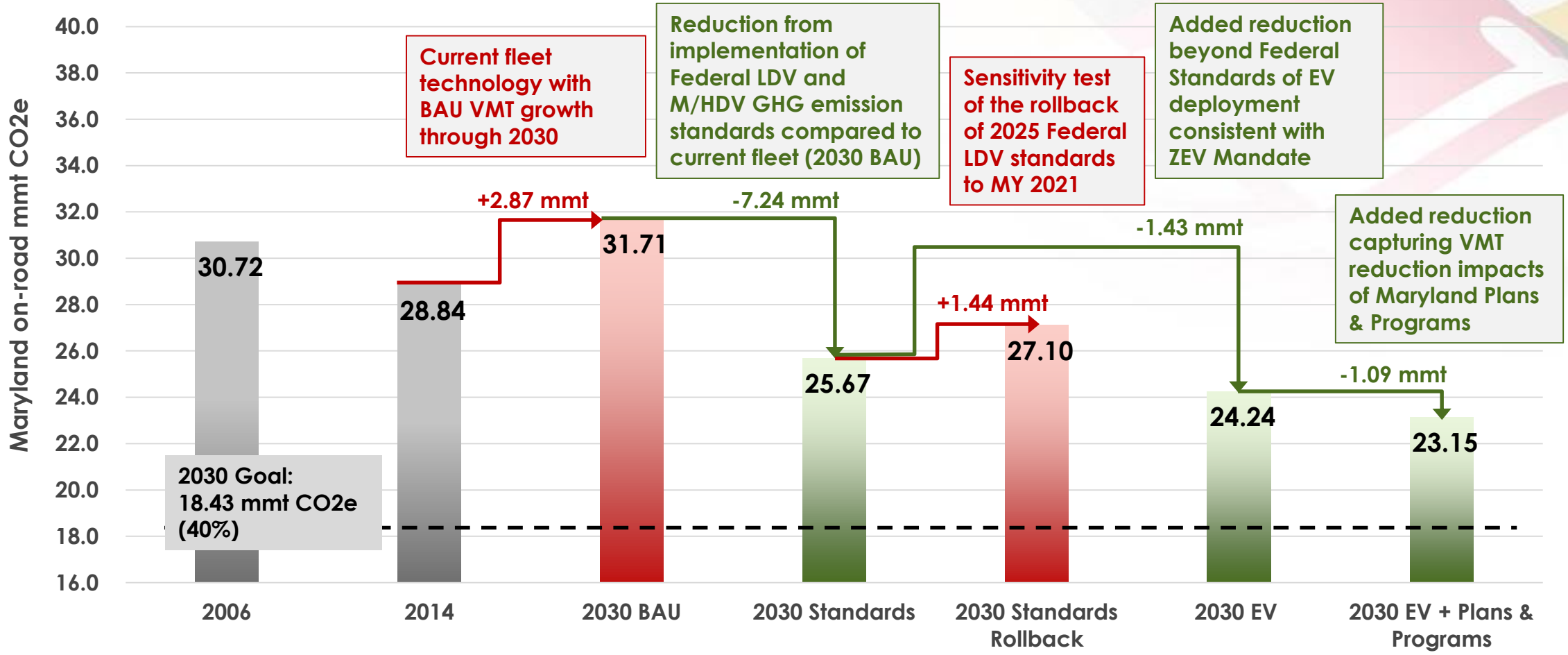
ON-ROAD EMISSIONS MODELING

2030 Scenarios	Description
1. 2030 BAU	Current fleet technology with BAU VMT growth through 2030
2. 2030 Standards	Federal Standards implementation with BAU VMT growth (Additional test including sensitivity of a rollback of 2025 LDV standards back to MY 2021)
3. 2030 EV*	2030 Technology Standards plus EV deployment
4. 2030 Plans & Programs with Standards & EV	Plan and programs VMT growth with adopted standards plus EV deployment

Notes*:

- Assumes attaining the **2025 goal of 290,000 EVs,**
- Assumes that **15% of new car sales will be BEV and 5% will be PHEV post-2025**
- For a total of **>600,000 BEV/PHEV by 2030 (11% percent of the Maryland LDV fleet)**

2030 ON-ROAD EMISSION SCENARIOS (DRAFT)



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2030 STRATEGIES AND BUNDLES

To push toward the 40 by 30 goal – multimodal / integrated / transformative

2030 On-Road Scenarios

- **2030 Standards**
- **2030 EV**
- **2030 Plans & Programs**

On-the-book strategies

- Other Funded or Committed Projects / Programs / Initiatives
- Other Traditional / Emerging MDOT Programs (not funded)
- Innovative Strategies / Bundling

Develop and test strategies and bundles to inform how to push toward goal

STRATEGIES AND BUNDLES

- Start from Plans and Program scenarios
  - **Add Transportation Emission Reduction Measures (TERMS), and other "on the book" programs**
  - **Add Strategic Bundles**
    - **Passenger Travel – Illustrative Examples**
      - **Mode Shift:** Transit/Intercity - Bicycle-Pedestrian - Land Use
      - **Demand Management:** Smart Mobility, Telecommute, TDM
      - **System Technology:** Autonomous/Connected Vehicles and Infrastructure, Congestion Management
      - **Vehicle Technology:** Transformational technology and EV market share
    - **Freight Movement – Illustrative Examples**
      - **Mode Shift:** Truck to Rail/Marine/Drone
      - **System Technology:** Autonomous Trucks
      - **Vehicle Technology:** Electric trucks

Additive to plan and program scenarios

Strategies and bundles are tested at different levels of intensity based on feasibility

NEXT STEPS

- Finalizing and analyzing additional strategies and bundles mid-June
- MDOT presents to MWG June 27th or July 5th
- GGRA Draft Plan August, final September
- MCCC State Agency Report Early Fall

QUESTIONS?

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