



2023 MDOT CPRP - Strategy Evaluation and Implementation

Presented to the Maryland Commission on Climate Change
Greenhouse Gas Mitigation Working Group

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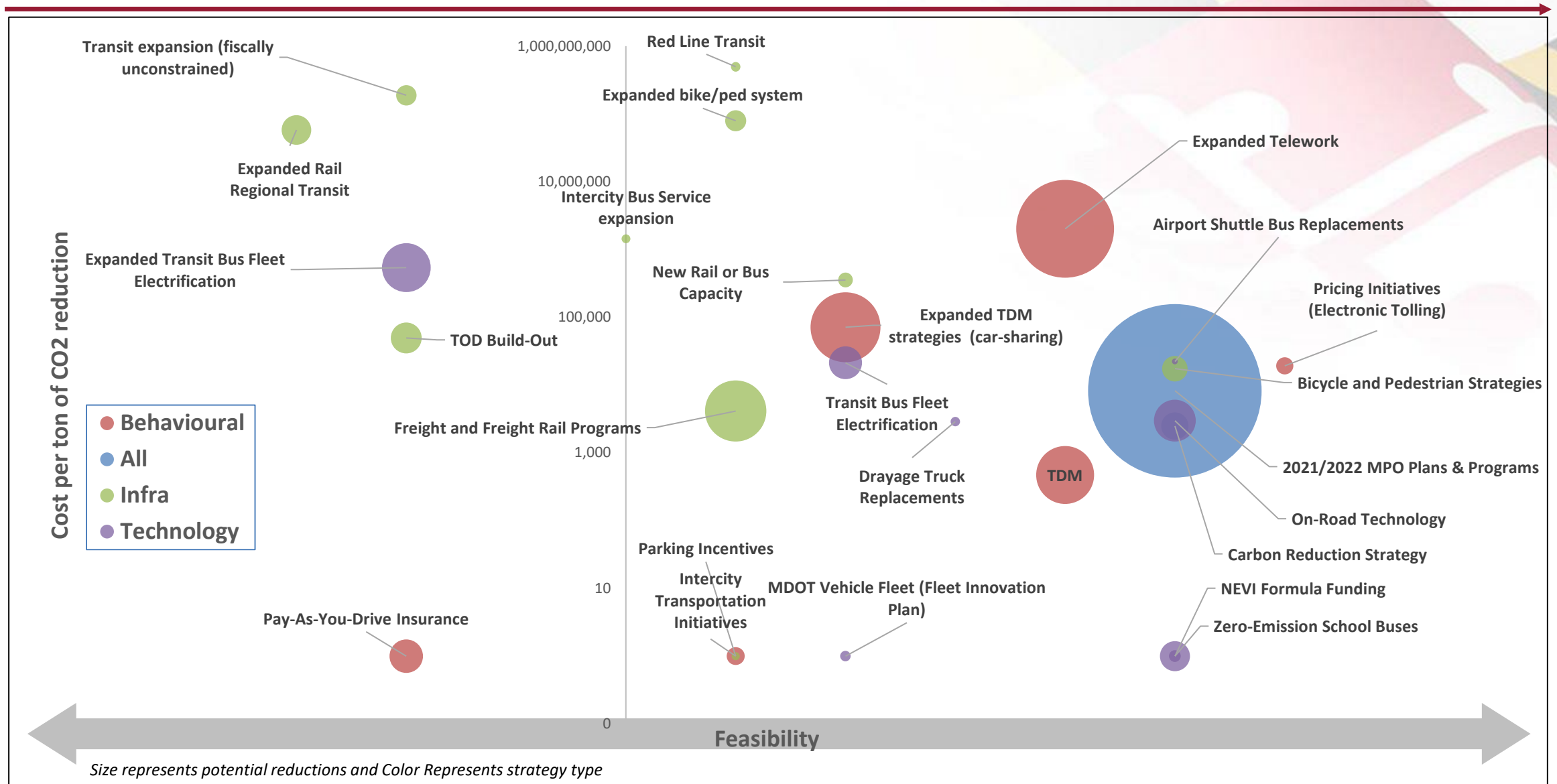
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Presentation Overview

- Transportation Emission Reduction Strategies Bubble Chart
- Review of Individual Strategies: MPO Plans and Programs, TDM
- Synergies – Typological, Geographic, Temporal
- Piloting Synergistic Approach – Example of Carbon Neutral Corridor
- Next Steps

Feasibility vs Cost-effectiveness



Strategy Details - MPO Plans and Programs

Definition

- Most recently adopted MPO Transportation Improvement Program and fiscally constrained long-range transportation plans.

Key Assumptions

- Reference annual VMT growth trend was 2.0%
- Due to Plans and Programs, VMT growth rate is 1.1% annually.

VMT and Emissions Reductions

- 1.53 mmt CO₂e
- 4,725 billion VMT reduction

Strategy Details – Transportation Demand Management

Definition

- Suite of strategies that increases the efficiency of transportation by informing and enabling the use of competitive travel choices including transit, ridesharing, walking, bicycling, and telework.

Key Assumptions

- Based on current trends as documented in MDOT's Annual Attainment Report, and results of ongoing and emerging programs within Commuter Choice Maryland and MWCOG's Commuter Connections Program.

VMT and Emissions Reductions

- 657 Million VMT
- 0.17 mmt CO₂e

Synergistic Strategies

- Transit, Parking Incentives, Car Sharing, Bicycle and Pedestrian Improvements, Intercity Bus, etc.

Defining Synergies

Synergy: When two or more strategies **enhance the effectiveness** of each other, affording the opportunity for policymakers and practitioners to **assemble portfolios of projects** and initiatives for **greater overall impact**.



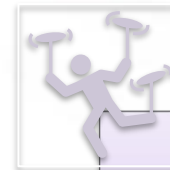
Geographic

- Context
- Place-type (Urban/Rural)
- Corridor



Temporal

- Phasing
- Incremental buildout



Typological

- Project Types
- Bundles

- We suggest **piloting bundles of projects or initiatives in targeted contexts** (e.g., community, corridor, region) with intention to scale up based on what we learn.
- Also **integrating strategies and sets of strategies into MWG recommendations**.

Synergies – Project Types

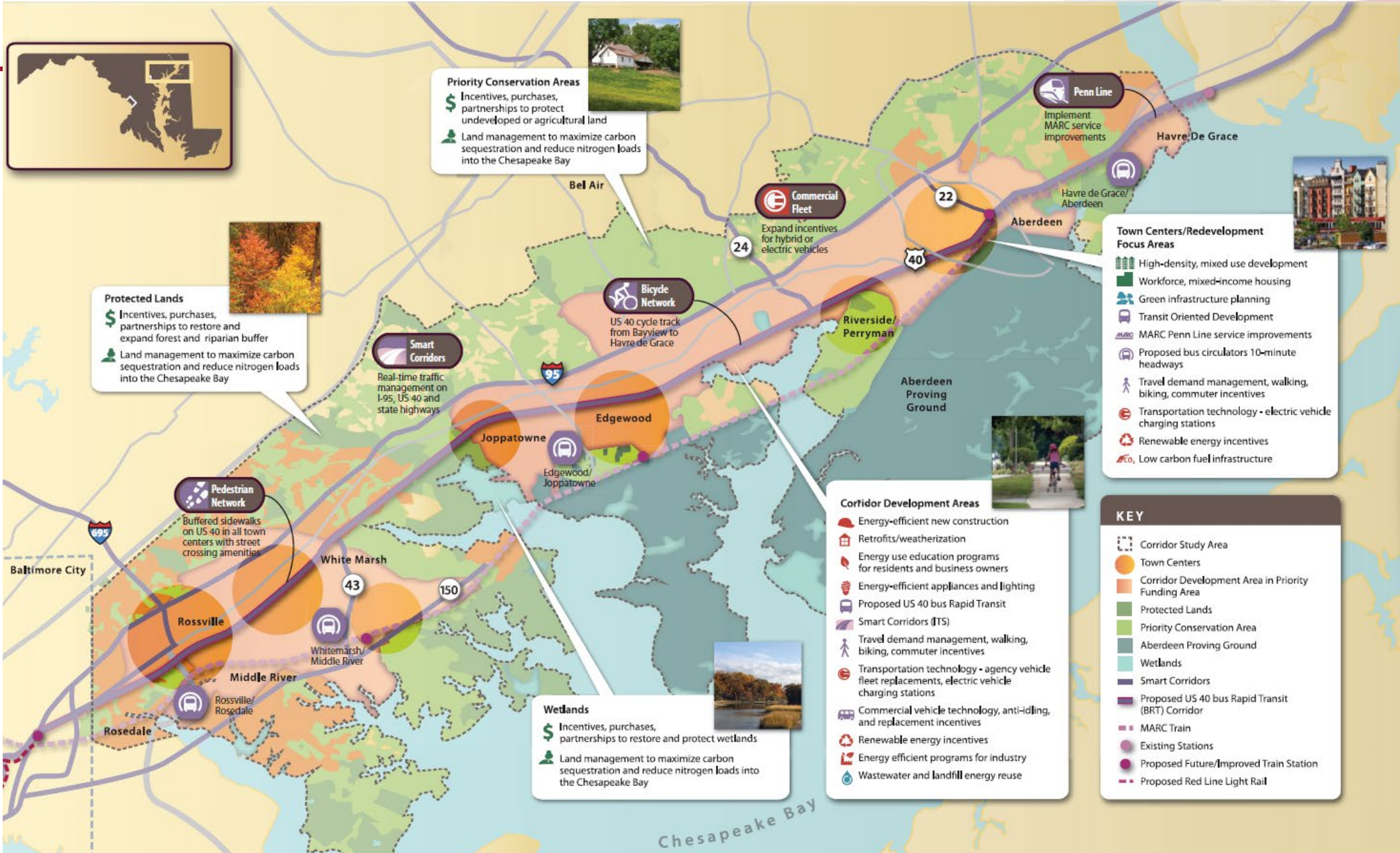
		... could have synergies with a project of this type:													
		Diesel Retrofit and Advanced Truck Tech	Idle Reduction	Congestion Reduction and Traffic Flow	Freight/ Intermodal	Transit Improvements	Bike and Ped Facilities and Programs	TDM	Public Education and Outreach	TAMs	Carpooling and Vanpooling	Car-sharing	Extreme Low-Temp. Cold Start	Training	I&M Programs
A project of this type...	Diesel Engine Retrofits/ Advanced Truck Tech				✓			✓					✓		
	Idle Reduction				✓			✓				✓	✓		
	Congestion Reduction and Traffic Flow			✓		✓		✓		✓			✓		
	Freight/Intermodal	✓	✓		✓								✓		✓
	Transit Improvements		✓	✓		✓	✓	✓	✓	✓	✓		✓		
	Bike and Ped Facilities and Programs					✓	✓	✓	✓	✓			✓		
	TDM					✓	✓	✓	✓	✓	✓		✓		
	Public Education and Outreach Activities	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	TAMs					✓	✓	✓	✓	✓	✓		✓		
	Carpooling and Vanpooling			✓		✓		✓	✓	✓	✓		✓		✓
	Carsharing					✓	✓	✓	✓	✓	✓				
	Extreme Low-Temperature Cold Start		✓					✓							
	Training	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓
	I&M Programs							✓							
Alternative Fuels and Vehicles				✓	✓		✓		✓			✓		✓	

Synergistic Benefits: Transit Improvements

Table 6 . Transit improvements.

Issue	Discussion
Primary pollutants addressed.	All pollutants. Specific effect/benefit may depend on mode shift, improved speeds, and fuel and emissions characteristics of replaced or newly added vehicles, among others.
Potential synergies with other projects of the same type.	Corridor (transit route) or areawide (service area) application could support larger mode shifts by expanding transit accessibility. Network effects may be realized with multiple projects.
Potential synergies with other projects of a different type.	<p>The emissions benefits of mode shifting to transit will be increased if the transit vehicles are clean (alternative fuels and/or idle reduction technologies).</p> <p>TDM and public education programs can increase the use of new or enhanced transit services by providing information and/or incentives to use these services.</p> <p>Bicycle and pedestrian improvements can increase transit ridership if implemented at locations that support first-/last-mile access to transit.</p> <p>Carsharing, bicycle and pedestrian improvements, and carpool/vanpool programs could increase transit use by providing more options for travelers who want to give up their car, even though they also might compete with transit for specific trips.</p> <p>Transit improvements are likely to attract more riders if transit-focused traffic flow improvements (such as transit priority signals) are implemented.</p>
Effect of location type (urban, suburban, rural) on project effectiveness and synergies.	Transit improvements are typically more effective in high population density areas (urban and suburban place types) where trip densities are greater.
Effect of area type/size (large/medium/small metro, State) on project effectiveness and synergies.	As larger metros and cities typically have a higher population density, the effectiveness of transit improvements is typically higher in these areas, although dense, transit-supportive development also is found in some smaller metro areas and communities.

Carbon Neutral Corridor Pilot – US 40 Study (2011)



Next Steps and Recommendations

- **Continued Efforts in Understanding:**
 - Land-use and transportation interactions
 - Community readiness for strategy implementation (place-type, equity)
 - Supporting Policy – partnerships, incentives, administrative guidance, performance-based programming of projects (CTP and TIPs), legislation, etc.
 - Impacts of e-VMT
 - Safety issues
 - Particulate Matter (PM) emissions
 - Roadway maintenance and state of good repair
- **Lean in on synergies** – geographic (context, place-type, and corridor), temporal synergies (phasing, incremental building-out), and typological (project types, bundles).
- **Pilot projects, scale-up strategy development, and incorporating VMT-reducing strategies into MWG recommendations**



Thank you!