CARBON REDUCTION PROGRAM: STATE CARBON REDUCTION STRATEGIES

Erin Morrow
TPB Transportation Engineer

Transportation Planning Board
October 18, 2023

National Capital Region
Transportation Planning Board

Agenda Item #8

Carbon Reduction Program (CRP)

- Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, a.k.a“Bipartisan Infrastructure Law”) enacted on November 15, 2021
- Provides $550 billion over fiscal years 2022 through 2026 in new federal investment in infrastructure including roads, bridges, mass transit, water infrastructure, resilience, and broadband
- One of the new programs: Carbon Reduction Program
    1. Provides States and Territories with $6.4 billion in formula funding nationally (FY 2022 - FY 2026)
    2. Requires States and Territories to develop a Carbon Reduction Strategy in consultation with Metropolitan Planning Organizations by November 15, 2023, and update that strategy at least once every four years

CRP – Funding

- Provided for "projects designed to reduce transportation emissions, defined as carbon dioxide emissions from on-road transportation sources."

$ billions	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Contract Authority	$1.234	$1.258	$1.283	$1.309	$1.335

- 65% percent of each state's apportionment is to be obligated to areas based on the proportion of the state's population residing in that area; 35% of the apportionment can be spent anywhere in the state

TPB Planning Area	FY 2022	FY 2023
District of Columbia	$3,206,817	$3,270,954
Maryland	$3,571,327	$3,642,754
Virginia	$5,786,618	$5,902,350
Total	$12,564,762	$12,816,058

- Project selection process for these new funds and how TPB will be involved in the allocation of these funds are under discussion for later briefings

CRP – Carbon Reductions Strategy

- Requires States to develop a Carbon Reduction Strategy (CRS) by November 15, 2023
  - Carbon Reduction Strategies "shall support efforts to reduce transportation emissions and identify projects and strategies to reduce these emissions"
  - States are required to consult with any MPO within the state as they develop the CRS
  - Carbon Reduction Strategies must be updated at least once every four years
- MPO consultation status:
  - TPB briefing today (October 18, 2023)
  - Maryland: TPB staff have reviewed and commented on draft CRS
  - District of Columbia: draft CRS not available at this time
  - Virginia: draft CRS not available at this time

MARYLAND DEPARTMENT OF TRANSPORTATION

CARBON REDUCTION STRATEGY (CRS) UPDATE

Shawn Kiernan
Sr. Program Manager, Office of Climate Change Resilience and Adaptation
October 2023

OUTLINE SLIDE

- Maryland Carbon Reduction
- CRS Table of Contents
- CRS Timeline
- Federal Requirements
- Next Steps

MARYLAND CARBON REDUCTION

- Maryland has a long history of highly successful carbon reduction programs.
- Several major greenhouse gas emission reduction plans are currently being prepared.
- The CRS, due in November, does not establish new strategies, instead it documents existing strategies already published.
- Maryland is developing a plan to implement the Climate Solutions Now Act (CSNA), due in December 2023.
- MDOT is also updating the Maryland Transportation Plan (MTP), due in January 2024.
- MDOT will revisit and update the CRS following the adoption of these plans.

Year Established	Legislation	Baseline Emissions Year	Target Reduction	Target Date
2009	Greenhouse Gas Reduction Act	2006	25%	2020*
2016	Greenhouse Gas Reduction Act Reauthorization	2006	40%	2030
2022	Climate Solutions Now Act	2006	60%	2031
		N/A	Net-zero	2045

*Achieved

CRS Table of Contents

Carbon Reduction Strategy Timeline

Appendix A: Meeting Federal Requirements

Table A.1 CRS Alignment with Federal Requirements

CRS Requirement	MDOT Progress	CRS Reference
Support efforts to reduce transportation emissions	CRS outlines a framework for optimizing MDOT CRP investments	Section 5 – Framework for Optimizing CRP Investments
Identify projects and strategies to reduce transportation emissions, which may include projects and strategies for safe, reliable, and cost-effective options- (i) to reduce traffic congestion by facilitating the use of alternatives to single-occupant vehicle trips, including public transportation facilities, pedestrian facilities, bicycle facilities, and shared or pooled vehicle trips within the State or an area served by the applicable metropolitan planning organization, if any; (ii) to facilitate the use of vehicles or modes of travel that result in lower transportation emissions per person-mile traveled as compared to existing vehicles and modes; and (iii) to facilitate approaches to the construction of transportation assets that result in lower transportation emissions as compared to existing approaches	CRS outlines ongoing strategies and example projects to reduce transportation emissions including those which: (i) reduce traffic congestion by facilitating the use of alternatives to single-occupant vehicle trips (ii) facilitate the use of vehicles or modes of travel that result in lower transportation emissions per person-mile traveled as compared to existing vehicles and modes (iii) facilitate approaches to the construction of transportation assets that result in lower transportation emissions as compared to existing approaches CRS outlines an approach to prioritizing projects to receive funding	Section 4 – Ongoing Carbon Reduction Strategies i – 4.2 Congestion Mitigation, 4.3 VMT Reduction ii – 4.1 Transportation Technology iii – 4.4 Infrastructure Design
Support the reduction of transportation emissions of the State	CRS outlines planned funding allocations across geographic regions of the state	Section 5.2—Track Funding Allocations
At the discretion of the State, quantify the total carbon emissions from the production, transport, and use of materials used in the construction of transportation facilities within the State	Because the development of the CSNA plan may result in new modeling information, MDOT has decided not to include quantification of emissions reduction in this version of the CRS to avoid presenting historic or potentially inconsistent data that could confuse readers.	
Be appropriate to the population density and context of the State, including any metropolitan planning organization designated within the State	CRS outlines planned funding allocations to urbanized areas consistent with CRP requirements	Section 5.1—Develop Project Prioritization Approach Section 5.2—Track Funding Allocations
Prepare CRS in consultation with MPOs	Initial MPO meetings held Fall 2022 MPO coordination ongoing MPOs invited to review draft CRS outline and provide feedback	Appendix B
Develop CRS no later than 2 years after enactment of IIJA	Draft CRS under development, to be submitted to FHWA by November 15, 2023	N/A
Update CRS a minimum of once every 4 years	Next proposed update is no later than November 15, 2027	Section 6—Updating the CRS

NEXT STEPS

- Finalize and submit CRS to USDOT by November 15.
- Regular coordination with MPOs, local government, and within MDOT.
- Improve GHG emission reduction project identification and selection process.
- Working with the MPOs, update the CRS following adoption of statewide GHG reduction planning efforts.

CONTACT INFORMATION

Maryland Department of Transportation

Office of Climate Change Resilience and Adaptation

Shawn Kiernan, Senior Program Manager for Strategic Climate Initiatives

Email: skiernan@mdot.Maryland.gov

Phone: 410-865-2775

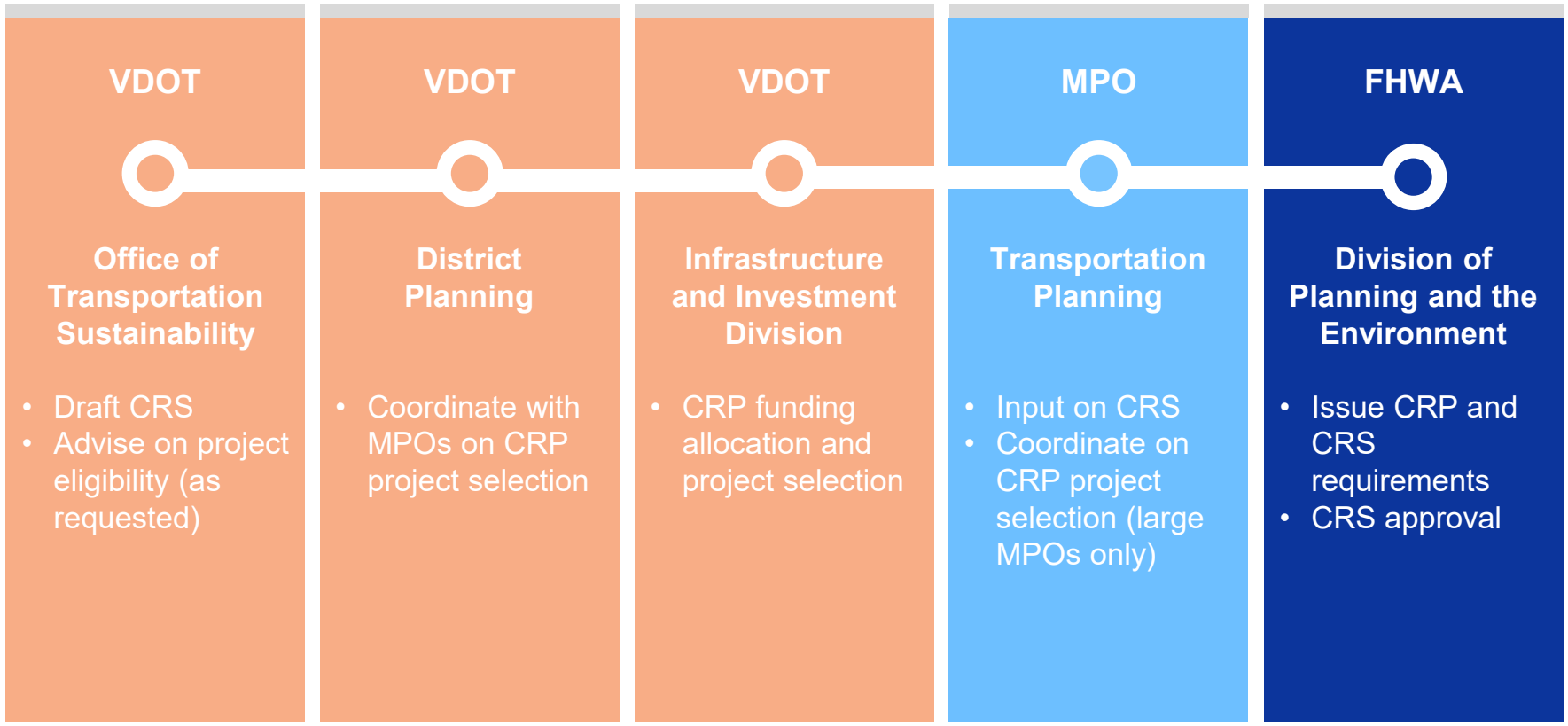

VDOT
Virginia Department of Transportation

VDOT Carbon Reduction Strategy

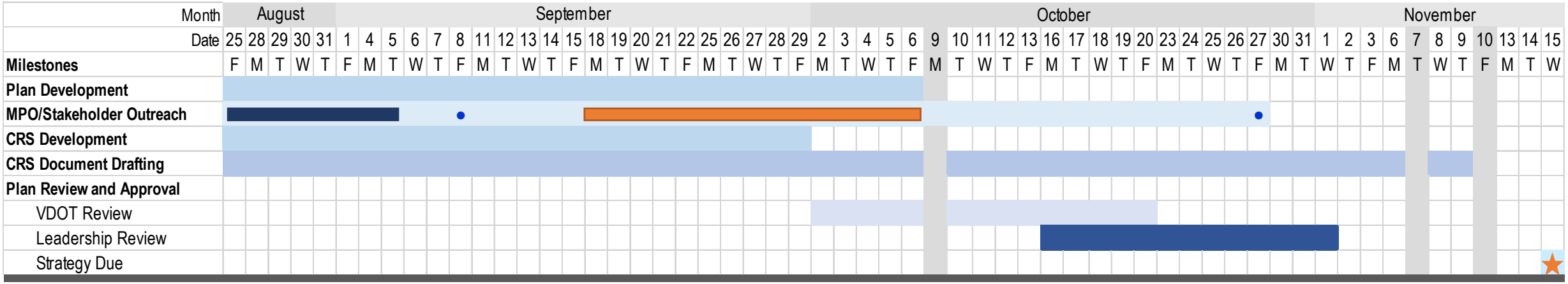
Chris Berg, Director of Sustainability

10/18/2023

Roles & Responsibilities



VDOT CRS Development Schedule



FHWA Review (Nov. 15th - Jan. 31st 2024)

FHWA Approval (Anticipated Feb 2024)

- **Listening / Working Sessions**
- **One-on-Ones**
- **MPO Stakeholder Survey**
- **CRS Due to FHWA**

Holiday

VDOT CRS Document Outline

01 **Background**

- Program guidance, funding allocation, and supporting initiatives

02 **Existing Conditions**

- Geography, emissions inventory, and trends

03 **Coordination & Outreach**

- Summary of survey results, working sessions, and one-on-one meetings, VAMPO meeting, and other internal and external coordination

04 **Strategy Identification / Analysis**

- Eligible strategies and example analysis tools [e.g., the CMAQ Toolkit]

05 **Implementation**

- Discussions of metrics and performance indicators, a monitoring and evaluation plan, and potential barriers and opportunities

06 **Conclusion**

- Summarizes the CRS and highlights the need for continued coordination

MPO Consultation

MPO Survey
August

MPO Information and Consultation Meeting
September

One-on-One MPO Meetings
September-October

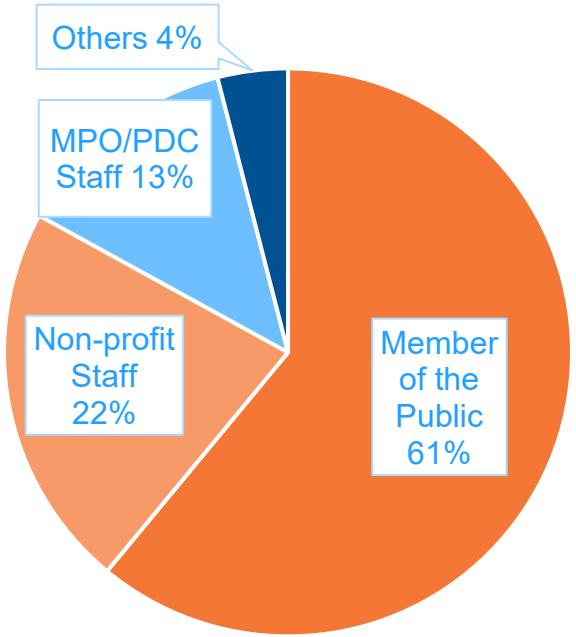
Six Year Improvement Plan Meeting Survey
April-May

VAMPO Peer-to-Peer Meeting
October

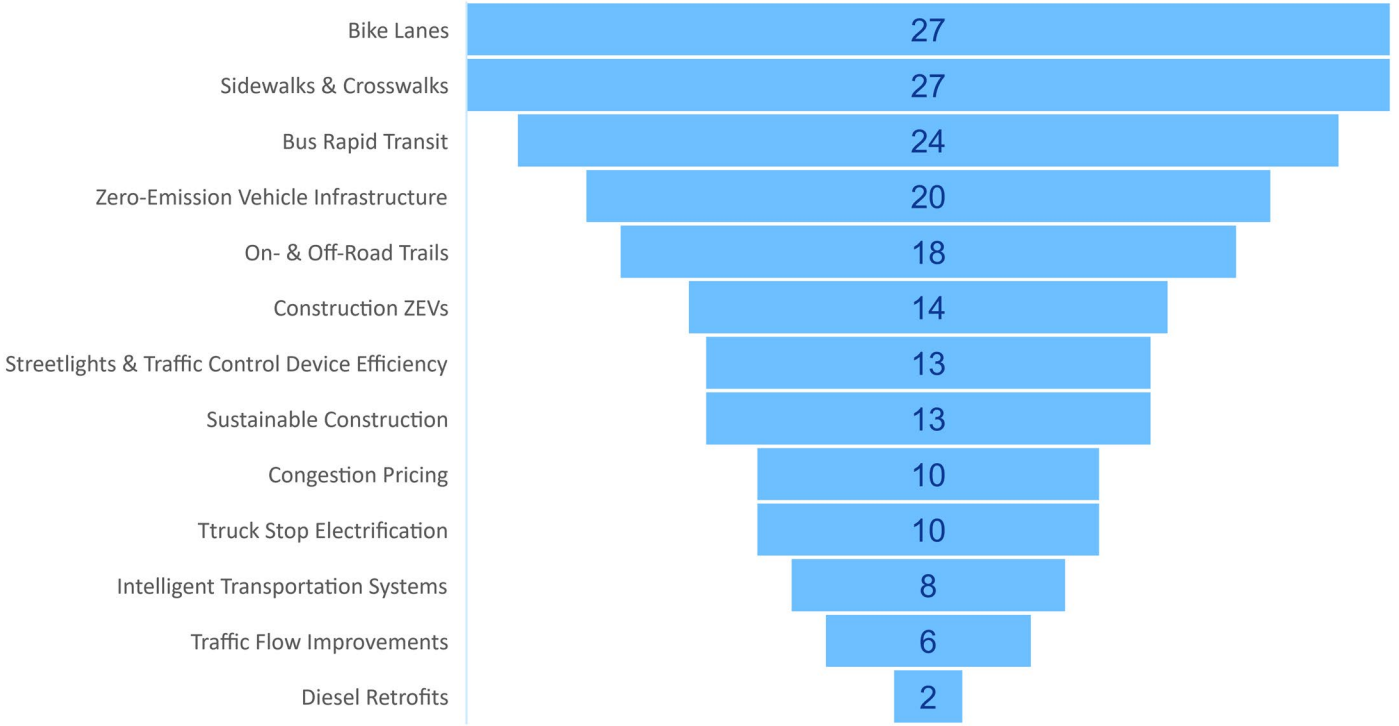
SYIP Public Survey Results – May 2023

216	46	297	105
VIEWS	PARTICIPANTS	RESPONSES	COMMENTS

PARTICIPANTS ROLE IN THE PLANNING PROCESS

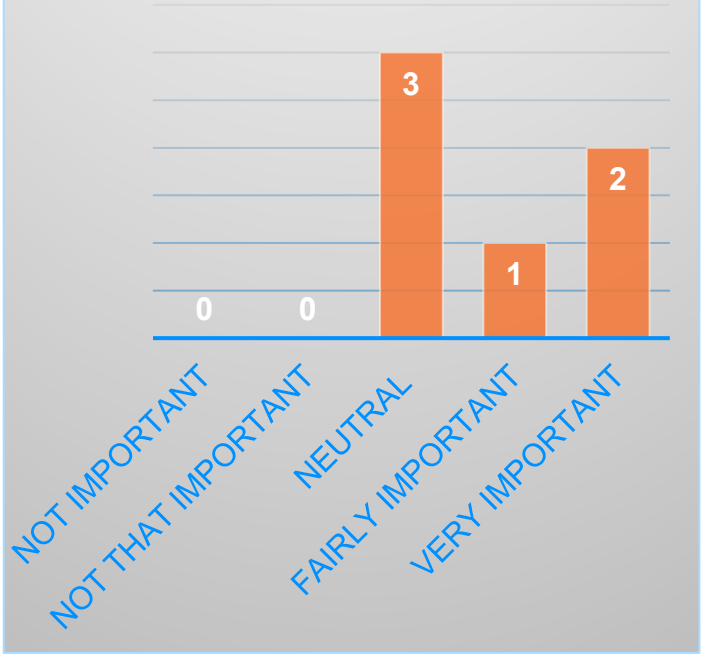


CARBON REDUCTION STRATEGIES

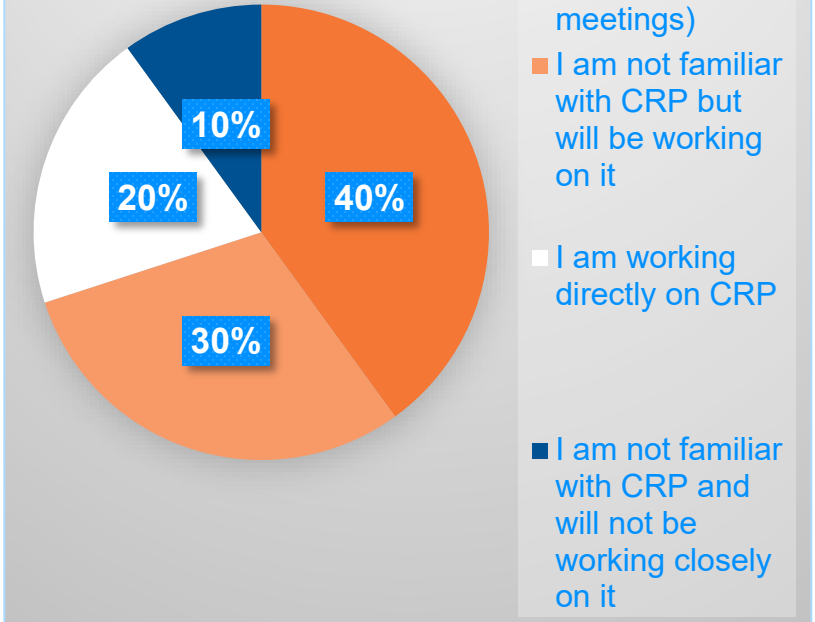


MPO Survey Results – September 2023

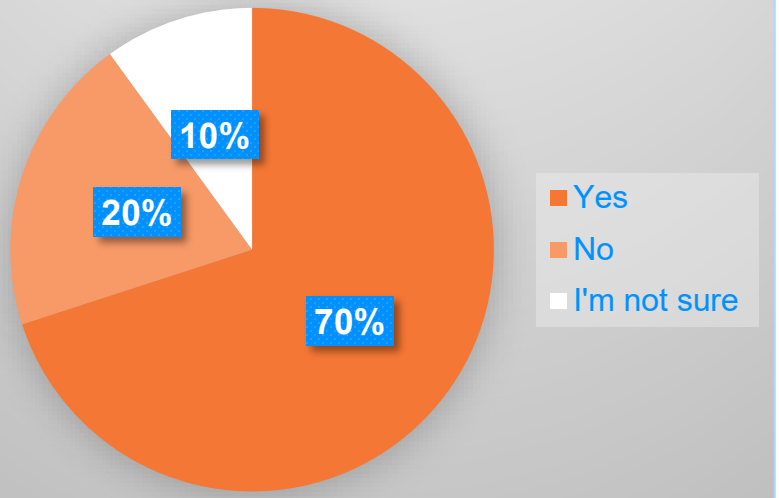
How important is addressing transportation carbon emissions to your organization?



What is your level of familiarity with CRP?



Does your organization have any existing climate-specific plans, projects, policies focused on reducing transportation emissions?



Carbon Reduction Strategies

What's important to stakeholders?

- Public Transportation
- Bicycle & Pedestrian Support
- Electric Vehicles & Charging

Co-Benefits of Reduction Strategies

All participants said they factored co-benefits into their strategy responses

SAFETY

ECONOMIC DEVELOPMENT

HEALTH & QUALITY OF LIFE

ACCESSIBILITY

Challenges When Implementing Strategies

Top Responses

EXISTING LAND USE

FUNDING

POLITICS

Other Challenges

limited staff capacity

competing priorities

another word for carbon

powerful interests

one size does not fit all

misconception of the problem

rural context

hesitancy for bike ped

relative effectiveness

persistent car culture

quantifying outcomes

industry growth vs environment

leadership buy-in

safety perceptions

planning philosophy

poor existing infrastructure

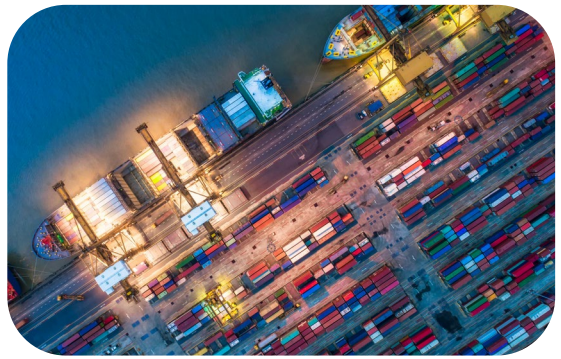
Success Stories

Active Transportation

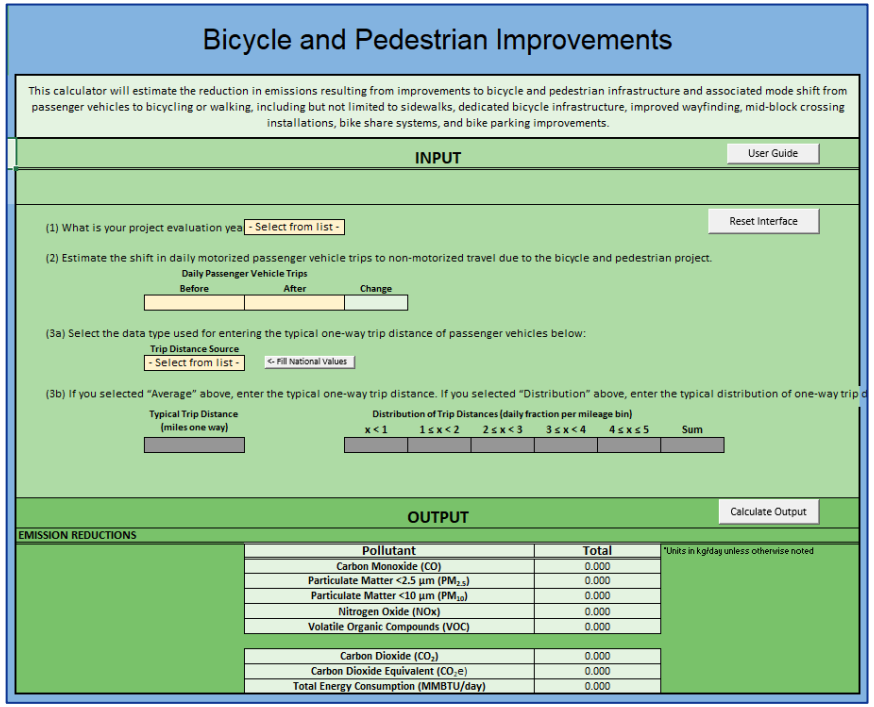
- Bicycle / pedestrian Infrastructure
- Trails / Regional Greenway Network
- Sidewalks
- Quality public spaces

Reduce Vehicles

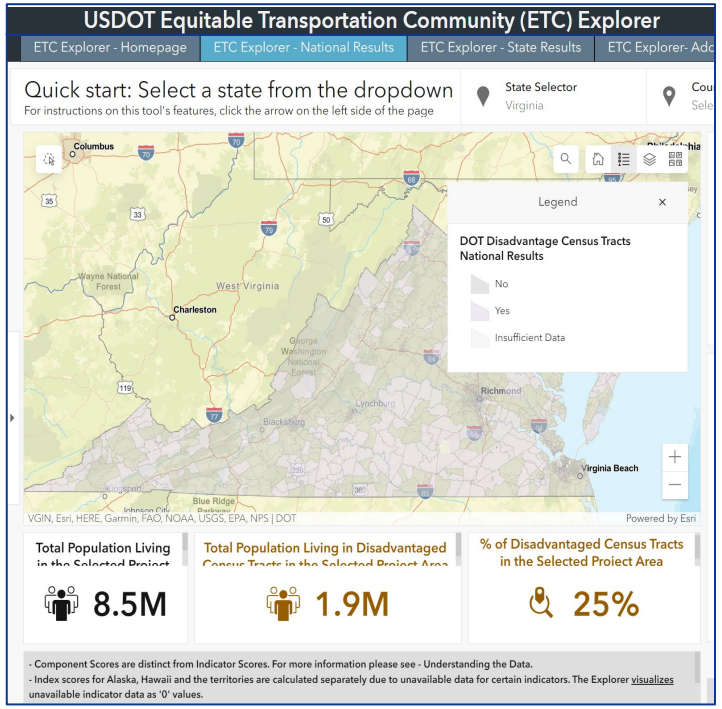
- Barge program to reduce trucks
- Microtransit
- Regional transit between work centers in different counties
- Increase rider transit use / free transit



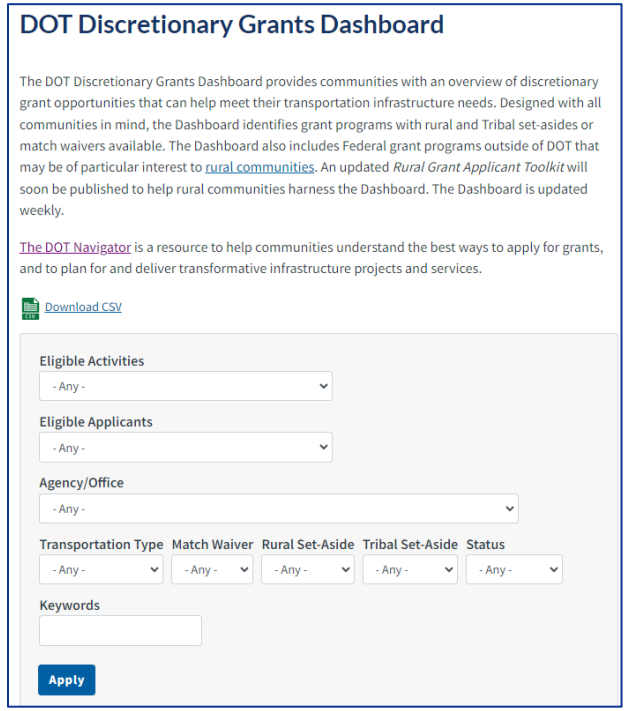
Tools and Resources



[CMAQ Emissions Calculator Toolkit]



[USDOT Equitable Transportation Community (ETC) Explorer]



[USDOT Discretionary Grants Dashboard]

THANK YOU

If you have questions or comments, please reach out to VDOT CRP at CarbonReduction@vdot.virginia.gov


VDOT
Virginia Department of Transportation

DISTRICT DEPARTMENT OF TRANSPORTATION

Carbon Reduction Strategy
October 2023

CRP Strategy Table of Contents Draft

I. Importance of Greenhouse Gas Reductions in Transportation

II. Intro to Overall DC Goals
   a) Current statistics

III. Existing Plans and Strategies
   a) moveDC 2021
   b) GoDCgo
   c) Sustainable DC 2.0

IV. Federal Requirements

V. Example eligible projects:
   a) Electrification of freight and delivery vehicles.
   b) Idling food trucks.
   c) LED Streetlights.
   d) Bike Lane and Trail Network.
   e) Bus priority program.
   f) Bus Electrification

VI. Next Steps

Existing Plan #1: moveDC (Long-range Plan)

Policy P: Reduce citywide greenhouse gas emissions 50 percent by 2032 (compared to 2006 baseline) and reduce greenhouse gas emissions from transportation by 60 percent by 2032 (compared to 2006 baseline).

Strategy #33:

UPDATE DDOT FLEET AND DC CIRCULATOR BUSES TO BE ELECTRIC

Implement the DC Circulator electrification plan and electrify the District-owned bus fleet by 2027. Convert 50 percent of the DDOT fleet to electric by FY 2023.

Implementation Steps

- Conduct a cost/benefit analysis for a transition to an electric fleet
- Create a fleet replacement program
- Implement the fleet replacement program

Strategy #34:

SUPPORT ELECTRIC VEHICLE USE WITH MORE CHARGING FACILITIES

Determine the demand for electric chargers. Encourage developers to provide electric chargers where demand is identified. Allow electric chargers in the public right-of-way through a permit process.

Implementation Steps

- Document the number of electric vehicles and chargers in the District and surrounding jurisdictions
- Assess the demand for electric charging stations; develop materials and conduct outreach to encourage developers to construct electric charging stations
- Track, monitor, and report; coordinate between DDOT and surrounding jurisdictions to share data

Existing Plan #2: goDCgo (Transportation Demand Management Plan)

- goDCgo provides commuters, employers, and others with the education and assistance they need to make more informed choices about their daily travel

- Focuses on development and implementation of commuter benefits programs and transportation amenities

- The program reduces single-occupancy vehicle (SOV) travel, decreases traffic congestion, and improves air quality to create a better quality of life in the District.

Existing Plan #3: Sustainable 2.0

- Sustainable DC offers four goals and 23 actions to help improve the DC transportation system.

- Goals include:
  - Improve connectivity and accessibility through efficient, integrated and affordable transit systems.
  - Expand safe, connected infrastructure for pedestrians and cyclists.
  - Enhance affordable, convenient transportation options to reduce dependency on single occupant vehicles.
  - Reduce greenhouse gas emissions and air pollution from the transportation sector.

Eligible Projects Ex. 1: Bus Electrification + Sustainable Facilities

3000 Series - Electric

Benefits of 3000 series – Electric

100% battery electric propulsion
Zero emissions
Displaces 88.9K gallons of diesel annually
Eliminates more than 244K lbs of CO_2 emissions annually
Provides cost savings of more than $6 million during a 12-year lifetime
Reduces noise pollution throughout the District

- DDOT is in the process of transitioning the entire District of Columbia Circulator (DC Circulator) bus fleet to battery-electric bus (BEB) vehicles by 2030
  - Transitioning our fleet to electric between April 2018 and April 2020, with a 14 BEB demonstration pilot for the Circulator

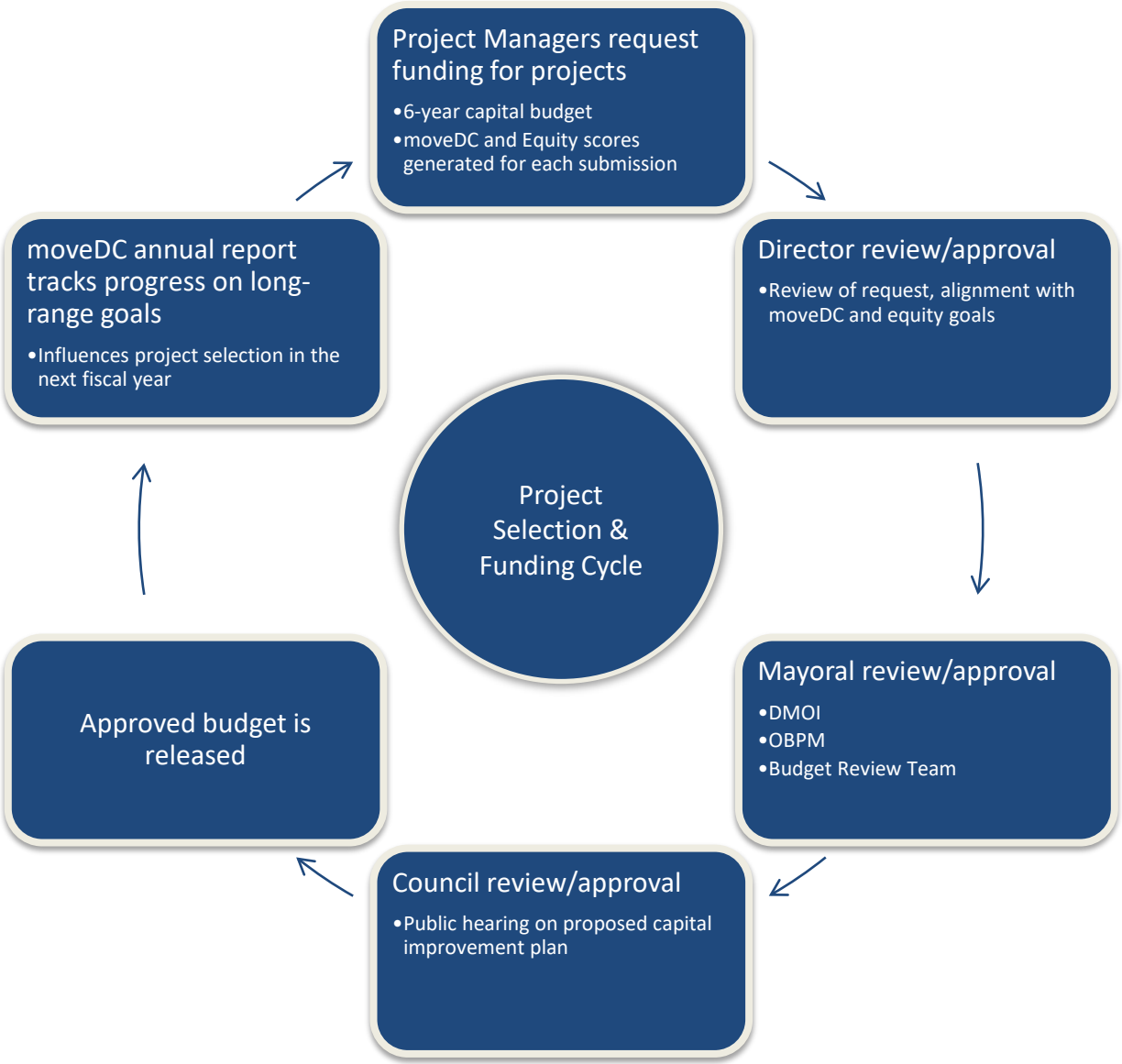
- As our battery-electric bus program grows, DC Circulator is upgrading existing and constructing new facilities with a focus on sustainable energy usage and storage.
  - DC Circulator is also planning a new garage to house our entire future fleet. The site, which is anticipated to open by 2028, will store and charge electric buses only

Eligible Projects Ex. 2: Bus Priority Program

- Mayor Bowser established the Bus Priority Program to improve bus speeds and reliability for riders across the District

- Bus priority includes the following strategies:
  - Improvements to the roads where buses operate, including bus lanes, transit signal priority, and floating bus islands;
  - Changes to the way bus service is operated, including more direct routes, faster fare payment and boarding, and bus stop rebalancing;
  - Enforcement of bus lanes and bus stops;
  - Improvements for multimodal safety and pedestrian access to bus stops.

DDOT's Project Selection Process



GOALS

moveDC 2021 has a goal for each of the following subjects: safety, equity, mobility, project delivery, management and operations, sustainability and enjoyable spaces. Each goal is defined with a goal statement:

Safety

DDOT will design and manage a transportation network that offers safe and secure travel choices for all users, in accordance with Mayor Bowser's Vision Zero initiatives.

Equity

DDOT will advance transportation equity by evaluating its policies, planning, community engagement and project delivery, to ensure public investments in transportation justly benefit all residents, visitors and commuters.

Mobility

DDOT will increase system reliability, improve accessibility and manage congestion through coordination, communications and mobility options, providing safe and affordable travel choices for all users and trips.

Project Delivery

DDOT will complete projects on-time and on-budget while engaging and communicating with the community.

Management and Operations (State of Good Repair)

DDOT will ensure the state of good repair for existing assets by investing in maintenance and operations to address the greatest mobility needs.

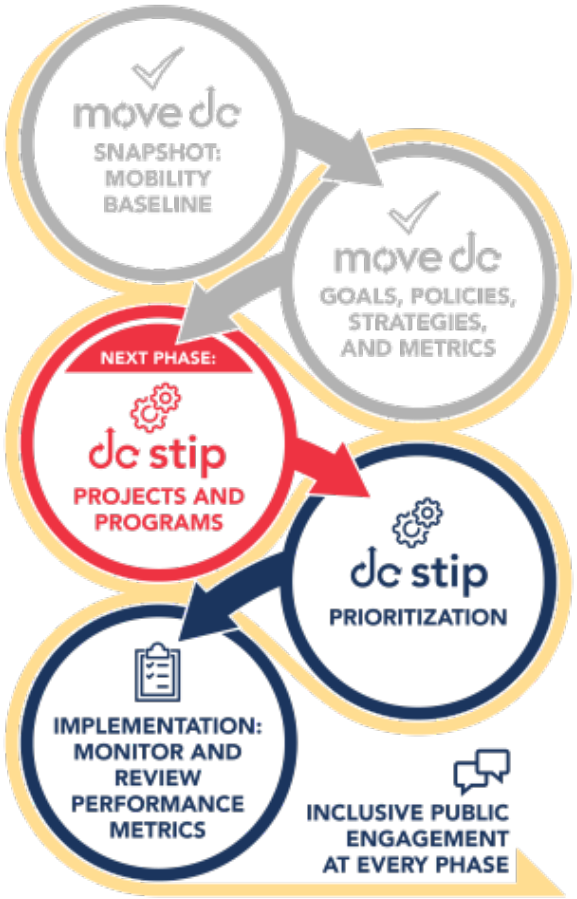
Sustainability

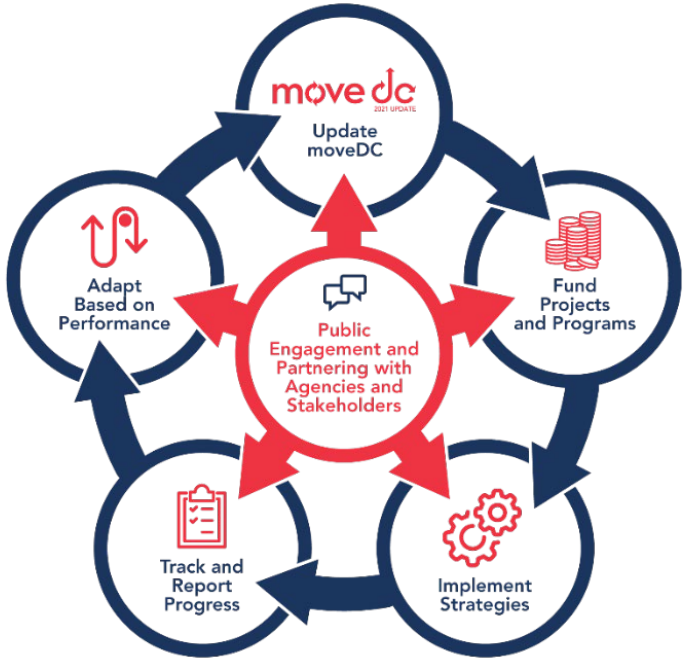
DDOT will manage and promote a transportation network that supports economic vitality and opportunity, reduces emissions and strengthens resilience in the face of climate change, especially in historically underserved neighborhoods that may experience greater impacts.

Enjoyable Spaces

Public spaces and transportation systems managed by DDOT will be accessible, safe, and welcoming to residents, visitors and commuters.

DDOT's Public Input Process for Project Advancement





Comments:

- Erin Morrow will be collecting comments and further questions and providing them to DDOT
  - Email- emorrow@mwcog.org
- Please have comments by October 25 COB
- DDOT Contacts:
  - Emma Cross – Air Quality Planner (Emma.Cross@dc.gov)
  - Samuel Brooks – State & Regional Planning Manager (SamuelM.Brooks@dc.gov)
  - Mark Rawlings – Regional Planner (Mark.Rawlings@dc.gov)

District Department of Transportation

250 M St SE | Washington, DC 20003 | 202.673.6813

Coordination Process Recommendation

State DOT Project Review

- Relationship to State LRTP (moveDC) is maintained
- Equitable projects move forward
- Select 3-5 recommendations for CRP funding

State DOT Presentations

- Project relationship to Carbon Reduction
- Relationship to TPB aspirational climate goals
- Expected outcomes from the project
- Project schedule, cost, location

TPB Input

- Which projects to fund (number)
- Confirm alignment with required Carbon Reduction Strategy

Vote for recommended or approved options