

ITEM 8 – Information

October 18, 2023

Carbon Reduction Program – State Carbon Reduction Strategies

Background:

As part of the new federal Carbon Reduction Program, state DOTs are required to consult MPOs as they develop their statewide Carbon Reduction Strategies. MDOT, VDOT, and DDOT will present their draft strategies and request comments.

District Department of Transportation

Carbon Program Reduction Strategy Draft

November 2023



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1. Introduction

The 2021 Bipartisan Infrastructure Law (Public Law 117-58; BIL § 11403) established the Carbon Reduction Program (CRP), which provides funds for projects designed to reduce transportation emissions, defined as carbon dioxide (CO₂) emissions from on-road highway sources. The national purpose of the CRP is to reduce transportation emissions through the development of State strategies and by funding projects designed to reduce transportation emissions.

The CRP Strategy can include projects and strategies for safe, reliable, and cost-effective options to—

- reduce traffic congestion by facilitating the use of alternatives to single-occupancy 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 relevant MPO;
- facilitate the use of vehicles or modes of travel that results in lower transportation emissions per person-mile traveled as compared to existing vehicles and modes; and
- facilitate approaches to the construction of transportation assets that result in lower transportation emissions as compared to existing approaches. [23 U.S.C. 175(d)(2)(B)]

2. District Department of Transportation (DDOT) Goals

2.1. Background

The District of Columbia's population is approximately 700,000 but, pre-COVID, grew by almost 80 percent during the weekday with commuters traveling from as far away as West Virginia and Delaware to their District workplaces.¹ This enormous influx of people results in serious traffic congestion. The Metropolitan Washington area has the sixth worst traffic congestion in the country with an average of 11 percent of driving time spent in congestion.² While buildings are the main source of greenhouse gas (GHG) emissions in the District, 21 percent of emissions come from transportation, making it the second largest source in the District.³

¹ Sustainable D.C. 2.0 Plan, p. 117, <https://sustainable.dc.gov/sdc2>.

² INRIX Global Traffic Scorecard, <http://inrix.com/scorecard/>.

³ Sustainable D.C. 2.0 Plan, p.117, <https://sustainable.dc.gov/sdc2>.

Over the next 25 years, using pre-COVID statistics, the District is projected to add more than 250,000 residents, 90,000 housing units, and almost 200,000 jobs.⁴ Areas in the Southeast and Northeast quadrants of the District and Northwest quadrant east of Rock Creek Park are projected to have the greatest population density increases. This growth will require increasing the use of non-auto modes to maintain mobility for District residents and employees.

2020 EMISSIONS BY SECTOR

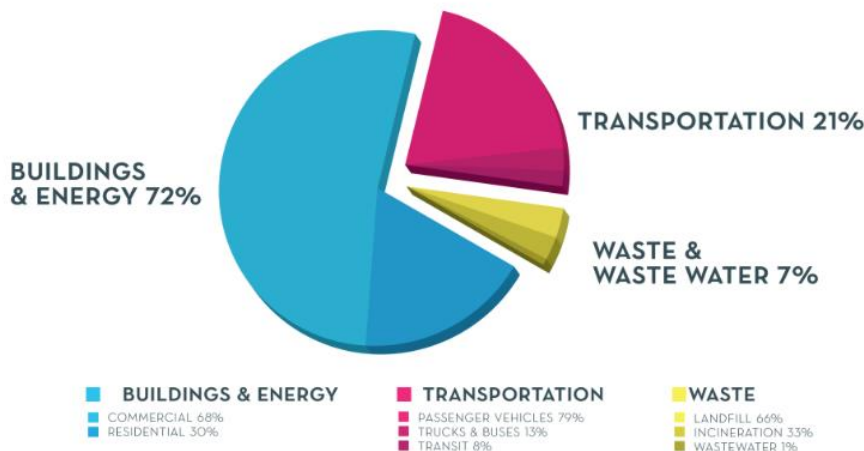


Figure 1: 2020 Emissions Sources in the District by Sector

2.2. DDOT Mission

DDOT’s mission is to provide reliable transportation facilities and services for residents, commuters, and businesses so they can move safely and efficiently while enhancing quality of life and economic competitiveness.

DDOT is committed to providing transportation options that encourage reduced vehicle miles traveled and GHG emissions. DDOT is committed to practicing environmental excellence as it fulfills its mission with minimal adverse impacts on the environment.

2.3. District Greenhouse Gas Emission Reduction Goal

In December 2017, Mayor Bowser, in recognition of the importance of local action to achieve the Paris Agreement goal to limit the global average temperature increase to 1.5°C, announced a goal to reduce GHG emissions in the District by at least 50% below 2006 levels by 2032 while increasing renewable energy and reducing energy consumption and achieve carbon neutrality

⁴ MoveDC, p.16, <https://movedc-dcgis.hub.arcgis.com/>.

by 2050.⁵ This bold and necessary commitment aligns the District with other global cities that are similarly working to avoid the worst impacts of climate change. The carbon-neutral commitment also provides a clear long-term vision of a transformed and resilient energy system that reliably, efficiently, affordably, and sustainably meets the needs of the District’s residents and businesses. The steps taken to achieve and exceed a 50% reduction in GHG emissions by 2032 will help lay the groundwork for carbon neutrality.

3. Existing Plans and Strategies

The District has several plans and strategies dedicated to establishing goals, policies, strategies, and metrics to invest in transportation facilities and programs that address the needs of residents across all eight wards. Together, these plans will make up DDOT’s Carbon Reduction Program Strategy for reducing carbon emissions from transportation.

3.1. MoveDC⁶

MoveDC is the long-range transportation plan for the District. MoveDC 2021 provides an overarching framework of goals and policies that will guide transportation decisions in the District over a 25-year period. The development of moveDC looked at the existing transportation network to determine the goals of the plan. MoveDC then identified a series of strategies to achieve these goals and created tools needed for different modes of transportation.



GOALS

The [goals](#) provide an overarching vision of what DDOT desires to achieve with the implementation of the moveDC update. The plan identifies goals for each of the following seven topics: safety, equity, mobility, management and operations, project delivery, sustainability, and enjoyable spaces.



⁵ Executive Office of the Mayor, Mayor Bowser Commits to Make Washington, DC Carbon-Neutral and Climate Resilient by 2050 (December 4, 2017) <https://mayor.dc.gov/release/mayor-bowser-commits-make-washington-dc-carbon-neutral-and-climate-resilient-2050>.

⁶ MoveDC, <https://movedc-dcgis.hub.arcgis.com/>.

POLICIES

MoveDC has 18 [policies](#) that define how the goals will be achieved. These policies guide decision-making and day-to-day business.

STRATEGIES

The 41 [strategies](#) in the plan are specific actions that DDOT will take to accomplish the policies and support the achievement of the goals. MoveDC is a 25-year plan, but the strategies represent discreet actions that DDOT can take in pursuit of these goals and policies.

3.2. goDCgo⁷

GoDCgo is the District's 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. This program focuses on the development and implementation of commuter benefits programs and transportation amenities. GoDCgo helps to reduce single-occupancy vehicle travel, decreases traffic congestion, and improves air quality by increasing commuter trips of bike, transit, and walking while reducing commuter car trips.

3.3. Sustainable 2.0⁸

Sustainable 2.0 is a District-wide plan to make the District the healthiest, greenest, and most livable city for all residents. The plan highlights the District's desire to shift away from fossil fuel-burning vehicles to pollution-free zero-emission vehicles and expand multimodal forms of transportation such as walking, biking, and transit.

Sustainable DC offers four goals and 23 actions to help improve the District transportation system including improving connectivity and accessibility through efficient, integrated, and affordable transit systems; expanding safe, connected infrastructure for pedestrians and cyclists; enhancing affordable, convenient transportation options to reduce dependency on single occupant vehicles; and reducing greenhouse gas emissions and air pollution from the transportation sector.

3.3. Visualize 2045⁹

Visualize 2045 is the federally mandated, long-range transportation plan for the National Capital Region. The plan includes projects and strategies that the region's transportation agencies

⁷ goDCgo, <https://godcgo.com/>.

⁸ Sustainable D.C. 2.0 Plan, <https://sustainable.dc.gov/sdc2>.

⁹ Metropolitan Washington Council of Governments, Visualize 2045, <https://www.mwco.org/transportation/plans/visualize-2045/>.

expect to implement between now and 2045. In June 2022, the National Capital Region Transportation Planning Board (TPB) approved *Visualize 2045 Long-Range Transportation Plan for the National Capital Region* which adopted regional, voluntary, on-road transportation-sector-specific goals to reduce GHG emissions 50% below 2005 levels by 2030 and 80% below 2005 levels by 2050. The TPB identified seven GHG reduction strategies, shown below, that have the potential to reduce on-road transportation GHG emissions.¹⁰

Ref.	Description of Strategy
1	Improve walk/bike access to all TPB identified high-capacity transit stations.
2	Increase Walk/Bike modes of travel - Complete the TPB's National Capital Trail Network by 2030.
3	Convert private and public sector light, medium and heavy-duty vehicles, and public transit buses to clean fuels, by 2030.
4	Deploy a region-wide robust electric vehicle charging network (or refueling stations for alternate fuels).
5	Add additional housing units near TPB-identified high-capacity transit stations and in COG's Regional Activity Centers.
6	Reduce travel times on all public transportation bus services.
7	Implement transportation system management & operations (TSMO) improvement measures at all eligible locations by 2030.

Figure 2: On-road GHG Reduction Strategies for Adoption As Priorities By the TPB

4. Carbon Reduction Strategy

Strategy	Plan	Goal	Metric
Update DDOT and Circulator fleet to electric	moveDC/ Sustainable 2.0	Reduce citywide GHG emissions by 50 percent by 2032 (compared to 2006 baseline) and reduce GHG emissions from transportation by 60 percent by 2032 (compared to 2006 baseline).	<ul style="list-style-type: none"> Percent of electric fleet Emissions reductions from fleet replacement
Support electric vehicle-use with charging infrastructure	moveDC/ Sustainable 2.0	Reduce citywide GHG emissions by 50 percent by 2032 (compared to 2006 baseline) and reduce GHG emissions from transportation by 60 percent by 2032 (compared to 2006 baseline).	<ul style="list-style-type: none"> Number of electric vehicles Number of charging stations Average distance between charging stations Utilization/hours used for each charging station

¹⁰ Metropolitan Washington Council of Governments, R18-2022, <https://www.mwcog.org/file.aspx>.

Strategy	Plan	Goal	Metric
Foster community partnerships to increase programs that encourage sustainable transportation options	goDCgo/ moveDC	Promote Travel Demand Management partnerships and programs.	<ul style="list-style-type: none"> Number of partners by type (employers, multifamily properties, schools, and hotels) Number of webinars and events
Increase awareness of the District's required commuter benefits among employers	goDCgo/ moveDC	Promote partnerships and programs such as travel demand management to achieve 75 percent non-auto residential commuter trips by 2032.	<ul style="list-style-type: none"> Number of eligible employers participating Percentage of employees participating in the transportation benefits program Mode shift to walking, bicycling, and transit Reduction in single-occupancy vehicle (SOV) travel, reduction in vehicle miles traveled (VMT)
Increase protected bike lanes, build more trails, add bikeshare stations and incentive programs	goDCgo	Increase commuter bike trips to 10% by 2032	<ul style="list-style-type: none"> Number of miles of protected bicycle lanes and trails Number of miles of trails Number of people enrolled Number of new stations installed per year
Increase dedicated bus lanes	goDCgo	Increase commuter transit trips to 50% by 2032	<ul style="list-style-type: none"> Number of lane miles of transit priority network Percent change in bus transit ridership
Build-out Complete Streets Principles for safer sidewalks	moveDC/ goDCgo	Increase commuter walking trips to 15% by 2032	<ul style="list-style-type: none"> Number of Complete Streets projects implemented Score of projects
Implementing idling engine policies	Sustainable 2.0	Reduce greenhouse gas emissions from transportation by 60%	<ul style="list-style-type: none"> Reduction of emissions from idling vehicles

5. Federal Requirements

5.1 Strategy Requirements¹¹

DDOT's CRP Strategy is required to:

- Support efforts and identify projects and strategies to support the reduction of transportation emissions;
- At the State's discretion, quantify the total carbon emissions from production, transport, and use of materials used in the construction of transportation facilities in the State; and
- Be appropriate to the population density and context of the State, including any MPO designated within the State. [23 U.S.C. 175(d)(2)]

5.2. Metropolitan Planning Organization (MPO) Consultation Requirements¹²

CRP requires each State, in consultation with any MPO designated within the State to:

- Develop a carbon reduction strategy not later than 2 years after enactment; [§ 11403; 23 U.S.C. 175(d)(1)] and
- Update that strategy at least every four years. [§ 11403; 23 U.S.C. 175(d)(3)]

DDOT built upon our existing partnerships to develop the Carbon Reduction Program Strategy. DDOT belongs to one Metropolitan Planning Organization, the Metropolitan Washington Council of Governments (MWCOCG),¹³ and consulted and discussed with MWCOCG to create this strategy through committee meetings, board meetings, and feedback opportunities as shown below.

¹¹ Federal Highway Administration, Carbon Reduction Program (CRP) Fact Sheet, https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm.

¹² Federal Highway Administration, Carbon Reduction Program (CRP) Fact Sheet, https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm.

¹³ Metropolitan Washington Council of Governments, <https://www.mwcog.org/>.

In addition to briefings and meetings, information on the strategy was available to MWCOG members. A 7-day comment period was offered to all MWCOG members to provide feedback on DDOT’s strategy. Over **XXX** comments were received, reviewed, and addressed in the final document.

Date	Event
September 20, 2023	MWCOG Transportation Planning Board Meeting
October 6, 2023	MWCOG Transportation Planning Board- Technical Committee Meeting
October 18, 2023	MWCOG Transportation Planning Board Meeting
October 25, 2023	MWCOG Comments on Strategy Due

6. Eligible Projects and Selection

6.1 Eligible Projects¹⁴

CRP funds may be obligated for projects that support the reduction of transportation emissions, including, but not limited to– [except as noted, § 11403; 23 U.S.C. 175(c)(1)]

- a. a project described in 23 U.S.C. 149(b)(4) to establish or operate a traffic monitoring, management, and control facility or program, including advanced truck stop electrification systems;
- b. a public transportation project eligible under 23 U.S.C. 142;
- c. a transportation alternative (as defined under the Moving Ahead for Progress under the 21st Century Act [23 U.S.C. 101(a)(29), as in effect on July 5, 2012]), including, but not limited to, the construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation;
- d. a project described in 23 U.S.C. 503(c)(4)(E) for advanced transportation and congestion management technologies;
- e. deployment of infrastructure-based intelligent transportation systems capital improvements and the installation of vehicle-to-infrastructure communications equipment;
- f. a project to replace street lighting and traffic control devices with energy-efficient alternatives;

¹⁴ Federal Highway Administration, Carbon Reduction Program (CRP) Fact Sheet, https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm.

- g. development of a carbon reduction strategy developed by a State per requirements in 23 U.S.C. 175(d);
- h. a project or strategy designed to support congestion pricing, shifting transportation demand to nonpeak hours or other transportation modes, increasing vehicle occupancy rates, or otherwise reducing demand for roads, including electronic toll collection, and travel demand management strategies and programs;
- i. efforts to reduce the environmental and community impacts of freight movement;
- j. a project that supports deployment of alternative fuel vehicles, including–
 - a. acquisition, installation, or operation of publicly accessible electric vehicle charging infrastructure or hydrogen, natural gas, or propane vehicle fueling infrastructure; and
 - b. purchase or lease of zero-emission construction equipment and vehicles, including the acquisition, construction, or leasing of required supporting facilities;
- k. a project described in 23 U.S.C. 149(b)(8) for a diesel engine retrofit;
- l. certain types of projects to improve traffic flow that are eligible under the CMAQ program, and that do not involve construction of new capacity; [§ 11403; 23 U.S.C. 149(b)(5); and 175(c)(1)(L)]
- m. a project that reduces transportation emissions at port facilities, including through the advancement of port electrification; and
- n. any other STBG-eligible project, if the Secretary certifies that the State has demonstrated a reduction in transportation emissions, as estimated on a per capita and per unit of economic output basis. [§ 11403; 23 U.S.C. 133(b) and 175(c)(2)]

6.2 Project Selection Process

For CRP, DDOT will follow the model moveDC uses for project selection criteria and prioritization. DDOT is improving its process to select and prioritize projects and programs for funding outlined in the Statewide Transportation Improvement Program (STIP) and ensuring that the local budget aligns with moveDC.

Under the current process, DDOT staff review a list of projects and coordinate with the executive leadership to determine the priority of projects based on the values and goals set forward in moveDC and other plans.

Using policies, strategies, metrics, the Mobility Priority Networks from moveDC 2021, and the equity assessment, DDOT is refining this approach to outline a more intentional set of project selection criteria. The criteria will enhance the existing DDOT budget formulation process that guides DDOT’s transportation investments.



Figure 3: Diagram of the various elements used to inform and develop the District's STIP

6.3 DDOT Example of Eligible Projects

Project Name	Description	Alignment with CRP Strategy
Delivery Vehicle Electrification/ Micro-Mobilization	Encouraging and evaluating innovative ways to mitigate the freight impacts in the District, such as through delivery demand management (using education and incentives to reduce delivery conflicts), residential loading zones, and microhubs for last-mile deliveries.	<ul style="list-style-type: none"> Implementing idling engine policies Support electric vehicle use
Bus Priority¹⁵	Improving bus speeds and reliability for riders through improvements to the roads where buses operate, changing bus service operations, bus lane enforcement, and increasing access to stops.	<ul style="list-style-type: none"> Increase awareness of the District's required commuter benefits among employers Creating more dedicated bus lanes
Bus Electrification + Sustainable Facilities¹⁶	Transitioning the entire District of Columbia Circulator (DC Circulator) bus fleet to battery-electric bus vehicles by 2030; upgrading existing and constructing new bus facilities with a focus on sustainable energy usage and storage.	<ul style="list-style-type: none"> Update DDOT fleet and District buses fleet to be electric
Bike Lane + Trail Network¹⁷	Providing labor, equipment, and materials necessary to provide maintenance to the Bike and Trails new and existing assets. Activities under this project includes restoration of pavements, trench drain maintenance, channelization devices for bike and trails, support for FTEs, equipment, material, and contractual services associated with improving the Bike and Trails Network.	<ul style="list-style-type: none"> Increase protected bike lanes, build more trails, add bikeshare stations and incentive programs Increase awareness of the District's required commuter benefits among employers

7. Next Steps

DDOT, using this Strategy, will continue to promote and execute transportation programs that result in carbon reduction. DDOT will continue to follow all Carbon Reduction Program requirements from the Federal Highway Administration. Moving forward, DDOT will be using updated moveDC and other existing plans to create a process for project selection, ensuring any project aligns with DDOT's goals of equity, accessibility, and sustainability.

¹⁵ District Department of Transportation, DDOT Bus Priority Projects, <https://buspriority.ddot.dc.gov/>.

¹⁶ District Department of Transportation, Zero Emissions Fleet Conversion, <https://dccirculator.com/explore/improvements-and-projects>.

¹⁷ District Department of Transportation, Bicycles, <https://movedc-dcgis.hub.arcgis.com/pages/bicycles>.