

# Carbon Program Reduction Strategy

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 (CO<sub>2</sub>) 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 as West Virginia and Delaware to their District workplaces.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup>

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

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

<sup>3</sup> 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.<sup>4</sup> Areas in the Southeast and Northeast quadrants of the District and the 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.

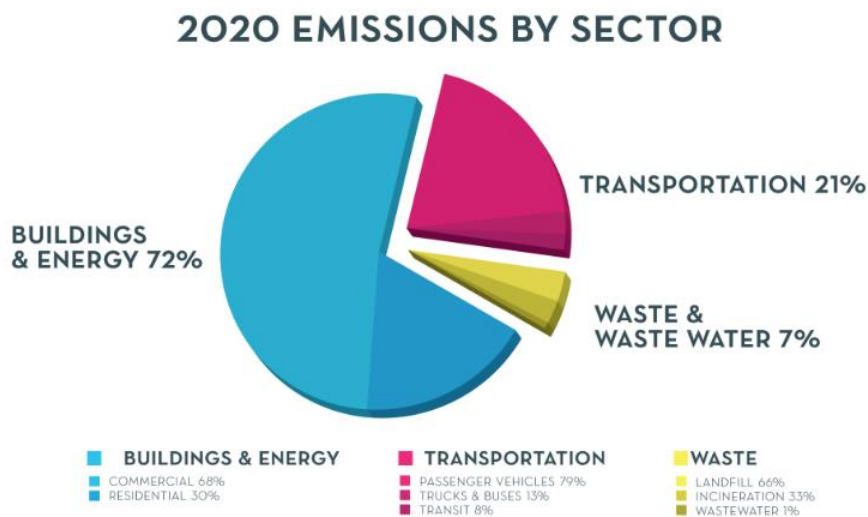


Figure 1: 2020 Emissions Sources in the District by Sector

## 2.2. DDOT Mission

DDOT’s mission is to equitably deliver a safe, sustainable, and reliable multimodal transportation network for all residents and visitors of the District of Columbia.

DDOT is committed to providing transportation options that encourage reduced vehicle miles traveled, and GHG emissions while 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 Muriel 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 by 2050.<sup>5</sup> This bold and necessary commitment aligns the District with other global cities

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

<sup>5</sup> 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>.

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. The District’s focus to achieve this goal involves creating a series of plans and programs that prioritize mode shifting from personal vehicle use to sustainable modes of transportation including biking, walking, electric vehicles, and public transit such as bus, rail, and streetcar.

# 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. Additionally, DDOT has participated in plans that use a cross-state collaboration approach to address climate change in the transportation sector. Together, these plans make up DDOT’s Carbon Reduction Program Strategy for reducing carbon emissions from transportation.

## STRATEGIES FOR TRANSPORTATION

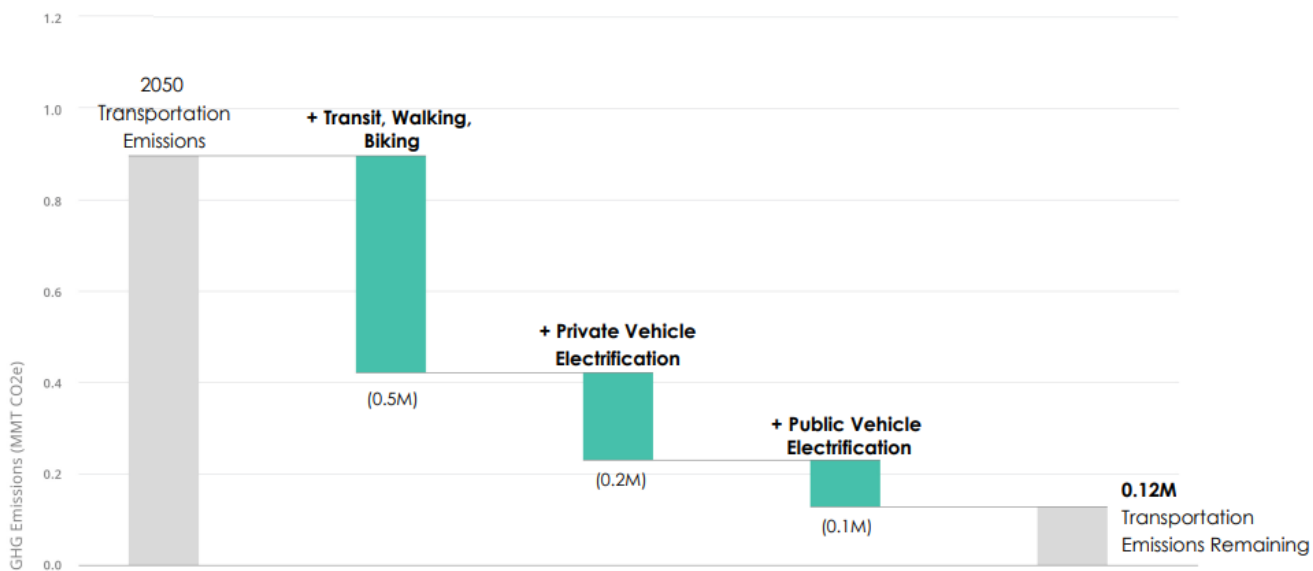
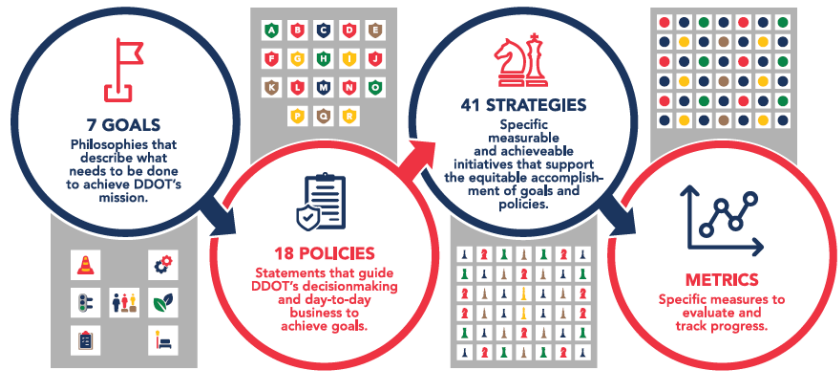


Figure 2: District's Carbon Free 2050 goal

### 3.1. moveDC<sup>6</sup>

moveDC is the long-range transportation plan for the District. moveDC, which was updated most recently in 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 as a baseline, as well as projected population growth and development to determine how to best meet the needs of future residents and visitors to the District. Using that knowledge, moveDC identified a series of goals, policies, and strategies to implement over the next 5 years, after which moveDC will be updated again.



#### GOALS

The [goals](#) provide an overarching vision of what DDOT wants to achieve with the implementation of the moveDC update. The plan identifies the following seven goals as the guiding vision of the District Department of Transportation: safety, equity, mobility, management and operations, project delivery, sustainability, and enjoyable spaces.



#### 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 is taking to accomplish the policies and support the achievement of the seven moveDC goals. The strategies are broken down into 1–2 year strategies, 3-5 year strategies, and 5+ year strategies, to complete the 41 strategies by 2026.

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

## 3.2. goDCgo<sup>7</sup>

goDCgo is the District's Transportation Demand Management program. goDCgo provides commuters, employers, residents, and others with the education and assistance they need to make 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 sustainable commuter trips and reducing commuter car trips.

## 3.3. Sustainable 2.0<sup>8</sup>

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 2045<sup>9</sup>

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 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.<sup>10</sup>

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<sup>7</sup> goDCgo, <https://godcgo.com/>.

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

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

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

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

## 4. Carbon Reduction Strategy

Strategy	Plan	Goal	Metric
<b>Update DDOT and Circulator fleet to electric</b>	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"> <li>• Percent of electric fleet</li> <li>• Emissions reductions from fleet replacement</li> </ul>
<b>Support electric vehicle-use with charging infrastructure</b>	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"> <li>• Number of electric vehicles</li> <li>• Number of charging stations</li> <li>• Average distance between charging stations</li> <li>• Utilization/hours used for each charging station</li> </ul>
<b>Foster community partnerships to encourage sustainable transportation options</b>	goDCgo/ moveDC	Promote partnerships and TDM programs to reduce drive-alone trips.	<ul style="list-style-type: none"> <li>• Number of partners by type (employers, multifamily properties, schools, and hotels)</li> <li>• Number of webinars and events</li> <li>• Mode shift to walking, bicycling, and transit</li> <li>• Behavior change metrics by campaign</li> </ul>

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Strategy	Plan	Goal	Metric
<b>Increase employer compliance with the District's required commuter benefits laws</b>	goDCgo/ moveDC	Promote partnerships and implement commuter benefit programs to achieve 75 percent non-auto residential commuter trips by 2032.	<ul style="list-style-type: none"> <li>• Number of eligible employers participating</li> <li>• Number of eligible employers compliant</li> <li>• Percentage of employees participating in transportation benefits programs</li> <li>• Reduction in single-occupancy vehicle (SOV) travel, reduction in vehicle miles traveled (VMT)</li> </ul>
<b>Increase protected bike lanes, build more trails, add bikeshare stations and incentive programs</b>	moveDC/ goDCgo	Increase commuter bike trips to 10% by 2032	<ul style="list-style-type: none"> <li>• Number of miles of protected bicycle lanes and trails</li> <li>• Number of miles of trails</li> <li>• Number of people enrolled in Capital Bikeshare for All</li> <li>• Number of new stations installed per year</li> <li>• Number of e-bike incentives redeemed</li> </ul>
<b>Increase dedicated bus lanes</b>	moveDC/ goDCgo	Increase commuter transit trips to 50% by 2032	<ul style="list-style-type: none"> <li>• Number of lane miles of transit priority network</li> <li>• Percent change in bus transit ridership</li> </ul>
<b>Educate and enforce the District's engine-idling regulations</b>	Sustainable 2.0	Reduce greenhouse gas emissions from transportation by 60%	<ul style="list-style-type: none"> <li>• Number of 311 idling vehicle reports</li> <li>• Number of schools with idle reduction policies</li> </ul>
<b>Expand Street Tree Coverage</b>	moveDC	Cover 40 percent of the District with a healthy tree canopy by 2032 to enhance sidewalks, walkability, and neighborhood amenities.	<ul style="list-style-type: none"> <li>• Percent coverage of healthy tree canopy</li> <li>• Number of trees planted</li> </ul>
<b>Update State Rail Plan</b>	moveDC	Update state rail plan regularly to aid in greenhouse gas emission reduction goals	<ul style="list-style-type: none"> <li>• Completion of updates</li> </ul>

# 5. Federal Requirements

## 5.1 Strategy Requirements<sup>11</sup>

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 Requirements<sup>12</sup>

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 National Capital Region Transportation Planning Board (TPB),<sup>13</sup> and consulted and discussed with TPB to create this strategy through committee meetings, board meetings, and feedback opportunities as shown below.

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<sup>11</sup> Federal Highway Administration, Carbon Reduction Program (CRP) Fact Sheet, [https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp\\_fact\\_sheet.cfm](https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm).

<sup>12</sup> Federal Highway Administration, Carbon Reduction Program (CRP) Fact Sheet, [https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp\\_fact\\_sheet.cfm](https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm).

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

In addition to briefings and meetings, information on the strategy was available to TPB members. A 7-day comment period was offered to all TPB members to provide feedback on DDOT’s strategy. All comments were reviewed, assessed, and addressed, when appropriate, in this final document.

Date	Event
October 6, 2023	Transportation Planning Board- Technical Committee Meeting
October 18, 2023	Transportation Planning Board Meeting
October 25, 2023	Comments on Strategy Due
November 1, 2023	Comments incorporated into Strategy
November 15, 2023	Strategy due to FHWA

## 6. Eligible Projects and Selection

### 6.1 Eligible Projects<sup>14</sup>

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;

<sup>14</sup> Federal Highway Administration, Carbon Reduction Program (CRP) Fact Sheet, [https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp\\_fact\\_sheet.cfm](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

CRP will follow the moveDC model for project selection criteria and prioritization. DDOT is continuously improving our 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, and equity assessments from moveDC 2021, DDOT is refining our approach in creating an intentional set of project selection criteria. The criteria will enhance the existing DDOT budget formulation process that guides DDOT’s transportation investments.



Figure 4: Diagram of the various elements used to inform and develop the District's STIP

As seen in Figure 4, DDOT has a multiple step process for project selection. DDOT's project selection process starts through our annual budget formulation process. DDOT leadership reviews requested projects and makes recommendations based on moveDC scores and the Equity Assessment Tool scores. Next, the Executive Office of the Mayor reviews the Department's budget request and proposes a budget to the Council of the District of Columbia. The DC Council holds public hearings on the requested budget and proposed projects. Later, the approved budget is released and executed.

The moveDC annual report tracks progress on each strategy based on completed projects and programs. Finally, the assessment of progress toward these goals and strategies is incorporated into the review process of future budget formulation requests.

Additionally, CRP Projects must be identified in the Statewide Transportation Improvement Program (STIP) and Transportation Improvement Program (TIP) and should be consistent with the Long-Range Statewide Transportation Plan and the Metropolitan Transportation Plan(s). This requires coordination with the MPO which will require a formal plan and process to be developed.

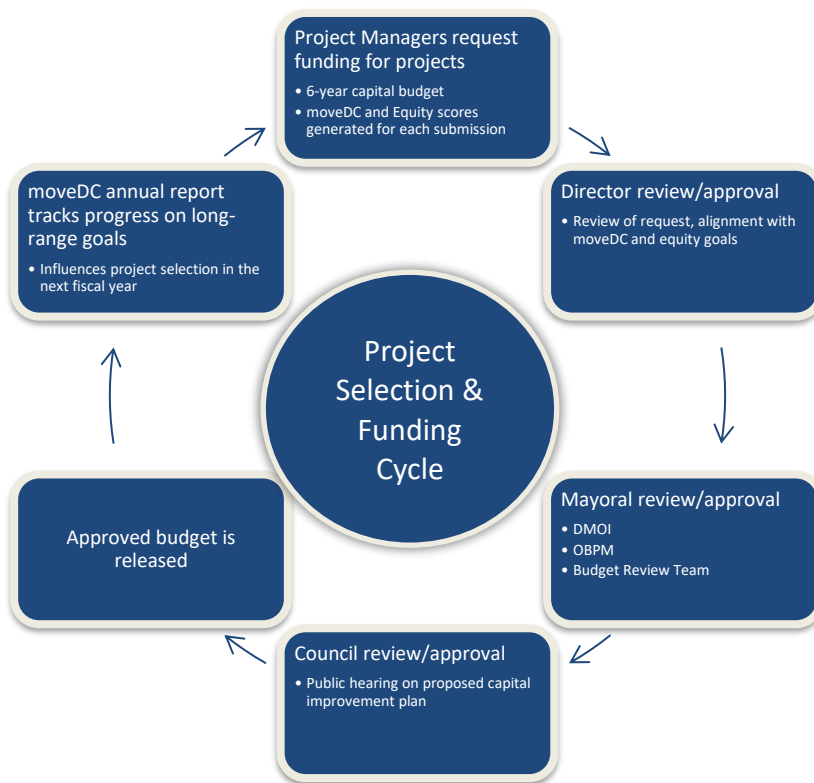


Figure 5: DDOT Project Selection and Funding Cycle

## 6.3 DDOT Example of Eligible Projects

Project Name	Description	Alignment with CRP Strategy	Alignment with FHWA Eligible Project List
<b>Bus Priority<sup>15</sup></b>	Improve bus speeds and reliability for riders through improvements to the roads where buses operate, change bus service operations, bus lane enforcement, and increase access to stops.	<ul style="list-style-type: none"> <li>• Increase awareness of the District's required commuter benefits among employers</li> <li>• Increase dedicated bus lanes</li> </ul>	"A public transportation project eligible under 23 U.S.C. 142"
<b>Bus Electrification + Sustainable Facilities<sup>16</sup></b>	Transition the entire DC Circulator bus fleet to battery-electric bus vehicles by 2030; upgrade existing and construct new bus facilities with a focus on sustainable energy usage and storage.	<ul style="list-style-type: none"> <li>• Update DDOT fleet and DC Circulator buses to electric</li> </ul>	"A project that supports deployment of alternative fuel vehicles, including— b. purchase or lease of zero-emission construction equipment and vehicles, including the acquisition, construction, or leasing of required supporting facilities"
<b>Bike Lane + Trail Network<sup>17</sup></b>	Plan, design, and build 5 miles of protected bike lanes and trails per year. Build elements of the Capital Trail Network within the District of Columbia and eliminate critical gaps in the trail network to support bicycle and pedestrian trips.	<ul style="list-style-type: none"> <li>• Increase protected bike lanes, trails, bikeshare stations, and incentive programs</li> <li>• Increase awareness of the District's required commuter benefits among employers</li> </ul>	"A transportation alternative (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"

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

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

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

Project Name	Description	Alignment with CRP Strategy	Alignment with FHWA Eligible Project List
<b>District Electric Bicycle Incentive Program</b> <sup>18</sup>	Encourage the purchase of electric bicycles and support bicycle businesses in the District by providing low income residents with rebates to purchase electric bicycles and equipment.	<ul style="list-style-type: none"> <li>• Increase protected bike lanes, trails, bikeshare stations, and incentive programs</li> <li>• Foster community partnerships to encourage sustainable transportation options</li> </ul>	“a project or strategy designed to... otherwise reducing demand for roads, including electronic toll collection, and travel demand management strategies and programs”
<b>Cargo and E-Bike Delivery Program</b>	A pilot program with cargo and e-bikes as food delivery methods in local communities to decrease motor vehicle usage.	<ul style="list-style-type: none"> <li>• Foster community partnerships to encourage sustainable transportation options</li> <li>• Increase employer compliance with the District's required commuter benefits laws</li> </ul>	“Efforts to reduce the environmental and community impacts of freight movement”

## 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 CRP requirements from the Federal Highway Administration. Moving forward, DDOT will use updated moveDC and other existing plans to create a specified process for CRP project selection, ensuring any project aligns with DDOT's goals of equity, accessibility, and sustainability.

<sup>18</sup> District Department of Transportation, District Electric Bicycle Incentive Program, <https://ddot.dc.gov/ebikes>.