



Transportation

Expand safe, efficient, affordable, and equitable multi-model transportation options that utilize clean and efficient energy sources and reduce reliance on vehicles.

Transportation accounts for 36% of the City's greenhouse gas emissions.





Work with WMATA, MDOT, and Montgomery County to maximize transit accessibility and ridership and enhance mobility options

Action C-10

Objective	Maximize the use and value of transit assets and services to reduce transportation GHG emissions				
Metrics	Transit ridership				
Target	Community transportation emissions	Development Stage	Ongoing		
Lead	Montgomery County, WMATA, MDOT	City Upfront Cost	Costs included in various projects and programs		
Partners	Public Works (Traffic and Transportation), Planning and Development Services	City Operating Cost	-		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
++	+	+	+	+	Mobility, Economic, Environment

For many, the transit system is a crucial means for accessing employment, shopping, and services. To reduce transportation emissions and congestion, mode shifting to transit and active (walking, bicycling, rolling, etc.) will be necessary to reduce private vehicle use. Rail and bus transit service is a crucial part of Rockville’s transportation system, providing mobility across the city and access to the region. Rockville is served by a variety of transit services that can be improved to increase mobility and encourage ridership.

A variety of transit options run in and through Rockville, including Amtrak, MARC trains, Metrorail, Metrobus, RideOn, and paratransit. Transit services are primarily operated by WMATA and Montgomery County, these agencies are exploring transitioning to technologies, such as electric buses, to reduce emissions. The City of Rockville offers a senior citizen bus service that can be used to transport Rockville residents 60 years of age and older to the Senior Center and to shopping destinations within the city. The City will explore electrification options for this bus service, as discussed in action M-06.



Equity Considerations

Prioritize access and bus stop improvements in low income and communities of color. Ensure equitable or improved service levels for high social vulnerability neighborhoods. Work with partners to provide transportation information in a variety of languages and forums to meet people where they are.

Rockville can also encourage more transit use through regional partnerships to advocate for funding and improvements to local stops and stations, transit information, accessibility, and integrative wayfinding to reduce transportation GHG emissions. The Bicycle and Pedestrian Master Plans (C-14 and C-15) support this action. Rockville 2040 Comprehensive Plan includes several policies to maximize the use and value of transit assets and services (Goal #3), including:

- Policy 6: Actively support the transit services provided by WMATA, Montgomery County government, the State of Maryland, and Amtrak.
- Policy 7: Advocate for MDOT MTA to expand MARC commuter rail service with midday and reverse commute service, and off peak and Saturday service at the Rockville transit station.
- Policy 8: Improve bus service, stops, and shelters in Rockville.
- Policy 9: Redesign and reconstruct the Rockville transit station as a 21st century multi-modal transit hub.
- Policy 10: Improve the Twinbrook transit station as an enhanced asset for the community.

Rockville should identify approaches to advancing these policies and implementing the actions listed under them in the 2040 Comprehensive Plan. Actions revolve around advocacy for funding and service improvements and collaboration with the transit service agencies on a suite of improvements. Actions include Rockville local projects such as pathway improvements, planning for Bus Rapid Transit, and redesigning metro stations and enhancing surrounding land use planning to improve access, comfort, safety, and information regarding transportation choices and programs to promote and incentivize transit use to maximize cost efficiency and environmental quality. These approaches, along with Action C -16 (implement 2040 Comprehensive Plan to steer the densest development/redevelopment to mixed-use, transit-served locations) are needed for the 2040 Comprehensive Plan implementation.



		<h2>Develop a Rockville Community Electric Vehicle (EV) Readiness Plan</h2>			
<h3>Action C-11</h3>					
Objective	Expand electric vehicle charging infrastructure equitably across the city				
Metrics	Number of permits for electric vehicle charging station installations (public and private)				
Target	Community transportation emissions	Development Stage		Proposed	
Lead	Public Works (Environment and Traffic and Transportation)	City Upfront Cost		One time consulting services: \$100,000	
Partners	Planning and Development Services, Recreation and Parks	City Operating Cost		-	
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+	+	++	++	+	Mobility, Economic, Environment

As of June 2021, there were approximately 1,068 electric vehicles and 440 plug-in hybrid vehicles registered in Rockville zip codes and 103 public charging station ports (Level 2 and Level 3) listed by ChargeHub. While the pace of electric vehicle (EV) adoption is accelerating, Rockville will require an extensive network of electric vehicle charging infrastructure to support transportation GHG emissions reductions goals. Additionally, EVs could have widespread impacts on the community and change everything from simple parking space requirements for new developments; retrofits of existing buildings, parking lots and on-street parking; and creating economic growth opportunities.

Although private companies and many homeowners will continue installing stations on their own, cities will face pressure to install publicly available chargers that ensure all neighborhoods, housing types, and renters have access to charge vehicles. Therefore, many communities are in the process of developing electric vehicle readiness plans to identify strategies and foster policies and programs to support widespread and equitable access to electric vehicles and charging infrastructure.

EV readiness plans develop a roadmap that anticipate the electric vehicle charging infrastructure needs of residents, workforce members, and visitors as electric vehicles become more mainstream. An EV readiness plan would evaluate the logistical issues involved in expanding EV infrastructure and involve a one-time consultant cost for plan development, estimated to be approximately \$100,000. The City could also explore options for grants and technical assistance to support plan development.

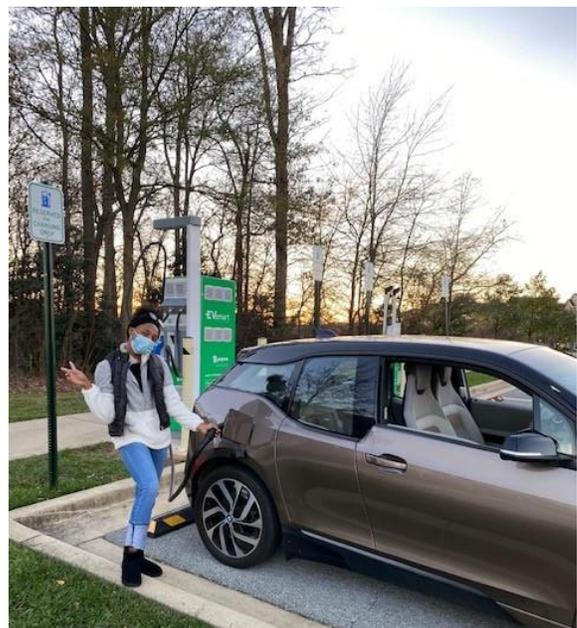
Equity Considerations

- Ensure equitable access to charging infrastructure for a range of buildings and ownership types, neighborhoods, and socio-economic classes.
- Ensure people who do not own their own homes can still find a place to charge their vehicles.
- Deploy EVs and infrastructure in traditionally underserved communities to improve areas with limited access and poor air quality.

Plan elements may include, but are not limited to:

- Evaluate projections for current and future demand for electric vehicle charging infrastructure.
- Recommend locations for publicly-accessible charging infrastructure with integration into a broader regional electric vehicle charging infrastructure network.
- Evaluate strategies to help residents access charging, especially if they live in multifamily dwelling units, townhouse communities without garages, and single-family homes with limited driveway or alley access. Plan for equitable access to charging infrastructure for a range of buildings and ownership types, neighborhoods, and socio-economic classes.
- Recommend charging infrastructure options, including hardware, business ownership, and operation models, interoperability, and management and maintenance solutions.
- Review the City’s zoning and building codes, permitting, and inspection requirements and processes to recommend updated language to promote and anticipate electric vehicle charging needs, including ADA accessibility.
- Recommend policies, approaches, and synergies for locating electric vehicle charging infrastructure at businesses, multi-unit dwellings, single-family homes, rights-of-way, and other locations.
- Identify opportunities to streamline permitting, including updating applicable codes (i.e., zoning, forest and tree protection ordinance, stormwater, building codes) with the guidance and flexibility needed to resolve conflicts between community goals (i.e., residential electric vehicle charging vs. stormwater controls) on a case-by-case basis. Ensure permit processes and fees are structured equitably and encourage charging installations.
- Identify technical assistance and funding and financing strategies available through federal, state and utility programs to ensure that EV-ready requirements do not place cost burdens on low-income and multi-family residents and small businesses.
- Identify options for charging station locations and potential configurations on City property to support electrification of the City fleet.
- Identify options for photovoltaic (PV), battery energy storage systems and/or backup generators to promote resiliency in the case of a power grid disruption.

The EV Readiness Plan could also identify charging station locations for City property (M-07) and support the electrification of the City fleet (M-06). The EV Readiness Plan should mutually support and integrate with other City plans and policies such as the Comprehensive Plan, small area plans, Bicycle and Pedestrian Master Plans (C-14 and C-15). The plan may also consider special charging or space needs of other e-micro-mobility services, such as electric bicycles and scooters.





Require new developments and redevelopments to be electric vehicle-ready

Objective	Implement measures to expand electric vehicle charging infrastructure equitably across the city as part of the development process				
Metrics	Number of permits for electric vehicle charging station installations (public and private)				
Target	Community transportation emissions	Development Stage	Proposed during building code update for 2021 ICC		
Lead	Planning and Development Services	City Upfront Cost	-		
Partners	Public Works (Engineering, Environment, Traffic & Transportation)	City Operating Cost	-		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+	N	++	+	+	Mobility

Installing electric vehicle supply equipment (EVSE) is much easier during development than it is after construction is completed. It is more expensive and challenging for property owners to go back and install wiring, ensure electric loads are suitable, and provide for universal access after a building and parking lot is constructed. For this reason, the International Code Council (ICC) approved changes to building standards in 2020 that functionally will make new homes “EV-ready.” For a single-family home, that means installing the proper panels, outlets and conduits — essentially everything short of the actual charger. For multi-family buildings, the code calls for two “EV-ready” parking spots, while making more spots “EV-capable,” meaning they can be more easily retrofitted with a 240V outlet. The new EV-ready provisions will appear in the 2021 International Codes. Upon State adoption, jurisdictions typically have up to a year to adopt the latest standards.

In addition to code requirements, the City can assess the Zoning ordinance for changes needed to support electric vehicle charging stations in residential and commercial areas including parking lots and gas stations. This effort should standardize permitting and inspections to streamline procedures and minimize costs for EVSE installation in new construction and retrofits, including, but not limited to:

- Classify EVSE installation as a “minor” amendment to the site plan;
- Provide a permitting template and online permitting application; and
- Ensure a clear and efficient inspection process.





Promote a regional electric vehicle purchasing cooperative (EVPC)

Action C-13

Objective	Increase electric vehicle adoption to reduce GHG emissions				
Metrics	Number of electric vehicles registered in Rockville zip codes				
Target	Community transportation emissions	Development Stage	COG issued RFP in 2021		
Lead	COG, Montgomery County	City Upfront Cost	-		
Partners	Public Works (Environment)	City Operating Cost	Utilize existing sustainability outreach resources		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
++	N	++	++	+	Mobility, Economic

To support the transition from internal combustion on-road vehicles to battery electric vehicles (EVs), regions need to expand the network of charging infrastructure and foster market adoption of EVs. A regional electric vehicle (EV) purchasing cooperative (EVPC) would seek to educate the community about EVs and leverage the collective buying power to negotiate and obtain discounts on EV purchases or leases. In 2021, the Metropolitan Washington Council of Governments (COG) issued a request for proposals to support a pilot EVPC program in Montgomery County to help consumers become more comfortable and willing to purchase EVs in the region, through cooperative purchasing designed to reduce the cost of vehicles. Specific goals of the proposed County program include:

- Reduce transportation sector emissions, thus making progress in achieving regional GHG emission reduction goals for a healthier, equitable, and resilient community.
- Make electric vehicles more accessible to interested parties, in particular with education, financing opportunities, and more equitable access for low-income residents who have historically been left out of similar technology initiatives.
- Work with local car dealerships to develop favorable pricing schedules in return for certain quantities of purchases/leases.
- Market, advertise and conduct community engagement.

A successful EVPC would increase the scale and rate of EV adoption in the area and generate more EV sales for local car dealerships. MWCOG anticipates this first pilot program will run through March 2022, with options for an extension. The City could partner with COG and the County to promote the program to residents through education opportunities and outreach, similar to the model used by the successful solar co-op program.



Equity Considerations

The program should identify ways to make EVs more accessible to all, particularly to lower-income residents and others who have historically been left out of similar technology initiatives.

		<h2>Expand active transportation and shared micro-mobility network by implementing improvements in the Bicycle Master Plan and Vision Zero Plan</h2>			
<h3>Action C-14</h3>					
Objective	Increase bicycle, rolling, walking, scooter, bikeshare and e-bikeshare, etc. trips in place of vehicle trips by improving facilities, user comfort, accessibility, and safety.				
Metrics	Milestone/Status update, miles of bike pathways				
Target	Community transportation emissions	Development Stage		Plan implementation	
Lead	Public Works (Traffic and Transportation)	City Upfront Cost		Cost included in various transportation projects	
Partners		City Operating Cost		-	
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
++	+	++	++	++	Mobility, Safety, Economic

Rockville can reduce GHG emissions and improve mobility by promoting opportunities to replace vehicle trips with bicycle, rolling, walking, scooter, bikeshare and e-bikeshare, etc. trips through improvements to infrastructure and user comfort, accessibility, and safety. The City has several policies and plans that support this goal, including the Comprehensive Plan, Complete Streets Policy, Bicycle Master Plan and Vision Zero Plan. The proposed Electric Vehicle Readiness Plan (C-11) could also support e-bike or e-scooter charging and space needs.

Implementing the Transportation Element in the Comprehensive Plan, particularly Goals 1, 2, and 5 will have the ancillary benefit of reducing greenhouse gases as well as providing more options for exercise and fresh air as residents and visitors travel to work, home, retail, or entertainment. Implementing Complete Streets upgrades, the Bicycle Master Plan, pedestrian and sidewalk amenities, and Vision Zero Plan all help create a safer, more convenient, and inviting active transportation system. Completing connections between potentially high-use routes following the County’s bicycle stress mapping concepts could help prioritize improvements. Implementing upgrades in areas with higher social vulnerability will also help increase equity to meet resident needs. Other community benefits of increased bicycling and walking include health and fitness and economic development. Having these facilities is one way to attract residents, businesses and employees who are looking for a high quality of life. The concepts of universal design reflected in Complete Streets can also improve mobility for people with disabilities, the elderly, youth, and other people who do not drive or prefer alternatives.



Equity Considerations

Care should be taken to ensure that all neighborhoods have access to high quality walking, rolling, and bicycling routes and shared micro-mobility network. Work with the micro-mobility companies to provide subsidized or free access for low-moderate income residents. Conduct outreach to communities of color to broaden user diversity.



Adopt and implement a Pedestrian Master Plan

Action C-15

Objective	Improve overall infrastructure to encourage and increase walking/rolling to reduce vehicle miles traveled and GHG emissions				
Metrics	Milestone/Status update				
Target	Community transportation emissions	Development Stage	Proposed FY22/23		
Lead	Public Works (Traffic and Transportation)	City Upfront Cost			
Partners	Community stakeholders	City Operating Cost	To Be Determined		

GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+	+	++	++	++	Mobility, Safety

Rockville’s Comprehensive Plan recommends developing and implementing a Pedestrian Master Plan to improve the city’s overall infrastructure to encourage and increase walking and rolling as an equitable form of transportation. Through the continued support of the pedestrian experience, the plan will identify steps toward fulfilling its goals of increasing safety, reducing impact on the environment, promoting healthier lifestyles, and providing opportunities for all residents. In addition to providing public health, safety and mobility benefits, this action supports the reduction of local GHG emissions from transportation by displacing vehicle miles traveled. The Plan will enable residents and visitors to walk or roll safely, comfortably, and directly for recreational, economic, and social purposes by:

- Identifying ways to improve the city’s overall infrastructure, ensure accessibility, and encourage and increase walking/rolling;
- Constructing pedestrian infrastructure to expand the network and provide connectivity;
- Recommending methods to improve and maintain pedestrian infrastructure for safe and barrier-free movement; and
- Emphasizing the safety, ease, accessibility, and benefits of walking/rolling in Rockville.

Elements of the plan may include improved transit wayfinding, ADA-compliant furniture and facilities, complete sidewalks, pedestrian-scale lighting, landscaping and street trees, and parking for bikes and other wheeled, non-vehicular modes. The plan should consider the potential impacts of climate change on the pedestrian/rolling experience and how to best protect health and safety (e.g., high heat events, extreme weather).

Equity Considerations

- Ensure equitable across all communities and socio-economic classes.
- Provide safe walking and rolling access to all neighborhoods bus stops; early and ample investment to neighborhoods with the greatest need; and proactive outreach to communities at every stage of the process to ensure recognition and appreciation of various perspectives.



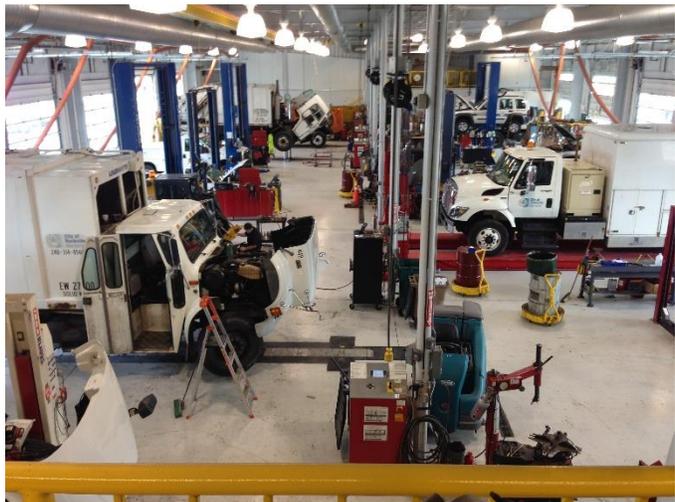
Convert the City fleet to cleaner and more efficient fuel sources

Action M-06

Objective	Transition fleet to low/zero emissions vehicles, beginning with electrification opportunities.				
Metrics	Percent of fleet that are ultra-low emission vehicle (ULEV), gallons of gasoline and diesel fuel consumed; average fuel efficiency of fleet, fleet GHG emissions				
Target	Municipal transportation emissions	Development Stage	Proposed FY2023 – FY2035		
Lead	Public Works (Fleet and Environment)	City Upfront Cost	See M-07		
Partners	All departments	City Operating Cost	From \$15,000/year to \$175,000+/year for heavy duty plus staff training; potential long-term savings in Operations and Maintenance		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+	+	++	++	+	Environment

Rockville seeks to operate a safe and efficient fleet that meets service delivery needs, reduces the cost of operation, contributes to healthy air quality, and reduces greenhouse gas emissions. Over the next decade, transitioning City vehicles to electric and other low/zero emission technologies where feasible is important to meeting these goals. Operating at the Gude Maintenance Facility, Fleet Management manages approximately 294 vehicles; including 93 police and parking or code enforcement vehicles, 114 public works vehicles for refuse collection, leaf collection, water and sewer maintenance, street service, and stormwater facility services, 60 vehicles serving parks, recreation, and facilities, and 27 other vehicles used for inspections, community services, and other city travel needs. The City currently operates one hybrid vehicle and one battery electric vehicle. The recently adopted Resolution to Transition the City’s On-road Fleet (see Appendix D) demonstrated the City’s intention to expand the proportion of alternative fuel vehicles in the fleet in a cost-effective manner while continuing to meet the public’s high service standards.

Given Rockville’s compact size of 13.57 square miles, the fleet primarily operates under low annual mileage and city driving conditions, which makes the economics of transitioning to alternative fuels economically challenging. Transitioning to all-electric vehicle fleets for light and heavy-duty vehicles requires thoughtful long-term planning and the ability to tap into incentives to facilitate the transition. In 2020, Rockville was among four jurisdictions awarded fleet technical assistance through the Maryland Energy Administration’s (MEA) Clean Fuels Technical Assistance (CFTA) Program. A consultant completed a high-level fleet assessment to identify a list of potential vehicles where the mileage, use, and cost savings may be suitable



for electrification. The consultant also factored in special operating considerations. For example, police vehicles incur the highest annual mileage in the fleet but need to be able to respond to any type of emergency with uncompromised functionality. Police vehicles often need to run for extended times with additional in-vehicle equipment to perform their duties. Some other types of vehicles have dual purposes and must be able to be deployed quickly and operate for extended periods of time to meet emergency needs. For example, several pick-up trucks are used for snow plowing which require 4-wheel drive (4WD) and around-the-clock operations following large snowstorms.

First, the CFTA consultant reviewed all 294 on-road vehicles eligible for replacement between FY 2021 through FY 2035 and developed the following electrification recommendations based on **mileage, use, and potential cost savings during the vehicle's tenure with the city**. Due to unique operating needs, emergency vehicles for police patrol and pursuit were not recommended eligible for electrification in the study. Police and Fleet are monitoring the availability and performance of pursuit rated BEVs or PHEVs for a potential pilot in the future. The consultant recommended between 20 to 61 internal combustion engine (ICE) vehicles for electrification (10-30 percent of the remaining 203 vehicles evaluated); based on current and announced electric vehicle (EV) make and model availability, which includes 20 to 38 plug-in hybrid electric vehicles (PHEVs) and up to 23 battery electric vehicles (BEVs). Some low mileage sedans, SUVs, and pickups were not recommended by the CFTA study for electrification because of high costs of acquisition and EVSE infrastructure. Instead, these vehicles could be candidates for leased hybrids that reduce gasoline consumption and GHG emissions.

The higher range of these CFTA recommendations is reliant on Rockville's ability to apply for, and receive, EV and charging station incentives. The conversions would take place over Rockville's existing 5-year lease cycle or during the longer replacement cycle for heavy duty equipment, with the actual number of vehicles eligible for electrification likely increasing over time as more EV make and models become available. Table 6 summarizes the CFTA's electrification recommendations for the higher range, assuming maximum incentives, and the estimated total financial savings and lifetime GHG emissions reductions. The consultant estimated the total financial savings based on capital cost of vehicle acquisition, NPV fuel costs, NPV maintenance costs, EVSE installation, EVSE hardware, and potential incentives.

Table 6: CFTA 15- Year Electrification Recommendations (with incentives)

Vehicle Type	Total Quantity in Fleet	Total Eligible Vehicles ³⁸	CFTA Quantity Recommended to Convert to Electric ³⁹	CFTA Total Financial Savings	CFTA Lifetime GHG Emission Reductions (MT)
Sedan	55	15	1	\$199	14
SUV	28	26	11	\$6,433	134
Light-Duty Pickup	57	17	15	\$9,901	126
Van	14	9*	9	\$21,459	225
Shuttle Bus	5	2*	2	\$45,433	163
Refuse Truck	16	16*	13	\$444,965	2144
Heavy Truck	28	10*	10	\$142,530	263
TOTAL	203	95	61	\$670,920	3,068

³⁸ * Indicates vehicle models meeting full fleet duty needs is uncertain at this time.

³⁹ [Recommendations from the Rockville Electrification Analysis report developed by the Maryland Energy Administration's \(MEA\) Clean Fuels Technical Assistance \(CFTA\) program, in a partnership with ICF. March 31, 2021.](#)

Second, staff evaluated the 61 vehicles recommended for electrification in the CFTA study and the potential market availability of a suitable model that meets the operating needs in the replacement year. After reviewing available models and comparing them with operating needs, the CFTA recommended list of was divided into three phases for implementation (Table 7):

- **Phase 1: Implement electric vehicle replacement.** An electric model that meets operating needs is available/likely available in replacement year.
- **Phase 2: Monitor market for suitable options in replacement year.** The availability of an electric model that meets operating needs is uncertain in the replacement year; therefore, staff will monitor the market for suitable options.
- **Phase 3: Reassess in next replacement cycle.** An electric model meeting operating needs is not available in the replacement year; the vehicle will be reassessed in the next replacement cycle.

Implementation would be based on the availability of electric vehicles through lease or purchase. In FY 2020, the City began to work with Enterprise Fleet Management to phase much of the currently owned fleet to all-leased vehicles, swapping about 35 vehicles per year. All sedans, sport utility vehicles, police vehicles, vans, and pick-up trucks are included in the lease program. This lease program permitted the City to reduce the traditional 15-year vehicle replacement schedule to a 5-year replacement schedule. The City purchases other vehicles, such as shuttle buses, refuse trucks and heavy-duty trucks typically on a 10 to 15-year replacement cycle. Potential replacement schedules by fiscal year are included in Table 7.

The CFTA study determined that the light-duty fleet recommended for electrification could be transitioned to battery electric vehicles (BEVs, such as Chevy Bolts or Nissan Leaf), with some plug-in hybrid electric vehicles (PHEVs, such as Ford - Escape SE FWD PHEV) that travel primarily using electricity, but also have gasoline engines for flexibility and resiliency needed for emergency preparedness. Some vehicles, such as 4-WD pickups used in emergency snow operations, were deferred to a second phase, until electric 2WD pickups could be tested in the first phase to meet the same duty cycle of existing vehicles. In addition, the availability and performance of electric refuse and other heavy-duty vehicles was deferred to later phases until more models become available on the market, are tested under operating conditions, and the necessary charging infrastructure could be planned through a capital improvement program (CIP).

Third, recognizing the City's ambitious GHG reduction goals and desire to lead by example, an enhanced electrification option was developed to go above and beyond the CFTA recommendations. The enhanced electrification option includes all eligible vehicles identified in the CFTA study plus an additional 32 light-duty (sedans, SUVs, vans and pickups) where electric vehicles meeting duty needs will likely be available in the market in FY 2023 and beyond (not including police pursuit and vehicles used snow or emergency operations).

Fourth, staff identified the facilities serving as overnight parking for each vehicle and summarized the charging stations needs for each phase and option to aid in planning electric vehicle supply equipment (EVSE) capital improvements. Retrofitting some facilities to install charging stations to accommodate the growth in electric vehicles may be challenging due to site and electricity service constraints. It should be noted that this initial assessment does not speculate on the need for charging police vehicles or the potential relocation of divisions to 6 Taft Court. Construction Management vehicles currently park at the Recreation Services Building but could potentially relocate to 6 Taft Court in the future. The potential relocation of services from City Hall to 6 Taft Court is also not factored into the EVSE assessment. These facilities may require EVSE in the future as conditions in the market and City parking change. Table 8 summarizes the fleet electric vehicle implementation plan options: 1) the MEA CFTA Option to replace 61

vehicles between FY 2023 and FY2035 and the associated charging station needs; and 2) the Enhanced Electrification Option that includes the 61 CFTA recommended vehicles plus approximately 33 other eligible sedans, SUVs and pickups. In the CFTA option, Phase 1 identifies 28 light duty vehicles and two buses that are candidates for electric replacements. In the Enhanced Electrification Option, Phase 1 involves the electrification of approximately 61 vehicles. Phase 1 also has broad EVSE needs that span seven facilities for both options. Phases 2 and 3 involve medium-duty and heavy-duty vehicles that primarily require EVSE investments at the Gude Maintenance Yard. The CFTA study estimated the cost to install EVSE infrastructure may range from \$644,625 to \$1,083,475 over the next five to ten years, depending on available incentives and is factored into action M-07. The incremental cost for electric vehicle acquisition would need to be determined each fiscal year based on the most recent quotes for lease or purchase. For example, in 2021, Enterprise estimated the PHEV SUV would cost an additional \$3,682 and the PHEV sedan would cost an additional \$2,518 throughout the term of the 5-year lease. Additionally, this action would require fleet and facilities maintenance training for all employees responsible for operating or maintaining an EV or EVSE. The plan is an initial estimate that will continue to evolve as technology and market conditions progress.

Table 7: Fleet Electric Vehicle Implementation Options

Implementation Phase	Option 1 MEA CFTA Report Number of Electric Vehicle Replacements	Option 1 MEA CFTA Report Number of Charging Stations	Option 2 Enhanced Electrification Number of Electric Vehicle Replacements	Option 2 Enhanced Electrification Number of Charging Stations
Phase 1: Implement electric vehicle replacement	Sedan = 1 Pickup (2WD) = 8 Shuttle Bus = 2 SUV = 11 Van = 6 Total = 28	City Hall = 11 Gude = 7 to 9* Rec Services = 4 CC Nature Center = 1 Twinbrook CC = 1 Swim Center = 1 Senior Center = 1 to 3* <i>*depending on senior bus parking</i> Total = 28	Sedan = 15 Pickup (2WD) = 10 Shuttle Bus = 2 SUV = 27 Van = 7 Total = 61	City Hall = 37 Gude = 14* Rec Services = 6 CC Nature Ctr = 1 Twinbrook CC = 1 Swim Center = 1 Senior Center = 1 to 3* <i>*depending on senior bus parking</i> Total = 61
Phase 2: Monitor market for suitable options in replacement year	Pickup (4WD) = 7 Refuse truck = 2 Van = 3 Total = 12	Gude = 12 Total = 12	Pickup (4WD) = 7 Refuse truck = 2 Van = 3 Total = 12	Gude = 12 Total = 12
Phase 3: Reassess in next replacement cycle	Heavy Truck = 10 Refuse = 11 Total = 21	Gude = 21 Total = 21	Heavy Truck = 10 Refuse = 11 Total = 21	Gude = 21 Total = 21
Total	61	61	94	94

Additional details on Phase I Implementation are illustrated in Table 8, including proposed fiscal year of planned replacement, vehicle type and the current parking locations. The first phase focuses on electrifying SUVs, non-emergency pickups, and piloting EV buses. This initial list will continue to evolve as more models become available and market conditions change. Please note that for starred "*" facilities, future parking may be shifted to another facility, depending on service location/needs and site conditions. For example, functions parking at the Recreation Services Building could eventually shift to Taft Court or some Senior Center buses currently parked at Gude could be shift to the Senior Center. Additionally, if an electric pursuit vehicle becomes available on the market to pilot, the Police Station may also need to be retrofitted with charging infrastructure.

Table 8: Proposed Phase I Electric Vehicle Replacement Schedule and Current Parking Locations

Fiscal Year/ Vehicle Type	Number of Electric Vehicles Requiring Charging Station Access (CFTA option/low estimate – Enhanced option/high estimate)							Total
	Recreation Services Building*	Croydon Creek Nature Center	City Hall	Gude Maintenance Facility*	Senior Center*	Twinbrook Community Center	Swim & Fitness Center	
2023		1	2-9	2		1		6-13
Sedan			0-6					0-6
SUV			2-3					2-3
Van		1				1		2
Pickup				2				2
2024	3		7-17	4-7			1	15-28
Sedan			1-7	0-1				1-8
SUV	2		3-7	3-5				8-15
Van			2					2
Pickup	1		1	1			1	4
2025			1-3	0-1	1			2-5
Sedan			0-1					0-1
SUV			0-1	0-1				0-2
Minivan			1		1			2
2026	0-1		0-1					0-2
SUV			0-1					0-1
Pickup	0-1							0-1
2027	1-2		1-7	1-2				3-11
SUV	0-1		1-6					2-7
Pickup	1			1-2				2-4
Minivan			0-1					0-1
2029				2				2
Shuttle Bus				2				2
Grand Total	4-6	1	11-37	9-14	1	1	1	28-61

Incentives and funding mechanisms will need to be regularly explored as programs evolve over time. Establishing plans for both vehicle acquisition and EVSE installation will be critical to allow the City to take

advantage of funding opportunities as they become available. One potential funding mechanism is the Maryland Smart Energy Community (MSEC) program. To participate in the MSEC fleet program, jurisdictions establish a goal to reduce on-road petroleum (gasoline and diesel fuel) consumption by 20 percent. Petroleum consumption is measured as gallons of gasoline equivalent (GGE) where one gallon of diesel fuel equals 1.13 gallons of gasoline. According to the electrification study, depending on the market and incentive availability, replacing 20 to 61 vehicles with electric models could displace 241,000 to 345,000 gallons of gasoline over 15 years of operation (which is approximately 7 to 10% of annual gasoline consumption). The City recently adopted a Resolution to Transition the City’s On-road Fleet to Cleaner and More Efficient Fuel Sources (see Appendix D) to enable the City to participate in MSEC transportation program and to demonstrate the City’s intention to expand the proportion of alternative fuel vehicles in the fleet in a cost-effective manner while continuing to meet the public’s high service standards. Other incentives to explore include EV and EVSE rebates and State and Federal grants.

Furthermore, technologies, markets and programs for low/zero emissions vehicles and infrastructure will continue to innovate and evolve over the next decade. The City’s annual fleet replacement assessment will continue to evaluate opportunities and be positioned to take advantage of federal initiatives, funding programs, or new market options for low/zero emissions vehicles that meet service duty needs. To reflect an accelerated integration of low/zero emissions beyond the initial list of vehicles recommended for payback by the CFTA study, Figure 30 summarizes the vehicle category and fiscal year of replacement through FY 2035. If additional vehicles are identified for electrification in the future, the accompanying action item M-07 that establishes a Capital Improvement Project (CIP) to expand electric vehicle charging infrastructure on City property will need also need to be adjusted to accommodate increased electrification opportunities.

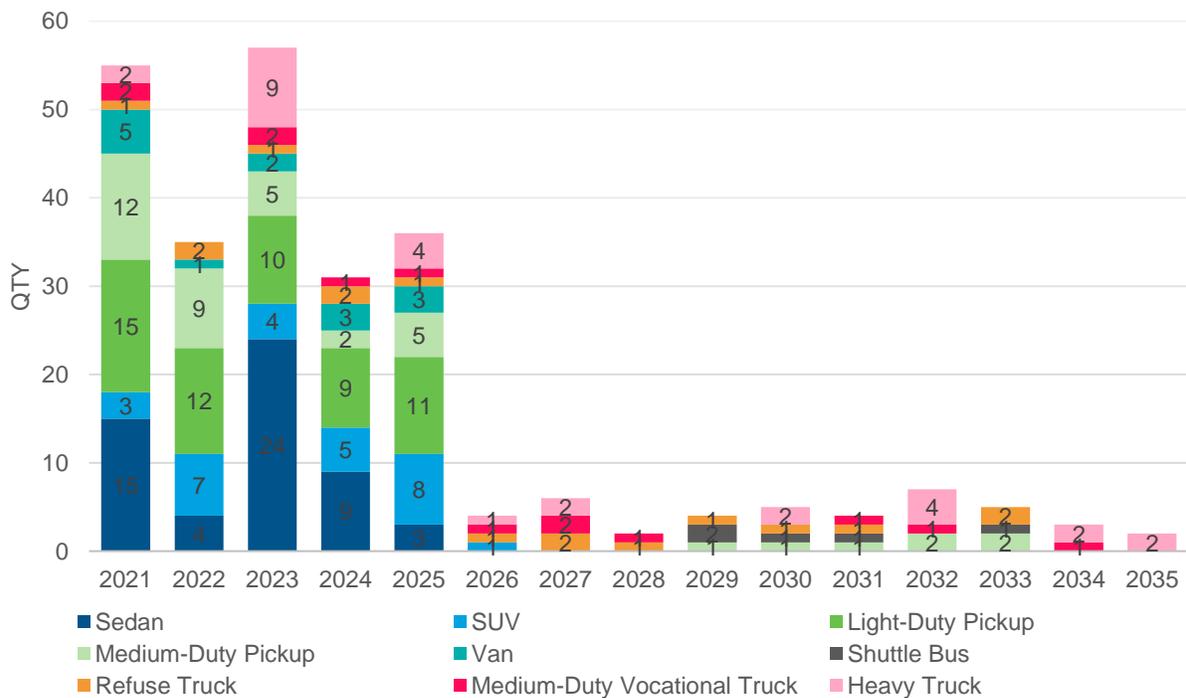


Figure 30: Rockville Fleet Replacement Schedule FY 2021 - FY 2035



Establish a new Capital Improvement Project (CIP) to expand electric vehicle charging infrastructure on City property to serve employees, fleet, and the community

Action M-07

Objective	Strategically plan, fund, and install electric vehicle supply equipment (EVSE) to support the transition to electric vehicles				
Metrics	Number of EVSE installed				
Target	Community and municipal transportation emissions	Development Stage	Proposed FY 2023		
Lead	Recreation and Parks	City Upfront Cost	\$644,625 to \$1,083,475; range depends on incentives and site design considerations. 0.5 FTE Planning cost-share with C-11		
Partners	Public Works (Fleet and Environment)	City Operating Cost	To Be Determined; may include charging station software subscriptions and increased electricity costs; may be offset by fuel savings		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+	+	++	++	+	Mobility, Economic, Economic

Rockville has limited electric vehicle supply equipment (EVSE) to serve the fleet and the public. Thomas Farm Community Center has a Pepco DC fast charger and a Level II charging station that is available to the public. City Hall has a Level II charging station available to the City fleet. To electrify the City fleet (M-06), a significant expansion of electric vehicle charging infrastructure (EVSE) is needed. The City’s recently adopted Resolution to Transition the City’s On-road Fleet to Cleaner and More Efficient Fuel Sources (see Appendix D) supports this action.

To support Phase 1 fleet electrification options in M-06, additional Level II and DC fast charging infrastructure will be needed at City Hall, the Gude Maintenance Facility, 6 Taft Court, the Senior Center and other facilities. Potential charging station locations and timelines are outlined in Table 8. Given the time required to plan, procure, design, permit and construct charging stations, the City should establish a new Capital Improvement Project (CIP) for phased multi-year EVSE deployment that aligns with the vehicle replacement cycle. The fleet electrification study discussed in M-06, estimates that transitioning light-duty and some heavy-duty vehicles to electric vehicles (EVs) over the next ten years will have significant costs, due primarily to expenses associated with needed charging infrastructure. The study estimated the cost to install EVSE infrastructure may range from \$644,625 to \$1,083,475 over the next ten years, depending on site conditions and available incentives. Further, to promote resiliency in the case of a power grid disruption, many studies recommend exploring solar photovoltaic (PV), battery energy storage systems and/or backup generators. It is important to examine potential sources of grant funding and to opportunities to make the most of this investment. With limited parking space availability at City facilities to meet fleet, employee and public charging demands, the City could evaluate dual-use stations where the public or employees could utilize the charging infrastructure during the day and fleet could charge at night. Management software and oversight would be needed to oversee the systems and ensure Fleet charging is available. The proposed EV Readiness Plan (C-11) could recommend options and financing models.

		<h2 style="text-align: center;">Update City teleworking and transportation benefit policies to encourage City employees to reduce vehicle miles traveled (VMT)</h2>			
<h3>Action M-08</h3>					
Objective	Reduced City employee vehicle miles traveled (VMT) through increased telework, transit use, and carpooling.				
Metrics	Number of employees utilizing telework agreements, transit benefits				
Target	Municipal transportation emissions	Development Stage	Proposed		
Lead	Human Resources	City Upfront Cost	-		
Partners	All Departments	City Operating Cost	Depends on level of transit incentives Cost share: M-07		
GHG Benefit	Resiliency	Feasibility	Health	Equity	Co-Benefits
+	++	++	+	+	Mobility

Rockville’s FY 2022 adopted budget has a total of 620 regular and temporary full time equivalent (FTE) positions. The emissions from employee commutes are included in the overall community transportation emissions. Providing telework and transportation benefits to encourage employees to reduce vehicle miles traveled in single-occupancy, internal combustion engine vehicles would reduce emissions from employee commutes. Such policies could balance in-person service needs while enabling regular teleworking where feasible and flexible schedules. These and other incentives such as more robust transit benefits, and parking cash-outs for employees taking alternate means of transportation other than transit could complement the City’s recently updated Telework Policy, bicycle storage, shower facilities, and before-tax transit benefit.

Additional steps to support reducing emissions from employee commutes could include Live Where you Work incentives for employees to reside in Rockville, incentives for carpooling, or leveling costs to park with costs to commute via alternative means, providing access to vehicles on-site, or considering Rockville among other local employment destinations in transit service improvement initiatives. Additionally, while providing employees with greater access to electric vehicles charging stations (M-07) could reduce GHG emissions from employee commutes, although not reduce VMT.

As experienced in the pandemic, telework policies provide resiliency co-benefits by supporting the continuation of community services.