District of Columbia

Transportation Electrification Roadmap

Wednesday, 15 December 2021

DEPARTMENT OF ENERGY & ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

TE Roadmap Goals

1. Buses and private fleets 50% Low or ZEV by 2030 → 100% ZEV by 2045

2. 100% EV replacement of public buses and school buses at EOL by 2021

3. At least 25% ZEV registrations by 2030 (estimates~75,000 EVs)

Provide policies, cost estimates, and timelines

EV Ecosystem

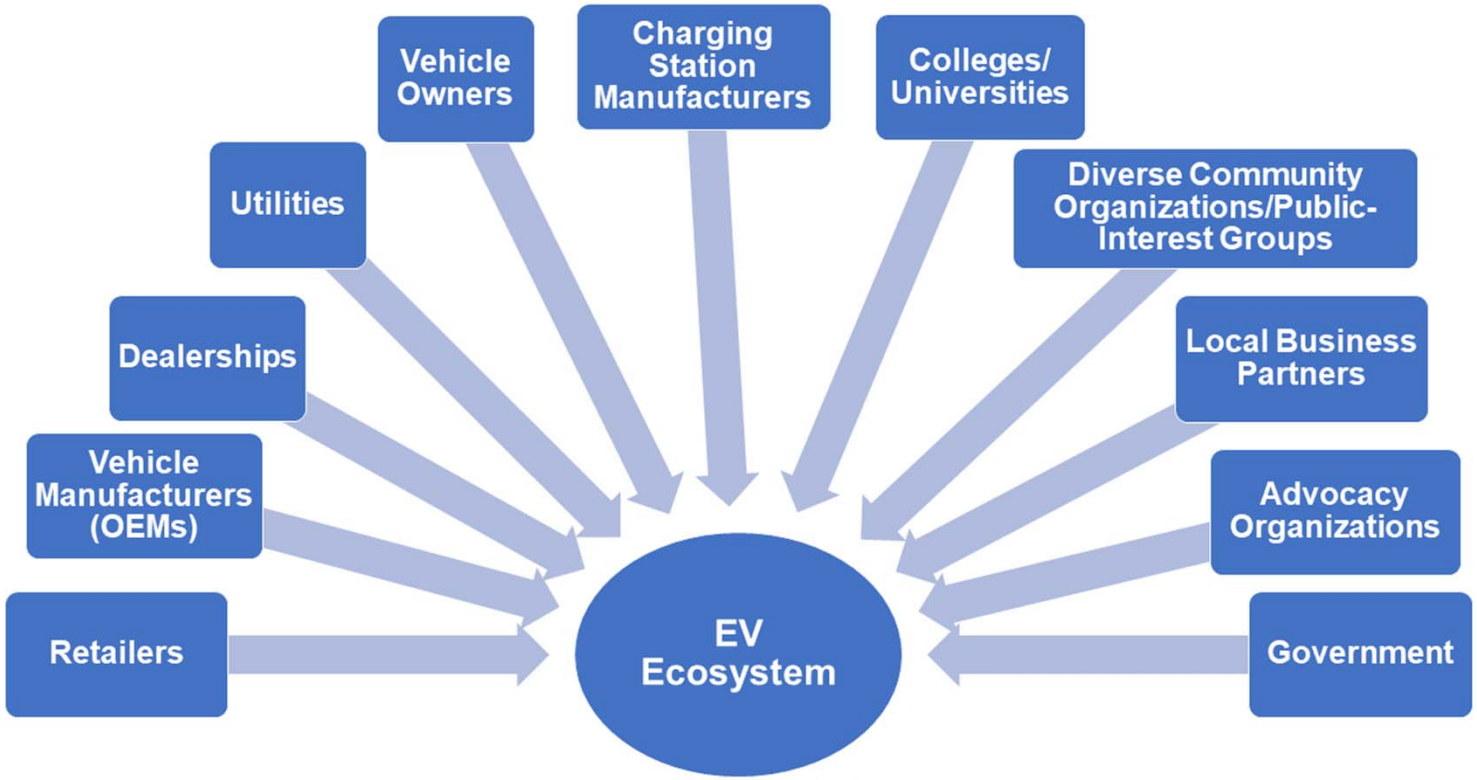
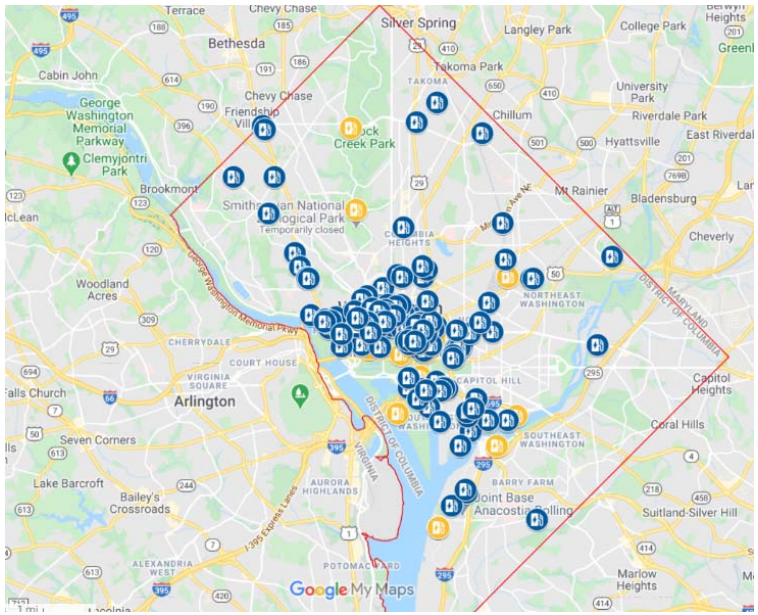


Figure 1. The Electric Vehicle (EV) Ecosystem

EV Charging Station Assessment



CURRENT PUBLIC EVSE LOCATIONS

EV Charger Type	Number of Charge Ports
Level 2 (blue)	546
DC Fast Charging (yellow)	33

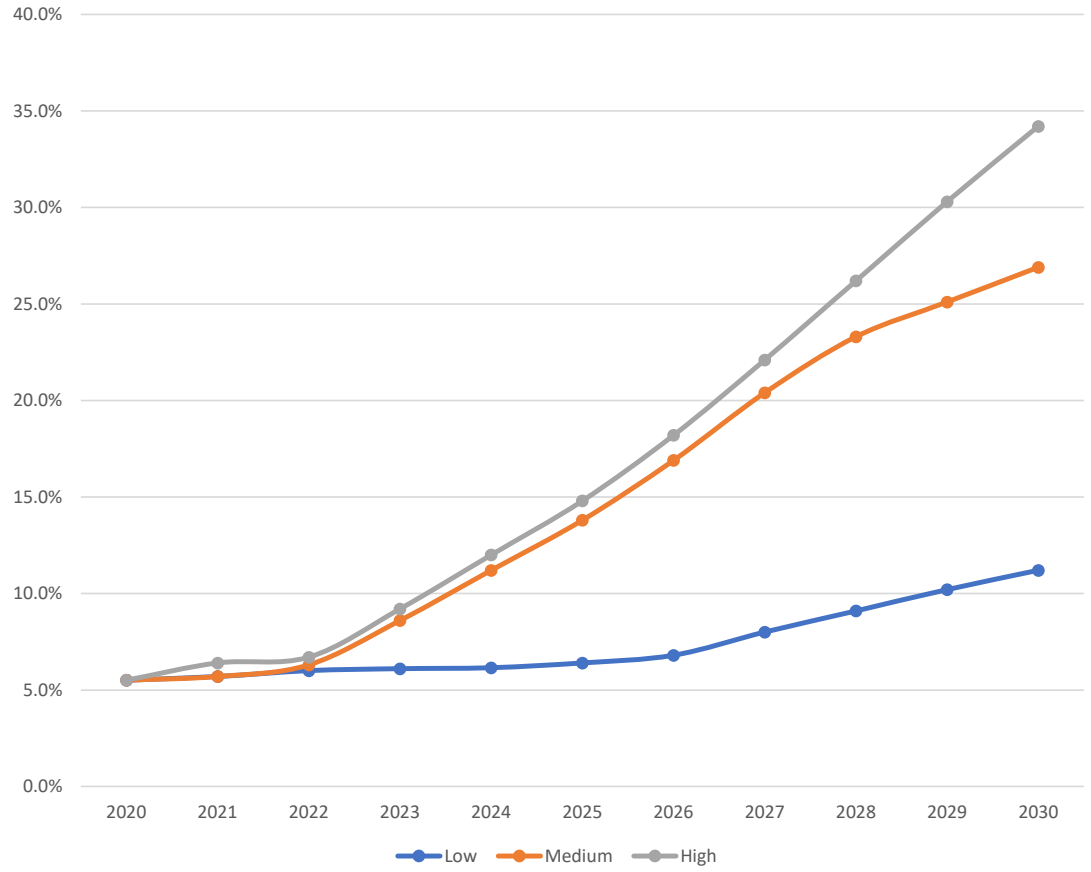
PROJECTED EV CHARGING NEED BY 2030

(GOAL OF 25% EVS REGISTERED)

EV Charger Type	Number of Charge Ports
Workplace – Level 2	2,677
Public – Level 2	1,858
Public – DC Fast Charging	542

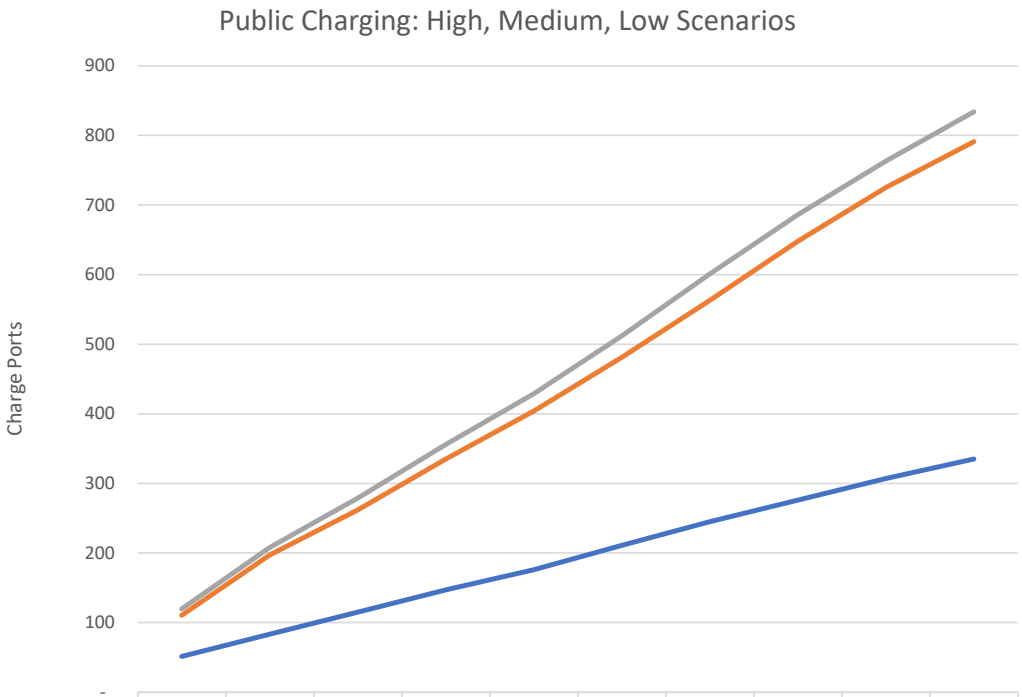
Percent Electric Vehicles of Total Registered Vehicles

- 296,000 personal vehicles registered within the District at the end of 2020.
- Assuming this number of vehicles holds constant over time, Washington D.C. could expect a range of 20,427 to 62,376 District-registered EVs and the associated charging needs by 2030.



Charging Scenarios: Public Charging

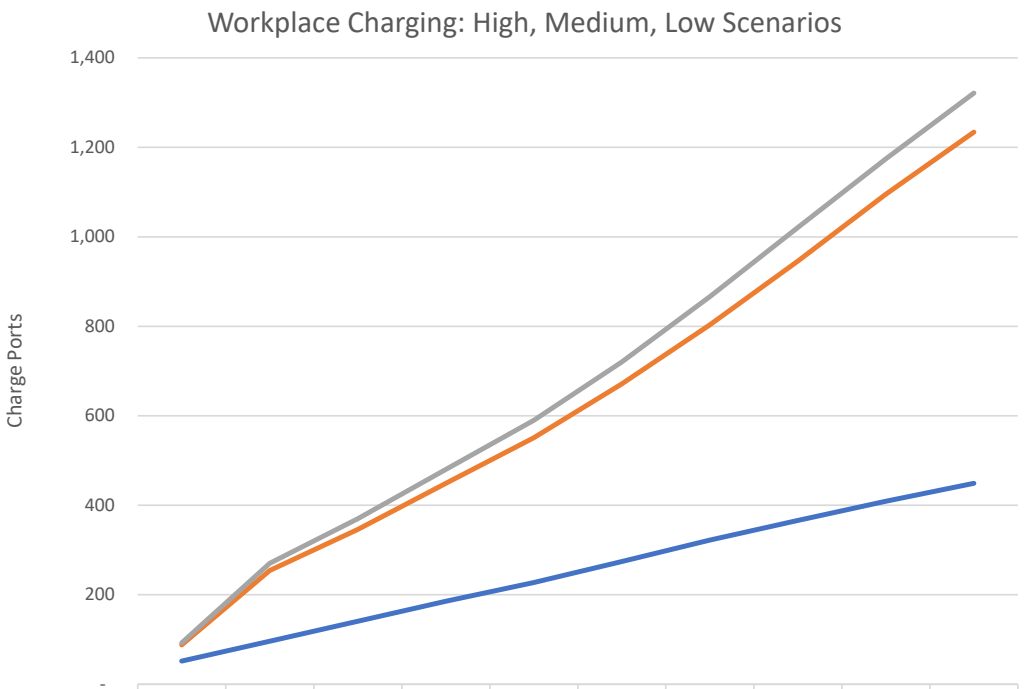
- Theoretically – Adequate charging exist within the District for current EV deployment.
- However, charging ports are located downtown and behind parking paywalls.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Low	51	83	115	147	176	211	245	276	307	335
Medium	110	197	262	335	404	481	563	648	725	791
High	120	208	279	356	429	512	601	686	763	834

Charging Scenarios: Workplace Charging

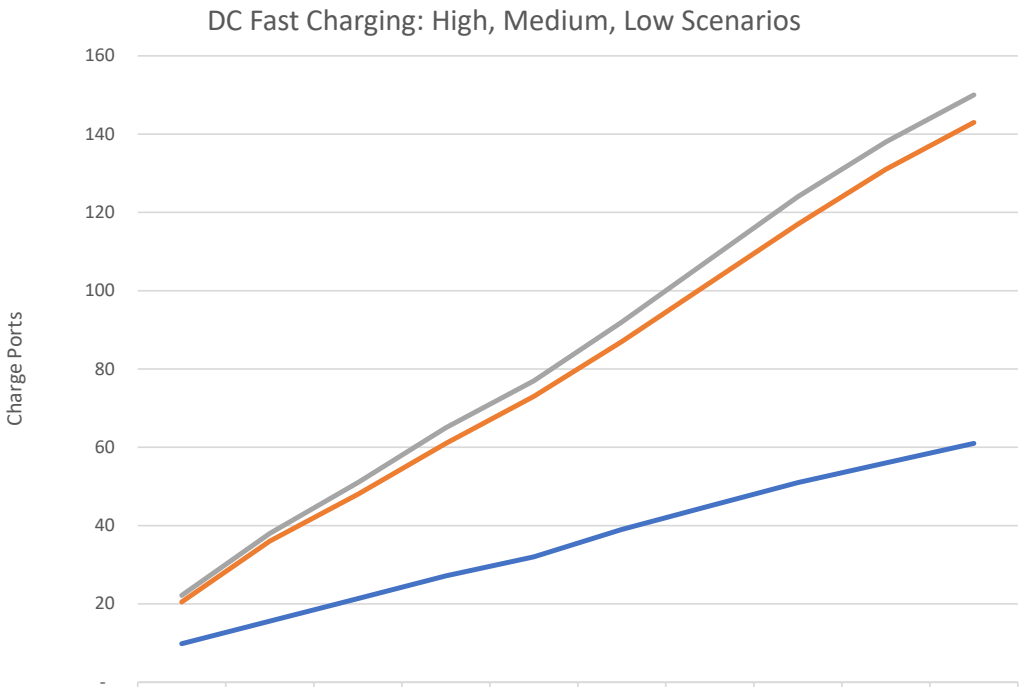
- Census (2016) tracked data estimates ~200,000 SOV and Carpooled drivers enter the District daily during normal working conditions.
- Regionally, to meet charging needs workplace LVL 2 charging ports will be needed to support EV growth



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Low	52	96	141	185	227	274	322	366	409	449
Medium	88	254	346	449	551	671	803	946	1,095	1,234
High	92	270	370	480	590	720	866	1,021	1,174	1,321

Charging Scenarios: DCFC

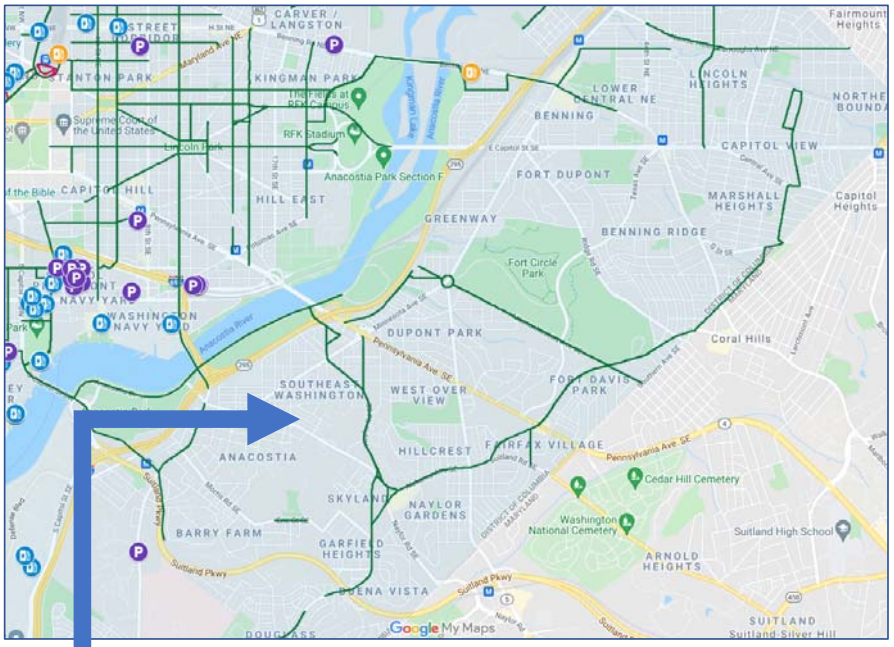
- DCFC, and some supplemental LVL-2 are required to meet needs of ride hailing drivers.
- Current needs are theoretically met but needs to scale with goals established by the CEDC Act.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Low	10	16	21	27	32	39	45	51	56	61
Medium	21	36	48	61	73	87	102	117	131	143
High	22	38	51	65	77	92	108	124	138	150

Where EV Charging Gaps Exist

LOW INCOME AND LIMITED OFF-STREET PARKING, DENSE NEIGHBORHOODS



Some overlapping charging, but more needed to serve residents.

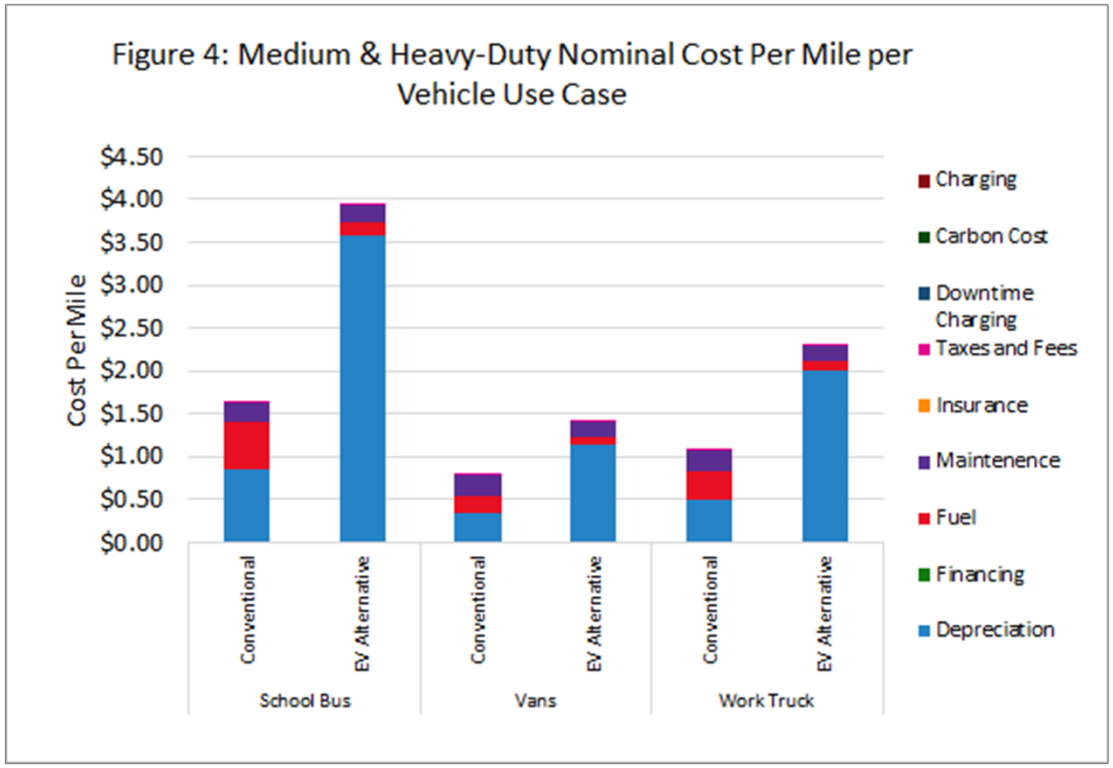
Lack of low-income neighborhood charging

Equity Framework - Policy Examples

	Equity Focused Policy Examples
Electric Public Transit	Fleet Procurement Requirement (# or % by prescribed date)
	EV First Transit Procurement Requirement
E-Bike (Shared or Owned)	Purchase incentives for low-income residents
	Subsidized E-bike sharing for low-income residents
E-Carshare	Prioritization of E-Carshare stations in low-income areas
	Subsidized EV car sharing for low-income users
E-Rideshare	TNC Electrification Requirement (# or % by prescribed date)
	Cost Sharing for TNC charging hubs development in lower-income areas
Personal Electric Vehicle	High emission vehicle buy-back program for low-income residents
	Increased purchase & EVSE incentives for low-income residents (new & used vehicles)

Challenges unique to the OSSE fleet

Funding an Electric School Bus Fleet



Thank you!

Questions?

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