



GUIDANCE FOR PUBLICLY ACCESSIBLE EV CHARGING STATIONS AT STATE-OWNED FACILITIES

Prepared by the Department of Energy Resources Leading by Example Division

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This guidance document is intended to inform publicly accessible electric vehicle charging station installation at facilities that are subject to the requirements of Leading by Example Executive Order 594 but may be used to inform decision making at any state entity. Questions or follow-up discussions should be directed to [LBE staff](#).

I. General Guidance

Commonwealth agencies, authorities, and institutions of higher education operate a diverse range of facilities that are open to the public for a variety of purposes, including but not limited to state parks, beaches, skating rinks and pools; licensing and permitting offices; residential care facilities; correctional and youth detention centers; university and college campuses; and public safety training centers. Given the Commonwealth's aggressive greenhouse gas emission (GHG) reduction goals, and the important role electric vehicles will play in achieving those goals, state facilities have a responsibility to support the expansion of electric vehicle (EV) charging infrastructure and should consider installing EV charging stations (sometimes referred to as electric vehicle station equipment or EVSE) for public use in multiple locations. Increased installation of EV charging infrastructure in the near term will accelerate and streamline substantial vehicle electrification across the state in the long-term.

This document is intended to guide agencies and departments in the deployment of publicly accessible EV charging stations, specifically stations designated for relatively short-term/destination use. This guidance does not apply to state fleet vehicle charging, workplace charging for state employees, or charging stations located along transportation corridors, although some of the guidance herein may still be applicable.

II. Charging Station Locations

Publicly accessible stations can be installed in any Massachusetts utility service territory although incentives may differ in certain areas (see Section V of this document). EV charging stations available for public use should be placed in locations that are easily accessible and available to as many potential users for as many hours a day, week, and year as possible. Examples include parking for visitors to state parks, residential facilities with family and friend visitation rights, sites requiring residents to apply in person for permits, licenses, and other documents, etc. It should be noted that to access incentives through the [MassEVIP¹](#) public charging program, a site must give the public practical access to EV charging parking spaces for at least twelve hours per day, seven days per week², although state entities may elect to implement limitations on individual charging sessions within that time frame (see Part VII of this Guidance for more information). Sites that are not as desirable include those that require special passes to enter, are only accessible to a subset of the public, or are purely seasonal sites and are closed during parts of the year, although in some cases they still may be appropriate for public EV charging.

¹ Massachusetts Electric Vehicle Incentive Program (MassEVIP) is a rolling grant program aimed at making EVs and charging infrastructure more widespread across the Commonwealth.

² Sites that require special passes or are only available to some members of the public do not qualify under the MassEVIP public access charging program.

III. EV Charging Station Types and Siting

In general, agencies should consider the installation of Level 2 charging stations as they are the most versatile and appropriate for various use cases and provide a significantly faster charge than Level 1 units. However, in cases where visitors may park as much as eight or ten hours a day, agencies may want to consider Level 1 AC charging stations that can provide sufficient recharge for most daily commutes. In rare cases, agencies might consider DC fast charging (DCFC) stations if visitors to a site are generally there for only a short amount of time. DCFC stations are significantly more expensive to install and require higher operating costs; these may be better suited for short duration visitor parking areas (e.g., correctional facilities, permitting offices, etc.). Agencies should also purchase only [ENERGY STAR®-certified EV charging stations](#). Non-traditional charging stations that are available on statewide contract may suit the needs of some sites with unique attributes.

Wherever possible, EV charging stations connected to the grid should be installed as close as possible to adequate electrical infrastructure to reduce overall trenching, site disruption, and electrical upgrade costs, even if those costs are borne by other funding sources. Charging stations must adhere to any federal, state, and MassEVIP accessibility requirements. Stations installed for use by the public should consist only of smart or networked chargers that are data enabled, ensuring that EV drivers can find these stations on the various apps designed to identify station locations and availability and enable the collection of fees for station use (see Section VII below). Any parking space with access to EV charging must be solely designated for EVs through signage or another means; it is the expectation that state entities will make every effort to ensure that such rules regarding station usage are enforced.

IV. Accessibility

State facilities should take steps during the planning process to make EV charging accessible and usable by persons who have disabilities. The Commonwealth of Massachusetts has obligations under Title I and II of the Americans with Disabilities Act (ADA) to ensure all public programs, services, and activities are accessible to persons with disabilities. To meet this mandate, state entities must ensure that at least 5% of the site's public EV charging parking spaces, but not less than one such space, be accessible to persons with disabilities. These EV charging stations and associated parking spaces must comply with the Massachusetts Architectural Access Board's rules and regulations ([521 CMR 23](#)) and/or the [2010 ADA Design Standards](#).

Accessible site layouts should consider connector and receptacle heights, special curb cutouts, charging cord placement, adjacent pedestrian circulation areas, and loading areas to ensure accessibility for those with disabilities and further facilitate access in difficult weather conditions. Adequate EVSE protection, such as concrete-filled steel bollards, should be used where warranted. Accessibility strategies for station placement will largely be site-specific and therefore it is advisable that a qualified, design professional review all planned installation locations for code-required factors. For more information and diagrams, please see the [MassEVIP accessibility requirements](#); facilities that are owned or managed by DCAMM should consult the [Statewide Accessibility Program](#).

V. Number of EV Charging Stations and EV-Ready / EV-Capable Parking Spaces

The target number of installed stations and EV-ready or EV-capable parking spaces at specific public parking areas will largely depend on such factors as existing infrastructure, future site plans, parking area size, and usage. While the most cost-effective way of installing a substantial number of charging stations will be in conjunction with new development or major parking area reconstruction, there may still be opportunities to increase charging infrastructure at existing facilities. Priority public parking areas may be identified as those with ease of build-out (e.g., accessible electrical service, sufficient capacity, etc.) and/or with many visitors that park daily for most if not all months of the year. For additional recommendations about number of stations and EV-ready or EV-capable parking spaces, see the [Executive Order 594 Section 5C Guideline: Electric Vehicle Charging](#). State entities and project proponents are encouraged to collaborate with LBE and DCAMM in developing charging infrastructure roll-out strategies, particularly agencies with several sites available to the public.

VI. Funding and Procurement

Funding of up to 100% of hardware and installation costs for public charging may be available through [utility make ready programs](#) (in Eversource and National Grid service territories), and/or [MassEVIP](#) grants (statewide). Because of complexities related to bundling MassEVIP and utility funds, as well as to procurement and construction laws and regulations, agencies are encouraged work with LBE staff and refer to [LBE guidelines](#) to help navigate these processes. To purchase EV charging stations, executive branch agencies must work with vendors on the current Massachusetts statewide contract *VEH102: Advanced Vehicle Technology Equipment, Supplies, and Services* (VEH102). The [VEH102 contract user guide](#) includes vendor information and details about currently available products and services.

VII. Upfront and Ongoing Costs

A standard dual-plug, networked Level 2 charging station available on VEH102 can range from \$3,000-\$8,000 (~\$5,000 on average), while a DCFC station can cost \$35,000 and up. Equipment costs will vary based on the type and brand of equipment selected, equipment features, and the selected vendor. More complex charging stations with advanced software and other capabilities (e.g., features such as charging cord type, complex pricing strategies, reservation systems) will typically result in higher upfront cost. Installation costs will also vary widely, depending on circumstances such as electricity service upgrade requirements and amount of trenching needed.

Once equipment has been installed, there are several ongoing costs for which agencies will need to plan. The table below provides general estimates for ongoing operating costs associate with a single dual-plug Level 2 charging station. There may be economies of scale associated with managing multiple stations at a single site so agencies should work with their selected vendors to determine any possible cost reductions.

Ongoing cost	Details <i>Please note that these ongoing costs are not covered by MassEVIP incentives</i>	Annual estimated cost
Annual charging station maintenance	Some vendors may offer an annual maintenance fee that includes a preventative maintenance schedule. There may be infrequent, unforeseen repairs that agencies should be prepared to cover on an ad hoc basis.	\$400
Extended manufacturer warranties	The inclusion of an extended warranty for charging stations that will be used by the public is recommended; costs vary depending on vendor and equipment and number of years of the warranty.	\$200-1,600
Electricity demand charges	Demand charges may vary widely by electric utility charging station type, metering arrangement, and how the station is used. These costs range from \$0 up to a few thousand dollars per year. Because there are so many factors in play and some are subject to change over time, it is difficult to estimate an average expected cost.	Varies
Electricity costs per kWh	Based on kWh use, charging at stations connected to a host site meter will cost a host facility the same amount it pays for its own electricity. Stations with an independent meter will pay the specific rate for that meter class. In either case the more hours vehicles charge, the higher the electricity costs. However, it should be noted that these costs may be partially or fully offset through charging fees assessed on station users.	Utility rate multiplied by kWh usage
Networking fees	Provides usage data collection, remote management, diagnostic capabilities, and a payment interface; cost varies depending on the vendor and network plan. Many grants will require charging stations to accept payment without restrictions based on network membership or subscription (e.g., allow credit card payment without login).	\$200-800

VIII. Usage Fees and Public Access

While each site may have different constraints and opportunities, there are four core usage and access considerations:

- 1) **Fees for public EV charger use:** Because state sites and funds are being utilized for the installation and ongoing management of public EV charging stations, including the cost of providing electricity, agencies should require payment for charging station use from any privately owned vehicle. Reasonable fees should be set that strike a balance between setting the fee too low, which might incentivize drivers to visit the site specifically just to charge, and pricing drivers out of using the stations by setting the fee too high. Usage rate information and charging time limits must always be made clear to any station users.

- 2) **Setting the fee structure:** EV charging stations typically involve a per-kWh or a charging time-based rate to charge. Using a per kWh fee is the easiest to set and understand based on the existing electricity fee structures at both state sites and private residences. Any fees should be made clearly visible to EV drivers to ensure full transparency and set expectations for drivers prior to accessing the station.³ Although it would be difficult to set such a fee that covers all costs associated with charging stations, agencies should consider setting a fee that is at least the same as the cost per kWh to the facility or that is equivalent to the surrounding area's residential electricity rate⁴ so that drivers are not benefitting by using state installed stations instead of their home stations nor are some drivers overly penalized who do not have access to home stations. Agencies may want to contemplate adding a modest surcharge (e.g., 10%-20%) on top of that fee to recoup some of the additional costs associated with operating the stations. Public EV charging stations at state sites must be equipped to accept payment and should enable a payment option for all EV drivers without restrictions based on network membership or subscription (e.g., allow credit card payment without login); state entities should plan to collect charging station usage data for at least three years after stations are operational.⁵
- 3) **Setting time limits:** Because there are many different scenarios associated with when and how a public user might want to access a charging station, this issue is very site dependent. For example, narrow time limits may not be feasible or recommended for a site where visitors are sequestered for many hours during the day and/or may be unable to return to their vehicles. However, if a site normally has visitors for shorter amounts of time, then limiting the charging time to few hours may encourage greater use of the station and provide more access to a greater number of EV drivers. One way to facilitate station turnover and alleviate enforcement challenges is to set a standard fee for a certain number of hours and then have the charger's networking system institute a rate increase after a pre-determined block of time. At a minimum, whenever possible, it is important to require vehicles to vacate the charging spot when completely charged so that others may take advantage of the station.
- 4) **Station access when sites are not occupied:** Providing access to public EV charging stations for as many hours as possible will help to support statewide transportation emissions reduction goals by providing drivers with a wider network of available chargers; furthermore, as noted above, there are currently access hour requirements associated with incentive programs for public charging. LBE staff recommend that agencies prioritize locations for EV charging stations in parking areas that are already available after hours and do not entail changes to security protocols to allow public access. Because there are many EV drivers who may not have access to personal charging infrastructure, providing these types of sites overnight can help to provide such charging to a wider range of EV users. Since in these instances EVs would likely need to be left overnight, sites that establish a tiered fee structure during the day may want to eliminate that structure overnight or other times when the site is not being utilized.
- 5) **Station location visibility:** State facilities housing public access charging must register such stations on the U.S. Department of Energy [Alternative Fuels Data Center Station Locator](#) and are strongly encouraged to submit station locations to other EV charging websites such as [PlugShare](#), [ChargePoint](#), [EVgo](#), and [ChargeHub](#). In addition, LBE program staff maintain an [interactive map of state-owned EV charging stations](#) across the Commonwealth that allows users to filter by charger type and enter a driving directions to identify state-owned EV charging stations along a specific route.

³ If certain public parking areas require a fee to park, state entities might consider reducing the fee for EV drivers.

⁴ Because retail rates involve several different charges and can change periodically, facilities that are unable to identify area rates should contact LBE staff to help them identify accurate rates for retail customers in the vicinity of the state facility looking to install charging stations.

⁵ Unrestricted payment capabilities and usage data collection are requirements for any public access stations receiving MassEVIP funding.