

# LEVEL 1 CHARGING AT MULTI-FAMILY HOUSING

## General Information About Level 1 Chargers

All new electric vehicles (EVs) come with a Level 1 (L1) charging cable that connects to the vehicle and can be plugged into any standard, 110/120-volt, three-pronged household outlet. L1 charging offers the slowest rate of charge for EVs, generally providing between two to five miles of range for every hour of charging. Charging overnight will add about 40 miles of range to your battery, which makes L1 charging ideal for drivers who do not travel long distances every day or those with a plug-in hybrid electric vehicle (PHEV), which has a much smaller battery than an all-electric vehicle.

While L1 charging is not fast, it is easy to access and inexpensive to install. Typically, all that is needed is a grounded outlet in close range to your vehicle, which is often standard in garages, including in multi-family housing garages. Level 2 (L2) chargers should also be installed in conjunction with L1 chargers to accommodate residents with longer commutes.

L1 chargers are usually less than \$300, but it is important to get an L1 charger that is listed by a nationally recognized testing laboratory (such as [UL](#) or [Intertek](#)). Those listings will ensure the charger uses quality parts that are certified to perform as expected. L1 chargers are almost always portable, so requiring billing for L1 chargers is nearly impossible unless utilizing a metered outlet (e.g., [Orange Charger](#), [Intellimeter](#) and others). L1 charging usually mitigates the need for adding additional electrical capacity in the form of panels or transformers.

## Installation

L1 chargers require a grounded outlet, but some hardwired L1 chargers exist and are generally best for long-dwell time use cases like at airports and ferry terminals. The cost difference between L1 wiring and L2 wiring is minimal unless much higher power L2 chargers and respective breaker/wire sizes are being used.

## Other Considerations

L1 chargers typically draw 12-16 amps and require breakers and outlets rated for 15-20 amps, respectively (80% of breaker size is approved continuous load amperage rating). The outlet must also contain a Ground Fault Circuit Interrupter. For safety reasons, it is always recommended to contract with a licensed electrician when adding outlets for L1 chargers, even with lower power levels. If L1 chargers are being installed in conjunction with L2 chargers, it is possible to simply add a 110-volt outlet to the L2 charging pedestal. This will enable two vehicles to charge simultaneously, although at a slightly lower rate of charge. Sites considering this option would need to reserve two parking spaces for each combined L1/L2 charger to be eligible for the L1 charging rebate under ODOT's CCR program.

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