

Ratios of Vehicles to Level 2 Chargers

These tables provide details about the number of vehicles that can share a single L2 charging port. At first, it may be easiest to plan for one vehicle per charging port, but as facility staff gain experience with EVs, greater vehicle-to-port ratios will lead to efficiencies in infrastructure.

EVSE type	Advantages	Drawbacks	Operations notes
<p>DEDICATED L2 1:1 non-networked</p> <p>These are the simplest EVSE.</p> <p>Fleets often use dedicated L2 units behind a fence where they control access, but these units may also be placed near an entrance where usage can be monitored.</p>	<p>Relatively simple to install.</p> <p>Less expensive without network software and fees.</p> <p>No need for Wi-Fi service or software upgrades.</p>	<p>Internal data about charger use must come from a separate meter or vehicle data tracking systems.</p> <p>No electric load management so demand charges may kick in if lots of charging is initiated at once.</p> <p>No automated communication to learn about outages and repairs.</p> <p>Integrating telematics may be cumbersome.</p>	<p>In-person technician repairs required for hardware or warranty issues. No remote restart.</p> <p>Creates an outage notification and repair initiation process among staff.</p>
<p>DEDICATED L2 1:1 networked</p> <p>Dedicated L2 units are typically used by fleets to charge vehicles overnight and track electrical use by vehicle or department. Each vehicle has access to a dedicated EVSE port at an assigned parking stall.</p> <p>(See NEC 625 on continuous load and dedicated charging.)</p>	<p>Can be sized to meet unique charging needs of multiple vehicle types (light-, medium-, and heavy-duty).</p> <p>Combine with load management systems for expansion without expensive upgrades.</p> <p>Over the air remote software upgrades and technician trouble shooting.</p>	<p>Can be more expensive to install and operate (annual per-port software fees), and impact more parking spaces.</p> <p>Costly demand charges could occur if charging times are not managed.</p> <p>Additional costs for adding smart charging or third-party load management systems.</p>	<p>Vehicle operators need to pick up the vehicle, disconnect the charging cable, return vehicle to stall when their shift is over, and reconnect the charger.</p> <p>Works well when:</p> <ul style="list-style-type: none"> • Facilities have a limited number of EVs and ample electrical capacity. • Shared charging is not possible.



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<p>SHARED L2 4:1 networked with load management</p> <p>Fleet vehicles have access to a shared parking stall equipped with charging hardware. Networked EVSE with a load management system may distribute electrical power and balance the load among EVs.</p>	<p>Spreads costs across multiple vehicles.</p> <p>Fleet operators can control when and how each EV is charged.</p> <p>Can reduce peak electrical load, which can reduce or avoid the need for electrical service upgrades and high demand charges.</p> <p>Can charge MHD vehicles with light- or variable-duty cycles alongside light-duty vehicles.</p> <p>Can capture data for usage reporting and clean fuel credit capture.</p>	<p>Higher initial capital investment and ongoing data and service cost with annual fees.</p> <p>May require a scheduling system to manage access to the charging port among drivers and vehicles.</p>	<p>Adding network-enabled load management to dedicated charging makes sense on sites with many EVs with long dwell times.</p> <p>Engage a network provider that includes a warranty and/or hardware repair agreement.</p>
<p>SHARED L2 Several EVSE shared by many EVs</p> <p>Useful for municipal fleets with EVs that drive relatively low miles per day and charge overnight in shared parking stalls with access to L2 ports on a wall or pedestal.</p> <p>NEC 625 code allows for this type of charging on a continuous load but may require a technology solution or staff to plug vehicles in when one car reaches a full battery and the next vehicle needs to be charged.</p>	<p>Reduces initial investment costs.</p> <p>Can leverage existing or limited electrical capacity.</p> <p>With load management there is the potential to avoid or reduce peak demand charges.</p>	<p>Requires process management to ensure each vehicle and battery maintains sufficient charge.</p> <p>Vehicles or the port must be moved and may increase operational costs and/or require a change in fleet driver behavior.</p>	<p>Requires rotating vehicles between shared L2 ports or moving the charge cord between vehicles.</p> <p>Makes sense when:</p> <ul style="list-style-type: none"> Fleet vehicles typically drive less than 50 miles a day and have dwell times greater than eight hours. Staff manages charging by rotating charging cords or vehicles, or directing drivers to charging when needed.

