metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

DESIGNING FOR EVs

Developers, engineers, and planners all have important parts to play in creating opportunities for supportive EV infrastructure. The right charging setup depends on user needs, surrounding land use, and site constraints. Accessibility for people with disabilities is a major component in a well-designed EV charging space.

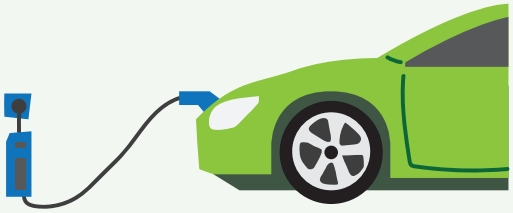
MEETING USER NEEDS

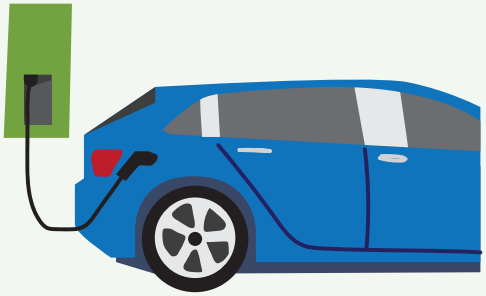
EV charger user needs will vary depending on land use and whether chargers are for homes, apartments, commercial/industrial areas, or recreational spaces. With any new construction, developers should estimate the current and future demand for EV charging. There are three general readiness levels for EV charging, so that new development can plan for both the current and future demand while minimizing the need to rebuild infrastructure when more demand is necessary:

EV-CAPABLE
Sufficient electrical panel capacity and installed conduit for future power.

EV-READY
Have all the required hardware in place for future EV equipment..

EV-INSTALLED
Sufficient electrical panel capacity and installed conduit for future power.





For Residents

Most EV drivers charge their cars at home. People who live in single-family homes typically have greater access to at-home charging, since they are more likely to have dedicated parking spaces and plug-in access. To facilitate wider EV adoption, people living in multifamily developments like condos and apartments also need access to at-home charging.

- Install Level 1 and Level 2 chargers near multifamily housing, paying particular attention to supply disadvantaged communities with equitable access to charging infrastructure.

For Employees

Employees who commute to work may need access to charging during the day. It is important to offer chargers where there are high concentrations of employees or large parking lots.

- Provide Level 1 and Level 2 chargers for employees to slowly charge their vehicles while they are parked at work.
- Implement charging management system or policies to prevent charged vehicles from parking too long in charging spaces.

For Visitors

The MetroPlan Orlando area is a top vacation destination and visitors need to have access to charging stations whether they are staying in town or just passing through. Visitors renting cars may be curious about EVs and take the opportunity to try out the technology while they are on vacation.

- Provide DC fast charging stations on corridors with high volumes of through-traffic (Florida's Turnpike, I-4).
- Install Level 2 chargers for retail, recreation, and entertainment area.
- Install a combination of Level 2 and DC fast chargers for hotels and motels.

DESIGN CONSIDERATIONS

To meet the future demands of EVs, any new construction, modification, or retrofit to buildings or parking lots should consider EV charging stations at the planning level. The following is a checklist of design considerations for EV charging stations.

Number of Charging Stations and Ports

- What is the demand?
- Are the parking spaces for public use, private use, or a combination of uses? Are spaces shared or assigned?
- How long are vehicles anticipated to stay parked at this location? What type of charger is needed?

Location

- Are there existing amenities where chargers would be able to be retrofitted? What is the impact on the existing landscaping?
- Can you design the site so that EV charging equipment such as transformers can be screened from the rest of the site?
- Are the EV chargers in well-lit areas and/or security cameras provided for increased user comfort?

Circulation

- Does the equipment mount interfere with the movement of vehicles and/or pedestrians within the site? Are there accessible pedestrian connections from the charging spaces to existing sidewalks and buildings?
- Is there space for vehicles to queue while waiting for a charger?

Accessibility

- Are the chargers designed at heights accessible to people who use wheelchairs or other mobility devices? Follow the US Access Board's Design Recommendations.
- Is there room for people with mobility disabilities to maneuver around the EV to access the charging cable and charging port, no matter where they are located on different vehicles?
- Is there an accessible route that leads to an accessible entrance of the building or facility?

Proximity to Power

- Where is existing power infrastructure available? Does coordination need to occur with utilities to identify any needed upgrades?
- Can you minimize disturbance and impacts to key infrastructure to minimize the installation costs?

Operations & Maintenance

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