

PLUG IN ALEXANDRIA

Getting Started with Electric Vehicle
Charging in Multi-unit Residential
Communities





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1 OVERVIEW



1.1 Why Install EV Chargers?

Electric vehicles (EVs) are cleaner, quieter, and more efficient than gas alternatives and have no harmful tailpipe emissions. Alexandrians are adopting EVs faster than the national average.

The City of Alexandria has set goals for reducing greenhouse gas emissions in the [Energy and Climate Change Action Plan](#) and [Environmental Action Plan 2040](#), including the following goals for EV adoption:

- 50% of personal vehicle sales are EV by 2030 and
- 100% of personal vehicle sales are EV by 2050.

Installing EV charging infrastructure at a multi-family community can create new revenue opportunities, as well as help attract and retain residents seeking modern amenities.

About 80% of EV charging happens at home, but **less than 5% of home charging occurs in multi-family communities** ([Forth, 2022](#)). Not having a convenient home charging option can be a significant barrier to EV adoption. Drivers without home charging must rely on public chargers or workplace chargers, which can be more expensive and less convenient than charging at home.

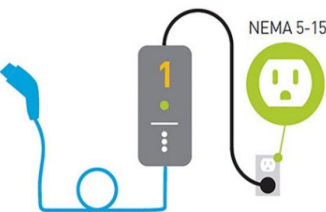
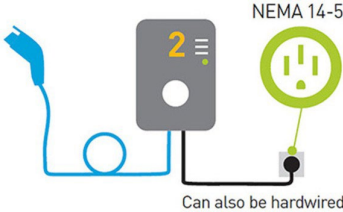
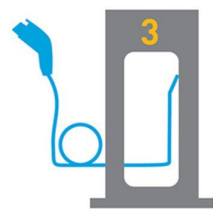
This Guide will help multi-family communities plan for installing EV chargers. The information of this guide assumes the installation of shared EV chargers. However, any specific considerations for communities looking to install private chargers in deeded or assigned spaces that will differ from considerations for shared spaces is provided throughout the guide in green shaded boxes.

Plug In Alexandria

The City's [Plug In Alexandria](#) program offers technical and financial incentives to help multi-family communities install EV charging for their residents and guests. Use this guide to prepare your community to apply for the Plug In Alexandria program, or to accompany participation in the program as you implement your plans to install EV chargers.

1.2 EV Charging Overview

A description of different charging options, and information on use cases is below.

LEVEL 1: 110V	LEVEL 2: 240V May require service upgrade	LEVEL 3: 480V DC Fast Charging/Commercial
 Level 1 charging uses a standard wall outlet. It is the slowest charging option, can provide about 30 miles of range in 8-10 hours. A full charge may take several days. Level 1 charging is typically used for daily overnight charging, with each vehicle having a dedicated charger or outlet or in a deeded or assigned parking space. Level 1 charging is too slow to be effective for shared residential or commercial use. Estimated cost to install: \$250-\$750 per parking space	 Level 2 charging uses a 240 V outlet, the same type of outlet used for a dryer or induction stove. A full charge will take about 6-10 hours. Level 2 charging is the most common charging type for multi-family communities. Most drivers will charge 1-2 times per week with access to a shared Level 2 charger. If driving more than 30 miles per day, a driver may need a private Level 2 charger in a deeded or assigned parking space. Estimated cost to install: \$7,000-\$10,000 per parking space	 <i>Figure 1. EV Charging Types (PGE)</i> Level 3 chargers are most common in commercial applications as they can charge an EV to 80% in < 30 minutes. Drivers without a home charging option will rely on public Level 3 chargers. Level 3 chargers are less convenient for residential due to their cost (about 10 times the cost of installing a Level 2 charger). While they charge vehicles quickly, high turnover is needed for more users to access fewer chargers. This can be inconvenient for residential use, where users want to plug in their car when they get home and not move it an hour later. Estimated cost to install: \$40,000-\$100,000+ per parking space

2 STEPS TO INSTALLING EV CHARGERS



The steps below will guide you through planning for and installing EV chargers that meet the needs of your multi-family community. Engaging the Board, residents, and property management early—and keeping them informed throughout—can help streamline decision-making and reduce delays when it's time to seek approval. Connecting with other multi-family communities that have already installed EV chargers can also provide helpful real-world insights and best practices.

2.1 Survey Residents

Conduct a resident survey early in the planning process to understand how many residents currently own an EV or have plans to buy an EV, which will inform how many EV charging spaces are needed to meet the short-term demand. A survey is also an opportunity to understand what questions residents have about the project, and to get their feedback on any preliminary plans, such as location.

Find a sample resident survey on the [Plug In Alexandria website](#).

2.2 Determine EV Charging Approval Process and Identify Relevant Policies

Review the community's existing rules in the covenants, bylaws, and policies and identify if there are any terms that restrict or limit the installation of EV chargers, or may need to be updated after EV chargers are installed.

Determine the process to gain approval to install the EV chargers, and ensure that process is communicated with the community.

Contact your insurance provider and discuss your plans to install EV chargers, to determine if there will be any changes to your policies or premiums.

2.3 Evaluate EV Charger Siting Options and Electrical Capacity

Evaluate options for where to install EV chargers in your community. Locating chargers close to transformers and electrical panels will have the lowest installation costs. Installing chargers further away from electrical equipment is possible, but longer runs will require more materials and equipment, and will result in higher costs.

Work with an electrician to evaluate available capacity for EV chargers. If there is limited electrical capacity available, you may need to work with Dominion Energy to upgrade the electric service.

Installing private chargers

To install private chargers in deeded or assigned parking spaces, the community will need to evaluate options for connecting to residents' individual meters, or from a common meter. Connecting to a resident's individual meter will allow the resident to pay for the energy used for charging directly. If that is not possible due to the parking configuration or available capacity, the management company or Board will need to work with residents to determine how charger usage and costs will be tracked and paid.

2.3.1 Futureproofing

When evaluating locations, it's important to consider **future expansion of EV chargers**. Consider planning for at least 5% of parking spaces to have EV chargers.

Including future expansion considerations in your first EV charging project can lower future construction costs and minimize disruption when additional chargers are added over time.

Futureproofing elements can include:

- Reserving panel capacity or selecting panels with expandable breaker space.
- Designing site layouts to allow the addition of EV chargers without major rework or utility service changes.
- Incorporating scalable “make-ready” infrastructure such as spare capacity and stub-outs during early construction phases.
- Implementing a Charge Management System (CMS) capable of dynamically balancing and allocating power among chargers, allowing for future expansion without upgrading electrical infrastructure. while maximizing utilization of existing electrical infrastructure.

By taking these steps upfront, the community can avoid repeated permitting, and contractor mobilization—significantly lowering the total lifecycle cost of charger deployment.

Common expansion trigger points may include:

- Resident or tenant requests for additional charging capacity once utilization of the existing infrastructure reaches approximately 80%.
- Scheduled property upgrades or capital improvements that offer opportunities to install additional EV charging infrastructure with minimal incremental cost.

By planning with growth in mind, communities can position themselves to meet near-term needs while ensuring readiness for future demand.

2.4 Select EV Chargers

There are many options for EV chargers available that offer a wide range of functionality and price points. Evaluate each of the factors below with your selected contractor, property stakeholders, and utility representative to ensure a cost-effective, functional, and scalable EV charging solution.

- **Access.** Do you want to restrict access to just residents? Or is there interest in allowing guests or the public to use the chargers?

Some chargers can use RFID cards to limit access, or an individual's account for that charger can be added to a group that is allowed access.

- **Rate Setting.** Will you ever want to set multiple price structures? If the chargers are open to non-residents, different rates could be set for residents, guests, and the public.
- **Rate Structure.** What type of rate structure are you considering? Common EV charging rate structures include:
 - \$/kWh,
 - Per session fees, and
 - “Idling” fee where users are charged a higher cost hourly if they are plugged into the charger after they are fully charged (e.g., \$5/hour after a grace period).
- **Charging Reservations.** Do you want residents to be able to schedule access to the chargers?
- **Cable Management.** Do you want a cable management system? Some chargers have a retractable cord that makes it easier to handle, and also won't leave a cable lying on the ground at risk of getting run over.
- **Connectivity.** Confirm reliable cellular or Wi-Fi coverage to support real-time monitoring, remote diagnostics, and software-based access management. Cell repeaters or wired connections may be required if cellular or Wi-Fi is not available in the EV charger location.
- **Data Collection & Monitoring.** Evaluate the need for usage analytics to support performance tracking, grant compliance, and future infrastructure planning.
- **Mounting Configuration.** Choose wall-mounted or pedestal-mounted chargers based on space availability, aesthetics, and installation cost.
- **Port Configuration.** Dual-port chargers may reduce infrastructure costs and maximize charger density, especially in high-demand areas.
- **Charging Level & Power Rating.** Level 2 (32–80 amps) is ideal for multifamily, overnight charging, and workplace settings.
- **Charge Management.** Some charger providers offer a CMS that can reduce peak demand charges and optimize energy distribution across chargers. If a charger provider doesn't offer a CMS, understand what third-party software options can be used.

2.5 Install EV Chargers

2.5.1 Select a Charging Infrastructure Provider

Collect at least three quotes from experienced EV charging infrastructure providers that have knowledge of EV charger installation, local permitting requirements, ADA standards, and utility coordination.

Develop a clear scope of work that details the number of chargers, locations, and other site-specific needs. Include photos of the proposed sites and existing electrical equipment and panels.

Participants in Plug In Alexandria can send the provided EV001 conceptual drawings directly to providers to facilitate quotes. The selected provider's scope of work may include:

- Site preparation
- Charger selection and procurement
- Coordination with Dominion Energy
- Permit acquisition and inspections – See the City's Electric Vehicle Charging Station Permit Guide in the [checklist document library](#) for more information on applying for an Electric Vehicle Charger permit.
- Construction and electrical installation
- Charger commissioning
- Additional services to support charger operation, including preventative maintenance, warranty administration, or field service.

The [Plug In Alexandria Partner List](#) includes stakeholders who have expressed interest in supporting multifamily communities. Note that by enabling and publishing the Plug In Alexandria Partner List, the City of Alexandria is not endorsing, sponsoring, or otherwise evaluating the qualifications of the individuals and organizations that are self-identifying themselves for placement on this Partner List.

The Electric Vehicle Infrastructure Training Program (EVITP) website includes a [list of contractors that are EVITP-certified](#) by state, which is required training for federal grant programs.

You may also consider contractor recommendations from other local properties that have completed EV charging projects.

2.5.2 Funding

Several financial incentives and financing models are available to help offset the capital costs associated with EV charger installation:

- **Plug In Alexandria EV Charger Installation Grant:** Communities accepted into the Plug In Alexandria program can receive a reimbursement grant if EV chargers are installed within one year of receiving the Plug In Alexandria assessment, up to \$10,000, or \$15,000 if located in a Low-Income Community census tract.
- **Dominion Energy Level 2 Charging Program:** Multifamily properties may qualify for Dominion’s Level 2 Charging Program, which provides:
 - Turnkey installation and maintenance
 - 50% up-front make-ready cost coverage
 - Remaining project costs amortized over 10 years on the electric bill. Visit Dominion Energy’s website for eligibility and application details.
- **Third-Party Financing / Charge-as-a-Service:** Consider lease agreements, power purchase agreements (PPAs), or “charge-as-a-service” models that eliminate upfront capital expenses. These arrangements typically involve the vendor covering equipment and installation costs in exchange for monthly service fees or user-based pricing.

2.5.3 Timeline

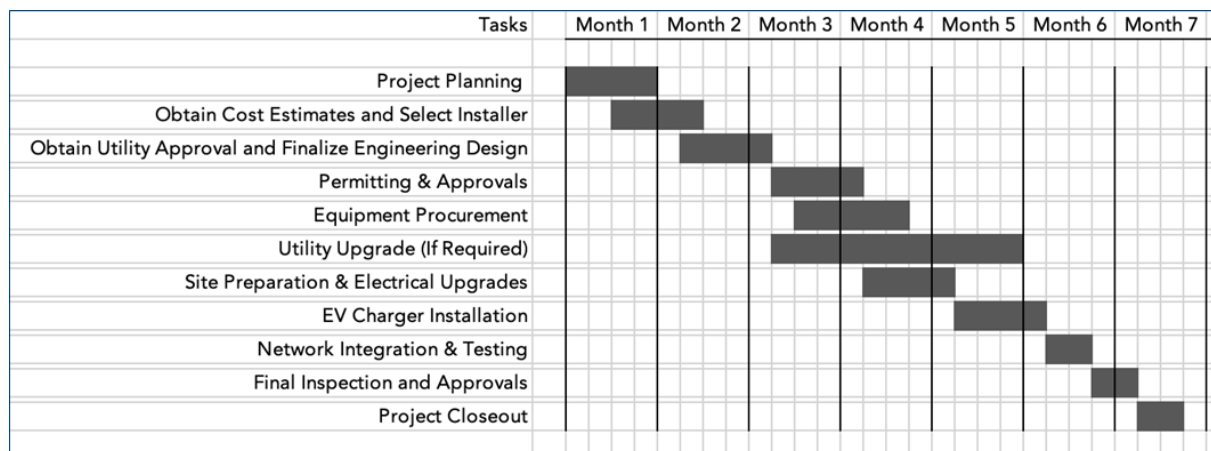


Figure 2. Sample Timeline for EV Charger Installation

Figure 2 outlines the schedule for planning, designing, and deploying EV charging infrastructure at a multifamily community. The overall process typically ranges from 3 to 7 months. However, this estimate is provided as a general reference—and is highly dependent on several project-specific factors. Each phase of the process may be extended or accelerated based on site conditions, permitting processes, utility coordination, equipment availability, and stakeholder readiness.

2.6 Set Rates and Usage Policies

2.6.1 Rates

While installing EV chargers may require an up-front investment, they can become a revenue stream for the community. The payback period will depend on utilization and the set price. Use the Plug In Alexandria Return on Investment calculator to explore various scenarios.

To assist in setting rates, first review your electricity bills to determine the cost of electricity for the service you will be using. The rates should at least cover the cost of electricity.

Then, explore the rates of different chargers in your area. You can find the pricing details of public chargers on [PlugShare](#) or the Alternative Fuels Data Center's [EV Charging Station Locator](#). While having a home charging option provides convenience, if rates are higher than nearby public chargers, residents may choose to use the public chargers instead of the community's chargers.

Common components of EV charging rate structures include:

- \$/kWh (most common)
- Per hour fees (less common, as charging rates may vary during the charging session due to the number of vehicles charging, battery state of charge, and in very cold temperatures)
- Per session fees (e.g., \$0.50 - \$1.00 to start the charging session)
- “Idling” fee where users are charged a higher cost hourly if they are plugged into the charger after they are fully charged (e.g., \$5-\$10/hr at public chargers after a grace period).
 - Idling fees can be challenging for multi-family communities, as it may require folks to move their cars in the middle of the night to avoid being charged.
 - Some communities have set time limits on when idling fees will be charged (e.g., 7am – 8pm).

2.6.2 Usage policies

Work with the management company, board, residents, and other building stakeholders to develop usage policies for the chargers to encourage turnover and fair access.

Usage policies should include requirements for moving vehicles when they are not charging, details of any reservation process, notification requirements for changing rates, and any guest or public access policies.

Assume that the usage policies will be a living document, and that changes will be necessary after you see how the chargers are being used.

2.7 Maintenance and Operations

Networked chargers will require ongoing networking fees. These can range from \$240 to \$420 per charging port per year. Charge management capabilities may be included in these annual fees.

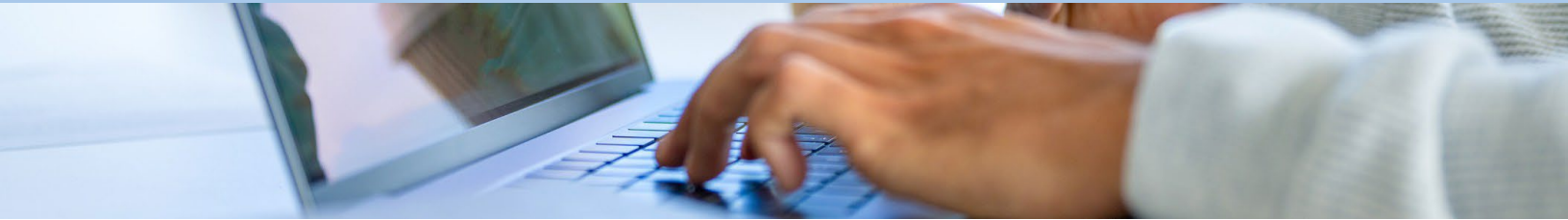
Communities should consider an extended warranty to cover any maintenance issues with the chargers. Communities can also use a contractor to conduct regular preventative maintenance to optimize the charger's function and life.

Operation and management of private chargers

For communities supporting residents installing private chargers in deeded or assigned spaces, the property management company or Board will need to determine how to structure its EV charging policies. Management options include:

- Specify an approved charger manufacturer (OEM) for all installations, to enable centralized charge management, allowing multiple chargers to share a limited power source through dynamic load balancing. This approach prevents overloading electrical panels, avoids unnecessary transformer upgrades, and simplifies future expansion planning.
- Specify an approved installer to ensure all code and safety requirements are met,
- Centrally manage and install charging stations while recovering costs through user fees, or
- Permit residents to purchase and own their individual chargers.

3 RESOURCES



- [Plug In Alexandria](#) – City of Alexandria program that provides technical and financial incentives to help multi-family communities install EV charging infrastructure.
- [Charge at Home](#) – Resources for existing multi-family properties and multi-family property developers on EV charging. Program offers free consultations for multi-family communities, by request.
- [Dominion Energy Charging On the Go](#) – Includes information on Dominion’s Level 2 incentive program and resources for multi-family charging.
- [U.S. Department of Energy’s AFDC Multifamily Housing](#) – Resources for EV charging at multi-family communities.
- [PlugShare](#) – Shows details for publicly accessible chargers.
- AFDC [EV Charging Station Locator](#) – Shows details for publicly accessible chargers.