

Urban EV Charging for All: 10 STRATEGIES FOR CITY GOVERNMENTS





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Introduction

Widespread electric vehicle (EV) adoption is critical to confronting climate change – but a lack of sufficient public charging infrastructure is holding many potential EV drivers back. The challenge is particularly acute in cities, where a larger share of residents live in multifamily housing, rent their homes, and/or park on the street—all of which make it difficult, if not impossible, for them to install home charging.

This report outlines 10 strategies for U.S. city officials seeking to overcome these complexities, better meet the needs of current and potential EV owners living in urban areas and create the conditions for broader EV ownership in their city.

City governments can play critical roles creating charging infrastructure in dense areas. Importantly, city government can facilitate access to the public right of way or city-owned property. Cities also write and enforce an array of laws and regulations that affect charging stations. Most city laws and regulations pre-date the emergence of contemporary EVs, which can result in unintended effects on efforts to build charging infrastructure.

The stakes are high. Shifting the vehicles traveling through a city's neighborhoods to zero tailpipe emission EVs will reduce residents' exposure to pollutants, improve air quality and bring health benefits. Many cities have declared their own climate goals that require widespread EV adoption. Public charging is particularly important to enabling lower income households, who are more likely to live in dense neighborhoods and multifamily housing, to own EVs.¹

Moreover, funding is available. The Infrastructure Investment and Jobs Act (IIJA) includes \$1.25 billion for community grants to deploy public charging infrastructure. Cities that develop and submit strong plans for EV charging infrastructure deployment to the U.S. Department of Transportation can win funds under the competitive grant program.² Their states may also delegate funds from the IIJA's National Electric Vehicle Infrastructure (NEVI) Program after completing their highway charging rollout. Cities may also be able to access other federal grants, loans, and tax credit programs for EV charging.

The goal of this report is to enable those U.S. cities early in their EV charging infrastructure planning to quickly develop plans based on strategies effectively deployed by cities that are further along in charging infrastructure implementation. Many cities and smaller local governments stand to gain from the experience of cities more advanced in developing EV charging. This guide offers a menu of tested options that could accelerate the development of a city EV strategy or EV component of a city sustainability plan.

Levers for Achieving EV Charging Goals

- 1. Deploy city-owned charging stations.**
- 2. Partner with the private sector.**
- 3. Build sufficient fast charging.**
- 4. Establish a maintenance plan to keep chargers in service.**
- 5. Streamline zoning rules and processes to remove barriers to EV charging.**
- 6. Expedite EV charger permitting, remove code obstacles.**
- 7. Use “EV-ready codes” to accelerate workplace, multifamily charging.**
- 8. Help residents and local businesses navigate installation and subsidized financing options.**
- 9. Leverage new charger designs.**
- 10. Consider compatibility with broader mobility strategy.**

1. Deploy City-Owned Charging Stations

Municipal investment in EV charging stations enables cities to quickly deploy public charging and target neighborhoods with the greatest need. But scale and availability can make – or break – city-owned infrastructure efforts.

KEY TAKEAWAYS:

- **Public development of charging stations can jumpstart EV ownership**, ensure charger availability in areas of the city that currently lack access, meet the needs of EV owners without residential charging, or leverage charging sites on city-owned property or in the public right of way (e.g., curbside). *(See Los Angeles below.)*
- **EV chargers need to be convenient to drivers** and available day and evening. However, cities need to achieve charging networks that reach the neighborhoods where residents live, work, and play. Chargers at city-owned properties (i.e. city hall, municipal office buildings, etc.) may be less convenient for the wider public and may not be enough to meet residents' needs. Cities can also leverage their locations throughout the city such as at libraries, parks, and schools.
- **Partner with your local electric utility as early as possible:** In some cases, it can take several years for utilities to make improvements to the electricity grid necessary to support charging station rollout. To ensure electric infrastructure doesn't become a bottleneck, cities should communicate their objectives as early as possible, so that utilities understand what sites the city is prioritizing for charging station development. *(See Austin below.)*

EXAMPLE: Los Angeles's focus on curbside chargers

Los Angeles has been a leader on curbside charging, building out hundreds of streetlight-attached Level 2 chargers since 2016.³ LA's 240-volt streetlights meant that there is sufficient electrical capacity to add chargers. This may not be the case for all cities: about 40% of American streetlights are 240 volt or higher, like the ones in LA.⁴

EXAMPLE: Austin Energy's charging network buildout

Austin Energy has deployed a network of almost 2,000 public charging stations in the city, which are effectively city-owned (since Austin Energy is a city-owned electric utility).⁵ The robust charging network has allowed Austin to adopt EVs at a much higher rate than other cities in Texas.⁶

2. Partner With the Private Sector

Even in the most public-driven charging station deployments, a private sector company is often involved in maintenance and operation of the station. At the other end of the spectrum, private charging providers can secure their own site and utility connections and provide service to their own customers. In between, local governments can leverage a variety of opportunities for public-private partnerships to meet their charging network goals.

KEY TAKEAWAYS:

- **Structure partnerships to meet policy goals:** Cities can use a variety of levers in designing partnership agreements with private sector charging companies that help both parties achieve their objectives. Levers can include facilitating access to sites, performance-based subsidies, community engagement input, and equity and data sharing requirements. *(See Portland, Boston below.)*
- **Consider long-term revenue in partnership agreement:** When negotiating with the private sector, cities should not only consider how to minimize upfront costs borne by the city, but also how to share any potential profits in the long term. *(See San Antonio below.)*
- **Ask the private sector how to remove barriers:** Cities should make sure that private sector investment in charging is not unintentionally slowed by burdensome permitting or zoning rules. Discussing procurement and siting plans with the private sector in advance can help ensure viable applications.
- **Involve your local utility early** to ensure electric infrastructure does not become a bottleneck, just as with city-owned chargers. Doing so is important whether the utility is public or private.
- **Consider partnering with neighboring jurisdictions on joint procurement** to reduce administrative effort and facilitate charging throughout your metro area.

EXAMPLE: Portland, Oregon's curbside charging program

Portland's initial EV charging buildout focused on downtown, but the city announced a "charging in the public right-of-way" initiative in 2023 designed to fill gaps in the charging network, especially in areas further from the city center and underserved communities. The program leases curbside locations to private charging developers for a fee.⁷

EXAMPLE: Boston's curbside charging program

In 2024, Boston initiated a program to install 250 curbside chargers through public-private partnerships with charging companies Itselectric and Greenspot. The city will select curbside locations and facilitate permitting. The companies can then install and operate the chargers, with no cost impact to the city.⁸

EXAMPLE: San Antonio's revenue share agreement with private charging company

In 2020, San Antonio announced an agreement with Blink Charging that provides Blink access to a public site, but leaves Blink entirely responsible for installation and operating costs. The city and Blink will split revenue 50/50 after project costs are met.⁹

3. Build Sufficient Fast Charging

A number of cities are performing much better on Level 2 charger installation goals than DC fast chargers (DCFCs), where installation has lagged further behind plans. DCFC are defined as offering speeds of at least 50kW, or of at least 150kW under the NEVI program; Level 2 chargers supply 7-19 kW.^{10, 11} But there are several opportunities to catch up to DCFC goals.¹²

KEY TAKEAWAYS:

- **Set realistic goals and understand true need:** Cities often create plans that include goals for the number of Level 2 and DCFCs over time and across neighborhoods. The charger speed at each station should be driven by the charging use cases that the station is designed to serve. Is it a residential or workplace area where people typically stay 3 or more hours (good for Level 2 charging), or a business district where many cars stop for an hour or less (where DC fast charging would be more valuable)? Although DC fast chargers are most common along highways today, they play an important role in creating a comprehensive set of charging options for EV owners in urban areas.
- **Consider impact of all policies related to EV charging on charging speed mix:** Cities can leverage other EV charging policies (such as make-ready requirements) to encourage faster DCFC deployment, creating incentives for developers who choose to make that investment. (*See Boston and Denver below.*)
- **Work with utilities:** DCFCs have higher electrical supply requirements, so involving utilities early is particularly important. Timelines may need to include, for example, ordering and installing additional transformers. (*See New York City below.*)

EXAMPLE: Boston and Denver favor DCFCs in EV make-ready zoning regulations

Boston and Denver structured their EV make-ready zoning regulations so that DCFC installation would be heavily favored by developers. Under Boston's rules, developers are able to substitute a single DCFC for 24 required Level 2 chargers.¹³ Denver's rules allow developers to substitute one DCFC for 10 required Level 2 chargers.^{14, 15}

EXAMPLE: New York City's partnership with Con Edison to deliver public fast charging

New York City has partnered with Con Edison on delivering more fast chargers. In 2024, the partners announced a plan that would help Con Edison better manage the peak load demands that DCFCs can generate.¹⁶

4. Establish a Maintenance Plan to Keep Chargers in Service

Many cities are finding it difficult to keep their full network of chargers operational, compromising the value of assets that required upfront investment. Cities should craft policies that maximize charger uptime, whether by negotiating service agreements for city-owned chargers or by policies that encourage similar agreements for privately-owned, public chargers.

KEY TAKEAWAYS:

- **Include uptime requirements in private sector agreements:** When crafting agreements with private sector companies to build and operate charging stations or leasing space for charger installation, include minimum uptime requirements (i.e., requirements for the percentage of time the charging station is in service). Cities should require charging station operators to regularly report on the share of chargers in service, following evolving industry standard uptime and successful charging attempt definitions as well as data reporting standards. *(See Atlanta below.)*
- **Require real-time data on charger status and price** to enable EV drivers to easily find working chargers. EV drivers should be able to open the mapping application of their choice; find a charger; tell if it is working and available, occupied, or out of service; and easily understand the pricing, all updated promptly after every status change. Charging station operators should post the data to an application programming interface (API) where software developers can access it, consistent with the NEVI standards.
- **Remove access to public site or public right of way if private partner fails to meet minimum service standards:** Cities can set rules for private companies operating in the public right of way that remove access if certain performance standards are not met. *(See Atlanta below.)*

EXAMPLE: Atlanta's uptime requirements

For charging operators using public parking, Atlanta revokes access to the site after 14 days of non-operational status.¹⁷

5. Streamline Zoning Rules and Processes to Remove Barriers to EV Charging

There are almost 20,000 zoning jurisdictions in the U.S. that enforce a variety of zoning regulations affecting EV charging stations in important ways.¹⁸ Cities should consider how to simplify their rules and streamline their processes to ensure they don't serve as a barrier to EV adoption.

KEY TAKEAWAYS:

- **Ensure EV-charging is allowed by default:** Crafting zoning regulations so that EV chargers are allowed by default (“by-right”) keeps EV charging stations out of discretionary review processes.¹⁹ In some zoning jurisdictions, rules written decades ago can unintentionally classify a property with an EV charger as a gas station. If an EV charging station is defined in zoning rules as an “accessory use,” then stations can be added (e.g., to a small business) without triggering a different set of zoning rules. *(See California below.)*
- **Allow EV charging across a range of use zones:** Cities should allow EV charging by-right across a variety of zoning classifications (e.g., single-family housing, multifamily housing, retail, commercial, institutional) to ensure that charging station development won't be arbitrarily limited to only certain areas or types of neighborhoods.
- **Opt for flexible, performance-based design standards:** Standardized design options and scoring systems can allow cities to regulate site design without subjecting EV charging to lengthy design review process. Cities can also issue design guidance related to EV chargers. Consider accessibility, safety, and lighting in developing options. *(See Atlanta and New Jersey below.)*

EXAMPLE: California's state law expedites the EV zoning process

In the early 2010s, hundreds of permitting jurisdictions in California had a range of different rules related to EV charging stations, slowing the process significantly and representing a barrier to EV adoption. In 2015, California adopted a law intended to streamline requirements, requiring that all CA cities and counties with permitting authority implement by-right approval (i.e., approval by default, without cumbersome discretionary review processes) and <24 hours approval timelines for EV charging stations.²⁰ As of March 2024, about 75% of permitting jurisdictions had complied or were in the process of complying with the law.²¹

EXAMPLE: Atlanta's standard designs for EV charging stations

Atlanta's 2014 EV charging zoning law streamlines approval by standardizing criteria like equipment placement, signage, and landscaping integration. This creates a clear, consistent framework that expedites the approval process for EV charger installation.²²

EXAMPLE: New Jersey law establishes numerical requirements for zoning standards

The New Jersey Model Municipal EV Ordinance facilitates the installation of EV chargers by setting state-wide zoning standards that classify EVSE as a permitted accessory use, thereby simplifying the approval process across all municipalities and ensuring a unified, streamlined regulatory approach.

6. Expedite EV Charger Permitting, Remove Code Obstacles

EV charging stations are typically subject to a local permitting process, which enforces building codes and electrical standards. Like zoning regulations and processes, a burdensome permitting process can significantly slow charging station adoption.

KEY TAKEAWAYS:

- **Allow online filing for permits with a simple checklist:** Cities should create online tools that simplify the process for applicants and for city staff. Applications should require the minimum information required for city officials to approve an EV charging permit while ensuring health and safety compliance. Quick permitting turnaround also encourages EV charger installation. *(See Austin, Orlando below.)*
- **Connect staff to learning resources related to EV charging:** Some jurisdictions may not deal with EV charger permitting often, resulting in a lack of staff knowledge that can slow the approval process. Continuing education related to EV charging and pertinent city rules can lead to a more efficient and consistent process.
- **Implement standard electrical codes:** Cities can implement electrical code rules that vary as little as possible from state, national, and international standards, such as the National Electrical Code (NEC).
- **Integrate EV charging measures in building energy codes:** Building energy codes, which determine the electrical equipment installed in new buildings, should comply as much as possible with standards like the International Building Code (IBC), ensuring compatibility with future EV charging needs.

EXAMPLE: Austin’s “Electric Vehicle Quick Turnaround” permit

The City of Austin Development Services Department implemented a “Quick Turnaround” permitting process that ensures complete applications will be processed within 24 hours.²³

EXAMPLE: Orlando’s permitting checklist and automated process

Orlando has implemented an automated system that minimizes staff time needed to process permits. The city also created a checklist available on their website that makes it easy for applicants to understand the information they need to gather before submitting an application.^{24, 25}

7. Use “EV Make-Ready” to Accelerate Workplace, Multifamily Charging

EV make-ready requirements are increasingly common policy measures that farsighted jurisdictions can implement. These rules ultimately save property owners money since it’s cheaper to prepare for EV charging now than retrofit it in the future. The rules can require either infrastructure for future charger installation or the installation of charging equipment itself. Zoning authorities generally vary these requirements based on the use of the building, in proportion to the number of parking spaces or dwelling units.

KEY TAKEAWAYS:

- **Create a comprehensive approach:** EV-ready rules can extend across building codes, parking rules, and zoning ordinances, so it’s important to have a comprehensive, consistent approach that ensures your city’s policy has the intended impact in all of those domains. *(See Denver below.)*
- **Provide flexibility where possible:** Instead of a long set of rigid requirements, alternative approaches such as point-based systems can often achieve the same goals while also giving more flexibility to developers. A point-based system ensures that, on average, the city meets its policy goals while still providing maximum flexibility. *(See Boston below.)*
- **Ensure rules have wide enough scope:** Cities must decide what set of buildings their EV-ready rules apply to. The most common approach is to set a threshold based on building size (by square footage or number of parking spaces), but cities should also consider how the rules might apply to building alterations. *(See Ann Arbor below.)*

EXAMPLE: Denver, Colorado includes accessibility requirements in EV-ready rules

In 2023, Denver’s City Council changed building codes to require preparation for future EV charging; at the same time, they also proposed adding accessibility requirements to the new rules, ensuring that drivers of all abilities and future self-driving vehicle passengers would be able to use charging stations.²⁶ Denver’s rules don’t just apply to new builds, but also to major alterations, where 50% of the building or at least 10 parking spaces are affected.²⁷

EXAMPLE: Boston’s flexible points system for EV make-ready

Boston’s EV-ready rules give developers flexibility to meet a certain point-based obligation through a mix of charging speeds and EV car share and electric bike parking, providing flexibility to install the infrastructure that best meets residents’ needs.²⁸

EXAMPLE: Ann Arbor, Michigan's EV make-ready zoning changes

In 2021, Ann Arbor adopted new rules that require developers to prepare parking for EV charging in all new building projects and major expansions.²⁹

8. Help Residents and Local Businesses Access Subsidies for Charger Installation

Subsidies for EV charging are typically provided by the state government or utility, rather than by a local government. However, local governments can play an important role in facilitating local applicants' successful applications for those subsidies.

KEY TAKEAWAYS:

- **Inform people and business about how to access state subsidies:** Cities should include easily accessible information on their website that communicates what subsidies are available from utilities or the state, and what the requirements are for accessing them. *(See Austin below.)*
- **Provide technical assistance for local applicants:** Given the wide suite of potential incentives for residents, landlords, and businesses, cities can remove barriers to implementation by issuing guidance, advice, templates, and other technical assistance. Consider dedicating a point person/office to build this capacity and/or creating an online interactive tool.
- **Work with utilities and state government to craft subsidies to local needs:** Cities can play a significant role in communicating with utility- and state-level subsidy providers on the needs of city residents, businesses, and charging providers. *(See Seattle, Detroit below.)*
- **Use subsidies to address policy goals:** State policymakers may be open to changing the level or structure of subsidies to better meet city goals (e.g., offer higher subsidies for DCFCs).

EXAMPLE: Austin Energy's clear information on how to access additional subsidies

Austin Energy, the city-owned electric utility, makes it easy for residents, developers, and other businesses to see available subsidies.³⁰

EXAMPLE: Seattle City Light's Multifamily EV Charging Program

Seattle City Light's Multifamily EV Charging Program covers 50-100% of installation costs for Level 2 EV charging stations at multifamily residences, aiming to support installation of charging infrastructure in existing multifamily buildings. Flexible funding of up to \$50,000 is available for charging projects.³¹

EXAMPLE: Detroit-based DTE Energy Multifamily Dwelling Rebate

DTE Energy, which serves Detroit residents and businesses, simplifies the rebate process by creating checklists with application links for both single and multi-family units.³² DTE's proposed new Transportation Electrification Plan would double the existing EV installation rebate for multifamily building units (from \$2,000 to \$5,000) and fully cover the installation and charger costs for 485 landlords with low-income renters.³³

9. Leverage New Charger Designs

Charging in the urban environment presents unique challenges, such as vandalism and space constraints. Charging station manufacturers are experimenting with new designs that may help address these challenges.

KEY TAKEAWAYS:

- **Innovations in charging form factors**, such as “bring your own cord” (BYOC) and pole-mounted chargers, can help cities find the right equipment to solve problems they are encountering. *(See Seattle, Los Angeles below.)*
- **Look to peer cities for real-world experience:** Reach out to other cities to learn from their experiences using new charger designs and other technologies to solve problems facing your city.

EXAMPLE: Bring your own cord (BYOC)

Used outside the U.S., BYOC charging offers a way both to minimize potential for vandalism and avoid maintenance problems with damaged cords (among the most common maintenance issues).³⁴ BYOC charging stations are also very compact and simple, making them cheaper to install and allowing them to be installed in a much smaller street footprint.³⁵

EXAMPLE: Seattle’s pole-mounted vandalism-proofed chargers

Seattle developed a charger that can be mounted on a utility pole at a height of about 15 feet. When users arrive at the station, they use their smartphone to activate it and a retractable cord drops from above. The design helps save street space and prevent vandalism.³⁶

EXAMPLE: Utility-mounted chargers in Los Angeles, California

Utility-mounted chargers like the ones Los Angeles has been installing for almost 10 years have several advantages for cities. First, they require less permitting since they can be installed directly on utility poles without alterations to sidewalks. Second, they take up less physical space than a charger that needs to be mounted on the ground. Finally, in some cases (like Los Angeles) they could even be connected directly into electricity supply on the utility pole, dramatically bringing down installation cost.³⁷

10. Consider Compatibility With Broader Mobility Strategy

Vehicle electrification is just one of several goals many cities are pursuing. A city's EV charging strategy can be designed to augment adjacent initiatives and policy goals like mobility and equity. While cities can incentivize car owners to switch to electric in the future, many cities are also focused on encouraging greater adoption of greener modes of transportation. Options like electric buses and EV rideshare impact quality of life factors by improving air quality, health, and job center accessibility; eliminating transportation gaps; and more.

KEY TAKEAWAYS:

- **Consider compatibility with street use goals:** When installing curbside EV charging stations, cities should consider whether the installation location will allow for future street modifications, such as the installation of bike lanes. Cities can also add charging to their list of design considerations for periodic street repaving.
- **Micromobility charging:** Cities should also consider how to serve other electrified vehicles like electric bikes, scooters, and other micromobility devices. Charging stations for these devices are often less expensive and simpler to install. *(See New York City, Boston below.)*
- **Use EV car sharing to jump start EV usage:** Several cities seeking to promote EV usage in low-income areas, including Boston, Denver, Los Angeles, Minneapolis, and St. Louis, have piloted programs where EV car share stations are installed along with charging infrastructure.^{38, 39, 40, 41} *(See California's Central Valley below.)*

EXAMPLE: New York City's Deliverista Hubs

To better serve the charging needs of micromobility users like delivery drivers, New York City introduced micromobility charging stations in frequently traveled areas.⁴²

EXAMPLE: Boston's EV make-ready system that includes electric bike parking

Boston's EV make-ready rules allow developers to use a mix of charging levels, EV car share, and electric bike parking to meet their minimum obligations. This policy allows developers to install equipment that best meets the needs of users, and the city is able to advance broader transportation policy goals.⁴³

EXAMPLE: EV car sharing in California's Central Valley

In low-income rural areas of CA's Central Valley, a nonprofit cooperative with funding from the California Air Resources Board was established to offer discounted EV car sharing for residents.⁴⁴

Resource Guide

Charging Forward: A Toolkit for Planning and Funding Urban Electric Mobility Infrastructure: <https://www.transportation.gov/urban-e-mobility-toolkit>

Public Electric Vehicle Charging Infrastructure Playbook: <https://driveelectric.gov/ev-infrastructure-playbook>

EV charging infrastructure: Business models and city case studies: https://www.c40knowledgehub.org/s/article/EV-charging-infrastructure-Business-models-and-city-case-studies?language=en_US

Planning and Zoning for Electric Vehicle Charger Deployment: <https://sustainableenergyaction.org/resources/planning-and-zoning-guidance-for-electric-vehicle-charger-deployment/>

Permitting Processes for Electric Vehicle Charging Infrastructure: <https://afdc.energy.gov/fuels/electricity-permitting-processes>

Improving Permitting and Zoning for EV Fast Charging Stations: https://www.naseo.org/data/sites/1/documents/publications/EV_Fact_Sheet_v3.pdf

Detailed State EV Policy Dashboard: <https://electrificationcoalition.org/resource/detailed-policy-dashboard/>

EV Charging Use Data Specification: <https://evchargingspec.org/>

Electric Vehicle (EV) Deployment Clearinghouse: <https://www.mwcog.org/about-us/cog-board-and-priorities/ev-clearinghouse/>

How to Obtain Technical Assistance from National Labs: <https://cleancities.energy.gov/technical-assistance/tiger-teams/>

Electrification Coalition's Local Government Playbook How Counties, Cities, and Towns Can Support EV Infrastructure and Leverage Federal Investments: https://electrificationcoalition.org/wp-content/uploads/2023/01/Local-Government-Playbook_Reader-file.pdf

Bring Electric Vehicle Charging to Your Community: Put Federal Funding & Private Partnerships to Work: https://www.ccm-ct.org/Portals/CCM/PDF/Energy/NLC-EVBrief_2-Approved.pdf?ver=2WU-cysKZKil-5pR2q-VqBw%3d%3d

Clean Cities and Communities: A Network of Local Coalitions (Department of Energy): <https://cleancities.energy.gov/coalitions/>

Estimating Electric Vehicle Charging Infrastructure Costs Across Major U.S. Metropolitan Areas: https://theicct.org/sites/default/files/publications/ICCT_EV_Charging_Cost_20190813.pdf

Endnotes

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