REVIEW DRAFT

EQUITABLE EV ACTION PLAN *Framework*

A guide for city-scale, equity-focused electrified mobility planning

APRIL 2024
Policy Report

EV Equity Initiative

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Berkeley Law | Center for Law, Energy, & the Environment

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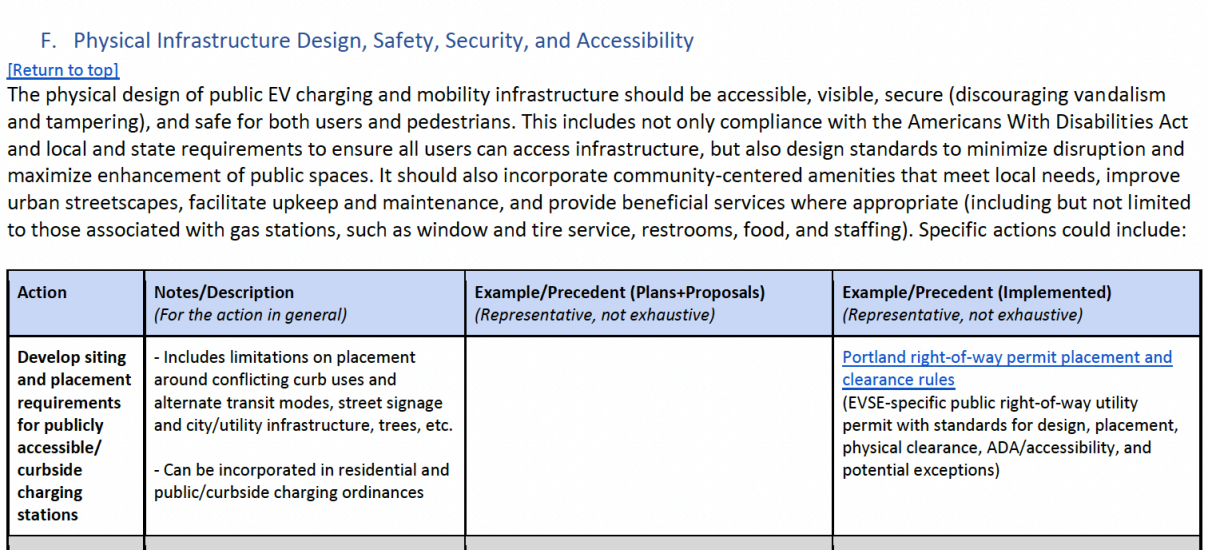
TEEM

Instructions for reviewers/how to read this framework

Thank you for taking the time to review this framework and share your expertise! As you can see, the document is very much a draft and we welcome input on any of the sections or individual recommendations. A brief note on how to read the document and where we want your ideas:

The core of the framework consists of 11 sections, each including a short narrative introduction followed by a table of strategies and descriptions. These tables are partially filled out, but none of them is complete. ***Some cells are empty, others contain some initial examples – see sample below – we welcome suggestions in all areas to make the framework useful for local governments and stakeholders!***



F. Physical Infrastructure Design, Safety, Security, and Accessibility

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The physical design of public EV charging and mobility infrastructure should be accessible, visible, secure (discouraging vandalism and tampering), and safe for both users and pedestrians. This includes not only compliance with the Americans With Disabilities Act and local and state requirements to ensure all users can access infrastructure, but also design standards to minimize disruption and maximize enhancement of public spaces. It should also incorporate community-centered amenities that meet local needs, improve urban streetscapes, facilitate upkeep and maintenance, and provide beneficial services where appropriate (including but not limited to those associated with gas stations, such as window and tire service, restrooms, food, and staffing). Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Develop siting and placement requirements for publicly accessible/ curbside charging stations	- Includes limitations on placement around conflicting curb uses and alternate transit modes, street signage and city/utility infrastructure, trees, etc. - Can be incorporated in residential and public/curbside charging ordinances		Portland right-of-way permit placement and clearance rules (EVSE-specific public right-of-way utility permit with standards for design, placement, physical clearance, ADA/accessibility, and potential exceptions)

Areas for comments and suggestions include:

- **Narrative intro:** Did we miss a central bit of context or foundational research that helps make the case for including this broad subset of actions in a local plan?
- **Action column:** Are you aware of a categorical action (i.e., "conduct mapping and outreach exercises") that we should add to the framework (i.e., a new row in the table)?
- **Notes/description column:** Are there any additional bits of high-level guidance that we should include to shape the approach?
- **Examples *(plans+proposals)* column**: Are you aware of local transportation or climate action plans that cover this action and would be helpful as reference points?
- **Examples *(implemented)* column**: Are you aware of local pilots or policies that have already completed this action and would be helpful as precedent or best practice?
- **Advancing equity box**: What complementary strategies or points of emphasis are important for local leaders to ensure all actions are equity-oriented?

Please share links, code sections, and other identifying information where possible. ***Thank you!***

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Equitable EV Action Plan Framework

April 2024 Draft

Purpose of this Framework
This framework introduces a set of strategies for an equity-focused local electric vehicle (EV) action plan and a framework for stakeholder-informed EV and mobility investment planning and decision-making, with the goal of initiating a process of policy development and stakeholder engagement and accelerating city efforts to secure federal, state, and private investment in EV and electrified mobility infrastructure.

Leaders in California and other states around the country have set concrete plans to transition their states to electric vehicles (EVs). California Air Resources Board (CARB) regulations require a complete phase out of new internal combustion engine vehicle sales for passenger cars by 2035[1] (and for medium- and heavy-duty trucks by 2045[2]) and at least 12 other states and Washington, DC have adopted the same targets.[3] The US Environmental Protection Agency has adopted nationwide standards that will also rapidly accelerate EV adoption,[4] and most auto manufacturers are adopting EV development and sales targets for the coming decades.

As drivers transition to EVs and from fueling their vehicles to charging them, and with unprecedented levels of federal and state funding available for charging infrastructure, local governments will need to plan strategically for vehicle adoption and charging deployment that meets local priorities and maximizes benefits for local residents.

This need is particularly acute for priority populations and underserved communities in California and around the country, who have long faced a host of financial, structural, policy, and technical barriers to accessing affordable, convenient, and healthy transportation options. These residents will be the least likely to have access to charging at home garages and at workplaces, and are most likely to live in multifamily dwellings and in areas with low near-term demand for privately operated charging services.

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[1] See California Air Resources Board (CARB), "Advanced Clean Cars II" (webpage), available at https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii; 13 Cal. Code Regs. § 1962.4.

[2] CARB, "Advanced Clean Fleets" (webpage), available at https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets; 13 Cal. Code Regs. § 2016.

[3] CARB, "States that Have Adopted California's Vehicle Regulations" (webpage), available at https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/states-have-adopted-californias-vehicle-regulations. These states currently include Colorado, Delaware, Maine, Massachusetts, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, Virginia, and Washington.

[4] US Environmental Protection Agency, Final Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, available at https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-multi-pollutant-emissions-standards-model.

Priority Populations
For purposes of California climate investment programs, "priority populations" include state-defined Disadvantaged Communities (the top 25 percent of census tracts ranked according to a group of environmental and socioeconomic risk criteria through the state's CalEnviroScreen program) and low-income communities and households (at or below 80 percent of the statewide median). This framework generally refers to "priority populations" and "priority communities" with intent to capture this definition while recognizing the broad diversity of priority communities in different states and geographies around the US and the multiple potentially applicable federal definitions under Justice40 and other initiatives.[5]

As the country transitions toward EVs–with an estimated need of 28 million total charging ports nationwide, including over one million total public chargers in California by 2030[6]–deliberate city-led efforts are crucial to ensuring that lower-income residents and communities are not left behind in the transition and have opportunities to access the benefits that EVs provide.

Local-level action plans will be crucial to this effort. While not all cities or counties will lead in site selection or infrastructure investment, local governments have a singular ability to craft effective long-range strategies that work across the needs of communities, businesses, public agencies, electric utilities, and charging providers. Cities are able to properly assess the needs of local communities and identify strategies (public, private, or hybrid) to meet them. They also have an obligation to ensure that underserved residents have equitable access to mobility options that serve their needs and improve their quality of life.

Local governments around the US have begun to develop EV blueprints, readiness plans, and action plans to ensure that they are prepared and organized for the shift to EVs and EV infrastructure. As more municipalities begin this process, it will be crucial to incorporate an explicit focus on equitable mobility to ensure that they are prepared for an EV transition that prioritizes lower-income communities most in need of greater mobility options.

Defining EV Equity
There is no single model for an Equitable EV Action Plan; this overview aims to facilitate creation of that model. In this context, defining equity for the EV transition is crucial. Building on The Greenlining Institute's definition of mobility equity, this overview defines EV equity as an electric vehicle transition that increases access to community-appropriate mobility options and affordable vehicle charging, reduces air pollution, and enhances economic opportunity for priority populations (including but not limited to disadvantaged communities and low-income communities of color). Operationalizing equity in the EV transition will require embedding equity throughout the goals, processes, investments, outcomes, and metrics that constitute an action plan.

This definition will expand and take shape over time through the steps outlined in this framework. See Appendix

[5] The definition of priority populations is available at https://www.caclimateinvestments.ca.gov/priority-populations and a map at https://gis.carb.arb.ca.gov/portal/apps/experiencebuilder/experience/?id=6b4b15f8c6514733972cabdda3108348.

[6] See National Renewable Energy Laboratory (NREL), *The 2030 National Charging Network*, available at https://driveelectric.gov/files/2030-charging-network.pdf; California Energy Commission (CEC), *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment* (August 2023), available at https://www.energy.ca.gov/data-reports/reports/electric-vehicle-charging-infrastructure-assessment-ab-2127.

A for more detail.

This document provides an overview of potential Equitable EV Action Plan strategies and a framework for city leaders to build locally appropriate plans based on top-priority strategies. Development of an Equitable EV Action Plan will necessarily rely on a process of direct engagement between city leadership and a range of local stakeholders and community members to inform decision-making regarding selection of strategies, infrastructure siting, prioritization, participatory frameworks, and more. This framework is intended to provide initial context for that process by helping city leadership and stakeholders identify and build effective, workable approaches.

Strategies and Actions

A local Equitable EV Action Plan will center on a set of strategies designed to accelerate EV adoption and access for residents, create a more cohesive and sustainable city transportation system, and facilitate equity and economic development in the electrification transition. The goals, strategies, and actions included in the plan should draw on work in other California and national jurisdictions but will be tailored to each city's demographics, geography, and economy. The needs of particular local stakeholders, focus areas and capacities of city departments, and potential revenue streams will determine which strategies are appropriate for development in a planning process.

An Equitable EV Action Plan should:

- Detail specific actions and responsible departments to achieve stated goals.
- Identify needs and strategies to operationalize equity at each step.
- Create conditions to set priority actions into motion.
- Establish deadlines and timelines for completion of each action.
- Propose revenue and financing measures (public and private) to fund the plan.
- Set metrics to measure success and evaluate progress.

Local Equitable EV Action Plans can include strategies in some or all of the following areas. They are not necessarily presented in order, and some areas may not be included in cities' ultimate plans (though all will be relevant to some degree):

A. Assessing Priorities, Setting Targets, and Defining Mobility Equity in the Local Context
B. City Leadership Opportunities and City Fleet Electrification
C. Public and Curbside EV Charging
D. Residential (Single-Family and Multifamily) EV Charging
E. Workplace EV Charging
F. Physical Infrastructure Design, Safety, Security, and Accessibility
G. Shared Mobility and Electric Micromobility
H. Passenger Vehicle Access and Incentives
I. Medium- and Heavy-Duty Vehicles and Charging
J. Engagement, Participation, and Benefits for Communities
K. Implementation and Funding

The following pages describe potential strategies in each of these areas, drawing on existing EV action plans, climate action plans, and implemented pilots and programs in US cities.

A. Assessing Priorities, Setting Targets, and Defining Mobility Equity in the Local Context

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To provide scope and context for the policies and strategies that will constitute the majority of an Equitable EV Action Plan, the plan should first identify local priorities and targets for an equitable EV transition. This may include conducting jurisdiction-wide technical assessments of vehicle and infrastructure needs; setting goals for adoption of EVs and alternative travel modes; and establishing principles that will guide policymaking in the EV context. Many of these elements will reflect prior local plans and work already completed, such as existing climate action plans or transportation- and climate-related components of general plans.

Crucially, this initial stage of plan development is when program leaders can craft a definition of and metrics for EV equity that will shape the local transition. This should include direct engagement with communities and stakeholders to identify guiding mobility equity principles; conduct mobility needs assessments; and locate highest-priority communities for proactive mobility investment and policy support. While each local context presents unique needs and opportunities, an Equitable EV Action Plan should identify appropriate strategies to center community voice and decision-making power throughout the process.[7] Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Define goals and targets of vehicle electrification transition	- May include mode shift goals (automobiles to transit/shared/active transportation), VMT reduction goals, and vehicle electrification goals (target date for full shift to EVs) - Includes mobility, air quality, economic, quality-of-life, and climate benefits	SF CAP TLU Sector Goals ("By 2030, 80% of trips taken by low-carbon modes such as walking, biking, transit, and shared EVs. By 2030, increase vehicle electrification to at least 25% of all registered private vehicles, and to 100% of all vehicles by 2040.") Oakland CAP TLU Sector Goals ("To reduce the carbon and pollution impacts of vehicles, the City must help as many Oaklanders as possible to move around	

[7] Greenlining Institute, *Mobility Equity Framework*, p. 5, available at https://greenlining.org/publications/mobility-equity-framework-how-to-make-transportation-work-for-people/.

		Oakland without cars. Active transportation (walking and biking) and public transportation are the top priorities. For those who must use vehicles (including cars, trucks, buses, and delivery vehicles), electrification is the key.")	
Define mobility/EV equity and establish goals	- Includes definition of equity in the local context, identification of priority populations/underserved communities, and assessment of local barriers to vehicle and infrastructure access - Includes identification of equity goals and outcomes (participation/process and investment, including top-priority strategies among action plan options)	Oakland ZEV AP Introduction ("ZEVs can be a powerful tool for social equity. They reduce the pollution associated with private automobile use that disproportionately impacts frontline communities, and lower lifetime driving expenses thanks to reduced fueling and maintenance costs.") SF CAP equity introduction ("San Francisco views climate action through four complementary focus areas, or 'lenses,' which have identified critical issues and shaped proposed strategies for future implementation. These considerations must be advanced to the extent possible to maximize benefits for the entire community, and with a special eye toward reducing burdens on marginalized communities." These lenses are: Racial and Social Equity, Economic Recovery and Just Transition, Protecting Public Health, and Resilience.) Greenlining Institute *Mobility Equity Framework* ("Mobility Equity: a transportation system that increases access to high quality mobility options, reduces air pollution, and enhances economic opportunity in low-income communities of color.")	

Conduct mobility needs assessment(s)		Austin Climate Action Plan TE Strategy 1 ("Complete an Electric Vehicle Community Needs Assessment to identify the intersections of mobility challenges, transportation electrification, and racial and economic justice.")	
Conduct mapping and outreach exercises to identify priority communities most in need of proactive planning, policy and financial support, and publicly accessible infrastructure	- Begins with identification of areas of greatest need based on local environmental and demographic criteria (e.g., expanding and modifying mapping tools such as CalEnviroScreen and the Climate and Economic Justice Screening Tool) -Where available and relevant, use local and state-specific mapping tools, such as those cataloged in the Environmental Justice Tool Inventory - Includes iterative review and feedback from city stakeholders and communities to refine assessment of needs and opportunities		SF EJ Communities Map/Framework (City-specific map tool based on CalEnviroScreen but incorporating more local pollution and demographic data and reflecting public comments to identify city areas with higher pollution and that are predominantly low-income.) Oakland EJ Communities Map/General Plan Element (Map building on CalEnviroScreen identifying "low-income areas disproportionately impacted by pollution, socioeconomic vulnerability, and adverse health impacts" that are "eligible for special considerations and investments, and are recognized and uplifted in order to equitably allocate resources.")
Catalog existing local plans/initiatives that overlap/advance EV efforts	- Includes climate action plans, general plan (i.e., comprehensive plan or master plan) elements, permit streamlining programs, interagency teams, etc. - Includes local incentive programs (e.g., Fresno Drives Electric and Equiticity's Mobility Opportunities Fund), pilots (e.g., Transform Fresno and Forth's Affordable Mobility Platform), grants obtained, and state programs relevant	Oakland ZEV AP policy timeline (Catalogs all city climate and transportation programs/policies over past two decades)	

	to local efforts (e.g., CC4A and Michigan DOT's Equitable Mobility Challenge)		

Advancing Equity

Defining equity in the context of EV and mobility infrastructure is a crucial first step toward developing a locally appropriate, effective action plan that supports communities across transportation, public health, and economic development needs.

- *California's CalEnviroScreen and the federal EJScreen and CEJST provide key baseline information on communities most vulnerable to environmental harms and most in need of proactive climate policy support and investment–but most cities and counties should refine and build on these resources with local knowledge and criteria. Many cities such as San Francisco and Oakland are developing EJ maps and indices tailored to local environmental risks and community demographics. See the EJ Tool Inventory for a list of state and local EJ maps, datasets, and tools across the country.*
- *Engaging directly with community-based organizations and residents to identify mobility needs is a key part of establishing a shared vision of EV Equity and embedding it throughout the process and implementation of an action plan.*
- *The Greenlining Institute's Mobility Equity Framework details a process of community needs assessment, mobility analysis, and decision-making that may guide these steps. See Section J for more actions related to this process.*

B. City Leadership Opportunities and City Fleet Electrification

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A subset of strategies that are fully within local government authority and purview will be key building blocks for a comprehensive approach to local EV and mobility policy. These strategies may include building departmental functions to manage and coordinate EV policy; assessing existing resources and policies relating to EVs and mobility; and efforts to electrify city fleets, which can help accelerate public adoption and secure charging infrastructure. Many local governments will lead with these strategies to cement early progress and build capacity. However, it is important to note that strategies focused on city coordination and assets are only a first step toward concrete, equity-focused investment. An Equitable EV Action Plan will hinge on the strategies that secure zero-emission mobility access for priority communities. Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Establish metrics to track vehicle and infrastructure progress and equitable implementation/ investment	- Includes data on EV ownership and charging infrastructure availability, citywide and in priority communities - May include vehicle purchase and charger installation targets - Includes collaboration with equity/EJ organizations to develop equity-based goals and metrics	City/county EV roadmaps and readiness blueprints (see Looking Forward) SF CAP implementation dashboard State EV rebate program application/award tracking data (e.g., CA CVRP rebate data, IL EPA EVRP rebate data)	
Assess current city government resources related to EV and e-mobiltiy policy	- Includes review of all potentially relevant city departments (transportation, public works, planning, city manager, city council, mayor's office etc.) to identify all staff/teams working on topics related to EVs and charging infrastructure and to identify gaps	City/county EV roadmaps and readiness blueprints (see Looking Forward)	
Inventory undeveloped,	- Includes surplus public land that cannot be used for housing or housing	SD CAP 2.3 SA-5 ("Explore the development of a citywide	

publicly owned properties that could be developed as EV charging and mobility hub sites	related uses and assessment of grid, accessibility, location, and other criteria for utility as a charging host	policy for surplus land that cannot be used for housing to be considered for EV charging prior to review for sale or other dispensation.") Oakland ZEV AP CL-2 ("Make a full accounting of City assets to catalogue the feasibility of siting public electric vehicle charging infrastructure. Develop a set of criteria for prioritizing candidate sites. Criteria may include technical feasibility, equity…lack of nearby public EV charging, number of rental and/or apartment buildings in the immediate area, and cost. ")	
Establish city government roles/entities dedicated to EV and mobility infrastructure efforts	- May include new FTEs at transportation and planning departments and/or interagency working group to oversee planning, permitting, and new projects as well as tracking progress - New staff roles should include dedicated grant-writing capacity - Working groups should include community and/or stakeholder representatives	Oakland ZEV AP CL-1, CL-11 ("Create and fund a staff position within the Department of Transportation or Oakland Public Works to oversee implementation of this Plan and related public EV infrastructure projects. Provide resources for City engineers to support those and other ZEV-related projects.") C40 Climate Action and Inflation Reduction Act Guide for Local Government Leaders (Outlines strategic roles that municipal leaders can play in maximizing local benefits associated with federal climate legislation, while minimizing the real and potential harms posed to frontline communities exposed to fossil fuel infrastructure and development.)	
Establish city program to decarbonize/ electrify all city fleet vehicles	- Includes target dates for EV replacement of all city-owned vehicles, including light-duty (e.g., staff, traffic, police, parks) and medium/heavy-duty (e.g., buses,	Oakland ZEV AP CL-8 ("By 2030, ensure that over 50% of the City's fleet uses alternative fuels, with 100% of all non-emergency response sedan purchases being zero emission vehicles. By 2030, triple	

	- Includes strategy to ensure charging availability at vehicle stations and overnight locations - May include strategy to allow crossover charging use for city and private vehicles	the number of electric vehicle chargers dedicated to fleet vehicles. By 2025, develop a feasibility study to identify zero emission and alternative fuel solutions for all City heavy-duty and emergency response vehicles and equipment.") SF CAP TLU.7-3 ("By 2024, develop a plan to help the City's nonrevenue fleet and small and locally owned businesses build infrastructure that allows for zero emission delivery, drayage, and longer haul trucks.")	
Build a working relationship with the local electric load-serving entity(ies) to understand grid capacity and the EV charging needs of specific communities	- Should include dedicated planning, transportation, or public works staff time to liaise between e-mobility infrastructure project developers (public and private) and utility or CCA - Should include resources to connect developers and building owners with utility capacity maps, planning resources, and interconnection processes and staff		
Advancing Equity *Establishing roles within city government dedicated to EV policy is key not only to traditional permitting and planning roles for this new form of infrastructure but also to ensuring community input and equitable allocation of resources.* ● *An interagency working group should include transportation, public works, planning, and other infrastructure teams as well as leaders from local agencies responsible for economic development, labor/workforce, community services, racial equity, and other relevant policy areas.* ● *Dedicating staff members to EV and mobility grant-writing can generate significant financial benefits given the significant federal and state funds currently available and largely designed to prioritize underserved and lower-income communities.*			

C. Public and Curbside EV Charging

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Public charging will play a crucial role in robust, accessible local charging networks as EV adoption expands. Expert analyses anticipate that millions of publicly accessible chargers will be required to support tens of millions of EVs over the coming decades; for example, the California Energy Commission estimates that the state will need 2.1 million public and shared private chargers to serve an expected 15 million EVs in 2035.[8] Lack of adequate public charging is a top barrier to EV adoption for many drivers,[9] and policymakers have identified curbside and neighborhood charging as a core solution.[10] While many federal programs and private providers are focused on a public charging network that serves long-range highway travel, an equitable EV transition will also require investment in public charging that serves as a community mobility resource.

These chargers–including curbside and public right-of-way (PROW) chargers–will be particularly valuable for city governments seeking to advance equitable access to EV charging for priority populations and underserved communities. They can bring convenient charging to residents who lack access to charging in private driveways or garages, in multifamily dwelling parking lots, or at workplaces; they can also promote mobility and economic development in high-priority commercial corridors and community facilities. At the same time, installing chargers in the PROW can present some of the most complex infrastructure and financing challenges for developers and policymakers.

For many cities, a robust strategy for equitably distributed public and curbside charging will be crucial to facilitate EV use for lower-income and disadvantaged residents, in conjunction with robust incentive programs and outreach. Cities around the US are piloting approaches ranging from cable-across-the-sidewalk residential charging[11] to city-managed, streetlight-mounted chargers[12] to

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[8] NREL, *The 2030 National Charging Network*, supra, pp. vi-ix; CEC, *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment*, supra, p. 4.

[9] See, e.g., Apurva Pamidimukkala et al., "Evaluation of barriers to electric vehicle adoption: A study of technological, environmental, financial, and infrastructure factors," Transportation Research Interdisciplinary Perspectives (November 2023), available at https://www.sciencedirect.com/science/article/pii/S2590198223002099.

[10] CEC, *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment*, supra, p. 58.

[11] See, e.g., Washington, DC Department of Transportation, *Electric Vehicle Charging Cord Guidance for Crossing the Public Right-of-Way*, available at https://ddot.dc.gov/sites/default/files/dc/sites/ddot/page_content/attachments/Admin%20Issuance%20EV%20Charging%20Guidance.pdf.

[12] See, e.g., Los Angeles Bureau of Street Lighting, "EV Charging Stations" (webpage), available at https://lalights.lacity.org/connected-infrastructure/ev_stations.html.

comprehensive code updates.[13] Access in-depth case studies of these programs in CLEE's public and curbside charging strategies policy brief. While appropriate public and curbside charging strategies will vary widely by city and community, an effective Equitable EV Action Plan will ensure coverage and accessibility in key locations–informed by community and stakeholder input. Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Conduct mapping and outreach exercises to identify zones and corridors most appropriate for public and curbside charging investment	- Builds on initial priority community mapping exercise with local spatial data on multifamily dwellings, travel dynamics and access, existing and planned curb uses, community hubs and resources, commercial hotspots, grid capacity, etc. - Includes iterative review and feedback from city stakeholders, community-based organizations and communities to ground-truth and refine assessment of needs and opportunities		Ava Energy MUD Hotspot Map (Map showing Multi Unit Dwelling (MUD) "hotspots" within energy provider's jurisdiction. Half of DCFC incentives will be reserved for projects in these hotspots.) Sacramento curbside map (Map showing streets that could potentially host curbside charging based on an initial data analysis.) CLEE/ERG site prioritization platform (In development: a free, publicly accessible tool to inform site prioritization and selection based on local equity and feasibility criteria.)
Develop a public and curbside charging strategy/policy	- Includes city agency leadership/management structure for siting and permitting (transportation, planning, public works, city attorney, etc.); process for site evaluation and community input; and pilot programs - Encompasses charging at curbside/in public right-of way and other public	Oakland ZEV AP PC-2, PC-3 ("By 2023, adopt an Ordinance to facilitate PROW charging in residential neighborhoods, including clear protocol for addressing ADA and pedestrian safety, permitting, and station use." "Identify highest-priority locations for public charging. Develop and include measures of where new infrastructure would maximally reduce barriers to EV ownership	

[13] See, e.g., Portland Bureau of Transportation, *Electric Vehicle Charging in the Public-Right-of-Way Code Update Project* (March 2023), available at https://www.portland.gov/transportation/electric-vehicles/documents/electric-vehicle-charging-public-right-way-code-project/download.

	spaces, as appropriate - Strategy/policy should be informed and shaped by community-based organizations and priority community members based on an agreed model of participation - May include direct city investments and/or contracting/franchise arrangements and RFPs for private developers - May include stand-alone, comprehensive ordinance (below) - May include goal-setting and solicitation of information or proposals for public charging on city-owned properties	and use, as well as where charging is technically and logistically feasible. In identifying locations, use best practices in inclusive community engagement to maximize input from residents and business owners who could be impacted by new infrastructure, and who stand to benefit most from EV access and use.") SF CAP TLU.7-2 ("Expand publicly available EV charging across the city that is financially and geographically accessible to low-income households and renters." Includes curbside, parking lot, and charging hub strategies.) SD CAP 2.3 SA-1 ("Set a goal for installation of public EV charging stations on city property to support EV adoption in Communities of Concern. Initiate process with publication of a Request for Information (RFI) to solicit public charging solutions.")	
Develop a public and curbside charging ordinance	- Includes updates in streamlined encroachment and utility permitting, traffic/curb management, parking enforcement, ADA and accessibility, and building codes - Should include fee waivers and/or accelerated permitting for applications in priority communities - Should include strategy for charger installation in parking lots and garages	Oakland ZEV AP PC-1 ("By 2023, adopt an Ordinance governing the goals, specific areas of responsibility, and workflow requirements for installing EV chargers in the PROW.")	Portland EV Charging in the Public Right of Way Code Update (The Portland Bureau of Transportation was charged with updating the Portland City Code and Administrative Rules "to set location and siting requirements for the installation of Level 2 EV chargers in the ROW in select areas of Portland. These changes are accompanied by a clear permit process for companies interested in providing public charging services.") SF Environment Code § 3102

	- Should include some level of economic development opportunity for priority communities (e.g., priority for local/minority-owned installation and maintenance; community benefits agreement for large heavy-duty charging depots)		(Ordinance requires commercial parking facilities with 100+ spaces to install Level 2 charging stations at 10% of all spaces or a minimum number of DCFC chargers.)
Develop pilot programs for curbside, public right-of-way, streetlight, or utility pole charging	- Includes one or more applications at priority locations based on mapping exercise (above), most viable application for city (e.g., ownership of streetlights), and access to funds (e.g., direct installation vs. permitting pilot) - Pilot project location priority should be given to priority communities		Los Angeles streetlight charging pilot program (Pilot program with over 700 Level 2 chargers installed on existing streetlight poles managed by city streetlight bureau and municipal electric utility) Melrose, MA streetlight/pole-mounted charging pilot program (Pilot program with over 30 Level 2 chargers installed on streetlights and utility poles, comanaged by city and local electric utility) Seattle curbside L2 charging program (Service provided by Seattle City Light, which will install, own, operate, and maintain public Level 2 EV charging next to the curb in residential neighborhoods in Seattle, with a focus on areas in need of public charging.) NYC curbside L2 charging pilot (A partnership between the city, the local electric utility, and FLO which placed 100 hundred L2 chargers across New York's five boroughs, with a focus on lower-income communities.) Sacramento curbside pilot (A partnership between the City and EVgo, which owns and operates the chargers, for

			three publicly accessible curbside charging sites.)
Develop pilot program for charging and mobility hubs	- Could include mobility hubs that integrate EV parking/charging with transit and micromobility access and/or DC fast charging hubs dedicated to EVs (in the gas service station model) - Pilot project location priority should be given to priority communities	SF CAP TLU.7-2(d) ("By 2023, create three 'fast-charging hubs' with one serving a disadvantaged community within San Francisco.") Oakland ZEV AP CL-3 ("The City will develop a "Smart and Equitable Mobility Hub" program, identifying goals, amenities, minimum services, fee structures, employment opportunities and responsible parties. Smart and Equitable Mobility Hubs will be placed in convenient locations to support the City's transportation priorities, including active and public transportation, shared and micromobility, and zero-emission vehicles.")	Sacramento AQMD mobility hub pilot program (The Mobility Hub encompasses four programs, including a community car share with 2 EVs, 4 EV charging stations, micro transit provided through a Lyft Concierge, and an electric shuttle to provide free rides to training centers for qualified students, located at a previously undeveloped city-owned lot in an underserved community. The second phase will include Wifi, a Digital Kiosk, and a Solar Canopy.) Fresno Biz-Werx mobility hub (Downtown mobility hub offering membership-based carshare services. Electric vans and e-bikes will be added.)
Develop a strategy or requirement for charging at service stations	- Impose requirement upon new construction of a service station or sale/major renovation of an existing station	Oakland ZEV AP PC-5 ("[D]evelop an ordinance requiring new service stations and those service stations proposed for renovation to install a minimum number of EV fast-charging stations as a condition of approval.")	
Develop a public charging subsidy program for lower-income drivers	- Includes analysis of gap between cost of at-home charging and public/curbside charging - Incorporates city funds as well as state, air district, energy provider, and private EVSE support - Targets transition period through 2035	Oakland ZEV AP PC-4 ("Study the possibility of subsidizing charging for low-income users, first by subsidizing electric vehicle parking and charging infrastructure in City-owned facilities." Also contemplates partnerships with other agencies like BART to reduce charging costs for low-income residents.)	

Advancing Equity
While robust publicly accessible charging will be a cornerstone of many equitable mobility strategies, the scale and use cases for this infrastructure will vary widely by local geography and demographics. Needs will likely be greatest in areas with a large quantity of multifamily housing and high proportion of renters, but local leaders will need to closely engage with stakeholders to identify appropriate, high-utility locations and charger designs for all residents who lack access to private off-street parking and/or sufficient capital.

D. Residential EV Charging

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Eighty percent of EV charging occurs at home, and thirty percent of U.S. households are in multifamily buildings.[14] Residential charging strategies will be a crucial component of the EV transition, and infrastructure can be tailored to the characteristics of each city's housing stock and policy needs. City governments will play a crucial role in ensuring that all residents–not just wealthier single-family homeowners–have access to charging at or near their homes.

Homeowners are more than three times as likely to own EVs than renters, which is a trend apparent even across income categories.[15] Equity considerations place focus on multifamily buildings whose residents are most likely to lack the ability and capital to install personal chargers in shared parking areas, given the realities of shared parking area management and landlord-tenant relationships. Additionally, many building managers do not have the resources or expertise on the benefits of EV charging or how to pursue charging installations.[16] To address these barriers, policy analysts have suggested strategies such as encouraging level 2 chargers for their grid integration features and speed, requiring or encouraging equipment that is capable of tracking separate metering charging load and administering user fees for EV customers, or allowing incentives to support lease products by third-party companies so managers do not take on the planning or administrative burden.[17]

Multifamily strategies will be central to many cities' plans given the preferability of charging at home, the financial and technical complexity of upgrading multifamily buildings (especially older buildings), and the need for policy to support lower-income renters. Many existing buildings will require panel or other electrical upgrades to enable EV charging, so actions in this section should also focus on building readiness for residents and owners who cannot afford those upgrades. Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Develop an	- Should include all new construction	Oakland ZEV AP EMB-1	CA City Green Building Codes (e.g., SJ)

[14] Nicole Lepre, Atlas Public Policy, *EV Charging at Multi-Family Dwellings* (January 2021), p. 2, available at https://atlaspolicy.com/wp-content/uploads/2021/01/EV-Charging-at-Multi-Family-Dwellings.pdf.

[15] Lucas Davis, "Evidence of a homeowner-renter gap for electric vehicles," Applied Economics Letters (2019), pp. 927-932, available at https://faculty.haas.berkeley.edu/ldavis/Davis%20AEL%202019%20Gap.pdf.

[16] Lepre, *EV Charging at Multi-Family Dwellings*, supra, p. 2.

[17] Id., pp. 2-3.

ordinance/building code that requires adequate charging or readiness for new construction and for existing buildings at time of major retrofits or sale	- For existing buildings, may trigger at point of sale, point of renovation, or both - Covers EV charging equipment and supporting electrical upgrades - May include exemptions for financially burdened owners and flexibility for smaller buildings, or be limited to an assessment and disclosure requirement - Should include requirements for 100% coverage of all dedicated parking spaces as charge ready and direct connection of dedicated chargers to unit electrical meters to access low-cost EV charging rates - Depends on state home rule/local control standard	("Develop and adopt an Ordinance requiring installation of certain EVSE and/or targeted electrical system upgrades when buildings undergo major retrofits and at time of sale.") SD CAP 2.3 SA-3 ("Amend the building code to expand EV charging stations requirements for multi-family and non-residential properties.") SF CAP BO.2-2, BO.2-10 (Proposals for residential time-of-sale policies to require building electrification plans and fossil fuel equipment replacement.) LA pLAn ZEV chapter ("Update building code to expand EV charging requirements to meet anticipated need") Tahoe-Truckee PlugIn Plan ("Specify standards for Electric Vehicle Supply Equipment (EVSE) in the building code to ensure that any EVSE installations are safe and accessible. The second is to require pre-wiring for EVSE to lower the cost of future EVSE installations.")	(State green building code requires EV readiness and minimum EV charging spaces for new construction. Individual cities have adopted reach codes that expand on these requirements.) Portland EV Ready Code ("The Electric Vehicle (EV) Ready Code Project amended Portland Zoning Code (Title 33) to require all new multi-dwelling and mixed-use development with five or more units – that include onsite parking – to provide EV-ready charging infrastructure.") Tucson Unified Development Code § 7.4.11 (Outlines the percentage of total mandated passenger vehicle parking spaces that must also have access to at least Level 2 EV charging stations by group, class and type, along with exceptions.) Seattle Muni. Code 23.54.030 (Requires EV readiness for newly constructed housing.) Boston EV Readiness Policy (Requires minimum number of EV-installed spaces in new developments an includes equivalence calculator that allows fewer installations of high-capacity chargers and car share spaces.) EV Charging for All EV Building Codes Toolkit (Best practices and examples for local code development.)

Develop streamlined process for multifamily building EV charger installations	- Includes guidance documents, city point-of-contact, and fee waivers/discounts or accelerated/streamlined approval for city permit applications (e.g., trenching, interconnection) for EV charging upgrades in lower-income multifamily buildings - Includes all multifamily properties, may include strategies to focus on largest buildings, affordable buildings, and buildings located in lower-income communities	- LA pLAn ZEV chapter ("Streamline permitting and interconnection processes for EV charger installations.")	CA AB 1236/AB 970 Permit Streamlining Program (State law requiring local governments to develop ordinances and checklists for EV charging permit streamlining, currently adopted by over 300 local governments.) San Jose Building Code § 17.88.400 (Details expedited permit review and approval for EV charging installations at multifamily buildings.)
Conduct outreach to multifamily property owners and tenants to build understanding of EV plan, building needs, charging options, and community priorities	- Includes education and outreach to owners, model tenant outreach plans, and venues for tenant-owner engagement - Includes city staff/portal dedicated to connecting multifamily building tenants and owners with rebates and incentive - Includes working with electric utility and buildings department to create list of multifamily buildings undergoing or most in need of electrical service upgrades to ensure charger installation at point of project - Includes coordination with Program Administrators who provide vehicle and charging infrastructure incentives to help improve access and affordability	Oakland ZEV AP EMB-2 ("Engage with property managers and community partners to develop model tenant outreach plans, including a script and survey to perform a needs assessment. Work with community partners to create outreach materials for homeowners and property owners, including EV and EVSE fact sheets, details about funding sources, average costs, approved contractors, and an online portal to help building owners understand and identify relevant building characteristics and EVSE needs.") SF CAP TLU.7-1 ("By 2023, launch a public awareness campaign, including messaging tailored to specific communities, with the goal of educating residents about the health, economic, and environmental benefits of transit, active transportation, and electric vehicles.")	Seattle EV readiness ordinance process ("For example, the city completed a full year of stakeholder outreach prior to passing the ordinance, focusing on the developer community and property managers. This process clarified concerns, answered questions, and got stakeholder approval. As more cities evaluate the implementation of similar EV readiness ordinances, Seattle offers a good example of how a municipality can streamline processes that otherwise limit EV adoption and access.")

Develop a strategy and ordinance to allow private charging cords in the public right-of-way in residential areas	- Authorizes and sets design, safety, accessibility, and use requirements for private charging cords across sidewalks from homes lacking off-street parking - Does not require permit issuance if requirements/guidelines are followed - Interacts with/is a component of public and curbside strategy and ordinance (above)	Oakland ZEV AP PC-2 ("[A]dopt an Ordinance to facilitate PROW charging in residential neighborhoods, including clear protocol for addressing ADA and pedestrian safety, permitting, and station use.")	Portland encroachment administrative rules TRN-8.08 C.13 (Rule outlines allowable uses of electric vehicle cord covers in the public right-of-way without need for encroachment permits.) Washington, DC guidelines (Guidance addresses electric vehicle charging cords that cross the public right-of-way.) See Appendix B for more examples and details.
Develop city green bank to provide low-cost financing for multifamily charging upgrades	- Can provide financing for a range of residential and commercial building decarbonization projects	SF proposed green bank (A city green bank has been proposed to help advance initiatives proposed in SF's Climate Action Plan, such as electrifying existing housing stock and augmenting the transit system.)	Washington, DC Green Bank (Offers financing solutions that work synergistically with DC initiatives to help make the green economy accessible to all DC residents, organizations, and businesses.)
Develop a rebate or zero-cost program for EV charger installation at multifamily buildings	- Should include access to funds for charging hardware and electrical upgrades - Should include technical assistance for property owners - Funds should be prioritized or restricted for affordable properties and properties located in priority communities - Can include connecting residents and building owners to state and utility rebate programs, like PG&E Multifamily and Small Business Program and Charge		Smart Columbus Program (Grant-funded, city-led program that funded initial round of 48 charging ports at 11 MUD project sites, based on partnership with local electric utility and nonprofit Clean Fuels Ohio which contracted with each site, conducted inspections, gathered data and provided the rebate over a three-year period. More rounds have since followed based on the success of round one.) PG&E Multifamily Housing and Small Business EV Charger Program (Electric utility program that installs chargers free of charge for multi-family housing and small businesses located in priority

	Ready NY 2.0 (which offers incentives for Level 2 EV charging stations including $2,000 per charging port installed at workplaces or multi-unit dwellings.)		communities.)
Develop guidance to facilitate charging installation by building owners and managers of multi-family dwellings	- Includes information to help property owners/managers plan, finance, install, and maintain charging stations, connections to relevant city departments, and information on private companies that can manage projects - Should include city-specific guidance from transportation, planning, permitting, and building departments and incorporate or link to state and utility guidance where applicable - May include dedicated staff at local building departments to field permitting and design inquiries		NY Siting and Design Guidelines (State-developed informational guides on location types and factors that make good EV charger locations; guidelines for installation and optimization of charging stations at long dwell parking lots; and strategies for reducing the installation and operating costs of equipment at a range of site types.)
Advancing Equity *The ability to charge at home provides much of the convenience and cost savings of EV ownership, and it is least accessible for residents who rent their homes and/or live in multi unit/multifamily dwellings (MUDs), often lacking dedicated parking spaces and control over electrical infrastructure. These individuals are disproportionately likely to be lower-income people of color and to lack the financial needed to install private chargers. Many barriers inhibit charging access at existing MUDs, including outdated building infrastructure, lack of landlord incentive, complex financing and capital limitations, and the logistical challenges of retrofitting older buildings. As a result, local leaders should prioritize a robust strategy to streamline charger installation at MUDs at any feasible point in the building life-cycle.*			

E. Workplace EV Charging

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Currently, about 80% of employers provide some form of parking access, and EV workplace-charging will be the second-longest time for long, low cost charging (behind homes).[18] Workplace charging will be in high demand among cities that have a large commuter population via cars. Convenient workplace charging also facilitates EV adoption for drivers who lack access to reliable home charging options and helps complete the charging network for all drivers. Additionally, workplace charging tends to occur during the day when peak energy demand is lower and renewable energy production, like solar, is higher.[19]

Charging at workplaces can also serve multiple purposes–employee charging during the workday, and community charging overnight.[20] These "shared private" chargers may play a vital role in many localities' efforts to ensure reliable, convenient charging in a range of communities–for example, NREL estimates that nine of the top 10 most populous metropolitan areas in the US will have ten thousand or more workplace ports by 2030.[21] However, workplace charging to date has typically centered in upper-income office employment, and employers and city leaders will need to expand it to a range of employment locations to serve all employees and residents who need it.[22]

As part of a comprehensive and equitable approach, local leaders should craft a small set of strategies to promote safe and convenient vehicle charging during working hours for employees and after hours for community neighbors. These strategies can reflect the needs and locations of the specific employers and industries most relevant in the city and the unique ability of large institutions–as employers of large numbers of residents and in many cases owners of large parking facilities–to meet employee, customer, and community needs.[23] Strategies should focus on employers located in priority communities with the potential to serve members of the community. Specific actions could include:

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[18] Gordon Bauer et al., International Council on Clean Transportation, *Charging up America: Assessing the Growing Need for U.S. Charging Infrastructure Through 2030* (July 2021), p. 27 (July 2021), available at https://theicct.org/wp-content/uploads/2021/12/charging-up-america-jul2021.pdf. See also SoCal Edison, PEV Workplace Charging Pilot (2014), available at https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/w/6442453598-workplace-charging.pdf.

[19] Id., p. 17.

[20] See, e.g, CEC, *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment*, supra, p. 37.

[21] NREL, *The 2030 National Charging Network*, supra, p. 44

[22] CEC, *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment*, supra, pp. 43, 99.

[23] See Drew Toher, Consumer Reports, *Charging the Future: The Role of Retail in our EV Transition* (March 2024), pp. 16-17, available at https://advocacy.consumerreports.org/wp-content/uploads/2024/02/ChargingTheFuture_final.pdf.

Action	Notes/Description *(For the action in general)*	Example/Precedent (Plans+Proposals) *(Representative, not exhaustive)*	Example/Precedent (Implemented) *(Representative, not exhaustive)*
Work with large private employers to survey employees and local residents on charging needs and preferences	- This strategy should identify employers with dedicated parking facilities that can serve residents of priority communities and employees who commute from priority communities	Denver ZEV Roadmap ("Develop an education and outreach campaign, in conjunction with existing fleet and workplace electrification initiatives, to reach out to large fleet owners and large workplaces to educate them about the benefits of EVs and EV charging.")	
Identify, map, and partner with employers whose charging installations could serve employees and residents	- Includes schools, houses of worship, healthcare centers, and other community facilities - Consider identifying workplaces with significant electrical capacity/infrastructure existing or on nearby grid		CalTech EV charging (A CalTech research group has installed publicly accessible EV charging stations in campus garages) GE Workplace Charging Pilot (Pilot in which GE tested its Level 2 charging equipment at the workplace and studied demand and usage of chargers from employees.)
Facilitate network for information-sharing among employers that provide charging and programs that provide assistance to employers considering	- Can include a program to connect employers to existing resources and services.		Clean Mobility Equity Alliance (A peer network allowing members carrying out mobility projects to share successes and challenges.) EMPOWER Project (Funded by US Department of Energy, this service partners with over 30 cities' Clean energy Coalitions which provide resources and support for employers to guide them to effective installations.)

installation			
Consider property tax breaks and other local tax incentives for businesses that host publicly accessible charging in priority communities		- TBD	

Advancing Equity
To ensure equitable charging access, city leaders should focus on anchor employers that are centrally located in communities and able to serve both employees and residents. Workplaces with large parking lots have the potential to serve as key partners in installing large charging facilities at relatively low cost, since these lots can accommodate construction and new electrical infrastructure with limited disruption and delay, and site hosts can engage in upfront cost-sharing in exchange for a portion of revenues. Public schools with parking facilities may be particularly well suited to this task, since they are often located in or adjacent to residential neighborhoods and often vacant overnight and on weekends.

F. Physical Infrastructure Design, Safety, Security, and Accessibility

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The physical design of public EV charging and mobility infrastructure should be accessible, visible, secure (discouraging vandalism and tampering), and safe for both users and pedestrians. This includes not only compliance with the Americans With Disabilities Act and local and state requirements to ensure all users can access infrastructure, but also design standards to minimize disruption and maximize enhancement of public spaces. It should also incorporate community-centered amenities that meet local needs, improve urban streetscapes, facilitate upkeep and maintenance, and provide beneficial services where appropriate (including but not limited to those associated with gas stations, such as window and tire service, restrooms, food, and staffing). Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Develop siting and placement requirements for publicly accessible/ curbside charging stations	- Includes limitations on placement around conflicting curb uses and alternate transit modes, street signage and city/utility infrastructure, trees, etc. - Can be incorporated in residential and public/curbside charging ordinances		Portland right-of-way permit placement and clearance rules (EVSE-specific public right-of-way utility permit with standards for design, placement, physical clearance, ADA/accessibility, and potential exceptions)
Develop accessibility requirements for publicly accessible/ curbside charging stations	- Includes Americans with Disabilities Act and California Building Code compliance - Can be incorporated in residential and public/curbside charging ordinances	Oakland ZEV AP PC-1, PC-2 ("Oakland's residential curbside EV charging policy should include strategies to address ADA accessibility, minimize damage from stormwater and irrigation, avoid conflict with other utilities in or traversing the curb, and minimize costs.")	Los Angeles Municipal Code § 99.04.106.4.2.2.1.3 ("...all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multi-family developments shall comply with California Building Code, Chapter 11A, Section 1109A.") Portland right-of-way permit accessibility rules (Detailed placement, clearance and ground space requirements to ensure accessibility)
Develop design	- Includes streetlight and utility pole		Los Angeles streetlight charging pilot program

requirements and installation strategies to increase safety for users and reduce vandalism	chargers that use retractable charging cords - Includes requirements/standards for lighting, security cameras, and emergency phone/alert systems		(Pilot program with over 700 Level 2 chargers installed on existing streetlight poles managed by city streetlight bureau and municipal electric utility) Melrose, MA streetlight/pole-mounted charging pilot program (Pilot program with over 30 Level 2 chargers installed on streetlights and utility poles, comanaged by city and local electric utility)
Incentivize co-location of amenities and support services at charging hubs	- Includes restrooms, phones/outlets, lighting, convenience store and food sales, basic vehicle care services, service attendants, and park and rest areas - May include subsidized or accelerated permitting for qualifying applicants		Electrify America San Francisco Flagship (Dedicated indoor EV charging hub with lighting, waiting area, restrooms, vending machines, and wifi.) Sacramento AQMD mobility hub (Includes community green space, wifi, and a solar canopy alongside transportation infrastructure)
Require fuel service stations to add charging and develop a program to convert to fast charging hubs	- May include requirement to add charging at point of sale or major renovation as a permit condition - May include design competition for EV charging stations/hubs for light-duty and heavy-duty vehicles	Oakland ZEV AP PC-5 ("By 2024, develop an ordinance requiring new service stations and those service stations proposed for renovation to install a minimum number of EV fast-charging stations as a condition of approval. In developing the ordinance, include consideration of additional opportunities to require and encourage installation of ZEV charging and fueling infrastructure, including permit review and approval, business license application, economic development goals and incentives.") LA pLAn ZEV chapter ("Initiate a design competition for the gas station of the future to meet the needs of	

		both passenger and heavy duty vehicles.")	

Advancing Equity
Streetlight and utility pole charging–installing Level 2 chargers directly on streetlights and utility poles, using the existing electrical distribution to power the charger and the existing pole to hold the equipment–is one leading design strategy to meet the needs of diverse communities. Streetlight and utility pole chargers typically do not require any street or pavement cuts or new power capacity, significantly reducing installation cost, complexity, and timelines for public and curbside installations. In addition, using elevated equipment with retracting charge cables reduces risk of vandalism and maintenance costs. Los Angeles, Seattle, and Melrose, MA have all successfully piloted this approach. However, in most cases it relies on close partnership with the electric utility that owns the power supply and utility poles–either a municipal utility or a private utility willing to invest.

G. Shared Mobility and Electric Micromobility

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Alternatives to traditional private vehicles such as carshare, rideshare, and micromobility options like e-bikes and scooters will play an important role in a city's overall transition to zero-emission transportation. These options can meet the travel needs of a diverse range of residents, enhance community connectivity through short-distance travel, assist with public transportation planning by providing convenient last-mile options, and simultaneously reduce pollution from private vehicle ownership by providing a more efficient alternative. They are also central to most plans for eliminating transportation GHG emissions and reducing vehicle miles traveled (VMT)–for example, CARB's 2022 Scoping Plan to Achieve Carbon Neutrality calls for local investments in electric shuttles, car share, bike share, and microtransit to enhance low-carbon mobility and reduce VMT.[24]

While most residents who rely on private vehicles (due to a variety of land use and lifestyle factors) will likely continue to do so in the near term, shared and micromobility options offer a viable alternative that can reduce reliance on automobiles. Crucially, they can deliver on key mobility equity criteria–such as affordability and accessibility, pollution reduction, and neighborhood connectivity–while supplementing other existing modes.[25]

Several analyses have confirmed the ways in which shared and micromobility programs can advance multiple goals of the transportation decarbonization transition. For example, car-share program users have self-reported that these programs help them to travel more frequently and to access places they otherwise would not.[26] Car-sharing programs have also been found to significantly reduce the need for private vehicle ownership (with round-trip programs having a greater impact than one-way programs)[27] and, as in the example of California's Míocar and BlueLA programs, they can be particularly effective in introducing EV technology to lower-income populations while meeting the mobility needs of communities that have historically lacked access. Micromobility programs are also low cost compared to car ownership and provide increased mobility and healthier, more energy efficient modes of transport.[28]

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[24] CARB, *2022 Scoping Plan to Achieve Carbon Neutrality* (December 2022), pp. 194, Appx. D p. 11, available at https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents.

[25] Greenlining Institute, *Mobility Equity Framework*, supra, pp. 12-18.

[26] Adam Millard-Ball et al., Transportation Research Board, *Car-Sharing: Where and How It Succeeds* (2005), pp. 4-25, 4-27, available at https://nap.nationalacademies.org/catalog/13559/car-sharing-where-and-how-it-succeeds.

[27] Michiko Namazu and Hadi Dowlatabadi, "Vehicle Ownership Reduction: A comparison of one-way and two-way carsharing systems," Transport Policy (May 2018), p. 38, available at https://www.sciencedirect.com/science/article/abs/pii/S0967070X16307314.

[28] City of Oakland, *Zero Emissions Vehicle Action Plan*, supra, pp. 83-84.

Although these programs have the potential to be impactful in promoting equity across EV access and transportation, programs must be carried out in locally and culturally appropriate ways with input from the community to address their needs and concerns.[29] Transportation experts have noted that widespread knowledge about the availability of these services, separate application processes, confusing websites, non-culturally specific marketing, historic trends in which demographics use these services, and location of the services can all be barriers to effective implementation.[30] Additionally, conducting needs assessments is a key strategy to inform city leaders of local variations in transportation perception, knowledge, and need. For example, a Philadelphia focus group indicated low-income residents saw bikesharing mainly as a recreational activity, while an Oakland Spanish-speaking focus group was unaware of carsharing but once informed were interested.[31]

Specific actions that can be taken to implement these programs include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Develop outreach and education program to inform residents about available car share and micromobility options and solicit input on high-priority options for different	- Should include robust solicitation of community input on micromobility options that increase mobility within the geography, acknowledging that many land use patterns are not safe or conducive to travel on bikes and scooters - May integrate with city bike plan development and community input processes - Should implement strategies to receive feedback from communities at	Oakland ZEV AP MM-7 ("In future updates to Oakland's Bike Plan, address how the growing use of e-bikes is affecting bike travel patterns. Consider including Actions to promote E-bike usage, particularly in neighborhoods with high VMT, high pollution burdens, and poorer transit access.") SF CAP TLU.2-6 ("Update San Francisco's Bike Plan by 2023 to improve and expand the active transportation network with robust community input.")	BlueLA Car Share Program (Developed a Steering Community comprising six local and diverse community organizations; which hosts community forums and conducts neighborhood outreach about the program.) Boston Request for Information (Boston put out a formal request to the local community for input on how to incorporate e-cargo bikes into the last-mile delivery ecosystem.)

[29] Greenlining Institute, *Mobility Equity Framework*, supra p. 15.

[30] Alexandra Pan and Susan Shaheen, UC Berkeley Institute for Transportation Studies, *Strategies to Overcome Transportation Barriers for Rent Burdened Oakland Residents* (March 2021), pp. 48-51, available at https://escholarship.org/uc/item/327773q9.

[31] *Id*. at pp. 48, 60.

commutes and communities	large, with strategies to target communities that have historically had gaps in access to clean mobility		
Expand existing car sharing or e-bike programs and/or Develop plans for EV car sharing/micro mobility programs within city-approved Climate Action Plans or ZEV Roadmaps	- Can include expanding existing car share or micro mobility projects to include EVs and include equity strategies to expand programs to lower-income, low-mobility communities - Can include planning in Climate Action or ZEV Roadmaps before a project is actually implemented; identifying strategies that will work for the local community and gathering input from priority communities; and identifying funding and project partners.	Boston ZEV Roadmap Action 1.4 (Plan to issue an EV car-share RFP prioritizing locations in environmental justice communities and near mobility hubs.) Boston ZEV Roadmap Action 1.4 (Plan to increase the accessibility of existing biking infrastructure by adding e-bikes in combination with expanded bike lanes, giving options to developers to build e-bike parking for compliance with local policies, and a Request for Information from the public to tailor the expansion to public needs.)	Stockton, CA Transformative Climate Communities Grant Sustainable Communities Plan CP 5.5 (The city's plan to implement a Transformative Climate Communities grant included an EV car share program, which became a pilot program through the groundbreaking Miocar initiative which caters to communities with historical challenges to mobility.)
Create an e-bike or e-scooter lending library program or purchase incentive program	- Includes engagement with local bike shops and nonprofit partners to provide e-bike rentals at low daily or monthly cost - Includes engagement with community members to identify priority locations, use cases, and bike types - May include income qualification or bifurcated rate structure, free access for lower-income riders, zero-fee/charge for no return policy, or purchase subsidy - May include cargo e-bikes	Oakland ZEV AP MM-1 ("Create an electric bike library to allow Oaklanders to check-out an electric bike for a long periods of time at low cost, like checking out a library book.") SF CAP TLU.2-2 ("Expand community programs and partnerships to make biking more accessible, via safety and maintenance classes, community parking, and subsidies for electric bikes for low-income residents.")	Oakland E-Bike Lending Pilot Program (A state grant-funded program to provide vouchers for e-bike purchases/rentals in underserved communities, in partnership with local bike shops. Includes a community engagement program.) Austin Energy E-Ride Rebate (Municipal utility e-bike and e-scooter rebate program with vouchers up to $1300 for income-qualified customers.)

Create an EV car-sharing program at multifamily properties and/or curbside in priority communities	- Includes provision of charging infrastructure and shared EVs at affordable/low-income housing sites or at curbside locations - May include additional e-mobility vehicles and charging - May include partnerships with local nonprofits and CBOs - May include sliding scale pricing systems and/or subsidized rates for lower-income drivers	Oakland ZEV AP CL-3 ("The City will develop a "Smart and Equitable Mobility Hub" program, identifying goals, amenities, minimum services, fee structures, employment opportunities and responsible parties" including car-share and EV charging components.)	BlueLA EV carshare (EV carshare pilot with 40 locations focused in underserved communities, including steering community and engagement led by 6 CBOs. Funded by CA cap-and-trade program.) TransForm/MTC Oakland, Richmond, San Jose car share and mobility hub pilot program (Pilot program for mobility hubs at three Bay Area multifamily housing properties including EV carshare components.) Stockton, CA Miocar Pilot (100% EV car share network program with three locations at multifamily properties and a county agency office. "Stations will be in historically underserved neighborhoods where mobility challenges are well documented and where there's the greatest need." Funded by CA cap-and-trade program) Boston Metropolitan Area Planning Council Good2Go Pilot (Nonprofit EV car-share with 6 locations and scaled membership/reduced rates for qualifying participants)
Implement a universal basic mobility program/pilot program	- Includes provision of prepaid cards to select residents for use on transit, shared, and micromobility services - Should include marketing and public information sessions - May include direct investment in new mobility services like EV charging, car-share, shuttles, and micromobility		Los Angeles Universal Basic Mobility Program (City pilot program for South LA including monthly mobility wallet stipend, e-bike lending library, community shuttle, public EV charging, and more, funded by CA cap-and-trade program and city funds.) Oakland Universal Basic Mobility Pilot Program (City program providing prepaid $300 transit

			cards to low- and moderate-income residents of East and West Oakland plus discounted access to public and microtransit services, funded by county transit agency grants.) ValleyCAN/Cal-ITP ZEV Equity Charging Card (A preloaded and reloadable contactless debit card designed to make it easier for priority communities to access and use mobility subsidies to be spent specifically on sustainable transportation, including ZEV charging, transit, and bike/scooter sharing, among others. Participants were largely low-income candidates identified from ZEV incentive programs and CBO partnerships. Funded by GO-Biz and a coalition of private and nonprofit partners.)
Expand secure public parking (and charging) for ebikes and scooters	- May include building code requirements for onside ebike and scooter charging stations (plus safety requirements)	Oakland ZEV AP MM-6 ("Identify strategies and seek funding to provide secure public bike storage and low-stress bikeways throughout the City and especially expanding to frontline communities.") SD CAP 2.3 SA-4 ("Amend the building code to require charging stations for electric bicycles.") SF CAP TLU.2-2 ("Expand community programs and partnerships to make biking more accessible, via safety and maintenance classes, community parking, and subsidies for electric bikes for low-income residents.")	
Develop a pilot	See action in C. above	Oakland ZEV AP CL-3	Sacramento AQMD mobility hub

program for charging and mobility hubs		("Smart and Equitable Mobility Hubs will be placed in convenient locations to support the City's transportation priorities, including active and public transportation, shared and micromobility, and zero-emission vehicles. By 2024, develop a list of at least 10 candidate locations for Smart and Equitable Mobility Hubs across the city, with a majority located in and serving Priority Communities according to OakDOT's Geographic Equity Toolbox. By 2030, partner with relevant agencies to fund and develop at least 3 Smart and Equitable Mobility Hubs, with at least two located in Priority Communities.")	(City/state/air district/private/nonprofit partnership including EV charging, community car-share, student ride-share, microtransit, electric shuttles, and other amenities at an underutilized site in a frontline community.)
Develop local guidance for charging and mobility hubs			Boston Neighborhood Mobility Hubs Guidebook (City guidebook describing mobility hub component parts and identifying top candidate locations for development.) Bay Area MTC Mobility Hubs Implementation Playbook (Regional guide for local mobility hub development from component and amenity selection to governance models, funding sources, assessment, and equity.)
Develop and/or expand protected bike lane and slow street networks		SF CAP TLU.2-1, 2-4, 2-6 ("Continue to expand programs that provide corridors that are attractive to all demographics for walking, biking, and using scooters, wheelchairs, and other small mobility devices." "Expand the protected bikeway network by at least 20 miles by 2025." "Update San Francisco's Bike Plan by 2023 to improve and expand the active	

		transportation network with robust community input.")	
Develop an e-bikeshare program with associated curbside public charging docks			Chicago Divvy Ebikeshare Program (Chicago DOT/Lyft partnership to pilot five locations hosting city bikeshare docks with integrated e-bike charging stations.)

Advancing Equity

The Greenlining Institute's Mobility Equity Framework emphasizes the importance of investing in sustainable transportation modes that meet the needs of specific communities. In most California communities this will include private EV use, but in many areas it will also include e-mobility, shared mobility, and transit access that enhance mobility and connectivity, particularly for lower-income residents who are most likely to lack private automobiles. Increasing non-automobile travel is also a priority for the California Air Resources Board's Scoping Plan to Achieve Carbon Neutrality, which calls for significant reductions in vehicle miles traveled, spearheaded by local governments. A robust and effective strategy for equitable EV charging should incorporate alternative modes that are appropriate for priority populations and often entail reduced capital and operational costs. Shared and micromobility strategies should also contain cost-control mechanisms to ensure that these programs maintain affordability for priority populations.

H. Passenger Vehicle Access and Incentives

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State and federal programs (such as California's Clean Cars for All and federal EV tax rebates) are the primary source of financial incentives to make buying or leasing an EV more affordable for lower-income drivers. However, local governments can play a key role helping residents access and combine available financial support–and doing so will be crucial to ensure equity-oriented charging programs actually benefit the communities that host them.

While the overall goal of transportation decarbonization will require greater investment in public transit and reducing VMT, the reality of ensuring equity in this transition requires contending with the necessity of personal vehicle access in many communities. Recent Census Data has shown that nearly 92% of American households own at least one car.[32] Meanwhile, lower-income workers are less than half as likely to use public transit to get to work as those earning over $75,000 per year.[33] Several recent studies have highlighted the value car ownership has, particularly for impoverished Americans.

One study found that the wealth gap between households that own a car and those that do not is about as wide as the wealth gap between homeowners and renters.[34] Among low-income families receiving federal housing assistance those with cars were twice as likely to find a job and four times as likely to remain employed.[35] Post-pandemic data shows that a greater share of commuters in poverty are using personal vehicles to get to work than non-impoverished commuters.[36] Therefore, wealthier households actually have less need for personal vehicles than the working poor. Further, impoverished households with access to personal vehicles tended to live in communities with higher quality of life factors including neighborhoods with less health risks, lower poverty rates, and better educational outcomes.[37] In many American communities, car ownership is necessary to access resources and quite literally a vehicle to better opportunities. Though lower-income families are already prioritizing personal vehicles, ownership can

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[32] 2022 American Community Survey data, available at https://data.census.gov/table/ACSDP5Y2022.DP04.

[33] 2022 American Community Survey data, available at https://data.census.gov/table/ACSST1Y2022.S0802?t=Commuting.

[34] David A. King at el., "The Poverty of the Carless: Toward Universal Auto Access." Journal of Planning Education and Research (2022), 464-481, available at https://journals.sagepub.com/doi/10.1177/0739456X18823252.

[35] Rolf Pendall et. al., Urban Institute, *Driving to Opportunity: Understanding the Links among Transportation Access, Residential Outcomes, and Economic Opportunity for Housing Voucher Recipients* (2014), available at https://www.urban.org/sites/default/files/publication/22461/413078-Driving-to-Opportunity-Understanding-the-Links-among-Transportation-Access-Residential-Outcomes-and-Economic-Opportunity-for-Housing-Voucher-Recipients.PDF.

[36] Wendell Cox, New Geography, "Poverty Level Workers Use Cars in Commuting More than Others," available at https://www.newgeography.com/content/007610-poverty-level-workers-use-cars-commuting-more-others.

[37] Rolf Pendall et. al., *Driving to Opportunity*, supra.

tend to come with higher costs including the price of the car itself, higher insurance rates, and more expensive upkeep costs.[38] To ensure these families benefit from, and are not burdened by, the transition to EVs, cities should be proactive in promoting access to affordable vehicles–including shared, leased, and used options–in parallel with efforts to ensure access to infrastructure.

Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Create a city staff liaison or partner with local community organization to connect residents with available rebates and incentives	- See actions in J and K below		Austin Energy EV Buyers Guide Public utility webpage with information on EVs and purchase incentives and directory to local purchasing opportunities. Seattle Dept. of Neighborhoods community liaisons partnerships (City program working with "embedded community leaders from a variety of immigrant and refugee communities, communities of color, and communities of seniors, youth, and people with disabilities" to conduct community outreach on planning and transportation efforts. A similar model could be employed for EV rebates and incentives, or existing municipal transportation staff could be devoted part-time to connecting residents with rebates and incentives.) Contra Costa KEYS Auto Loan Program (Low-income auto loan support program is conducted through existing human services

[38] Julia Angwin et al., "*Minority Neighborhoods Pay Higher Car Insurance Premiums than White Areas with the Same Risk*,"ProPublica (April 2017), available at https://www.propublica.org/article/minority-neighborhoods-higher-car-insurance-premiums-white-areas-same-risk.

			case managers.)
Assist residents in connecting with existing state and federal programs that provide assistance to low-income households in purchasing EVs	- Includes web materials, outreach events, and staff to raise residents' awareness and assist with enrollment. - Includes state programs like Clean Vehicle Assistance Program, Driving Clean Assistance Program, Clean Cars for All and federal tax credits for new and used EVs		ReCharge ReCharge Coaches (Connect residents, businesses, etc with information on monetary savings, grant opportunities, and more to advance the adoption of EVs and charging infrastructure.)
Provide auto loans to low-income households that have difficulty in otherwise obtaining financing for an EV			Contra Costa KEYS Auto Loan Program (County low-interest auto loan program for eligible state benefits program recipients who have difficulty obtaining an auto loan from other sources.)
Connect residents with non-profit organizations that assist in vehicle ownership	- Includes linkages to programs like Vehicles for Change, Working Cars for Working Families, Hand Up Cars		
Urge state lawmakers to provide tax		West Virginia HB 4547 (2020) (Proposed program to provide tax credits for sale of donation of used vehicles to qualified	

credits to incentivize the donation of used electric vehicles for discounted sale to low-income households		organizations that provide low-cost vehicles and financing to low-income residents.)	
Sell used city fleet EVs or lease vehicles directly at low cost for qualifying residents		Washington Transportation Electrification Strategy I.3.2 ("To provide additional support for LMI communities…Commerce is considering a social leasing program, wherein individuals below an income threshold can lease EVs at an affordable monthly rate.")	
Implement Local Tax Exemptions for the Sale of Pre-Owned Electric Vehicles			Washington Excise Tax Code § 82.08.809 (Retail excise tax exemption for sale of new EVs.)
Advancing Equity *The California Air Resources Board's Clean Vehicle Rebate Project and Clean Cars for All programs and the federal income tax credit for EV purchases are all limited to lower- and middle-income drivers and can lower the cost of acquiring a vehicle by up to $20,000 in some cases. Many electric utilities, community choice aggregators, and regional agencies also offer additional rebates. EV affordability for many priority populations will rely on stacking all available incentives and rebates. A small-scale city investment in staff time and web materials to assist residents in accessing state and federal funds will generate significant return on investment for eligible drivers and for the local economy.*			

I. Medium- and Heavy-Duty Vehicles and Charging

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Medium- and heavy-duty (MHD) vehicles, such as delivery trucks, buses, and freight vehicles are particularly significant sources of harmful air pollution for priority populations in all cities. Those that are home to major ports, distribution centers, industrial operations, and high-traffic highway corridors have a particular interest in electrifying MHD vehicles.

While MHD vehicles are only 5 percent of vehicles on the road they account for significant percentages of GHG emissions, over 70% of NOx emissions, and are one of the largest sources of particulate matter, all of which are shown to have harmful health effects on surrounding vulnerable communities. Cities and communities that are home to multiple major ports, distribution centers, industrial operations, and high-traffic highway corridors need to prioritize electrifying MHD vehicles to decrease the harmful emissions associated with these operations. In that sense, electrifying MHD vehicles serves a twofold purpose, both easing the pollution burden on vulnerable communities sited near port and industrial operations and contributing to the overall state goal of transitioning to a greener transportation system. Additionally, the economic ecosystem associated with MHD is a major employment source and the electrification of this sector could provide a foundation for the development of thousands of new, well-paying jobs for cities with the proper planning.

CARB has set electrification targets for new medium- and heavy-duty vehicles and ten other states are on track to adopt the standards[39]; while cities are not responsible for private fleet turnover, they have an interest in ensuring the transition is smooth, delivers immediate air quality benefits to environmentally vulnerable communities, and minimizes business disruption for local businesses. A comprehensive approach to MHD electrification could cover vehicles, charging, financing, workforce, and community benefits elements - many, but not all, within the purview of local governments. Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Identify MHD charging locations and develop a zoning update	- Includes site selection process based on industrial and commercial sites, travel corridors, grid capacity, community needs/impacts, and physical limitations	Oakland ZEV AP MHD-1 ("By 2025, assess and identify sites where zero-emission MHD charging (for BEVs) or fueling (for green hydrogen) may be an appropriate allowable land use, either as a	

[39] See https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/states-have-adopted-californias-vehicle-regulations.

to permit them	- Includes engagement with utility and business leaders, community groups, ports and US military where applicable, community groups - Includes zoning ordinance amendment to facilitate MHD charging as an allowable land use	stand-alone use or in coordination with additional co-locatable land uses. The designation shall account for impacts to the surrounding community, including noise, traffic congestion, and potential air pollution or ground contamination. Site identification shall include a public process to help inform which sites would be optimal candidates to include…") SD CAP 2.3 SA-8 ("Continue to work with SANDAG, APCD, U.S. Navy, the Port of San Diego and other partners on medium and heavy duty (MD/HD) ZEV infrastructure planning. Consider future policies to advance MD/HD ZEV adoption and utilization in the Portside Communities, Border Communities, and other major logistics hubs.")	
Require MHD fleet vehicle host sites to upgrade for charging readiness	- Includes a requirement for industrial and commercial properties that host MHD fleet vehicles to invest in grid capacity upgrades for EV charging readiness, or to prepare a site plan for such investments	Oakland ZEV AP MHD-2 ("By 2025, develop a plan to require existing business that own or host MHD fleet vehicles to invest in site upgrades for zero-emission charging/fueling infrastructure, or to provide a business and investment plan for those upgrades.")	
Create an interagency team to identify sites, facilitate permitting, and conduct outreach to fleet-operating	- Should include relevant city departments and external stakeholders such as utilities, ports, and major warehouse/distribution operators in the jurisdiction - Should include mechanisms to incorporate feedback from affected communities and report regularly to	Oakland ZEV AP MHD-3 ("Within one year of plan adoption, finalize a Partnership Agreement among the Port of Oakland, EBCE, PG&E, and relevant City departments (including Planning and Building, Sustainability, Economic & Workforce Development, and Transportation) identifying roles and expectations, and establishing a quarterly Working Group among these parties	

businesses	them	to address issues of permitting, electric service upgrades, land use and transportation impacts, and related issues for planning and constructing MHD charging and fueling infrastructure.")	
Develop a community benefits approach for MHD charging depot developments	- includes establishing a set of community benefits and process considerations to be included in any city agreement for the development of large-scale MHD charging sites		SD Co. CBA Program (County-level initiative to programmatically incorporate community benefits agreements (CBAs) and similar strategies in renewable energy development proposals)
Create a small business engagement officer role to assist with accessing clean vehicle incentives	- Includes connecting small businesses/fleets and individual truck owners to electrification incentives and resources - Includes informational resources and hands-on technical assistance with applications and infrastructure needs - Includes federal Inflation Reduction Act and Bipartisan Infrastructure Law opportunities as well as state programs like New Jersey Zero-Emission Incentive Program and New York Truck Voucher Incentive Program	Electrification Coalition Freight Funding Guidance (Summarizes opportunities in the Inflation Reduction Act, Bipartisan Infrastructure Law, and other federal programs for MHD fleets.)	
Identify any local freight corridors that are eligible for federal/state clean freight corridor	- Assessment should identify any areas that are part of state or federal MHD corridor funding for infrastructure that supports electrification -Examples include California Transportation Commission Clean		

programs	Freight Corridor Efficiency Assessment and the California Energy Commission EnergIIZE commercial vehicle infrastructure funding program		
Develop a workforce development plan and hiring requirements for port and MHD fleet electrification efforts	- Allows cities to tap in to funding available through EPA's Clean Port Program and other state programs to ensure workforce opportunities for local underserved communities EPA's Clean Port Program (Local agencies with jurisdiction over a port or port authority may apply to two types of grant opportunities: 1) a planning competition; or 2) ZE technology including: ZE mobile equipment serving a port, ZE infrastructure serving mobile equipment, ZE technology deployment support)		CA Public Utilities Code § 740.20 (Requires utility-funded charging infrastructure projects to include at least one electrician on each crew to hold an Electric Vehicle Infrastructure Training Program (EVITP) certification.)
Develop a plan and secure funding to transition public MHD fleets to zero-emissions	- Includes city-owned bus, school bus, transit van, and truck fleets - Includes both vehicle transition and supporting charging/fueling infrastructure - Includes informational resources for school districts and transportation departments/transit agencies - Should connect city departments and third-party service providers (where applicable) to state funding sources such as California's Hybrid and Zero-	Twin Rivers Unified School District Electric Vehicle Blueprint (Plan to transition district's entire school bus fleet to electric including needs assessment, community consultation, and workforce development recommendations.) SF CAP TLU.7-3 ("By 2024, develop a plan to help the City's nonrevenue fleet and small and locally owned businesses build infrastructure that allows for zero emission delivery, drayage, and longer haul trucks.") Oakland ZEV AP CL-8	Montgomery County School District (MD) (Largest electric school bus fleet in the US with a target of 100% zero-emission buses by 2035.) Twin Rivers Unified School District (CA) (District fleet includes over 70 electric buses and 35 compressed natural gas buses.)

	Emission Truck and Bus Incentive Project and Virgnia's Dominion Energy Electric School Bus Program and federal Clean Heavy Duty Vehicle Program, Low or No Emission Grant Program, and Clean School Bus Program	("By 2025, develop a feasibility study zero emission and alternative fuel solutions for all City heavy-duty and emergency response vehicles and equipment.")	
Adopt zero-emissions vehicle transition roadmap for ports	- Includes truck (road and drayage) electrification and charging commitments alongside other port emissions reduction strategies	San Pedro Bay Ports Clean Air Action Plan (The ports of Long Beach and Los Angeles have adopted a joint clean air plan for ships, port equipment, and vehicles, including a technology advancement program and multiple truck electrification pilots.)	
Advancing Equity *Charging for medium- and heavy-duty vehicles is particularly energy- and infrastructure-intensive, and truck traffic often brings noise pollution and road congestion along with its heavy air quality impact (which electrification will mitigate). Local leaders should take particular care to ensure that MHD charging depots are located at existing industrial and commercial sites or other locations appropriate for commercial activity and do not attract additional truck traffic to already-impacted communities without adequate community benefits.*			

J. Engagement, Participation, and Benefits for Communities

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Zero-emissions mobility and EV programs can not only improve air quality and reduce emissions, but also build capacity and catalyze economic opportunity in underserved communities, if they are designed and executed with equitable principles in mind. Engagement with community members, stakeholders, and community-based organizations is crucial to ensure that an Equitable EV Action Plan truly meets the needs of priority populations, promotes mobility equity, and is effectively implemented. The San Francisco Climate Action Plan, for example, notes that: "Addressing climate change will require ongoing engagement with the entire community"[40] and that "[o]utreach and engagement will be imperative to success."[41]

Local governments building an Equitable EV Action Plan must begin by identifying community mobility needs and include strategies to center community input and goals throughout plan development and implementation. A 2021 Greenlining Institute report, *Clean Mobility Equity: A Playbook*, explains the pitfalls of past approaches and the ways in which meaningful engagement goes beyond typical consultation with communities: "Traditional transportation planning and decision-making generally occur behind closed doors, with only superficial community engagement, which leads to a prescriptive approach that does not meet community-identified needs."[42] Local leaders should engage community members and prioritize community input at each stage of a project, starting with the planning process, in ways that prioritize co-creation and shared decision-making, instead of "check the box" engagement. This ranges from early consultation and needs assessment to input on project selection and design and involvement in investment decision-making.

In general, the Greenlining Institute recommends operationalizing an equity approach for any program as follows: 1) embed equity in the mission, vision, and values of a project; 2) engage community members and incorporate equity into project design; 3) secure equitable outcomes by ensuring that project goals align with community needs (for example, jobs), deliver increased climate resiliency, and improve climate outcomes; and 4) capture equity metrics and evaluate them to assess the equity success of a project.

Specific actions could include:

[40] San Francisco Climate Action Plan (2021), p. 18, available at https://www.sfenvironment.org/files/events/2021_climate_action_plan.pdf.

[41] The Greenlining Institute, *Clean Mobility Equity: A Playbook* (2021), p. 31, available at https://greenlining.org/publications/clean-mobility-transportation-equity-report/.

[42] Id. at p. 20.

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Create a community and equity oversight committee that compensates its members with roles in both action plan development and implementation	- Includes community-based organizations and community members, local businesses, and environmental/EJ advocates, among others - Meets regularly as part of action plan development process and has formal role in siting and investment prioritization decision-making - May include participatory budgeting exercises for select portions of infrastructure investment	SD Southeastern Community Mobility Roadmap (Community-driven roadmap developed with advocacy organizations and CBOs through participatory workshops and budgeting process, resulting in a $1.5 million proposal in city budget for two community-preferred projects and $100,000 to invest in participatory budgeting-selected project.) CLEE Equity Oversight Board recommendation for SF CAP ("Create an independent community council to provide equity oversight of CAP investment, implementation, and revenue generation mechanisms with representatives from City government and community, climate, environmental justice, labor, and small business groups" including decision-making authority and participation compensation.) Fresno Transformative Climate Communities process (City used a participatory budgeting process to develop proposals for its submission to the state Transformative Climate Communities (TCC) program, including five community steering committee meetings, resulting in $66 million state award for climate investments.)	BlueLA CBO Steering Committee (Steering Committee composed of six local CBOs that lead community engagement and outreach efforts for the program including the Koreatown Immigrant Workers Alliance, the Salvadoran American Leadership and Education Fund, TRUST South LA, People for Mobility Justice, the Thai Community Development Center and Ciclavia.) Cambridge, MA participatory budgeting (City dedicates a portion of budget to participatory process for infrastructure/capital projects that benefit the public through one-time expenditures that cost $1 million or less.)
Provide compensation for community participation in	- Includes, for example, stipends for advisory/oversight board members to participate in meetings and review proposals, meal and transportation	Greenlining Clean Mobility Equity Playbook ("Partner with and pay community groups to design a targeted, grassroots approach to outreach and marketing and coordinate with	

plan development, feedback, and oversight processes	subsidies for residents to participate in community sessions, and compensation for survey completion - May include direct compensation by local agencies or partnerships with existing community groups	existing community events and services.")	
Promote inclusive practices at community meetings and during outreach	- Includes convening meetings in trusted places and at times when working residents can participate, providing significant advance notice for meetings, ensuring that food and childcare are available, and creating accessible, translated meeting materials.	CEJA and Placeworks SB 1000 Implementation Toolkit "The. . . planning process can promote inclusive and meaningful participation by all groups by ensuring that meetings are accessible in terms of language, time and location. . . and by using facilitation methods that support and encourage all participants' contributions, especially those coming from impacted community groups." CEJA and Placeworks SB 1000 Implementation Toolkit "Maintaining an adequate budget for meaningful community engagement is important for promoting equitable access and achieving high-quality public participation. Activities to be included in a budget include resources such as city/county staff time, contractor fees, outreach workers, meeting materials, food, audio-visual equipment, translation and interpretation services, translation equipment, transportation costs, child care, and building maintenance services."	
Conduct regular community	- Includes dedicated, funded work with relevant CBOs to inform strategy selection/prioritization, build public	SD Southeastern Community Mobility Roadmap (Included workshops with four participating	

engagement sessions during plan preparation and implementation	support, and promote accountability	CBOs and community pop-ups, listening sessions, and feedback workshops.) Oakland ZEV AP Appx. A (Details outreach and workshop process led by 3 CBOs to identify barriers and strategies that informed plan contents.)	
Host promotional events and share information at existing community events	- Includes city websites, library and community center information sessions and portals, and community events	Oakland ZEV AP CL-6 ("Increase City resources devoted to ZEV outreach and education in frontline communities and geographies with lower-than-average ZEV ownership and use…By the end of 2023, develop clear digital resources on the City's website and at key community touch points, such as libraries and community centers, for residents to learn more about sustainable mobility technology and incentives including ZEV mobility.")	
Conduct events to engage the community around ZEV-related career pathways and economic opportunities	- Includes partnerships with school districts and community colleges as well as career expos	Oakland ZEV AP CL-6, ZE-2 ("By 2023, launch or expand partnerships with OUSD and others to expand awareness of ZEV-related career pathways." "By 2023, work with partners to launch an annual Expo highlighting business, career, and training opportunities in ZEV technologies and services as well as other fields related to equitable decarbonization.")	
Develop a city website that details the city's EV plan and serves as a portal to incentive,		Oakland ZEV AP CL-6 ("By the end of 2023, develop clear digital resources on the City's website and at key community touch points, such as libraries and community centers, for residents to learn more about sustainable mobility technology and incentives including ZEV mobility.")	GO-Biz ZEV Funding Resources website (State agency website with ZEV funding resources for stakeholders, including vehicle incentives, infrastructure incentives, fleet resources, financing programs, the California budget and funding plans, and additional search tools.)

permitting, pilots, and other city EV programs and staff			
Include local business and local hiring preferences in all charging infrastructure investments	- Can include procurement preference in city projects/investments and tax or other financial incentives for private projects	Oakland ZEV AP ZE-5, ZE-6 ("The City will explore ways of strengthening local hiring standards and incentivizing successful applications for City contracts from firms led by frontline community members. New or strengthened standards will be applied first to projects supporting building and transportation decarbonization." "Working with unions, labor leaders, and training partners, identify ways to best serve the communities that need resources the most. Workforce efforts must prioritize historically disadvantaged, impacted, and underinvested communities.")	
Co-develop infrastructure installation and maintenance programs and mobility programs with local colleges and high schools	- Can include both job training and mobility resources for students to promote job access	Oakland ZEV AP ZE-3 ("Partner With Local Community Colleges And Workforce Training Partners to Create ZEV-Specific Training Programs and Pathways")	Sacramento AQMD mobility hub (Hub includes ride-hail program for students to access local GreenTech job training program, which will eventually take operational control of the hub) Michigan Central training program (Partnership between mobility/tech hub and ChargerHelp EVSE O+M group to provide 4-6 week training course in EVSE installation and maintenance for working adults)
Consider community benefits agreements	- May be appropriate for major city- or neighborhood-wide procurement contracts or franchise agreements, MHD charging depots, and ports		SD Co. CBA Program (County-level initiative to programmatically incorporate community benefits agreements (CBAs) and similar strategies in renewable

(CBAs) as a requirement for large-scale infrastructure projects			energy development proposals)
Maximize emphasis on mobility equity best practices throughout project planning and implementation		GLI Clean Mobility Equity Playbook (Best practices include: - **Emphasizing anti-racist solutions** by prioritizing investment in highest-need communities - **Prioritizing multi-sector approaches** that incorporate land use, active transportation, and community vehicle use - **Delivering intentional benefits** through broad stakeholder engagement and anti-displacement strategies - **Building community capacity** through bottom-up technical assistance - **Being community-driven at every stage** through needs assessment and and building off existing community programs - **Establishing paths toward wealth-building** through workforce development and training and contracting with community enterprises	
Advancing Equity *Community engagement and participation are at the core of each element and phase of an Equitable EV Action Plan. City leaders should secure a formal role for community stakeholders in at least a portion of site selection and investment decision-making. The strategies in this section should be developed and implemented concurrently with the infrastructure and investment strategies in the rest of the plan, not after. The Towards Equitable Electric Mobility (TEEM) Community of Practice developed a platform that synthesizes three years of collective learnings and recommendations from over 30 community based*			

organizations across seven states for federal, state, and local programs to integrate equity and sustainability into transportation systems across the country. The platform offers principles, implementation recommendations, and examples that local departments of transportation, transit agencies, auto industry partners, and other key municipal decision-makers can use as guidance to submit strong and equitable applications for federal and state funding for their municipal electrification projects and programs. The platform's principles focus on equity and justice; emissions reductions; affordable clean mobility access for all; health and safety; and wealth building.

K. Implementation and Funding

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An Equitable EV Action Plan will not achieve its investment or equity goals without a strategy to generate substantial revenue from a range of sources–and a plan to ensure revenue generation and expenditure is equitable. City staff or external teams responsible for implementing the selected actions will need to coordinate regularly to achieve success, and leaders from across the city will need to identify revenue strategies (public and private) to meet investment targets. The City should state its approach to implementation and revenue for the plan, even if that approach is based entirely on private investment, and discuss how revenue strategies can prioritize the needs of underserved communities. Specific actions could include:

Action	**Notes/Description** *(For the action in general)*	**Example/Precedent (Plans+Proposals)** *(Representative, not exhaustive)*	**Example/Precedent (Implemented)** *(Representative, not exhaustive)*
Estimate costs for each action and explore funding and financing opportunities to cover those costs, including identifying top-priority strategies to fund via local bond, tax, and other measures	- Includes estimates of costs for city plan implementation (programmatic and staff), any anticipated direct city investments in infrastructure, and anticipated private investments in infrastructure - Proposes revenue generation options as necessary to cover city costs - Includes strategies to ensure revenue generation is equitable	CLEE SF CAP Analysis (Analysis of estimated costs of city's Climate Action Plan and proposal of revenue and financing strategies to fund and implement it equitably, based on research and city/public stakeholder engagement process)	
Establish an interagency EV working group to assess Action Plan progress and updates as			ClimateSF (Standing city agency coalition focused on decarbonization and resilience planning including Mayor's Office, Office of Resilience and Capital Planning, Planning Department, Department of the Environment, Port, Public Utilities Commission, Municipal

necessary, with participation from community stakeholders			Transportation Authority, Department of Public Health, and Public Works)
Identify staff leads for each action in the Action Plan, including a staff position or team dedicated to grant-writing for federal and state EV infrastructure grants		CLEE SF CAP Analysis ("Fund or reallocate City staff to accelerate CAP implementation including one full-time senior staff member and supporting staff at the lead implementation department for each CAP sector dedicated to 1) CAP-specific budget development, investment planning, and grant-seeking and 2) CAP implementation coordination.")	
Establish a county-level or regional working group to coordinate city-level actions with county-, air district-, and MPO-level actions and funds		SD Co. EV Roadmap (County-level roadmap for EV adoption and infrastructure based on Planning & Development Services, Department of General Services, Air Pollution Control District, and Department of Human Resources collaboration)	
Craft a master franchise agreement and	- Includes core technical, accessibility, financial, and equity-centered location selection terms for large-scale private	Portland EV Charging in the Public Right of Way Code Update (City code update to facilitate PROW charging	Oakland Informational Kiosk Program (City used master agreement/permit approach to identify private provider for kiosks installed

permit approach for private EVSE development in public spaces	investment in public charging - Enables developer to select individual deployment sites based on pre-agreed zones/principles and obtain ministerial review of individual site permits assuming core terms are met - Should include permit/agreement term of at least 10 years to promote investment case and permanence - Should include firm commitments to uptime and O+M	permitting will accompany streamlined process for private EVSE contracting.)	in the PROW.) San Diego Informational Kiosk Program (City used master agreement/permit approach to identify private provider for kiosks installed in the PROW.)
Implement a general obligation or revenue bond dedicated to public EV charging and mobility infrastructure investments	- May be solely dedicated to EV and mobility investments or may include those investments alongside traditional public transit investments - Charging infrastructure may be owned/operated by private entities as long as it is fully publicly accessible	CLEE SF CAP Analysis (Recommends city pass a $300-$500m transportation GO bond including investments in public EV charging.)	
Investigate congestion pricing strategies to promote shared mobility and fund public EV charging and mobility	- Can raise tens to hundreds of millions dollars for zero-carbon transportation investment in larger cities while encouraging more efficient modes of travel/transit use and improving air quality - Should include consideration of exemptions or discounts for lower-income residents and those with accessibility needs	San Francisco Congestion Pricing Study (City analysis of plan benefits and structure, zone designations, discount and exemption options, and policy design.) CLEE SF CAP Analysis (Recommends city adopt congestion pricing to fund transportation emissions reduction programs.)	- London has implemented a congestion charge for years (together with low- and zero-emission zone programs) with documented success in reducing congestion, improving air quality, and raising revenue for transit investment - New York has finalized plans for the first congestion pricing program in the US

infrastructure investments	- Likely only applicable for large, dense cities in the near term - May require state law amendments to implement		

Advancing Equity
Direct investment of city funds will likely form only a small portion of total investment in EV infrastructure, but the city will need to raise revenue for staff, new programs, and key investments. To the maximum extent possible, this revenue should be drawn from sources that are equitable in impact (for example, property tax increments based on property values or parcel taxes based on lot size rather than sales taxes on consumer goods or other fees that disproportionately impact lower-income residents), as identified by CLEE, The Greenlining Institute, The Urban Institute, and many others. With the passage of the Inflation Reduction Act (IRA) and the Bipartisan Infrastructure Law (BIL), cities have an unprecedented opportunity to remedy past and present inequities by providing equitable investments in transportation electrification. These two bills will invest approximately $700 billion, including up to $100 billion to electrify transportation.

Looking Forward: Local Governments

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Planning for equitable EV infrastructure will fall within the responsibilities of a number of city entities, including but not limited to the following (or their local equivalents):

- Planning Department
- Transportation Department
- Public Works Department
- Environment/Sustainability Department
- City Attorney
- City Manager
- Mayor
- City Council

As an initial step, city leaders should create a process or body for coordination across these different entities, which will be vital to effective plan development and implementation. Creation of a dedicated coordination body will help ensure that engagement with community groups and stakeholders in plan development is robust, direct, and incorporated into investment decision-making, which will be essential to the creation of a truly equitable plan.

Effective plan development will require coordination with a wide range of entities and stakeholders including, for example:

- **Community-based organizations** that engage with community members and stakeholders, advocate for local investment and economic development, and support sustainability and mobility investments
- **Local environmental organizations** that advocate for environmental justice, climate action, and air quality improvement
- **Regional government entities** such as metropolitan planning organizations, councils of governments, and air quality management districts
- **State government entities** such as air quality regulators, energy and utility authorities, transportation agencies, economic development agencies, infrastructure/green banks, and climate funds.
- **Local business groups and property owners** such as major employers, leading car dealerships, major multifamily dwelling managers, chambers of commerce, and business districts
- **EV supply equipment and service providers** including large national developers, smaller, local developers, and O+M dedicated entities.
- **Electricity suppliers** including investor-owned utilities, community choice aggregators, and publicly owned and municipal utilities
- **Educational institutions** such as community colleges and high schools

City leaders crafting an Equitable EV Action Plan based on the strategies outlined in this proposal should begin early and iterative discussions with these stakeholders–in particular with

community groups and community members in greatest need of policy support to ensure an equitable EV transition.

As city leaders consider how to work with these stakeholders and develop a plan, they can also look to other cities for best-fit strategies that meet the particular needs of residents, businesses, and government agencies. A short list of California examples:

- Berkeley - Electric Mobility Roadmap
- Burlingame - EV Action Plan
- Contra Costa County - Electric Vehicle Readiness Blueprint
- Fresno COG - EV Readiness Plan
- Kern County - Electric Vehicle Charging Station Blueprint
- Kings County - Electric Vehicle Readiness Plan
- Oakland - Zero Emission Vehicle Action Plan
- Sacramento - Electric Vehicle Blueprint
- San Diego County - Electric Vehicle Roadmap
- San Francisco - Electric Vehicle Ready Community Blueprint
- San Jose - Electric Mobility Roadmap
- Santa Clara - EV Blueprint
- Ventura County - Electric Vehicle Ready Blueprint

Looking Forward: Stakeholders and Communities

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An Equitable EV Action Plan should ultimately be developed and adopted by local government to guide public action and investment. Community and stakeholder groups will play a central role in shaping its contents and ensuring policies and investments are equitable.

These groups can also play a central role in advocating for plan development and prompting local government to begin the planning process. Many local governments lack the capacity, and cross-agency coordination to develop an action plan without dedicated grant funding or direction from elected officials and voters. Community and stakeholder groups can use this framework and the strategies it highlights to call on local leaders to take action. Initial steps for advocates to kick-start the process can include:

- **Contact the local city council/board of supervisors, mayor, city manager, and lead departments** to inquire about the existence of equity-focused EV and mobility plans and efforts to form a local Equitable EV Action Plan. Share this framework and examples of high-priority strategies that could be appropriate for the jurisdiction.
- **Consult this framework, Greenlining's Mobility Equity Framework, the Towards Equitable Electric Mobility Platform,** and other resources to form a local definition and principles for an equitable EV transition.
- **Consult the national Justice40 Initiative Mapping Tool, state equivalents like CalEnviroScreen, and other environmental justice/climate investment platforms** to understand where federal- and state-recognized priority communities and funding-eligible areas are located within your jurisdiction. Using these tools can help local governments and communities understand where funds are available to implement infrastructure projects within underserved areas. They will also be necessary to use in consultation with communities to understand their concerns/readiness for additional EVSE infrastructure.[43]

[43] See https://www.anl.gov/esia/electric-vehicle-charging-equity-considerations for more information. Users can also consult expert analysis on how to use these mapping tools. See Yan Zhou et al., Argonne National Laboratory, *Using Mapping Tools to Prioritize Electric Vehicle Charger Benefits to Underserved Communities* (May 2022), available at https://www.osti.gov/biblio/1870157/.

Appendix A: Defining EV Equity and Frameworks for Mobility Policy

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Defining EV equity is iterative and context-dependent. At its core, EV equity means that electric vehicle transition increases access to community-appropriate mobility options and affordable vehicle charging, reduces air pollution, and enhances economic opportunity for priority populations (including but not limited to disadvantaged communities and low-income communities of color). The Greenlining Institute has developed multiple frameworks for operationalizing equity in climate and mobility policy. These include:

The Mobility Equity Framework, which outlines the following principles and process:

To achieve mobility equity in transportation planning and investments, we must prioritize:

1. Social equity: The fair and just distribution of societal benefits and burdens.
2. Community power: The ability of marginalized communities to influence decisions in a way that addresses their needs and concerns.

- Step One: Identify the mobility needs of a specific low-income community of color.
- Step Two: Conduct the mobility equity analysis to prioritize transportation modes that best meet those needs while maximizing benefits and minimizing burdens.
- Step Three: Place decision-making power in the hands of the local community.

The Making Equity Real Guidebook, which details four steps to build equity into climate policies and grant programs:

1. Embed Equity in the Mission, Vision, & Values: Policies and grant programs should explicitly state a commitment to equity and specifically identify the vulnerable populations they seek to benefit. The effort must aim to create comprehensive climate strategies for communities that not only build the resilience of physical environments but address other health and economic injustices that climate impacts exacerbate.
2. Build Equity into the Process: Processes should deeply engage community members so as to learn about their priorities, needs and challenges to adapting to climate impacts. The information gathered should inform the development and implementation of the policy or grant program.
3. Ensure Equity Outcomes: The implementation of the policy or grant program must lead to equity outcomes that respond to community needs, reduce climate vulnerabilities, and increase community resilience. Outcomes can include improved public health and safety, workforce and economic development, and more.
4. Measure & Analyze for Equity: Policies and grant programs should regularly evaluate their equity successes and challenges to improve the effort going forward.

As the city crafts its Equitable EV Action Plan, it will devise and refine its own definition of EV Equity.

Appendix B: City programs allowing residential EV charging across the PROW

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	Cambridge, MA	Portland, OR	Seattle, WA	Washington, DC
Mode of adoption (code/ordinance/guidance)	Department of Public Works pilot program	Bureau of Transportation administrative rule (TRN 8.08 C.13) adopted pursuant to city code rulemaking authority (3.12.040)	Department of Transportation guidance	Department of Transportation guidance
Program type	Annual permit	No permit required/allowed use	No permit required/allowed use	No permit required/allowed use
Cord location(s)	Sidewalk/cord cover Overhead	Sidewalk/cord cover	Sidewalk/cord cover	Sidewalk/cord cover
Charging type	Level 1 allowed Level 2 prohibited	Level 1 allowed Level 2 prohibited	Level 1 allowed Level 2 prohibited	Level 1 allowed Level 2 prohibited
Location restrictions	Only allowed for residential properties that lack off-street parking	Only allowed if no off-street parking available at property Only allowed in single-family residential zones and local traffic streets	Only allowed for ground-floor use in residential zones Guidance intended for users with no off-street parking but no formal restriction	Guidance is "primarily for properties with an adjacent sidewalk and available on-street parking" but no formal restriction
Parking restrictions	Applicant must hold a residential parking permit Standard parking rules apply Parking not guaranteed or reserved Signage prohibited	Standard parking rules apply Parking not guaranteed or reserved Signage prohibited	Standard parking rules apply Parking not guaranteed or reserved Signage prohibited	Standard parking rules apply Parking not guaranteed or reserved Signage prohibited
Design requirements	Overhead system must have aerial support with min. 9ft clearance and arm that can be retracted onto private property Ramp must be ADA compliant	Narrative requirements for ramp design, size, placement	Narrative and diagrammed requirements for ramp design per ADA rules, including for ½" and 1" cords	Narrative and diagrammed requirements for ramp design per ADA rules, including for ½" and 1" cords
Electrical requirements	Applicant must provide electrician's certification letter NEC compliant	NEC and local building code compliant Outlet located on private property linked to owner utility bill	NEC compliant Outlet associated with owner's utility account	NEC compliant Outlet associated with owner's utility account Rating of any equipment not fastened in place shall not exceed 80% of the branch circuit ampere rating
Use restrictions	In place only while charging, 12 hour max	In place only while charging	In place only when charging	In place only when charging

		No commercial use/sale of power		
Liability	Permitee assumes all liability associated with the permitted use	User liable for ensuring compliance with requirements	--	--
Insurance	Permittee must show evidence of homeowner or renter insurance	--	--	Owner "should" consult with insurer to confirm adequate coverage ($1m suggested limit) and inquire about adding EV charger to policy
Enforcement	Superintendent of Streets may remove for health, safety, or PROW maintenance	Violations subject to right-of-way use enforcement program	Violations subject to city code provisions regulating PROW	Violations subject to city code provisions regulating PROW

About the EV Equity Initiative

The Center for Law, Energy & the Environment's EV Equity Initiative seeks to build locally tailored, community driven, and replicable approaches to the development of electric vehicle and mobility infrastructure in underserved communities in California and across the U.S. Our team and project partners can support local EV equity strategies through policy analysis, action plan development, implementation guidance, stakeholder engagement, priority site mapping, and more. We are pleased to be partnering with The Greenlining Institute, Forth, and the Towards Equitable Electric Mobility (TEEM) Community of Practice on policy development and stakeholder engagement efforts, ProspectSV on financing and revenue strategies, and the UC Berkeley Renewable and Appropriate Energy Lab on mapping and data analysis.

This draft is for review and feedback purposes only.

Visit https://www.law.berkeley.edu/research/clee/ev-equity/ for any questions.

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