



Electric Vehicle Ready Code

Discussion Draft for Public Review

April 2022



THE BUREAU OF
**PLANNING &
SUSTAINABILITY**

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How to give feedback:

The Bureau of Planning and Sustainability thanks you for taking time to review proposed changes to the City of Portland's zoning code. This Discussion Draft is intended for public review of the proposed code amendments. Your comments will inform the development of a revised Proposed Draft of the zoning code that is scheduled to be released in August 2022. The Proposed Draft will be reviewed by the Planning and Sustainability Commission (PSC) at a public hearing. Following any amendments to the proposal, the PSC will vote to forward a Recommended Draft to the Portland City Council. An additional public hearing will be held before the City Council prior to the adoption of changes to the City Code.

Your comments on this Discussion Draft are due by:

5 p.m. on Friday, June 17, 2022

Send your comments to:

Online: <https://www.portlandmaps.com/bps/mapapp/proposals/#/ev-ready>

For more information:

Visit the project webpage: <https://www.portland.gov/bps/planning/ev-ready>

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Section I: Introduction

Introduction

The Bureau of Planning and Sustainability (BPS) is proposing to amend Portland City Code to require all new multi-dwelling and mixed use development with five or more units – that include onsite parking – to provide electric vehicle (EV)-ready charging infrastructure.

Project Summary

In 2021 the state legislature passed HB 2180, updating the state building code. These new rules require that 20% of parking spaces in newly constructed, privately owned commercial buildings – as well as multi-dwelling and mixed-use buildings with five or more residential units – provide electrical service capacity to support vehicle charging. The legislation also allows a municipality to go above and beyond the 20% requirement for these building types by a “process concerning land use.”

The Department of Land Conservation and Development (DLCD) is currently leading the [Climate-Friendly and Equitable Communities Rulemaking](#) process, which incorporates HB 2180 into the draft rules for climate-friendly and equitable land use and transportation planning. The State Building Code Division (BCD) has also begun the [HB 2180 implementation rulemaking](#) process. The EV Ready Code Project brings the City of Portland into alignment with these new state regulations.

This report contains amendments to the Portland City Zoning Code (Title 33) to complement changes to State law. These amendments will clarify land use requirements and standards for the installation of EV-ready infrastructure in new buildings, as well as to provide guidance for voluntary installations within existing parking areas. The changes make it easier for someone to install charging equipment/stations in the future or retrofit existing parking facilities.

The number of EV-ready parking spaces required would depend on the type of land use as well as the type and size of onsite parking facilities provided. However, the amendments include minimum installation ratios of at least 50% for new multi-dwelling and mixed-use development with five or more dwelling units. None of these local amendments would go into effect unless first adopted by an ordinance of the Portland City Council.

Code changes being considered

Multi-dwelling and mixed use development with at least five dwelling units:

- 50% of onsite parking spaces are EV-ready or 100% of six or fewer onsite parking, whichever is greater.
- EV-ready requirements would include electrical capacity and conduit to support at least Level 2 charging for the number of spaces specified above.

Other amendments clarify the Zoning Code to acknowledge EV-ready installations taking place because the current code is silent on this infrastructure. Other changes that address existing code affecting incentives and upgrades for EV include:

- Adding development standards (e.g., placement) for voluntary and required EV-ready installations.
- Clarifying how EV-ready installations are categorized in land use code (e.g., primary versus accessory use).
- Targeting certain incentives to include EV charging for car sharing and carpool parking, while also exempting EV improvements from nonconforming development.

Commentary describing each amendment can be found on the facing pages next to the code amendments in this report. Language to be added to City codes is indicated by underlined text and language to be removed is indicated by ~~strikethrough~~ text. Language to remain the same is indicated by plain text.

Authorization and Background

In 2017, via the adoption of the City of Portland EV Strategy [Resolution No. 37255], Portland City Council directed BPS staff to explore EV parking and charging infrastructure requirements in new multifamily and commercial construction projects that include parking. In November 2019, City Council passed ordinance #189769 directing BPS to scope updates to City code that address changing mobility needs, including mobility hubs and EV charging stations.

Purpose

The Electric Vehicle (EV) Ready Code Project amendments are part of the bureau’s work to reduce carbon emissions in the city. These amendments are intended to implement key elements of the City of Portland’s [adopted Electric Vehicle Strategy](#), [Portland 2035 Transportation System Plan](#) and [2035 Comprehensive Plan’s Policy 9.6](#). In addition, the amendments are responsive to recent State legislation, [House Bill 2180](#) (2021), which directs the State Building Code Division (BCD) to amend state building code to require that new construction of certain buildings include electrical charging capacity for a percentage of parking spaces. Lastly, the amendments work in tandem with the Department of Land Conservation and Development’s [Climate Friendly and Equitable Communities Rulemaking](#). The result is a balancing of city policy with state provisions.

Why is electrical charging infrastructure important?

The City of Portland has adopted policy direction to support the use of electric vehicles. While policy direction also prioritizes walking, bicycling, transit, and shared vehicles over private cars, it clearly prioritizes zero-emission over fossil-fueled private cars for their higher efficiency and reduced air quality impacts.

Research shows that access to convenient charging is a key factor in whether to buy an electric vehicle. Requiring developers to provide the conduit and electrical capacity needed for future charging equipment/stations with new parking will increase the use of EVs and save substantial costs on future charging station installation.

Electric vehicles are typically charged at home, work, or publicly accessible charging stations. But, installing the necessary infrastructure to support EV charging after a building has been constructed can be cost prohibitive. So, we need to ensure that buildings are designed to include infrastructure to

support future installation of EV chargers. This concept is known as “EV readiness.” The average lifespan of a building is 60 years. Ensuring that a building is EV-ready at the time of construction supports a climate-friendly future and minimizes future retrofit related costs.

Adoption of electric vehicle use is slowed by lack of familiarity and concerns about the availability of charging infrastructure. Ensuring that infrastructure is provided in new development, particularly in multi-dwelling buildings, supports people to choose electric over fossil-fueled vehicles when they purchase or lease a new vehicle.

Equity

Access to charging that is reliable, convenient, and affordable is critical to enabling EV ownership. Some sources estimate that more than 80% of charging occurs at home.¹ However, rental housing tenants often lack the ability to access or install a charger where they park at home due to a lack of dedicated off-street parking, an inability to afford the expense of charger installation, or a property owner’s unwillingness to install a charger.

Approximately 36% of households in the United States are renters, so access to EV-charging facilities in multifamily housing is key to ensuring equitable access. In Portland, the percentage of renters is higher than the national average, exceeding 47% of households. Renters also represent a greater portion of low- and moderate-income (LMI) and Black, Indigenous, and People of Color (BIPOC) households.² To date, these households have largely been unable to benefit from electric vehicles.

Most EV owners are higher income single-family homeowners that are able to install a private, dedicated charger at home, while many LMI and BIPOC households face challenges in attaining the resources needed to participate in the clean energy transition as a result of structural and institutional racism. Without targeted interventions, these groups are at risk of remaining locked out of the EV transition, and ambitious climate targets and EV deployment goals will not be achieved.

Additionally, renters who do own EVs may be limited in future housing choices based on proximity to EV charging. This is particularly problematic for renters because they tend to move more frequently than homeowners. Targeted action is also needed to ensure that structural and distributional inequities are corrected as communities transition to cleaner technologies. By focusing on the renter population, this project seeks to expand access to EV charging for these traditionally underserved communities.

The Portland Bureau of Transportation (PBOT) is currently developing policy to support public EV charging in concentrated commercial, mixed use and multi-dwelling areas across Portland by permitted EV charging companies and local utilities, which would better support residents who are unable to charge at home. While that policy is being developed, PBOT is not issuing permits to install EV chargers in the public right-of-way.

Economic impact considerations

¹ Office of Energy Efficiency & Renewable Energy. (n.d.). Charging at Home. United States Department of Energy. Retrieved from: <https://www.energy.gov/eere/electricvehicles/charging-home>

² Joint Center for Housing Studies of Harvard University. (2017). Renter Households. Retrieved from: https://www.jchs.harvard.edu/sites/default/files/02_harvard_jchs_americas_rental_housing_2017.pdf

During the summer 2021, BPS commissioned an *EV Ready Economic Analysis Report* by Johnson Economics as part of the code concepts analysis phase. The Johnson Economics' *EV Ready Economic Analysis (2021)* in the appendix outlines how the installation of EV conduit could affect housing affordability. The estimated impact on overall development cost associated with EV-ready infrastructure is expected to be modest relative to the overall cost of development.

The proposed mandate will move EV-ready space requirements from 20% to 50% of parking spaces for new mixed use and multi-dwelling development permits, with an average cost per space ranging from \$800 to \$4,700, depending upon the technical requirements and project-specific variables. This additional cost would need to be offset by increased revenue, which would be possible through user charges if the infrastructure was demanded in the market. But this would more likely be reflected in marginally higher rent levels and/or lower underlying land values. The impact of this mandate on rent levels is expected to be below 1% for new construction. The memo concludes that these changes could be positive for housing affordability, when compared to current processes and regulations.

The analysis also highlights a significant difference in cost between installing dedicated circuits and load management (shared) EV-ready infrastructure, and that dedicated infrastructure is much more expensive than shared systems (Table 1).

	Estimated Costs		
	Low	High	Average
Cost per EV Space			
<i>Dedicated</i>	\$3,667	\$4,791	\$4,229
<i>Shared</i>	\$824	\$1,902	\$1,363
Incremental Cost/Unit			
<i>Dedicated</i>	\$550	\$1,582	\$1,066
<i>Shared</i>	\$185	\$622	\$404
Baseline Costs	\$275,000	\$375,000	\$325,000
% Shift in Costs			
<i>Dedicated</i>	0.20%	0.42%	0.33%
<i>Shared</i>	0.07%	0.17%	0.12%

- Project staff intend to raise the issue of the cost difference and urge the State to allow developers the flexibility to install shared systems. These save money and enable the installation of energy efficient load management EV-ready infrastructure systems.
- If the State is not allowing shared systems under their minimum requirement, project staff would like the City of Portland to allow developers the flexibility to install shared-circuit load management systems for the additional 30% parking space EV-ready mandate, which Portland will likely require.

Current regulations and coordination with State agencies

In response to Governor Brown's Executive Order 20-04 to reduce climate pollution, the Land Conservation and Development Commission (DLCD) launched its Climate-Friendly and Equitable Communities Rulemaking [Climate-Friendly & Equitable Communities rulemaking](#) in September 2020 and aims to adopt rules at its May 2022 meeting. It directed DLCD, Oregon's land use planning agency, to draft changes in Oregon's planning system for communities in Oregon's eight most populated areas.

The rules require those communities to change their local transportation and land use plans to ensure Oregonians have more safe, comfortable ways to get around, and don't have to drive long distances just to meet their daily needs. The rules also aim to improve equity, and help community transportation, housing, and planning. Specific to electric vehicles, the rules propose new housing and mixed-use development would include electric conduit (pipes) to up to 50% of parking spots at varying levels of electrical capacity, readying these sites for adding wiring and charging stations to support EVs as the market expands.

At the legislative level, the passage of HB2180 creates opportunities for the State codes and rules to become more lenient for local alternatives. While the recent adopted legislation creates a consistent statewide threshold, it allows local jurisdictions to exceed these thresholds for certain forms of development. This project follows through on this allowance, while also providing greater clarification for how EV chargers are to be regulated through development standards.

Oregon OAR 918-020-0380 Electric Vehicle Ready Parking (2017) requires new construction of parking facilities with 50 or more open parking spaces. Five percent of the open parking spaces must be available for future installation of EV charging stations. This OAR will be amended or replaced during the Oregon Department of Consumer and Business Services, Building Code Division HB 2180 rule-making process in 2021-22, as stated through ORS 455.417.

The updated State regulation, authorized by HB 2180 and codified through ORS 455.417 (effective July 1, 2022) requires the installation of conduit and electrical service capacity to support the installation of Level 2 EV charging stations at no less than 20% of the vehicle parking spaces at newly constructed commercial buildings under private ownership, multifamily residential buildings with five or more dwelling units and mixed-use buildings with privately owned commercial space and five or more dwelling units. The legislation allows local municipalities to require EV-readiness in more than 20% of parking spaces through a process concerning land use.

American Disability Act (ADA)

The State building code – rather than a city or county zoning code – requires the minimum number of ADA parking spaces, as well as the dimensional and signage requirements for them. ADA parking requirements are codified in the State of Oregon's [Oregon Revised Statute \(ORS\) 447.233](#) and the [Oregon Structural Specialty Code, Chapter 11 – Accessibility](#). The City of Portland and all other Oregon cities and counties defer to these state regulations for ADA requirements. For accessible parking, City of Portland BDS Plans Examiners specifically look at Oregon Structural Specialty Code, Chapter 11 – Accessibility, Table 1106.1 Accessible Parking Spaces for the minimum number of accessible spaces.

Project staff have been coordinating with State agency staff as follows:

- On Sept. 30, 2021, project staff met with staff from the Oregon's Department of Consumer and Business Services (DCBS), which is the state agency that manages the State Building Code. At this meeting, they discussed EV-ready parking space requirements that are currently in a rule-making process with DLCD. The Building Code Division was preparing to start up their rule-making process in early 2022. Coordination between the two state agencies on EV-ready parking and ADA parking that is also served by EV-charging infrastructure was also discussed.
- On Oct. 19, 2021, project staff attended DLCD's Introduction to Climate-Friendly and Equitable Communities Rulemaking meeting. DLCD staff walked through the State's draft rules that propose new housing and mixed-use development would include electrical conduit (pipes) and

again project staff flagged that there needs to be coordination between the two state agencies (DCBS and DLCD) on EV-ready parking and ADA parking requirements.

- On January 31, 2022, City staff met with staff from DLCD and ODOT regarding the Climate-Friendly and Equitable Rulemaking content on EV charging infrastructure.
- On March 31, 2022, City staff submitted testimony on the DLCD rulemaking process which includes rules on EV charging infrastructure.

Coordination with City bureaus

Project staff have been coordinating with the City bureaus listed on the Acknowledgements page throughout the project. Coordination has ranged from formal participation in the Enabling Tenants Access to EV Charging and the Technical Advisory Planning Series public meetings to the review of this document and its content and follow up discussions. Two key topics of discussion were coordination with the Portland Bureau of Transportation (PBOT) on mobility hubs and coordination with Bureau of Development Services (BDS) on signage regulations.

What about Mobility Hubs?

During project scoping and initial outreach with various stakeholders, there were suggestions to clarify the use category of a site that dedicates space to active and alternative transportation as well as facilitate EV charging. These areas are often called “mobility hubs.”

However, these discussions also pointed out the potential problems with creating a specific category for these sites, especially since a mobility hub may take a variety of forms. As noted below, mobility hubs are anticipated to be incorporated into the street network within the right-of-way, so many elements would be under the jurisdiction of Title 17, which the Portland Bureau of Transportation administers. In addition, mobility hubs may be combined with other uses that are already defined in our use categories.

During discussions within the Technical Advisory Planning Series, stakeholders recognized that mobility hubs should include links to multi-modal transportation options and features that could incorporate different land uses, as well as be close to low-income housing to provide access to these options. Additional community benefits such as areas to gather, places to charge electronics and public restrooms would be desirable. However, stakeholders were not distinguishing between development in the right-of-way and development on private property.

The Portland Bureau of Transportation is working on incorporating the mobility hub concept into their planning processes. This is in response to the following Comprehensive Plan policies:

Policy 9.68 New mobility priorities and outcomes. Facilitate new mobility vehicles and services with the lowest climate and congestion impacts and greatest equity benefits; with priority to vehicles that are fleet/shared ownership, fully automated, electric and, for passenger vehicles, shared by multiple passengers.

Policy 9.69 New mobility tools. Use a full range of tools to ensure that new mobility vehicles and services and private data communications devices installed in the City right-of-way contribute to achieving Comprehensive Plan and Transportation System Plan goals and policies.

Recently, PBOT has worked with consultant Alta Planning and Design to come up with a series of typologies for mobility hubs. The consultant report identified the mobility hub as “A location where mobility options are intentionally linked to one another and to amenities to make getting around Portland more convenient, seamless, and enjoyable for the purpose of advancing mobility, climate and equity goals.”

These hubs would be set up along rights-of-way with frequent transit or light rail access, with the intent to link multiple modes with other emerging shared mobility options. This typology study found four elements to a successful hub (both major and minor), including:

1. Areas for transit and trip-making transfers.
2. Parking and charging elements.
3. Priority access for people.
4. Amenities to complement the hub.

Many of these elements occur in the right-of-way and would be the responsibility of PBOT through Title 17. Supportive functions such as shared vehicle and bike parking, or retail or service amenities, may take place on the adjoining private property. But they would be based on the property owner’s development plans or could be negotiated between PBOT and the property owner.

Staff found that many existing use categories can incorporate the accessory functions, and EV facilities provided on a site with other uses will be categorized as accessory or serving that use. In general, EV chargers will fall under one of these provisions:

- EV parking in areas that also provide retail sales and service uses, such as bicycle rental, coffee shops, and other services, may be part of that retail use.
- EV facilities and bike/scooter parking located on a site that includes transit stations or park and ride facilities can potentially be incorporated into the existing Basic Utilities and Community Service Uses, which include park & rides, light rail and mass transit stations.
- EV chargers located on a site that also provides social services, community centers or libraries would also be incorporated into those Community Service uses.

However, EV charging technology may improve over time to the point where a charge can be made in a matter of minutes, similar to the filling up of a gas tank. If a quick EV-charging facility is set up for vehicles to line up to access an EV-charging station terminal within a queueing line, as opposed to being adjacent to a parking space, this facility would be classified as a Quick Vehicle Servicing use and subject to the same drive-through facility standards as a gas station. [Since mobility hubs can be incorporated into many of our existing use categories](#)As a result, the term “mobility hub” has not been added to the definitions or use category sections.

Sign Code Regulations

Generally, EV chargers include some form of text or advertising on them to attract attention, and because they are often visible outside, they may be subject to the provisions of signs under Title 32, Signs and Related Regulations. The idea of proposing sign exemptions or regulations specific to EV-charging signage was discussed with implementation staff from the Bureau of Development Services (BDS) who work on sign permits along with PBOT staff. While the need for a more holistic sign code update continues to be present, concerns about developing such specific regulations without a larger sign code discussion remain. Since a rewrite of the sign code is outside the scope of this project, no

amendments related to Title 32 are suggested at this time. BDS staff will continue to review and monitor signage related to EV chargers as they currently apply.

Section II: Relationship to the Comprehensive Plan

Comprehensive Plan Guiding Principles

The EV Ready Code Project helps implement the 2035 Comprehensive Plan in the following ways.

Economic Prosperity. *Support a low-carbon economy and foster employment growth, competitiveness, and equitably-distributed household prosperity.*

This project advances this principle by supporting low-carbon transportation options for Portlanders that reside in multi-dwelling housing and mixed use development with five or more units in buildings built after the code updates go into effect. Transportation is the second highest-household cost. The average cost to operate an EV in the United States is \$485 per year, while the average for a gasoline-powered vehicle is \$1,117. The exact price difference depends on gas and electric rates where you live, plus the type of car you drive.³ These standards support lower-cost and climate friendly transportation options, which can provide tangible economic benefits to individuals and households across Portland.

Human Health. *Avoid or minimize negative health impacts and improve opportunities for Portlanders to lead healthy, active lives.*

This project advances this principle by supporting the use of electric vehicles as a form of transportation. Expanding the use of electric vehicles in large metropolitan areas could reduce health harms from tailpipe emissions, which contain nitrogen dioxide (NO₂), fine particulate matter (PM_{2.5}) and other harmful compounds.⁴ BIPOC and low-income communities are disproportionately exposed to poor air quality due to lower income housing often being located near highways and busy roads. This project helps facilitate vehicle electrification by requiring EV-ready conduit and greater access to charging in new development; and, further vehicle electrification is an opportunity to achieve large public health benefits.

Environmental Health. *Weave nature into the city and foster a healthy environment that sustains people, neighborhoods, and fish and wildlife. Recognize the intrinsic value of nature and sustain the ecosystem services of Portland's air, water, and land.*

This project advances this principle by increasing the supply of EV-ready parking, which supports EV use, a low-carbon transportation option. Climate change threatens not just Oregon's natural treasures, but also Portlanders' jobs and health. Forty-three percent of all local carbon

³ Energy Sage, "Costs and benefits of electric cars vs. conventional vehicles,"

<https://www.energysage.com/electric-vehicles/costs-and-benefits-evs/evs-vs-fossil-fuel-vehicles/>, (2021)

⁴ ScienceDirect, "Assessing the health impacts of electric vehicles through air pollution in the United States," <https://www.sciencedirect.com/science/article/pii/S016041202031970X?via%3Dihub>, (2020)

emissions come from transportation sources. Utilizing vehicle electrification (fuel-shifting) is one of the key strategies to reduce carbon emissions from the transportation sector.

Equity. *Promote equity and environmental justice by reducing disparities, minimizing burdens, extending community benefits, increasing the amount of affordable housing, affirmatively furthering fair housing, proactively fighting displacement, and improving socio-economic opportunities for underserved and underrepresented populations. Intentionally engage underserved and underrepresented populations in decisions that affect them. Specifically recognize, address, and prevent repetition of the injustices suffered by communities of color throughout Portland's history.*

This project advances this principle by establishing standards for EV charging access that consider the needs of people with different abilities and by requiring, rather than relying on the market, EV-ready parking in new development. Additionally, the standards were developed based on considerable feedback and engagement with a wide variety of stakeholders, including residents of multi-dwelling buildings, affordable housing developers, community-based organizations, and the Portland Housing Bureau. The project worked to balance the City goals of providing more affordable housing and supporting affordable, environmentally friendly transportation options.

Resilience. *Reduce risk and improve the ability of individuals, communities, economic systems, and the natural and built environments to withstand, recover from, and adapt to changes from natural hazards, human-made disasters, climate change, and economic shifts.*

This project advances this principle in that the promotion of an increase in EV-ready access enables more EV adoption—the kind of accelerated adoption that encourages those in the car market to shift from fuel-powered to EV sales as well as the use of low-carbon transportation options. Fundamentally, the number of private vehicles must decrease, the distance travelled must shrink, and alternative forms of electric transport (including electric buses, electric-scooters and electric bikes) must substitute for car trips. Making the city more attractive for walking and cycling is also an important strategy to reduce carbon from the transportation sector and to develop a low-carbon, resilient infrastructure system for Portland. Yet, for those that choose or must drive, shifting to electric vehicles is a necessary part of the transition. To mitigate climate change, an increasing number of governors are mandating a phase-out of gas-powered vehicle sales. The vehicle market is also trending towards producing more efficient vehicles. EV charging infrastructure is currently needed to fuel existing vehicles and will become even more important in the next three to five years and beyond.

Comprehensive Plan Goals and Policies

The 2035 Comprehensive Plan includes goals and policy language designed to support and further the guiding principles. The EV Ready Code Project primarily supports Chapter 9: Transportation. However, the project also supports the closely linked goals and policies around development, urban form, and the environment, which span the following chapters of the Comprehensive Plan: Chapter 3, Urban Form; Chapter 4, Design and Development; Chapter 5, Housing; Chapter 6, Economic Development; Chapter 7, Environment and Watershed Health; and Chapter 10, Land Use Designations and Zoning.

Key Comprehensive Plan goals and policies supported by the EV Ready Code Project are listed

below.

Community Engagement

Goal 2.B: Social justice and equity. The City of Portland seeks social justice by expanding choice and opportunity for all community members, recognizing a special responsibility to identify and engage, as genuine partners, under-served and under-represented communities in planning, investment, implementation, and enforcement processes, particularly those with potential to be adversely affected by the results of decisions. The City actively works to improve its planning and investment-related decisions to achieve equitable distribution of burdens and benefits and address past injustices.

Policy 2.3 Extend benefits. Ensure plans and investments promote environmental justice by extending the community benefits associated with environmental assets, land use, and public investments to communities of color, low-income populations, and other under-served or under-represented groups impacted by the decision. Maximize economic, cultural, political, and environmental benefits through ongoing partnerships.

Policy 2.4 Eliminate burdens. Ensure plans and investments eliminate associated disproportionate burdens (e.g., adverse environmental, economic, or community impacts) for to communities of color, low-income populations, and other under-served or under-represented groups impacted by the decision.

2.4.a. Minimize or mitigate disproportionate burdens in cases where they cannot be eliminated.

2.4.b. Use plans and investments to address disproportionate burdens of previous decisions.

Urban Form

Goal 3.A: A city designed for people. Portland's built environment is designed to serve the needs and aspirations of all Portlanders, promoting prosperity, health, equity, and resiliency. New development, redevelopment, and public investments reduce disparities and encourage social interaction to create a healthy connected city.

Goal 3.B: A climate and hazard resilient urban form. Portland's compact urban form, sustainable building development practices, green infrastructure, and active transportation system reduce carbon emissions, reduce natural hazard risks and impacts, and improve resilience to the effects of climate change.

Policy 3.3 Equitable development. Guide development, growth, and public facility investment to reduce disparities; encourage equitable access to opportunities, mitigate the impacts of development on income disparity, displacement and housing affordability; and produce positive outcomes for all Portlanders.

3.3.a. Anticipate, avoid, reduce, and mitigate negative public facility and development impacts, especially where those impacts inequitably burden communities of color, under-served and under-represented communities, and other vulnerable populations.

3.3.b. Make needed investments in areas that are deficient in public facilities to reduce disparities and increase equity. Accompany these investments with proactive measures to avoid displacement and increase affordable housing.

- 3.3.c.** Encourage use of plans, agreements, incentives, and other tools to promote equitable outcomes from development projects that benefit from public facility investments.
- 3.3.d.** Incorporate requirements in the Zoning Code to provide public and community benefits as a condition of development projects to receive increased development allowances.
- 3.3.e.** When private property value is increased by public plans and investments, require development to address or mitigate displacement impacts and impacts on affordability, in ways that are related and roughly proportional to these impacts.
- 3.3.f.** Coordinate housing, economic development, and public facility plans and investments to create an integrated community development approach to restore communities impacted by past decisions. See Policy 5.18.
- 3.3.g.** Encourage developers to engage directly with a broad range of impacted communities to identify potential impacts of private development projects, develop mitigation measures, and provide community benefits to address adverse impacts.

Policy 3.4 All ages and abilities. Strive for a built environment designed to provide a safe, healthful, and attractive environment for people of all ages and abilities.

Design and Development

Goal 4.C: Human and environmental health. Neighborhoods and development are efficiently designed and built to enhance human and environmental health: they protect safety and livability; support local access to healthy food; limit negative impacts on water, hydrology, and air quality; reduce carbon emissions; encourage active and sustainable design; protect wildlife; address urban heat islands; and integrate nature and the built environment.

Policy 4.19 Resource efficient and healthy residential design and development. Support resource efficient and healthy residential design and development.

Policy 4.24 Drive-through facilities. Prohibit drive through facilities in the Central City, and limit new development of new ones in the Inner Ring Districts and centers in order to support a pedestrian-oriented environment.

Policy 4.34 Auto-oriented facilities, uses, and exterior displays. Minimize the adverse impacts of highways, auto-oriented uses, vehicle areas, drive-through areas, signage, and exterior display and storage areas on adjacent residential uses.

Policy 4.69 Reduce carbon emissions. Encourage a development pattern that minimizes carbon emissions from building and transportation energy use.

Housing

Goal 5.C: Healthy connected city. Portlanders live in safe, healthy housing that provides convenient access to jobs and to goods and services that meet daily needs. This housing is connected to the rest of the city and region by safe, convenient, and affordable multimodal transportation.

Policy 5.9 Accessible design for all. Encourage new construction and retrofitting to create physically-accessible housing to meet the needs of older adults and people with disabilities, especially in centers, station areas, and other places that are proximate to services and transit.

Policy 5.12 Impact analysis. Evaluate plans and investments, significant new infrastructure, and significant new development to identify potential disparate impacts on housing choice, access, and affordability for protected classes and low-income households. Identify and implement strategies to mitigate the anticipated impacts.

Policy 5.15 Gentrification/displacement risk. Evaluate plans and investments, significant new infrastructure, and significant new development for the potential to increase housing costs for, or cause displacement of communities of color, low- and moderate-income households, and renters. Identify and implement strategies to mitigate the anticipated impacts.

Policy 5.19 Aging in Place. Encourage a range of housing options and supportive environments to enable older adults to remain in their communities as their needs change (emphasis on supportive environments)

Policy 5.36 Impact of regulations on affordability. Evaluate how existing and new regulations affect private development of affordable housing, and minimize negative impacts where possible. Avoid regulations that facilitate economically-exclusive neighborhoods.

Environment and Watershed Health

Goal 7.A: Climate. Carbon emissions are reduced to 50 percent below 1990 levels by 2035.

Public Facilities and Services

Goal 8.M: Energy infrastructure and services. Residents, businesses, and institutions are served by reliable energy infrastructure that provides efficient, low-carbon, affordable energy through decision-making based on integrated resource planning.

Policy 8.34 Resource efficiency. Reduce the energy and resource use, waste, and carbon emissions from facilities necessary to serve designated land uses to meet adopted City goals and targets.

Policy 8.125 Energy efficiency. Promote efficient and sustainable production and use of energy resources by residents and businesses, including low-carbon renewable energy sources, district energy systems, and distributed generation, through land use plans, zoning, and other legislative land use decisions.

Transportation

GOAL 9.D: Environmentally sustainable. The transportation system increasingly uses active transportation, renewable energy, or electricity from renewable sources, achieves adopted carbon reduction targets, and reduces air pollution, water pollution, noise, and Portlanders' reliance on private vehicles.

Policy 9.9 Accessible and age-friendly transportation system. Ensure that transportation facilities are accessible to people of all ages and abilities, and that all improvements to the transportation system (traffic, transit, bicycle, and pedestrian) in the public right-of-way comply with the Americans with Disabilities Act of 1990. Improve and adapt the transportation system to better meet the needs of the most vulnerable users, including the young, older adults, and people with different abilities.

Policy 9.39 Automobile efficiency. Coordinate land use and transportation plans and programs with other public and private stakeholders to encourage vehicle technology innovation, shifts toward electric and other cleaner, more energy-efficient vehicles and fuels, integration of smart vehicle technology with intelligent transportation systems, and greater use of options such as car-share, carpool, and taxi.

Policy 9.68 New mobility priorities and outcomes. Facilitate new mobility vehicles and services with the lowest climate and congestion impacts and greatest equity benefits; with priority to vehicles that are fleet/shared ownership, fully automated, electric and, for passenger vehicles, shared by multiple passengers.

Policy 9.69 New mobility tools. Use a full range of tools to ensure that new mobility vehicles and services and private data communications devices installed in the City right-of-way contribute to achieving Comprehensive Plan and Transportation System Plan goals and policies.

Section III: Public Involvement

Development of the EV Ready Code Project concepts and the resulting Zoning Code amendments were informed by a range of public involvement activities.

Enabling Tenant Access to EV Charging Community Stakeholders

In 2020, the Bureau of Planning and Sustainability received a grant from the Urban Sustainability Directors Network (USDN) Innovation Fund for the “Enabling Tenant Access to EV Charging” project. This work informed Phase 1 of the EV Ready Code Project. The intent of the Enabling Tenant Access to EV Charging project was to provide cities with stakeholder-tested and context-grounded strategies that local governments can use to overcome barriers and enable access to EV charging for renters, in their cities, particularly those in Low-and-Moderate Income (LMI) households and Black, Indigenous, and People of Color (BIPOC) communities.

Four core USDN cities from the U.S. were involved throughout the Enabling Tenant Access to EV Charging project, as well as seven U.S. and Canadian observer cities who participated in calls and project progress conversations. Portland, OR joined Burlington, VT, Somerville, MA, Cambridge, MA as the core USDN cities.

The EV Ready Code Project’s Phase 1 coincided with the Enabling Tenant Access to EV Charging Project and supported a facilitated early discussion with a Portland stakeholder group in January through April 2020 to do the following:

- Develop a shared understanding of an equity lens and framework for the project.
- Identify key project issues and identify the communities that are impacted.

Enabling Tenant Access to EV Charging Key Equity Goals:

One of the reasons why low-income people and communities of color are impacted more than the general population by COVID-19 is due to underlining health conditions such as asthma, lung infections, and other respiratory diseases that are exacerbated, and often caused, by exposure to poor air quality.

This work to advance EV-ready buildings was done in partnership with communities of color and other under-represented Portlanders to ensure lived experience, needs and ideas were considered as we developed the proposals.

The following key equity goals were developed by project staff and reviewed by the Enabling Tenant Access to EV Charging stakeholders to provide the overarching framework direction for any City-initiated regulatory and programmatic recommendations.

- **Expand EV access.** Everyone, especially renters, low-income people, and communities of color, are able to use electric vehicles to access future jobs, education, and services.
- **Inclusion in technology advances.** As governments develop more aggressive clean fuel requirements and vehicle manufacturing companies’ phase-out internal combustion engines, low-income people and communities of color are not left out of the future transportation system.

- **Public health and air quality.** Low-income people and communities of color are disproportionately exposed to transportation-related air pollution due to both residential segregation and the siting of multi-dwelling housing near freeway air pollution sheds.
- **Reduced household costs.** Low-income people and communities of color benefit the most from EVs. The fuel and maintenance cost savings associated with EVs are more significant for low-income households compared to medium and higher income households.

Technical Advisory Planning Series

To facilitate a conversation among various interested parties, BPS re-convened participants in the Enabling Tenant Access to EV Charging stakeholder group and held a series of public meetings in January through June 2021.

The technical advisory planning series participants consisted of engaged external stakeholders including representatives from: EV-related businesses, utilities, and community organizations, to inform the scoping and direction of the project and to discuss how to increase EV charging access to renters. Community organization involvement included representatives from Verde, Hacienda CDC, Portland Tenants United and Beyond Black. USDN Innovation Fund resources were used to provide \$300 per meeting to these four organizations to support their participation.

The purpose of convening this planning series was for the participants to provide early input to BPS in developing the general concepts of the code amendments. Then BPS staff worked closely with the Portland Bureau of Transportation (PBOT) and the Bureau of Development Services (BDS) staff to develop the actual code amendments in this document. At the June 2021 meeting, the following Code Concepts were reviewed:

- **Code Concept #1:** Clarify how EV-ready installations are categorized in land use code (e.g., primary versus accessory use)
- **Code Concept #2:** Add development standards (e.g., placement, signage) for voluntary EV-ready installations
- **Code Concept #3:** Define what use category a mobility hub is in accordance with the Transportation System Plan's (TSP) New Mobility policies – *Project staff is not making any changes to the code regarding this concept. Please see Section #1 for further information.*
- **Code Concept #4:** Multi-dwelling and mixed-use with five units or more
 - 100% spots are EV-ready for up to 6 spaces
 - 50% of spots for parking lots with 7 or more spaces
 - EV-ready requirements would include electrical capacity and conduit to support Level 2 charging for the number of spaces specified above
- **Code Concept #5:** Commercial – *Project staff notes that this is already addressed in the adopted HB 2180.*
 - 20% of spots are EV-ready for parking, conduit, and electrical capacity to support Level 2 chargers
- **Code Concept #6:** Adding EV charging installation to qualify for structure parking FAR discount
- **Code Concept #7:** Non-conforming: EV infrastructure costs are not counted towards non-conforming upgrades thresholds

- **Code Concept #8:** For recreational fields for organized sports, schools and school sites, and other conditional uses, when adding EV infrastructure costs to the list of exterior improvements that are exempt for work allowed without a conditional use review
- **Code Concept #9:** Areas with parking minimums are an opportunity to expand car-share requirement to include electric vehicles and related EV-ready infrastructure
- **Code Concept #10:** Areas in Central City that require short-term/carpool parking are an opportunity to require EV infrastructure
- **Code Concept #11:** Ensure commercial parking provide EV-ready infrastructure
- **Code Concept #12:** Sign Code – *Project staff is not making any amendments to the sign code. See Section #1 for further information.*

Themes from Community Organization Input included the following requests:

- EV-ready Infrastructure related rent increases that could lead to displacement should be minimized and/or eliminated.
- Ensure that buildings are EV-ready needs to be balanced with actions and programs that enable charger and electric vehicle access to low-income and BIPOC communities. Examples of these programs include outreach and education programs to multifamily dwelling building owners, incentives to reduce the cost of EV chargers, EV related education and outreach to low-income and BIPOC communities disseminating information about EV economic and climate benefits, where/how to purchase low-cost electric vehicles and available vehicle rebates and incentives.
- Look for opportunities to encourage charging to support EV car share which can provide an affordable option for low-income communities.
- Consider EV code related impacts on residents and business owners.
- General Public Engagement Input: Appreciate the ability to provide input but consider having set up the conversation so it happens with two separate groups. One group made up of community organization representatives and another group consisting of experienced planners with knowledge about zoning codes and other technical topics. Joint meetings can lead to power dynamics and lack of understanding technical terminology. We appreciate that project management staff was always available to answer questions.
- Consider requirements for a certain percentage of disability-accessible parking (ADA) spaces to be EV-ready, including in car-sharing spaces.
- FAR: Portland Tenants United (PTU) supports FAR bonuses related to EV chargers for non-residential parking. For residential parking, PTU primarily supports FAR incentives as a way of incentivizing affordability commitments *specifically*.
- Mobility Hub:
 - Should encompass multi-modal forms of transportation such as scooters, bikes, and transit alongside electric vehicles and/or EV chargers.
 - Ensure flexibility of land uses, features, components, and characteristics of a mobility hub by allowing applicants to choose the land use classification for mobility hubs.
 - Hubs should be located near low-income housing and EV charging at mobility hubs should be located near transit stops and include other amenities/community benefits such as free Wi-Fi, outdoor smart furniture, electric wheelchair charging, public restrooms.

EV Experience Interviews

In February through June 2021, several Portland BIPOC residents of multi-dwelling housing with current or prior ownership of personal electric vehicles were interviewed. The questions were focused on the following groupings of questions to learn:

Ownership and usability information – To know the type of vehicle and its infrastructure that can help us understand the future requirements of charging infrastructure for EV code projects.

Charging information – To know charging needs and patterns of the E.V. users and the availability of charging infrastructure in their neighborhood.

Design information – Questions about the design and placement of charging infrastructure.

Safety information – To understand safety and accessibility issues around charging stations.

Key takeaways:

- Finding a functional and less expensive EV charger around the city is a huge concern for EV owners.
- Most multi-dwelling buildings around Portland do not have EV charging infrastructure as evident from the EV owner's experience.
- Leaving the car away for charging, when the charger is located few blocks away is a concern for the EV owners, concerns include people stealing batteries or meddling with the charging process or just removing the car from the charger.
- Lack of reliable charging infrastructure in rental apartments or duplexes force EV owners to give up the EV's.
- EV owners who have tried to work with their rental housing management to get charging infrastructure on site were unable to get the requested amenity for use.
- Some of the interviewees shared having/asking for an EV charging station is like an extra perk that the building management may or may not provide.
- Ownership of the EV affects the decision for where to live or rent an apartment around Portland; however, owners are not able to find many suitable options for rental housing with EV charging station within the building or complex.
- Newer apartments that include charging infrastructure advertise them to attract EV owners to rent in those apartments.
- Most EV owners suggest having a mix of DC fast chargers (that takes about 30 min to charge) and the typical Level 2 charger (takes about 3-4 hrs. to charge a car) in multi-unit apartment building would be ideal. This would allow enough time for folks to keep the car parked at the charging station, although DC fast chargers could have the requirement to move the car frequently to allow the use of the charging infrastructure more efficiently.
- In terms of design and accessibility, interviewees believe having charging stations that do not time out quickly when activated would give enough time to a person who has accessibility issues (for e.g., on a wheelchair) to pull the cord and plug in to the vehicle to begin charging.

- Interviewees experienced anxiety when using charging stations that are not explicitly visible or are hidden behind the trees. When chargers are not readily visible, it is difficult for the EV owners to find and use them, in addition to the anxiety for parking the car in a hidden spot.

One EV owner was quoted, “Just like you don’t expect gas stations to be located in a hidden spot behind the bushes or trees, and they are visible and well lit, the charging stations should also be located in a similar fashion. Specially for people who might be more vulnerable such as people with mobility issues, elderly and women (I have heard other women say that quite often).”

- Lighting was a primary accessibility concern and most EV owners agreed/suggested having adequate lighting at the charging station would be most beneficial safety feature.
- Maintaining the installed EV chargers to make sure they are functional, and running is very important for the interviewees. Some sort of accountability that would make sure the chargers are running and not broken would give people less range anxiety and more confidence with EV charging infrastructure.
- Standardized charging stations that are not super expensive to use and does not require variety of different apps to operate but rather could be activated via standard app would be ideal for the EV users.

EV Ready Economic Analysis Interviews

Johnson Economics was retained to prepare an economic analysis of the Bureau of Planning and Sustainability’s EV Ready Code Project. The economic analysis includes an assessment of the anticipated marginal impact of a range of EV-ready infrastructure requirements on residential and commercial construction. Johnson Economics used simplified financial analysis tools to assess the expected impact on new mandated infrastructure on variables such as product pricing, investment returns, and overall production levels.

A secondary analysis includes an estimation of the demographic characteristics of impacted populations, including breakdowns by income level. Available demographic data is supplemented by interviews with affordable housing providers and local developers. The research also looks at available income-qualified rebates and available infrastructure grants.

In August through October 2021, a series of interviews was conducted by Johnson Economics to provide additional context. Interviewees included public agency staff in other jurisdictions, electrical engineers, utilities, and developers.

Everyone that was interviewed expressed an expectation that electric vehicle adoption is likely to increase significantly over the next decade, and that there would likely be an increased need for property owners to accommodate these demands. There was less consensus regarding the scale of adoption as well as longer term sustained charging patterns. This is an evolving technology (particularly for batteries) and there is a high level of uncertainty regarding how vehicle charging needs will be accommodated. Some felt that the eventual pattern would favor fewer higher-rate charging stations, with faster charging times supporting centralized fueling stations similar to current gas stations. On the other end of the spectrum some saw slow overnight charging as a future solution, requiring only three prong outlets and limited additional infrastructure. Recognizing the high level of uncertainty and the risk

of stranding investments in the incorrect infrastructure, many respondents stressed a need for flexibility in requirements.

Section IV: Zoning Code Amendments

This section presents staff proposed zoning code amendments. The section is formatted to facilitate readability by showing draft code amendments on the right-hand pages and related commentary on the facing left-hand pages.

Commentary

33.110.245.D This amendment clarifies that a detached structure that holds the electrical conduit and charger is an uncovered vertical structure (see example photo). If the equipment is located within a parking area, it would instead be subject to the standards in 33.266.130. This provision is intended to cover plugs and cables located adjacent to driveways or other vehicle areas on a residential property.

These structures would likely meet the size allowance that would allow them to be in required setbacks (Item D.2.a is shown for this provision). However, as these structures are intended to provide charging opportunities to a vehicle parked on site, a new regulation is added requiring that the chargers be within 5-feet of driveways or other vehicle areas. However, this only applies to Level 2 or higher chargers which generally draw greater power and need a 220/240-volt connection. A level 1 charger uses standard outlets and power cords resulting in less risk, and it is not required to be proximate to the vehicle area/driveway.



33.110 Single-Dwelling Zones

110

33.110.245 Detached and Connected Accessory Structures

- A. Purpose.** This section regulates detached and connected structures that are incidental to primary buildings to prevent them from becoming the predominant element of the site. The standards limit the height and bulk of these structures, promote compatibility of design for larger structures, provide for necessary access around larger structures, help maintain privacy between abutting lots, and maintain open front setbacks.
- B-C.** [No change]
- D. Detached uncovered vertical structures.** Detached uncovered vertical structures are items such as flag poles, trellises, arbors and other garden structures, play structures, antennas, satellite receiving dishes, detached structures that hold electric vehicle chargers, and lamp posts. The following standards apply to detached uncovered vertical structures. Fences are addressed in 33.110.275:
1. Height. Except as follows, the maximum height allowed for all detached uncovered vertical structures is 20 feet:
 - a. Antennas, utility power poles, and public safety facilities are exempt from the height limit.
 - b. Flagpoles are subject to the height limit of the base zone for primary structures.
 - c. Detached small wind turbines are subject to the standards of 33.299, Wind Turbines.
 2. Setbacks. Except as follows, detached uncovered vertical structures are subject to required building setbacks:
 - a. Detached uncovered vertical structures that are no larger than 3 feet in width, depth, or diameter and no taller than 8 feet are allowed in required building setbacks.
 - b-d. [No change]
 3. Additional standard for detached uncovered vertical structures that hold electric vehicle chargers. In addition to Paragraphs 1. and 2. above, a detached uncovered vertical structure that holds at least a Level 2 electric vehicle charger must be located so that the electric vehicle charger is within 5 feet of a vehicle area.

Commentary

33.120.210.B The floor area ratio standard currently allows up to 0.5 to 1 of floor area to be discounted from the total allowed as an incentive for providing structured parking over surface parking. This amendment adds the requirement that at least 50% of the parking spaces, or a minimum of 6 spaces, within the structured parking *provide electric vehicle charging capacity with at least a Level 2 charger* in order to take advantage of the discount. The amendment is intended to encourage the addition of electric vehicle chargers in the structured parking spaces. The provision would most likely be used during the construction of a new building, or through an addition.

33.120 Multi-Dwelling Zones

120

33.120.210 Floor Area Ratio

- A. Purpose.** Floor area ratios (FARs) regulate the amount of use (the intensity) allowed on a site. FARs provide a means to match the potential amount of uses with the desired character of the area and the provision of public services. FARs also work with the height, setback, and building coverage standards to control the overall bulk of development.
- B. FAR standard.** The maximum floor area ratios are stated in Table 120-3 and apply to all uses and development. In the RM4 zone the maximum FAR is 4 to 1, except in Historic Districts and Conservation Districts, where the maximum FAR is 3 to 1. Floor area ratio is not applicable in the RMP zone. There is no maximum limit on the number of dwelling units within the allowable floor area, but the units must comply with all building and housing code requirements. Additional floor area may be allowed through bonus options described in Section 33.120.211, or transferred as described in Subsection D. Maximum FAR does not apply to one alteration or addition of up to 250 square feet when the alteration or addition is to a primary structure that received final inspection at least 5 years ago. This exception is allowed once every 5 years. Adjustments to the maximum floor area ratios are prohibited. Floor area does not include the following:
1. ~~Floor area for structured parking and required long-term bicycle parking not located in a dwelling unit, up to a maximum FAR of 0.5 to 1 of FAR for; and up to a maximum FAR of 0.5 to 1; and~~
 - a. Structured parking when at least 50 percent, or 6, of the parking spaces in the structure, whichever is greater, have electric vehicle charging capacity with at least a Level 2 charger adjacent to the space; and
 - b. Required long-term bicycle parking not located in a dwelling unit.
 2. Floor area for indoor common area used to meet the requirements of Section 33.120.240.
- C-D.** [No change]

Commentary

33.120.280.D This amendment clarifies that a detached structure that holds the electrical conduit and charger is an uncovered vertical structure (see example photo in 33.110). If the equipment is located within a parking area, it would instead be subject to the standards in 33.266.130. This provision is intended to cover plugs and cables located adjacent to driveways or other vehicle areas on a residential property.

These structures would likely meet the size allowance that would allow them to be in required setbacks (Item D.2.a is shown for this provision). However, as these structures are intended to provide charging opportunities to a vehicle parked on site, a new regulation is added requiring that the chargers be within 5-feet of driveways or other vehicle areas. However, this only applies to Level 2 or higher chargers which generally draw greater power and need a 220/240-volt connection. A Level 1 charger uses standard outlets and power cords resulting in less risk, and it is not required to be proximate to the vehicle area/driveway.

33.120.280 Detached Accessory Structures

A. Purpose. This section regulates detached structures that are incidental to primary buildings to prevent them from becoming the predominant element of the site. The standards limit the height and bulk of the structures and promote compatibility of design for larger accessory structures when they are in conjunction with single-dwelling development. The standards provide for necessary access around structures, help maintain privacy to abutting lots, provide flexibility for the location of accessory structures, and maintain open front yard areas.

B-C. [No change]

D. Detached uncovered vertical structures. Vertical structures are items such as flag poles, trellises, arbors, and other garden structures, play structures, antennas, satellite receiving dishes, detached structures that hold electric vehicle chargers, and lamp posts. The following standards apply to uncovered vertical structures. Fences are addressed in Section 33.120.285 below:

1. Height. Except as follows, the maximum height allowed for all detached uncovered vertical structures is the maximum height of the base zone. The maximum height allowed for detached uncovered vertical structures that are accessory to a house, attached house, duplex, attached duplex or manufactured home on an individual lot is 20 feet:
 - a. Antennas, utility power poles, and public safety facilities are exempt from height limits.
 - b. Flagpoles are subject to the height limit of the base zone for primary structures.
 - c. Detached small wind turbines are subject to the standards of 33.299.
2. Setbacks. Except as follows, detached uncovered vertical structures are subject to the required building setbacks:
 - a. Detached uncovered vertical structures that are no larger than 3 feet in width, depth, or diameter and no taller than 8 feet are allowed in required building setback.
 - b-d. [No change]
3. Additional standard for detached uncovered vertical structures that hold electric vehicle chargers. In addition to Paragraphs 1. and 2. above, a detached uncovered vertical structure that holds at least a Level 2 electric vehicle charger must be located so that the electric vehicle charger is within 5 feet of a vehicle area.

Commentary

33.130.205.B The floor area ratio standard currently allows up to 0.5 to 1 of floor area to be discounted from the total allowed as an incentive for providing structured parking over surface parking. This amendment adds the requirement that at least 50% of the parking spaces, or a minimum of 6 spaces, within the structured parking provide EV chargers in order to take advantage of the discount. The amendment is intended to encourage the addition of electric vehicle chargers in the structured parking spaces. The provision would most likely be used during the construction of a new building, or through an addition.

33.130 Commercial/Mixed Use Zones

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33.130.205 Floor Area Ratio

- A. Purpose.** Floor area ratios (FARs) regulate the amount of use (the intensity) allowed on a site. FARs provide a means to match the potential amount of uses with the desired character of the area and the provision of public services. FARs also work with the height, setback, and building coverage standards to control the overall bulk of development. The bonus FAR options allow additional floor area as an incentive for providing affordable housing.
- B. FAR standard.** The maximum floor area ratios are stated in Table 130-2 and apply to all uses and development. Additional floor area may be allowed through bonus options, as described in Section 33.130.212, or transferred from historic resources per Subsection C. Adjustments to the maximum floor area ratios are prohibited. Except in the CR zone, floor area does not include the following:
1. ~~Floor area for structured parking and required long-term bicycle parking not located in a dwelling unit, u~~Up to a maximum FAR of 0.5 to 1 of FAR for:; and
 - a. Structured parking when at least 50 percent, or 6, of the parking spaces in the structure, whichever is greater, have electric vehicle charging capacity and at least a Level 2 charger; and
 - b. Required long-term bicycle parking not located in a dwelling unit.
 2. Floor area for indoor common area used to meet the requirements of Section 33.130.228.
- C. [No change]**

Commentary

33.224.050 Stacking Lane Standards

A. Gasoline pumps and electric vehicle charging stations.

Current drive-through standards are focused on fuel stations and the needs for vehicle stacking lines at pumps. As electric vehicles become more ubiquitous, electric charging stations will become more common to satisfy the demand for quick charging. Also, charging stations are anticipated to become more efficient so that cars will not need to be parked for an extended time to receive a charge. As charging times get reduced from current levels down to 5 to 10 minutes in the future, the nature of some charging areas will change from being accessory to parking spaces to those that incorporate drive-through operations similar to gas fueling stations. This amendment ensures that electric vehicle charging stations that include charging islands, queuing spots, and are not integrated into parking spaces, are subject to the same development standards as gasoline fueling stations. These determinations are clarified within the definitions for drive-through facilities in 33.910 and for Quick Vehicle Service uses in 33.920. See the commentary and code for those sections.

33.224 Drive-Through Facilities

224

33.224.050 Stacking Lane Standards

These regulations ensure that there is adequate on-site maneuvering and circulation areas, ensure that stacking vehicles do not impede traffic on abutting streets, and that stacking lanes will not have nuisance impacts on abutting residential lands.

- A. Gasoline pumps and electric vehicle chargers.** A minimum of 30 feet of stacking lane is required between the stacking lane entrance and the nearest gasoline pump or electric vehicle charger.
- B. Other drive-through facilities.**
 - 1. Primary facilities. A minimum of 150 feet for a single stacking lane or 80 feet per lane when there is more than one stacking lane, is required for all other drive-through facilities. A stacking lane is measured between the stacking lane entrance and the service area.
 - 2. Accessory facilities. A stacking lane is not required for accessory facilities where vehicles do not routinely stack up while waiting for the service. Examples are window washing, air compressor, and vacuum cleaning stations.
- C. Stacking lane design and layout.** Stacking lanes must be designed so that they do not interfere with parking and vehicle circulation. No part of a required stacking lane may encroach into the right-of-way. Stacking lanes may be curvilinear. See Subsection 33.930.030.C. for measurement information.
- D. Stacking lanes identified.** All stacking lanes must be clearly identified, through the use of means such as striping, landscaping, and signs.

Commentary

33.258.070 Nonconforming Development

D.2.a. The nonconforming development on a site is required to be brought into conformance when a certain threshold of improvement is made to a property. The threshold for compliance is based on the value of the improvement. However, the threshold exempts some improvements that are either required through other codes or that provide a direct benefit to the city, such as ADA requirements, stormwater management facilities and energy efficiency improvements. This amendment adds installation of electric vehicle chargers and equipment to the list of items that do not count toward the threshold that triggers compliance with the nonconforming development section. This encourages the voluntary installation of EV chargers on an existing site.

33.258 Nonconforming Situations

258

33.258.070 Nonconforming Development

A-C. [No change]

D. Development that must be brought into conformance. The regulations of this subsection are divided into two types of situations, depending upon whether the use is also nonconforming or not. These regulations apply except where superseded by more specific regulations in the code.

1. [No change]

2. Nonconforming development with an existing nonconforming use, allowed use, limited use, or conditional use. Nonconforming development associated with an existing nonconforming use, an allowed use, a limited use, or a conditional use, must meet the requirements stated below. When alterations are made that are over the threshold of Subparagraph D.2.a., the site must be brought into conformance with the development standards listed in Subparagraph D.2.b. The value of the alterations is based on the entire project, not individual building permits.

a. Thresholds triggering compliance. The standards of Subparagraph D.2.b., below, must be met when the value of the proposed alterations on the site, as determined by BDS, is more than \$330,800. The following alterations and improvements do not count toward the threshold:

(1-7) [No change];

(8) Landscaping required by 33.475.220; ~~and~~

(9) Removal or remediation of hazardous substances conducted under ORS 465.200-545 & 900' and-

(10) The installation of electric vehicle chargers and accessory equipment.

b-d. [No change]

E-G. [No change]

Commentary

33.266.110 Minimum Required Parking Spaces

33.266.110.A. The purpose statement is amended to add information on the new minimum requirement for providing electrical infrastructure for the installation of electric vehicle chargers. While the chargers themselves aren't required as per state law, requiring the infrastructure ensures adequate charging in the future, especially when many automakers are contemplating moving to all EVs in the next 20 years.

33.266.110.D. Required electric vehicle charging spaces. This a new standard to establish parameters for a minimum number of spaces that will include electric conduit access for EV charging facilities. House Bill 2180 passed in 2021 established a statewide minimum for new parking spaces associated with private commercial buildings, and for mixed-use/residential development that includes over 5 dwelling units. Twenty percent of all new parking spaces will need to have electrical capacity and conduit set up to be able to provide electric vehicle charging facilities now or in the future. A rule making process is occurring during 2022 to establish these requirements within building/electrical codes. The bill also allows local jurisdictions to establish minimum EV capacity requirements in excess of 20 percent for these development types through a jurisdiction's land use codes. Portland is creating a minimum requirement of 6 spaces or 50% of the total number of parking spaces, whichever is greater when multi-dwelling or mixed-use development with more than 5 dwelling units is proposed and parking is provided for the dwelling units. In addition, a standard is added to clarify that any new Commercial Parking use (which is parking not associated with a specific use) provide a minimum of 20% of the total spaces for EV capability. The actual EV chargers are not part of the requirement as the state law provided the flexibility for these chargers to be installed in the future, but the capacity and conduit requirements ensure that retrofitting and rewiring isn't needed for the installations.

33.266 Parking, Loading, And Transportation And Parking Demand Management

266

33.266.110 Minimum Required Parking Spaces

- A. Purpose.** The purpose of required parking spaces is to provide enough on-site parking to accommodate the majority of traffic generated by the range of uses which might locate at the site over time. Sites that are located in close proximity to transit, have good street connectivity, and good pedestrian facilities may need little or no off-street parking. Parking requirements should be balanced with an active pedestrian network to minimize pedestrian, bicycle and vehicle conflicts as much as possible. Transit-supportive plazas and bicycle parking may be substituted for some required parking on a site to encourage transit use and bicycling by employees and visitors to the site. The required parking numbers correspond to broad use categories, not specific uses, in response to this long term emphasis. Provision of carpool parking, and locating it close to the building entrance, will encourage carpool use. Providing opportunities to install electric vehicle chargers within parking areas encourage electric vehicles as an alternative to vehicles that burn fossil fuels.
- B-C.** [No change]
- D. Required electric vehicle charging spaces.** For Commercial Parking uses and for sites with 5 or more dwelling units, the following standards must be met:
1. Commercial Parking. For Commercial Parking uses, at least 20 percent of the total number of parking spaces must include electrical conduit adjacent to the spaces that will allow for the installation of at least a Level 2 electric vehicle charger.
 2. In buildings with five or more dwelling units, if parking spaces are provided for any of the dwelling units, the following standards apply:
 - a. If between one and six spaces are provided for dwelling units, 100 percent of the spaces must include electrical conduit adjacent to the spaces that will allow for installation of at least a Level 2 electric vehicle charger.
 - b. If seven or more spaces are provided for dwelling units, 50 percent, or six, whichever is greater of the parking spaces provided must include electrical conduit adjacent to the spaces that will allow for installation of at least a Level 2 electric vehicle charger.

Commentary

33.266.110.E. Exceptions to the minimum number of parking spaces. In areas of the City where parking minimums may apply, there are several exceptions that allow the minimum to be reduced in exchange for development that is encouraged. One of the exceptions is for providing parking for cars in a car-share program. Each car-share space reduces the number of required parking spaces by two, up to a maximum of 25 percent of the total parking spaces.

This amendment requires that qualifying car-share spaces provide electric vehicle charging equipment. This will promote the use of EV for car-sharing programs, which is especially beneficial since car-sharing vehicles are often used for shorter trips, within Portland. Use of EV would reduce emissions in the city while remaining within vehicle driving range and allowing for charging between these trips.

ED. Exceptions to the minimum number of parking spaces. The minimum number of required parking spaces may be reduced as follows:

1. [No change]
2. Other exceptions. The minimum number of required parking spaces may not be reduced by more than 50 percent through the exceptions of this Paragraph. The 50 percent limit applies cumulatively to all exceptions in this Paragraph:
 - a-e. [No change]
 - f. Car-sharing parking spaces may substitute for required parking if all of the following are met:
 - (1) For every car-sharing parking space that is provided, the motor vehicle parking requirement is reduced by 2 spaces, up to a maximum of 25 percent of the required parking spaces;
 - (2) The car-sharing parking spaces must be shown on the building plans;
 - (3) The car-sharing parking space must provide at least a Level 2 electric vehicle charger; and
 - ~~(4)~~ A copy of the car-sharing agreement between the property owner and the car-sharing company must be submitted with the building permit.
 - g. [No change]

Commentary

33.266.130 Development Standards for All Other Development

A. Purpose.

This amendment expands the purpose statement for parking development standards to address EV charging facilities. The new bullet provides the purpose for the screening and location standards for locating EV chargers and equipment.

33.266.130 Development Standards for All Other Development

- A. Purpose.** The development standards promote vehicle areas that are safe and attractive for motorists and pedestrians. Vehicle area locations are restricted in some zones to promote the desired character of those zones.

Together with the transit street building setback standards in the base zone chapters, the vehicle area location regulations:

- Provide pedestrian access that is protected from auto traffic;
- Create an environment that is inviting to pedestrians and transit users, especially on transit streets and in Pedestrian Districts;
- Limit the prominence of vehicle areas along street frontages and create a strong relationship between buildings and the sidewalk;
- Create a sense of enclosure on transit and pedestrian street frontages; and
- Limit the size of paved parking area and the type of paving material allowed in order to limit increases in temperature associated with asphalt and reduce impacts from urban heat islands.

The parking area layout standards are intended to promote safe circulation within the parking area, provide for the effective management of stormwater runoff from vehicle areas, and provide for convenient entry and exit of vehicles. The setback and landscaping standards:

- Improve and soften the appearance of parking areas;
- Reduce the visual impact of parking areas from sidewalks, streets, and especially from adjacent residential zones;
- Provide flexibility to reduce the visual impacts of small residential parking lots;
- Direct traffic in parking areas;
- Shade and cool parking areas;
- Reduce the amount and rate of stormwater runoff from vehicle areas;
- Reduce pollution and temperature of stormwater runoff from vehicle areas; ~~and~~
- Decrease airborne and waterborne pollution; and
- Limit the impacts of electric vehicle chargers and equipment on adjacent streets and lots

- B. Where these standards apply.** The standards of this section apply to all vehicle areas whether required or excess parking, except for residential vehicle areas subject to the standards of 33.266.120.

Commentary

33.266.130.H. Electric vehicle chargers and equipment in parking areas. These are new development standards for the installation of EV charging facilities, for both required facilities and those voluntarily installed. These standards provide guidance on where the EV charging facility can go within the parking lot and whether they can intrude on individual parking spaces.

Many EV charging terminals, including those that offer high-speed commercial charging, are often accompanied by accessory electrical equipment and cabinets. These cabinets are similar to other mechanical equipment. The amendments clarify that this equipment is subject to screening and setback requirements.

C-G. No change

H. Electric vehicle chargers and equipment in parking areas. Electric vehicle chargers and accessory equipment may be located within surface and structured parking areas, subject to the following:

1. The chargers and equipment can be placed in areas adjacent to parking spaces, but are not allowed within required perimeter landscaping areas.
2. The chargers may project into a portion of a parking space. However, the chargers cannot project more than a 2-foot square into the minimum required parking dimension.
3. Electrical equipment, generators or transformers associated with EV chargers must be screened from the street and adjacent residential zones by walls, fences, or vegetation. Screening must comply with at least the L2 or F2 standards of Chapter 33.248, Landscaping and Screening, and be tall enough to screen the equipment.

Commentary

33.279.030 Alterations Allowed Without Conditional Use Review

- D. This amendment clarifies that the installation of EV chargers and equipment on the site of a recreation field should be treated similar to other minor improvements or features of a site, and its installation does not trigger a conditional use review.

33.281.050 Review Thresholds for Development

- A. **Allowed.** Similar to above, this clarifies that the installation of EV chargers and equipment does not trigger conditional use review on a school site.

33.279 Recreational Fields for Organized Sports

279

33.279.030 Alterations Allowed Without Conditional Use Review

Alterations related to a recreational field for organized sports to the site that meet all of the following are allowed without a conditional use review provided the proposal meets all of the following thresholds.

A-C. [No change]

D. Does not increase the exterior improvement area by more than 1,500 square feet. Fences, handicap access ramps, on-site pedestrian circulation systems, Community Gardens, Market Gardens, electric vehicle chargers and equipment, and increases allowed by Subsections F. through H. below are exempt from this limitation;

E-I. [No change]

33.281 Schools and School Sites

281

33.281.050 Review Thresholds for Development

This section states when development related to schools and on school sites in the OS, R, and IR zones is allowed, when a conditional use review is required, and the type of procedure used. Recreational fields used for organized sports are subject to Chapter 33.279, Recreational Fields for Organized Sports.

A. **Allowed.** Alterations to the site that meet all of the following are allowed without a conditional use review.

1-3. [No change]

4. Increases of exterior improvement areas up to 2,000 square feet. Fences, handicap access ramps, on-site pedestrian circulation systems, Community Gardens, Market Gardens, electric vehicle chargers and equipment, bicycle parking and increases allowed by Paragraphs A.6 and A.9 are exempt from this limitation;

5-9. [No change]

Commentary

33.420.045 Items Exempt From This Chapter

B. Exterior Alterations

This amendment adds an exemption allowing EV chargers and equipment to be installed in areas within the Design overlay zone without triggering the requirements of the chapter. This is intended to encourage the installation of these systems, especially in conjunction with existing parking areas.

33.420 Design overlay zone

420

33.420.045 Items Exempt From This Chapter

The following items are exempt from the regulations of this chapter:

A. General exemptions: [No change]

B. Exterior alterations:

1. Repair, maintenance, and replacement with comparable materials;
2. Exterior alterations to a structure required to meet the Americans With Disabilities Act's requirements, or as specified in Section 1113 of the Oregon Structural Specialty Code;
3. Exterior work activities associated with an Agriculture use;
4. Detached accessory structures when the structure has a building coverage no more than 300 square feet in area and is located at least 20 feet from all street lot lines, or located within an existing vehicle area;
5. Exterior alterations for parking lot landscaping, short-term bicycle parking, and pedestrian circulation systems when all relevant development standards of this Title are met;
6. Electric vehicle chargers and equipment.

Renumber 6.-10. to 7.-11.;

C. [No change]

Commentary

33.510.261 Parking Built After July 9, 2018

I.2 Carpool parking. Current regulations within the Central City require new parking for non-residential/hotel uses to include a proportion of their spaces allocated toward carpools. A minimum of 5 spaces or 5 percent of total spaces must be set aside for carpools. This amendment requires that at least 20 percent of the carpool spaces include access for EV charging facilities, to ensure that the EV capability is distributed proportionally between carpool and non-carpool spaces.

33.510 Central City Plan District

510

33.510.261 Parking Built After July 9, 2018

A-H. [No change]

- I. **All parking built after July 9, 2018.** The regulations of this subsection apply to all new parking regardless of type.
 1. The applicant is required to report the number of constructed parking spaces to the Director of the Bureau of Transportation within 30 days of parking operations beginning.
 2. Carpool parking. The carpool regulations of this Paragraph do not apply to Residential uses or hotels.
 - a. Five spaces or five percent of the total number of parking spaces on the site, whichever is less, must be reserved for carpool use before 9:00 AM on weekdays. More spaces may be reserved, but they are not required;
 - b. The carpool spaces must be those closest to the building entrance or elevator, but not closer than the spaces for disabled parking; ~~and~~
 - c. At least twenty percent of the carpool spaces must include electrical conduit adjacent to the spaces that will allow for installation of at least a Level 2 electric vehicle charger; and
 - ed. Signs must be posted indicating that the spaces are reserved for carpool use before 9:00 AM on weekdays.
- 3-4. [No change]

Commentary

I.5. Operation reports. All parking facilities built after July 9, 2018 are required to provide operation reports to the Bureau of Transportation (PBOT). These reports include metrics on overall usage, permits and fees for regular and carpool parking. This amendment adds a monitoring requirement to include spaces that have current or future EV charging capabilities and what rates are being charged at spaces that provide EV charging facilities. Incorporating this data into future operation reports can help PBOT and the City determine the use of these spaces and the rates charged, in comparison with other parking spaces. The existing code is also amended so that reports for these facilities are generated by the same due date for PBOT to monitor. PBOT is responsible for providing the procedures for submitting the reports.

5. Operation reports. The applicant must provide operation reports to the Director of the Bureau of Transportation no later than December 31 each year~~upon request~~. The operation reports must be based on a sample of four days during every 12-month period, and must include the following information:
 - a. The number of parking spaces and the amount of net building area on the site.
 - b. A description of how the parking spaces were used in the following categories. Percentage of parking used for:
 - (1) Short-term (less than 4 hours);
 - (2) Long-term daily (four or more hours);
 - (3) Average number of monthly permits issued (other than carpool);~~and~~
 - (4) Number of signed monthly Carpool stalls in the facility; ~~and~~
 - (5) Number of spaces that either include electrical conduit adjacent to the spaces that will allow for the installation of at least a Level 2 electric vehicle charger, or currently provide at least a Level 2 electric vehicle charger.
 - c. Rate schedule for:
 - (1) Hourly parking;
 - (2) Daily Maximum Rate;
 - (3) Evening Parking;
 - (4) Weekend Parking;
 - (5) Monthly parking; ~~and~~
 - (6) Carpool parking; ~~and~~
 - (7) Electric vehicle parking if different from above rates
 - d. The hours of operation on weekdays, Saturday, Sunday, and whether the facility is open during special events in the area.
6. [No change]

Commentary

33.815.040.B. Proposals that alter the development of an existing conditional use.

- 1.f Similar to the amendments for recreational fields and schools, this amendment clarifies that the installation of EV chargers and equipment does not trigger conditional use review on a site with an existing conditional use.

33.815 Conditional Uses

815

33.815.040 Review Procedures

The procedure for reviewing conditional uses depends on how the proposal affects the use of, or the development on, the site. Subsection A, below, outlines the procedures for proposals that affect the use of the site while Subsection B outlines the procedures for proposals that affect the development or reduce the conditional use site boundary. Proposals may be subject to Subsection A or B or both. The review procedures of this section apply unless specifically stated otherwise in this Title. Proposals may also be subject to the provisions of 33.700.040, Reconsideration of Land Use Approvals.

A. [No change]

B. Proposals that alter the development of an existing conditional use. Alterations to the development on a site with an existing conditional use and reducing the boundary of a conditional use site may be allowed, require an adjustment, modification, or require a conditional use review, as follows:

1. Conditional use review not required. A conditional use review is not required for alterations to the site and reductions to the conditional use site boundary that comply with Subparagraphs a through h. All other alterations and boundary changes are subject to Paragraph 2, below. Alterations to development and reductions to the site boundary are allowed by right provided the proposal:
 - a-e. [No change]
 - f. Does not increase the exterior improvement area by more than 2,000 square feet. Fences, handicap access ramps, and on-site pedestrian circulation systems, ground mounted solar panels, Community Gardens, Market Gardens, bicycle parking, electric vehicle chargers and equipment, and parking space increases allowed by 33.815.040.B.1.h, below, are exempt from this limitation;
 - g-h. [No change]
2. [No change]

Commentary

33.910.030 Definitions

Drive-Through Facility.

This amendment clarifies that an EV charging facility that is designed for quick vehicle charging and queuing similar to a gas station is defined as a drive-through facility. It includes stacking lanes behind each individual charging station similar to a gas pump. It also clarifies that situations where a vehicle may be getting charged while parked in a parking space is not classified as a drive-through facility. These amendments are intended to complement the changes to 33.920 to help classify the range of EV charging situations that city will encounter. EV charging facilities currently take 30 minutes to several hours to charge, which means that most chargers will be located in a parking space. However, future improvements in efficiency are likely to result in EV charging stations operating more closely to a standard gas station in terms of time spent at the charging island. This could allow for future drive-through style facilities.

33.910 Definitions

910

33.910.030 Definitions

The definition of words with specific meaning in the zoning code are as follows:

Drive-Through Facility. A facility or structure that is designed to allow drivers to remain in their vehicles before and during an activity on the site. Drive-through facilities are a type of site development that is usually found in conjunction with a Quick Vehicle Servicing use or a Retail Sales And Service use. Drive-through facilities also include facilities designed for the rapid servicing of vehicles, where the drivers may or may not remain in their vehicles, but where the drivers usually either perform the service for themselves, or wait on the site for the service to be rendered. Drive-through facilities may serve the primary use of the site or may serve accessory uses. Examples are drive-up windows; menu boards; order boards or boxes; gas pump and electric vehicle charging islands; car wash facilities; auto service facilities, such as air compressor, water, and windshield washing stations; quick-lube or quick-oil change facilities; and drive-in theaters. Parking spaces used for customer pick-up or loading of goods or products purchased on-site, on the phone, or on-line from the establishment are not a drive-through facility. Parking spaces that include electric vehicle chargers and equipment are not a drive-through facility. Facilities designed for electric vehicle charging or the picking-up or loading of goods or products purchased from the establishment that include a stacking lane and a service area are a drive-through facility.

Commentary

33.920.220 Quick Vehicle Servicing

The amendments to the Quick Vehicle Servicing use category add electric vehicle charging facilities as an example of a Quick Vehicle Servicing use, which occurs when the chargers are located with vehicle queuing. The amendment also clarifies when an EV charger is part of accessory parking. In many cases, EV charging facilities are incorporated into parking lots, partially because the vehicles have to remain in the space for an extended period of time to get charged. However, if it functions as a drive-through, it will be a Quick Vehicle Service use.

33.920 Description of Use Categories

920

33.920.220 Quick Vehicle Servicing

- A. Characteristics.** Quick Vehicle Servicing uses provide direct services for motor vehicles where the driver generally waits in the car before and while the service is performed. The development will include a drive-through facility, the area where the service is performed (see 33.910, Definitions.) Full-serve and mini-serve gas stations are always classified as a primary use (Quick Vehicle Servicing), rather than an accessory use, even when they are in conjunction with other uses.
- B. Accessory Uses.** Accessory uses may include auto repair, food membership distribution, and tire sales.
- C. Examples.** Examples include full-serve and mini-serve gas stations, unattended card key stations, electric vehicle charging stations, car washes, quick lubrication services, and Department of Environmental Quality vehicle emission test sites.
- D. Exceptions.**
1. Truck stops are classified as Industrial Service.
 2. Refueling facilities for the vehicles that belong to a specific use (fleet vehicles) which are on the site where the vehicles are kept, are accessory to the use.
 3. Electric vehicle chargers that are intended to be used while the car is parked in a parking space are not a Quick Vehicle Servicing use.

Commentary

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