Ridgway Sustainability Advisory Board
Meeting Agenda

Wednesday July 5, 2023

Pursuant to the Town's Electronic Participation Policy, the meeting will be conducted both in person and via a virtual meeting portal. Members of the public may attend in person at the Community Center, located at 201 N. Railroad Street, Ridgway, Colorado 81432, or virtually using the meeting information below.

Join Zoom Meeting
https://us02web.zoom.us/j/81658915600?pwd=K1RKeEhtVzk4UDA3VmYrMnp0NXFHUT09
Meeting ID: 816 5891 5600
Passcode: 458478
Dial by your location
+1 346 248 7799 US
+1 253 215 8782 US
+1 312 626 6799 US

5:00 p.m.

CALL TO ORDER & ROLL CALL Angela Hawse, Vicki Hawse, Joyce Huang, Dana Ivers, Dave Jones, Ken Mihelich, JT Thomas

ADDITIONS TO THE AGENDA

NEW BUSINESS

Item 1 – Presentation by Kim Wheels of EcoAction Partners re: Model Colorado Electric and Solar Ready Code

Item 2 – Discussion on Sustainability Conference Work Session

Item 3 – Approval of minutes from June 7, 2023 meeting

ADJOURNMENT

AGENDA ITEM #1

COLORADO
Energy Office

Colorado Model Solar and Electric Ready Code Report

Process Overview and Explanatory Notes

Published: June 1, 2023

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Introduction

House Bill 22-1362.

In 2022, the General Assembly of the State of Colorado passed House Bill 22-1362[1] (House Bill or state statute), requiring the Colorado Energy Office (CEO) and Department of Local Affairs (DOLA) to appoint an energy code board (the board) charged with developing a model electric and solar ready code (model code) for adoption by counties, municipalities, and state agencies in Colorado.

The board is composed of representatives from key stakeholder groups from across the State and throughout the building and design process, including building engineers, building code experts, renewable energy and energy efficiency experts, environmental advocates, home builders, trades representatives, affordable housing experts, and jurisdictional representatives from urban and rural communities. An executive committee was also appointed by CEO and DOLA per the requirements of the House Bill.

The model code sets the minimum requirements for each element within the model code. Jurisdictions are able to adopt and enforce the model code or any alternative code that achieves equivalent or better performance than the model code.

Definitions from the State Statute

The House Bill defined several key terms that bound the board to a set of baseline requirements for the model code. The key terms defined by the House Bill include the following. Please see the text of the House Bill for the full list of terms and definitions.[2]

- **Electric ready**
- **EV capable**
- **EV ready**
- **EV supply equipment (EVSE)**
- **Mixed fuel building**
- **Provisions for electric service capacity**
- **Solar ready**

[1] House Bill 22-1362

[2] Section 1(1) of HB22-1362, CRS 24-38.5-401(1)

House Bill Code Element Requirements

The House Bill also outlined requirements for the three primary sections of the model code: electric ready, solar ready, and electric vehicle (EV) ready. The board was charged with articulating the specifics regarding the code elements within these three main sections and developing a process for certain buildings to apply for waivers from the code requirements.[3]

Required elements for each code section differed by building type and size; the House Bill distinguished requirements by residential buildings, commercial and multifamily buildings under 10,000 square feet (sq. ft.), and commercial and multifamily buildings at or over 10,000 sq. ft. The board had discretion under the House Bill's code development process to determine the specifics of each code section's requirements for each building type.

For a full account of the bill's requirements, please see the text of the House Bill.

Electric Ready Code Requirements

The House Bill required **mixed-fuel residential homes** and **mixed-fuel commercial and multifamily buildings under 10,000 sq. ft.** to be built electric ready. **Commercial and multifamily buildings at or above 10,000 sq. ft.** are required to provide dedicated electric panel space, electrical wire, electrical receptacles, and adequate panel capacity for electric-readiness.

Solar Ready Code Requirements

The House Bill required **all residential homes** and **commercial and multifamily buildings of all sizes** to be built solar ready.

Electric Vehicle Ready Code Requirements

The House Bill required **all residential homes** be built EV ready or EV capable, leaving the board with the responsibility to determine which would be appropriate for Coloradans. For **commercial and multifamily buildings of all sizes**, the House Bill required parking facilities to supply EV ready, EV capable, & EVSE installed spaces with provisions for electrical service capacity in 20% or more of the vehicle parking spaces.

Waivers

All residential and commercial buildings are eligible for a waiver from the model code requirements in the case of a **declared natural disaster or other circumstance** as declared by the authority having jurisdiction (AHJ). **Commercial buildings at or above 10,000 sq. ft.**

[3] Section 1(5) of HB22-1362, CRS 24-38.5-401(5)

are also eligible for a waiver if the project developer can demonstrate that the costs incurred as a result of compliance with the model code impose a **substantial cost differential** on a project. A substantial cost differential is defined by the House Bill as "one percent or greater of the total mechanical, electrical, and plumbing construction costs on the project". The board was tasked with developing a methodology for determining whether or not a project has reached a substantial cost differential and developing a process by which local building departments should waive requirements of the model code to reduce the cost differential. This waiver section was included as a means to minimize costs to builders, building owners, and developers, but jurisdictions may opt to omit the waiver section from their codes and apply all requirements of this model code to all projects. This would be considered a strengthening amendment, as it would apply the requirements to projects that otherwise may not have had to comply with all requirements of the model code

Table 1. Key code elements required by the House Bill by building type and size.

Building Type	Solar Ready	EV Ready	Electric Ready	Waiver Eligibility
Residential	Required	EV ready or EV capable.	Electric ready for mixed-fuel homes.	Natural disaster waiver.
Commercial & Multi-Family <10,000 sq. ft.	Required	EV ready, EV capable, & EVSE installed with provisions for electrical service capacity in 20% or more of the vehicle parking spaces.	Electric ready for mixed-fuel buildings.	Natural disaster waiver.
Commercial & Multi-Family >10,000 sq. ft.	Required	EV ready, EV capable, & EVSE installed with provisions for electrical service capacity in 20% or more of the vehicle parking spaces.	Provide dedicated electric panel space, electrical wire, electrical receptacles, and adequate panel capacity.	a) Natural disaster waiver. b) A standard methodology for determining when compliance reaches a substantial cost differential. c) An evidence-based uniform process to allow a project to request a waiver.

Validating Factors from the House Bill:

The board was charged with developing a model code that enables **Residential and Small Commercial & Multi-Family buildings** to be converted to high efficiency electric space and water heating equipment and appliances at the lowest possible cost to building owners and in consideration of home affordability.

Similarly, for **Large Commercial & Multi-Family buildings**, the board was required to take into account the cost-effectiveness of pre-wiring for future efficient electric equipment and the ability to determine what wiring and receptacle locations would be needed.

House Bill Model Code Development Process Requirements

The Directors of the CEO and DOLA appointed members of the board by October 1, 2022, ensuring geographic diversity and representation from each of the three major climate zones in the State.

The board was required to approve each element of the model electric ready and solar ready code by a two-thirds majority (14 members) of all members by April 1, 2023.[4] After this date, elements of the model code that did not receive a two-thirds majority were then passed onto the executive committee.[5] The executive committee was required to vote only on those elements that failed to pass the board by May 15, 2023. The executive committee votes required a simple majority (three members) to pass any outstanding code element.[6]

Part 1: Energy Code Board Overview & Process

Introduction to the Energy Code Board.

The board included the following members. Listed next to each board member is the role that each member fulfilled, per the House Bill requirements. Members are listed in the order that their role appeared in the House Bill.[7]

CEO Appointees

- **Will Toor**, Director of the CEO.*
    - **Adam Berry**, the CEO director's designee.
- **Ron Flax**, representing an urban county of the State, and a building official.*
- **Jason MacMillan**, representing a rural municipality of the State.
- **Chris Menges**, representing an environmental or sustainability group.
- **Kim Wheels**, representing an environmental or sustainability group.
- **Carolyn Elam**, a solar power expert.
- **Kristen Taddonio**, an energy efficiency expert.
- **Elizabeth Gillmor**, a professional engineer with experience working on systems for buildings.
- **Mary Wiener**, representing an electric, gas, or a combined electric and gas utility.

[4] Section 1(8)(a) of HB22-1362, CRS 24-38.5-401(8)(a)
[5] Section 1(8)(b) of HB22-1362, CRS 24-38.5-401(8)(b)
[6] Section 1(8)(d) of HB22-1362, CRS 24-38.5-401(8)(d)
[7] Section 1(3) of HB22-1362, CRS 24-38.5-401(3)

    - *Note: Mary left the board in January after she transitioned positions.*
    - **Rob Buchanan**, replaced Mary Wiener in the role of the electric, gas, or combined utility representative.
- **Kevin Eronimous**, an architect.
- **Brad Smith**, a building energy code expert.*

DOLA Appointees

- **Rick Garcia**, Director of the DOLA.*
    - **Maulid (Mo) Miskell**, the DOLA director's designee.
- **Don Suppes**, representing a rural county of the State.
- **Tim Pate**, representing an urban municipality of the State, and a building official.*
- **Aaron Martinez**, representing a for-rent nonprofit builder who serves populations with incomes under 80% of an area's median income.
- **Lauren DeBell**, representing a nonprofit for-sale builder.
- **Zachary Esquibel**, holds an electrical license, plumbing license, or professional credential in the mechanical trades.
- **Sean Wyatt**, holds an electrical license, plumbing license, or professional credential in the mechanical trades and is a member of a labor organization.
- **Andrew Harris**, representing a statewide organization for home building professionals.
- **Cody Davis**, building operation expertise.
- **Tom Riead**, a contractor who provides mechanical, electrical, or plumbing services or represents a statewide association that represents mechanical, electrical, or plumbing contractors.

**Appointed as an Executive Committee member.*

Summary of Energy Code Board Meetings, Major Milestones, and Timeline.

The board convened in October 2022 and commenced a series of 15 total meetings through March 2023 to deliberate and vote on a final model code for statewide adoption. A third-party facilitation consultant and technical consultant were hired to conduct meetings, draft model code language, and ensure the board met its statutory deadline for creating the model code.

For further detail on the contents of each board meeting, all meeting materials including meeting agendas, presentations, minutes, and livestreamed meeting recordings, are available online on the CEO's energy code board website.[8]

Review and Discussion of Code Elements

Board Meetings #1 -4 covered a comprehensive review of all solar ready, EV ready, and electrification codes adopted across Colorado. In the next set of meetings, Meetings #5-9, the board discussed specific code elements for each of the three main code sections outlined in the statute – solar ready, EV ready, and electric ready – and provided direction to the consultant team on the specific elements that should be included in the first code drafts. The board debated how each element should be written to achieve fairness across the State, consider technological obstacles, and ensure cost-effectiveness and affordability. In these discussions, cost-effectiveness was primarily considered as the balancing of upfront costs to make mixed-fuel homes and buildings solar ready, EV ready, and electric ready and the retrofit costs of installing solar, electric appliances, and EV charging in the future without readiness provisions in place.

Drafting Process

After these meetings, the consultant provided a draft code language package for each section of the model code for board members to review. Between the regularly scheduled board meetings, the board reviewed the code package drafts and suggested edits for full board discussion in the following meetings. At Meetings #10-12, the board reviewed and discussed the suggested edits from board members, then made preliminary decisions on those edits via a straw poll process. The straw polls were nonbinding, simple majority polls (simple majority of the full board, or 11 members) on each suggested edit to provide direction to the consultant team on the edits to include in the model code.

The results of these straw polls were incorporated into the next iterations of the draft code language. A preliminary draft code package was prepared by the consultant team following the straw poll processes. This draft was shared with the public ahead of Meeting #13, where members of the public provided comments and testimony to the board on the draft code package. Following the public comment meeting, the board discussed feedback from members of the public on the preliminary draft, then proposed new edits to the draft in response. The board then reviewed, deliberated, and straw polled these edits at Meeting #14.

[8] Energy Code Board website

Final Energy Code Board Votes

After the final round of edits following the public comment session, the board received a full draft code package for review. The 15th and final energy code board meeting was hosted on March 31, 2023 to conduct final votes on every individual code element. All elements that did not receive a two-thirds majority approval from the board were compiled and sent to the executive committee members in preparation for finalizing the model code.

Executive Committee Discussion and Votes

The executive committee was made up of 5 members of the full board. This committee convened three times to review all code elements that did not receive supporting votes from a full two-thirds majority of the energy code board during Meeting #15. Following a similar process as the full board, the executive committee reviewed the code elements that were not approved by the board, and deliberated on changes or removals for each of the code elements to address concerns raised by the full board. Live editing of the code elements was followed by straw polling in the first two executive committee meetings to work towards consensus for the final code package. Finally, the executive committee conducted official votes on all code elements under their charge. Once this voting was completed, the model code package was finalized.

Public Comment Opportunities Through Code Development

Throughout the meeting process, the CEO hosted two open portals on their energy code board webpage for members of the public to provide comments or code proposals. These submissions were reviewed at the beginning of each board meeting, and the board was provided time at each meeting to bring up comments or code proposals with the full board for discussion.

In addition to the open comment forms hosted by the CEO, the board hosted a meeting dedicated to public comment to allow members of the public to share their comments live. This meeting, Meeting #13, offered each meeting registrant a maximum of five (5) minutes with the board to share their comment.

Following the public comment meeting, board members had the opportunity to draft and submit amendment proposals based on the public's input that were deliberated and straw polled for incorporation into the final code package.

Final Code Package and Report

Following the board and executive committee meetings, the consultant finalized the model electric ready and solar ready code package. The code package includes an explanatory version of the model code, which provides notes on the board's intent with certain code elements and directions for an AHJ in adopting the model code.

Part 2: Explanatory Notes on Intent and Adoption

The model electric and solar ready code includes a number of code elements that underwent significant discussion and deliberation by the board. The following section aims to contextualize the board's decision-making process and clarify their intent for these code elements in order to support Colorado communities in their adoption and implementation of the model code.

Elements That Impact the Full Model Code Package.

Scope and Major Renovations and Additions

The House Bill requires adopting jurisdictions to apply this code to all "new construction" of, and "major renovations and additions" to, commercial and residential buildings. However, the House Bill did not define "major renovation and addition" for the purposes of the model code. It was thus interpreted that the board, while not required to, could choose to give direction to AHJs on defining a "major renovation and addition" as part of the model code. The board decided, for the purposes of compliance with the model code, to allow each AHJ to determine their own definition of "major renovations and additions." The jurisdictional definition would then determine how the requirements of the code applied to such projects in their jurisdiction.

During the final board vote, all but one of the scope sections (*Sections RE301.1 in Chapter 3; RS401.1 and CS401.1 in Chapter 4; and RV501.1 and CV501.1 in Chapter 5*) failed to reach a two-thirds majority consensus. The failed votes and subsequent board discussion indicated the board's intent to allow the executive committee to revise the language from "new construction" to "new buildings" to maintain consistency with the language used in the administrative chapter of the model code, as well as other codes.

During executive committee review of these scope sections, it was again brought forward that the House Bill required AHJs to apply the model code requirements to both new construction and "major renovations and additions" to commercial and residential buildings. The executive committee members determined that, although the full board

opted not to define "major renovations and additions" in the body of the code, these terms should be included, but left undefined, in the model code scope. The intent is to clarify the need for AHJs to define major renovations and additions to which the model code requirements would apply during their adoption of the model code.

Ultimately, the executive committee agreed on two changes to each scope section noted above. The first change updated the language to "new buildings" to maintain consistency with the *Chapter 1 Section 101.2 Scope,* assist with AHJ enforcement, and align with the intent expressed by the full board. The second change added language to direct AHJs to apply the requirements of those sections both to "new buildings" and to "major renovations and additions", instead of just "new buildings."

Implementation Note: Each AHJ must define "major renovations and additions" when adopting the model code. AHJs have full discretion to define what renovations and additions constitute "major renovations" and "major additions", but all renovations and additions that fall under the jurisdictional definition must comply in full with the model code.

Defining Residential and Commercial Buildings

The board voted to include definitions of "residential buildings" and "commercial buildings", which differ from the definitions included in the IECC, and align the subsections of *Chapter 1 Section 101.4 Applicability* with these definitions. The code requirements that emerged from the board's discussions suggested that R-occupancies would be most easily and efficiently covered under the commercial buildings definition, as key considerations, such as usage behaviors, energy load, and construction process, most closely resembled those of other commercial buildings.

The definition of "residential buildings" aligns with the International Residential Code definition and includes all one- and two-family dwellings and townhomes. The definition of "commercial buildings" aligns with the International Building Code definition and includes all building types that are not covered under "residential buildings."

Variance and Waivers

The House Bill required the board to include a waiver process for buildings impacted by declared natural disasters and a waiver request process for a builder, building owner, or developer of a commercial building greater than 10,000 sq. ft. that incurs a substantial cost

differential[9] by meeting the code requirements. The board was left with the discretion to design the specifics of these processes.

For the substantial cost differential waiver, *Sections 102.1.1 Commercial Buildings 10,000 sq. ft. or Greater* and *102.2 Substantial Cost Differential Waiver*, the board's key decision points included whether or not to allow the AHJ to waive all of the code requirements for buildings that could successfully demonstrate a substantial cost differential, and how such demonstration of a substantial cost differential in waiver requests should be validated. The majority of board members agreed most elements of the model code would not incur a significant cost; therefore the board chose to allow AHJs to exempt buildings from *only some* of the model code requirements. The model code permits AHJs to waive requirements of the model code for a project up until the cost to comply with the remaining code requirements equals less than one percent of the project's total mechanical, electrical, and plumbing construction costs, including materials and labor.

Implementation Note: For both the natural disaster variance, described in *Chapter 1 Section 102.1.2 Buildings Impacted by a Natural Disaster*, and the substantial cost differential variance, AHJs must determine the specific implementation process for granting the waivers. The AHJ must also identify what documentation is needed to demonstrate the substantial cost differential. The natural disaster waiver may be granted on a case by case basis. As noted in the introduction, the variance and waiver sections were included, per state statute, as a means to minimize costs to builders, building owners, and developers in complying with the model code. However, jurisdictions may opt to omit the waiver section from their codes and apply all the requirements of the model code to all projects.

Chapter 3 Electric Ready.

Future Electric Equipment

The board developed and voted on a definition of "future electric equipment." The definition captures their intent to ensure adequate physical space, electrical panel space, and electrical wiring is provided for all equipment necessary to support the conversion of combustion equipment to all-electric equivalents. From a physical space perspective, the board assumed that, in some cases, the future all-electric appliance would directly replace the location of the original/existing combustion equipment. *Chapter 3 Sections*

[9] Section 1(5)(c)(II)(A)of HB22-1362, CRS 24-38.5-401(5)(c)(II)(A)

RE302.2 Combustion Equipment, CE302.2 Commercial Buildings Less than 10,000 sq. ft. and all R-Occupancies, and *CE302.3 Commercial Buildings 10,000 sq. ft. or Greater* require reservation of additional physical space and electrical panel space because some all-electric systems, particularly those for space heating and water heating, need supplementary equipment such as air handlers, electric resistance backup coil, condensing units, and other equipment that are not necessary for combustion equipment.

Commercial Buildings Over 10,000 sq. ft.

For large commercial buildings, the requirements for electric-readiness were written to incorporate greater flexibility, acknowledging the challenge in predicting the needs of future large-scale electric technologies that may not yet exist to serve large commercial buildings. Learning from other Colorado communities with existing electric ready standards, the board determined the most cost-effective and flexible way to support future electric equipment in large buildings is to remove requirements for running wire and installing receptacles, allowing developers to install conduit and junction boxes only. This helps avoid the potential for creating stranded costs in unusable wiring or receptacles that would force developers to replace or remove the pre-installed electrical infrastructure.

However, these same communities also reported to the board that large commercial buildings face significant physical space constraints in efforts to electrify, namely for the additional transformers needed to accommodate greater electrical loads. To remove this barrier, the board agreed that large commercial buildings must retain physical space for future electric service equipment.

Core and Shell / Tenant Finishes

Core and shell buildings are buildings in which the outer structure is constructed first, with the intent that commercial tenants will subsequently move in and adapt spaces to their needs (e.g., vendors at a mall). Specific to provisions in *Chapter 3 Electric Ready*, the board expressed concern over burdening core and shell developers with all elements of electric readiness when they may not know at the time of design what equipment, appliances, electrical infrastructure, or electrical loads will ultimately be installed. The board agreed on a more cost-effective approach that shares the electric ready requirements between the core and shell developers and the first tenants to move into a core and shell building.

As a result, the board developed definitions for “core and shell” and “first tenant finish” and included subsection *Chapter 3 CE301.1 First Tenant Finishes* that captures their intent. This section requires first tenant finishes to meet the electric ready requirements of the model

code before being issued a certificate of occupancy. By sharing these responsibilities, the model code reduces costs for the core and shell, while allowing the first tenant to tailor the electric ready infrastructure to their specific energy needs.

Implementation Note: Core and shell buildings must comply with Chapter 4 Solar Ready and Chapter 5 EV Ready of the model code when built.

Chapter 4 Solar Ready.

This chapter was modeled closely on the 2021 IECC Appendix RB Solar Ready Provisions and the 2021 IECC Appendix CB Solar Ready Provisions with a few key exceptions as detailed below.

Solar Ready Zone

The board altered the first exception in *Chapter 4 Section RS402.1 General* to specify that the on-site renewable energy system must provide electricity to the particular dwelling unit in order for a new residential project to qualify for the exception and bypass the solar ready zone requirements. The intent behind this change was to ensure that any dwelling unit developer that pursues the exception for on-site renewable energy instead of solar-readiness must install a solar photovoltaic (PV) system or other renewable energy system that offsets a substantial amount of the dwelling's electricity consumption rather than a system that may provide minimal power to an isolated area of the property. Dwelling units that do not meet this requirement will still need to comply with the solar ready provision to ensure future tenants or owners can have a solar system that directly offsets their on-site electricity use.

On the commercial side, the board similarly adapted the first exception to *Chapter 4 Section CS402.1 General* to require projects to achieve a minimum on-site solar PV output capacity to qualify for that particular exemption from the solar ready zone requirements. The board added a second criteria to this exception, allowing solar arrays not directly installed on the building's roof but somewhere on the building premises or parking lot to count towards the exemption, so long as it meets the size and output requirements. These two components were intended to provide commercial buildings flexibility with site design while ensuring the spirit of the solar ready requirements is met through adequate energy production.

Residential Solar Ready Zone Areas

The board rearranged *Chapter 4 Section RS402.3 Solar-Ready Zone Area* to pull out townhouses as an exception from the language governing single family homes and require minimum solar-ready zones on a per-townhouse unit basis rather than the townhouse as a whole. The intent of this change was to ensure that each townhouse would be provided with its own solar ready zone as opposed to sharing a solar ready zone with other townhouses in the same building.

Roof Load Documentation

In *Chapter 4 Section CS402.5 Roof Loads and Documentation*, the board opted to remove the minimum pounds per square footage requirement from the 2021 IECC Commercial Solar Ready Appendix. Board members noted that some solar arrays may not require this, and that existing roofs not designed specifically with solar-readiness could often still accommodate solar arrays. The requirement was perceived to impose unnecessary costs and burdens on engineers and lead to over-engineered roofs.

Interconnection Pathways

Board discussions and public comments on identifying interconnection pathways on construction drawings for solar readiness revealed that solar installers often prefer not to follow designated interconnection pathways noted on construction documents when installing conduit from the roof to the electrical panel. Many installers instead opt to route conduit on the exterior of the building. The adapted *Chapter 4 Sections RS402.7* and *CS402.6 Interconnection Pathway* require that construction documents merely show a potential pathway for routing electrical wire to the roof to provide an option for solar installers, and indicate on the construction documents that it is just one of many potential pathways.

Capped Roof Penetration Sleeve

From conversations with experienced solar installers, referenced above, board members understood that running conduit along the exterior of a structure to connect a solar array to the building's electrical panel is common practice. In such situations, the capped roof penetration sleeve becomes a stranded expense, so the board decided to exclude from the model code the requirement for a capped roof penetration sleeve that is included in the 2021 IECC Commercial and Residential Solar Ready Appendix.

Electrical Energy Storage System-Ready Area

The provision of the 2021 IECC Commercial Solar Ready Appendix requiring an energy storage system-ready area was not a statutory requirement in the House Bill. Therefore

the board indicated initially it may be useful as a recommended code element. The board wanted to recognize the importance of energy storage to the clean energy transition and to electric grid resilience and reliability. However, subsequent discussions on the specifics of the language revealed that the suggested space sizing requirements did not necessarily reflect actual battery sizing options and was ultimately outside the scope of this model code. The board subsequently voted to exclude this language.

Construction Document Certificate

Many board members emphasized that requiring both a certificate and a set of approved construction documents felt redundant and burdensome. However, the board noted that current and future homeowners or tenants may still find the certificate helpful in understanding what solar technologies their building or dwelling unit is capable of supporting.

The executive committee reviewed this code element and agreed to require it for residential buildings but remove the language requiring that a builder or registered design professional provide the certificate. The executive committee determined that code officials would struggle to enforce it for commercial buildings, thus creating a different requirement in the commercial solar ready section of the model code. Finally, the executive committee outlined the key items that the permanent certificate should contain, including the following:

- The location, image or descriptive text, of the solar ready zone.
- The total size of the solar ready zone in square feet.
- The structural design loads for the roof dead load and the roof live load.
- The “potential pathway”, image or descriptive text, for the conduit and wire to be run from the electrical panel to the solar ready zone.
- The total electrical panel reserved space set aside for future solar PV.

Solar Panel Capacity

Parts 3 and 4 of the Chapter 4 Solar Ready code section were developed to ensure all buildings, regardless of design or roof area, can easily add a variety of solar power generation technologies. The board intended to incorporate flexibility with respect to new technology and building performance, acknowledging the potential for future, more efficient solar photovoltaic technologies that could produce the same energy output while using less space. Secondly, the board hoped to enable building owners to install solar panels on their property via ground mounts, regardless of any roof design constraints. Part

3 and Part 4 of Chapter 4 require all residential and commercial buildings to reserve electrical panel space for future solar installations, even if the building is exempt from the solar ready provisions.

Chapter 5 EV Ready.

EV Capable Light Space Type

As the board weighed upfront costs against retrofit costs for EV readiness infrastructure, it was determined that the largest retrofit expense would come from tearing up existing parking lots and rearranging building layouts to run new electrical conduit and provide additional electric service capacity for future EV chargers. As a result, the board developed a new EV space type designed to just require conduit and the physical space for future electrical service equipment needed to support EV chargers. This was done to enable buildings to meet future EV charging demand cost-effectively, with maximum flexibility and minimal upfront cost.

The EV capable light spaces do not count towards the statutory requirements for the minimum 20% of space types, as they do not meet the statutory requirement of providing electrical service capacity. An EV capable, EV ready, or EVSE installed space may each be used as a substitute for an EV capable light space, but EV capable light spaces may not be used to substitute for any other EV space type.

Commercial Building Space Quantity and Allocation

The House Bill charged the board with determining how many EV capable, EV ready, and/or EVSE installed parking spaces (all categories are referred to as, "EV space types") that commercial building projects would be required to provide, and it required a minimum of 20% of total parking spaces be assigned as an EV space type. The board's decisions had to balance upfront costs, future retrofit costs, and future EV charging demand. As context during the board's discussion meeting, the CEO shared with the board the State's goal, detailed in the 2023 Colorado EV Plan, to have nearly 100% of light-duty passenger vehicles on the road be electric by 2050.[10]

The board generally agreed that the percentage or amount of EV capable, EV ready, and/or EVSE installed parking spaces should depend on the building type. First, the board observed that most people prefer to charge their EVs at home. That meant that R-2 occupancies might expect the greatest demand for EV charging, while most other

[10] 2023 Colorado Electric Vehicle Plan

commercial building types would likely see more short term EV charging. Therefore, the board created higher space type allocation requirements for R-2 occupancies, which intend to reflect the immediate and expected needs for EV charging in multifamily buildings. The minimum required number of EV space types, including EV capable light, is 60% of the total parking spaces for R-2 occupancies with greater than 10 parking spaces, while the minimum required number of EV space types, including EV capable light, is 30% of total parking spaces for all other commercial buildings with greater than 10 parking spaces.

Next, the board recognized the cost burden that buildings with smaller parking facilities may face in meeting EV readiness requirements. As a result, the board unified around reducing EV space type quantity requirements for smaller parking lots and removed requirements for EVSE installed spaces in these lots. The board and executive committee ultimately required commercial buildings with 10 or fewer parking spaces to provide a minimum of two EV ready spaces and R-2 occupancies with 10 or fewer parking spaces to provide a minimum of 35% of total parking spaces as one of the EV space types.

Additional considerations that the board and executive committee weighed in their deliberations over space type quantity and allocation include accessibility of parking spaces with EVSE and risk of theft of copper wire for EV ready spaces.

Space Type Substitution Allowances

The board voted to allow any extra space types of higher stringency to count towards the minimum requirements of a space type of lower stringency on a one to one substitution. For example, extra EV ready spaces that go beyond the code minimum may be used to cover EV capable or EV capable light space requirements.

In addition, the board agreed that commercial buildings and R-2 occupancies could substitute any EV space type requirement with the installation of direct current fast chargers (DCFC), as long as the parking facility maintained the minimum quantity of EV readiness spaces required by code. The board designated different substitution ratios for the two distinct building categories. R-2 occupancies may substitute a DCFC charger for up to 5 EV space types. All other commercial buildings may substitute a DCFC charger for up to 10 EV space types. The rationale for the difference in substitution ratios is that residents of R-2 occupancies are more likely to charge their EVs overnight and can tolerate longer charging times, while visitors to other commercial buildings would benefit from shorter DCFC charging times.

Implementation Note: AHJs may opt to adopt codes with stricter EV readiness requirements such as adopting higher minimum percentages for EV capable light, EV capable, EV ready, and/or EVSE installed parking spaces for any building type.

Part 3: Notes on Adoption

The House Bill requirements for adoption of the model electric ready and solar ready code will enter into effect on July 1, 2023. After July 1, 2023 a municipality, county, or state agency that updates any of their building codes must adopt this model code, or a code equivalent to or stronger than the model code, in addition to the 2021 International Energy Conservation Code (IECC). AHJs may adapt the model code in order to fit into their current building code framework as long as they do not weaken any provisions of the model code, and may amend the model code to increase the stringency of the requirements if they so choose. AHJs should review the explanatory version of the code package when reviewing the code for adoption. Any AHJs that wish to retain their current building codes do not need to adopt this model code, nor do AHJs that currently do not maintain a building code.

The 2023 Colorado legislative session delivered a House Bill that clarifies the adoption timing requirements for the model code and the 2021 IECC, and expands the applicability of the EV power transfer infrastructure requirements for multifamily buildings into the state electrical code. House Bill 23-1233, which was signed into law on May 23, 2023, allows a jurisdiction that adopts the state electrical code or plumbing code concurrently with the state to have until June 30, 2026 to adopt the model code and the 2021 IECC, if they do not update any other building codes after July 1, 2023. House Bill 23-1233 also directs the State Electrical Board to require compliance with the EV Power Transfer Infrastructure requirements for new and substantially renovated multifamily buildings (R-2 occupancies) in the model code in order to obtain an electrical permit, beginning March 1, 2024.

COLORADO
Energy Office

Colorado Model Electric Ready and Solar Ready Code:

Explanatory Notes

Published: June 1, 2023

COLORADO
Department of Local Affairs

Explanatory notes will be in blue, bold, and italics text throughout the document.

Explanatory Note: 'Chapter 1 Scope and Administration' is not required by statute and is optional for authorities having jurisdictions (AHJ) to adopt. An AHJ may amend Chapter 1 however they wish, with the exception of Section 102 and accompanying subsections, to align with their existing building codes. As with the other sections of Chapter 1, an AHJ may choose whether or not to adopt Section 102 and accompanying subsections in their entirety, but an AHJ choosing to adopt Section 102 and accompanying subsections must adopt them as written.

Chapter 1 Scope and Administration

Explanatory Note: Sections 101.1 through 101.4 align with the scope provisions that exist in the administrative chapters of the 2021 International Energy Conservation Code (IECC).

SECTION 101 SCOPE AND GENERAL REQUIREMENTS.

101.1 Title. This code shall be known as the **Electric Ready and Solar Ready Code** of [NAME OF JURISDICTION], and shall be cited as such. It is referred to herein as "this code".

101.2 Scope. This code applies to all buildings and dwelling units, and the buildings' sites and associated systems and equipment.

101.3 Intent. This code shall regulate the design and construction of buildings to prepare new buildings for solar photovoltaic or solar thermal, electric vehicle charging infrastructure, and electrification of building systems. This code is intended to provide flexibility and balance upfront construction costs with the future cost to retrofit buildings to accommodate these systems. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

Explanatory Note: Residential and Commercial buildings are defined in 'Chapter 2: Definitions' as they apply to this code.

101.4. Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

101.4.1 Residential Buildings. *Residential buildings* must comply with the Residential Chapters of this code.

101.4.2 Commercial Buildings. *Commercial buildings* must comply with the Commercial Chapters of this code.

Explanatory Note: Section 102 describes the two different variance and waiver processes buildings can follow in the event they need to request a waiver to the code requirements in the Model Electric Ready and Solar Ready Code (model code). All buildings are eligible for a waiver from all code requirements under the natural disaster waiver described in Section 102.1.2. Only large commercial buildings may apply for a partial waiver under the substantial cost differential waiver described in Section 102.2. A partial waiver exempts a building from some of the requirements in the model code, as determined by the AHJ, and will not be fully exempt from the requirements.

SECTION 102 WAIVER AND VARIANCE.

102.1 Scope. The following waivers shall be permitted to be requested if buildings meet the following requirements.

102.1.1 Commercial Buildings Greater than 10,000 sq. ft. *Commercial buildings* that have a gross floor area greater than 10,000 sq. ft. shall be eligible to request a partial waiver to the requirements of this code if they meet the requirements of Section **102.2**.

102.1.2 Buildings Impacted by a Natural Disaster. [NAME OF JURISDICTION] is permitted to authorize, upon appeal in specific cases, a waiver from the requirements of this code where, owing to a declared natural disaster that has destroyed buildings or resulted in other exceptional and extraordinary circumstances as determined by [NAME OF JURISDICTION], and [NAME OF

JURISDICTION] determines enforcement of the provisions of this code will result in unnecessary hardship.

Explanatory Note: Section 102.2 describes the waiver process for specific code requirements when implementation of the model code will result in a substantial cost differential (see definition in 102.2.1). The project must provide adequate proof of a substantial cost differential to the AHJ to determine if the waiver request is valid. Building projects will only be exempt from some of the requirements, and it will be up to each AHJ to determine the allowable exemptions to bring the cost differential below one percent.

102.2 Substantial Cost Differential Waiver. [NAME OF JURISDICTION] shall be permitted to authorize, upon appeal, a waiver from the requirements of this code for an applicant that asserts that compliance with this code will result in a substantial cost differential. [NAME OF JURISDICTION], when authorizing such a waiver, shall be permitted to waive certain requirements of this code only until the cost differential for compliance with the remaining requirements reaches one percent or less. The burden of proof is upon the applicant to provide substantiation of a cost differential, such as quotes or other licensed design professional analyses as *approved* by [NAME OF JURISDICTION].

102.2.1 Substantial Cost Differential. For the purposes of Section **102.2**, "substantial cost differential" means costs incurred as a result of compliance with the requirements of this code would exceed one percent of total mechanical, electrical, and plumbing construction costs inclusive of materials and labor.

SECTION 103 CONSTRUCTION DOCUMENTS.

103.1 General. Construction documents and other supporting data shall be submitted in one or more sets, or in a digital format where allowed by the *code official*, with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the *code official* is authorized to require necessary construction documents to be prepared by a registered design professional.

Exception: The *code official* is authorized to waive the requirements for construction documents or other supporting data if the *code official* determines they are not necessary to confirm compliance with this code.

103.2 Information on Construction Documents. Construction documents shall be drawn to scale on suitable material. Electronic media documents are permitted to be submitted where *approved* by the *code official*. Construction documents shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems, and equipment as herein governed. Details shall include, but are not limited to, the following as applicable:

1. Location and size of the *solar-ready zone.*
2. Structural design loads of roof dead load and roof live load.
3. Pathways for routing of conduit from the *solar-ready zone* to the electrical service panel.
4. Number and location of *EV capable light spaces.*
5. Number and location of *EV capable spaces.*
6. Number and location of *EV ready spaces.*
7. Number and location of *EVSE installed spaces.*
8. Locations of conduit and termination points serving the aforementioned parking spaces.
9. Location for condensate drainage where *combustion equipment* for space heating and water heating is installed.

103.3 Examination of Documents. The *code official* shall examine or cause to be examined the accompanying documents and shall ascertain whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances. The *code official* is authorized to utilize a registered design professional, or other *approved* entity not affiliated with the building design or construction, in conducting the review of the plans and specifications for compliance with the code.

103.3.1 Approval of Construction Documents. When the *code official* issues a permit where construction documents are required, the construction documents shall be endorsed in writing and stamped "Reviewed for Code

Compliance". Such *approved* construction documents shall not be changed, modified, or altered without authorization from the *code official*. Work shall be done in accordance with the *approved* construction documents.

One set of "Reviewed for Code Compliance" construction documents shall be retained by the *code official*. The other set shall be returned to the applicant, kept at the site of work, and shall be open to inspection by the *code official* or a duly authorized representative.

103.3.2 Previous Approvals. This code shall not require changes in the construction documents, construction, or designated occupancy of a structure for which a lawful permit has been heretofore issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within 180 days after the effective date of this code and has not been abandoned; except that the *code official* is authorized to grant one or more extensions of time for additional periods not exceeding 180 days each.

103.3.3 Phased Approval. The *code official* shall have the authority to issue a permit for the construction of part of a solar ready, EV ready, or electric ready installation before the construction documents for the entire system have been submitted or *approved*, provided that adequate information and detailed statements have been filed complying with all pertinent requirements of this code. The holders of such permit shall proceed at their own risk without assurance that the permit for the entire solar ready, EV ready, or electric ready installation will be granted.

I03.4 Amended Construction Documents. Changes made during construction that are not in compliance with the *approved* construction documents shall be resubmitted for approval as an amended set of construction documents.

103.5 Retention of Construction Documents. One set of *approved* construction documents shall be retained by the *code official* for a period of not less than 180 days from the date of completion of the permitted work, or as required by state or local laws.

Explanatory Note: Residential buildings are exempt from 103.6 to align the requirement with the IECC, which has this requirement in the Commercial section only and does not apply this requirement to residential buildings.

103.6 Building Documentation and Closeout Submittal Requirements. The construction documents shall specify that the documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the certificate of occupancy.

Exception: *Residential buildings.*

103.6.1 Record Documents. Construction documents shall be updated to convey a record of the completed work. Such updates shall include mechanical, electrical, and control drawings that indicate all changes to size, type, and location of components, equipment, and assemblies.

103.6.2 Compliance Documentation. Compliance documentation and supporting calculations shall be delivered in one document to the building owner as a part of the project record documents or manuals, or as a standalone document. This document shall include the specific energy code edition utilized for compliance determination for each system.

Explanatory Note: Section 104 requires inspections after the issuance of a permit, and during and after the work is completed. Solar ready, EV ready, and electric ready provisions each have their own inspection requirements.

SECTION 104 INSPECTIONS.

104.1 General. Construction or work for which a permit is required shall be subject to inspection by the *code official*, his or her designated agent or an *approved agency*, and such construction or work shall remain visible and able to be accessed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain visible and/or able to be accessed for inspection purposes. Neither the *code official* nor the

jurisdiction shall be liable for expenses entailed in the removal or replacement of any material, product, system or building component required to allow an inspection to validate compliance with this code.

104.2 Required Inspections. The *code official*, his or her designated agent or an *approved agency*, upon notification, shall make the inspections set forth in Sections **104.2.1** through **104.2.4**.

104.2.1 Solar Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. The location and size of the *solar-ready zone* or the capacity of an installed on-site renewable energy system.
2. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel that are properly labeled.

104.2.2 Electric Vehicle Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. *EV* power transfer infrastructure requirements.
2. Electrical equipment associated with each parking space type, including branch circuits, conduit and/or raceway, junction boxes, receptacles, and *EVSE* are properly labeled and installed.
3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled, if applicable.

104.2.3 Electric Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. Branch circuits, conduit and/or raceway, wiring, junction boxes, and receptacles for *future electric equipment* or appliances are properly labeled and installed, as applicable.
2. Reserved physical space for *future electric equipment* or appliances.
3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled.

104.2.4 Final Inspection. The final inspection shall include verification of the installation and proper labeling of all requirements of this code.

104.3 Reinspection. A building shall be reinspected where determined necessary by the *code official*.

104.4 Approved Inspection Agencies. The *code official* is authorized to accept reports of third-party inspection agencies not affiliated with the building design or construction, provided that such agencies are *approved* as to qualifications and reliability relevant to the building components and systems that they are inspecting.

104.5 Inspection Requests. It shall be the duty of the holder of the permit or their duly authorized agent to notify the *code official* when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

104.6 Reinspection and Testing. Where any work or installation does not pass an initial test or inspection, the necessary corrections shall be made to achieve compliance with this code. The work or installation shall then be resubmitted to the *code official* for inspection and testing.

SECTION 105 NOTICE OF APPROVAL.

105.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the *code official*.

105.2 Revocation. The *code official* is authorized to suspend or revoke, in writing, a notice of approval issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

SECTION 106 VALIDITY.

106.1 General. If a portion of this code is held to be illegal or void, such a decision shall not affect the validity of the remainder of this code.

Explanatory Note: Section 107 identifies all codes and standards that are referenced in the model code and clarifies that this model code shall take precedence if there are any conflicts between provisions of this code and provisions of any of the

referenced codes. However, the provisions of the model code do not nullify any provisions of state, local, and federal laws.

SECTION 107 REFERENCED STANDARDS.

107.1 General. The codes and standards referenced in this code shall be listed in Section **107.2**, and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference.

107.2 Referenced Codes and Standards. The codes and standards referenced in this code are as follows:

1. International Building Code
    a. Chapter 3
    b. Chapter 11
2. International Energy Conservation Code
3. International Fire Code
4. International Residential Code
5. National Electrical Code Article 625
6. UL2202 and 2594

107.2.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

107.2.2 Provisions in Referenced Codes and Standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

107.3 Applications of References. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section, or provision of this code.

107.4 Other Laws. The provisions of this code shall not be deemed to nullify any provisions of local, state, or federal law.

SECTION 108 STOP WORK ORDER.

108.1 Authority. Where the *code official* finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the *code official* is authorized to issue a stop work order.

108.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property, the owner's authorized agent, or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.

108.3 Emergencies. Where an emergency exists, the *code official* shall not be required to give a written notice prior to stopping the work.

108.4 Failure to Comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by [NAME OF JURISDICTION].

SECTION 109 BOARD OF APPEALS.

109.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the *code official* relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The *code official* shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the *code official*.

109.2 Limitations on Authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall not have the authority to waive the requirements of this code.

109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of [NAME OF JURISDICTION].

Chapter 2 Definitions

SECTION 201 GENERAL.

201.1 Scope. Unless stated otherwise, the following words and terms in this code shall have the meanings indicated in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural includes the singular.

201.3 Terms Defined in Other Codes. Terms that are not defined in this code but are defined in the International Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Energy Conservation Code, or International Residential Code shall have the meanings ascribed to them in those codes.

201.4 Terms not Defined. Terms not defined by this chapter or the codes listed under 201.3 shall have ordinarily accepted meanings such as the context implies.

SECTION 202 GENERAL DEFINITIONS.

APPROVED. Acceptable to the *code official*.

APPROVED AGENCY. An established and recognized agency that is regularly engaged in conducting tests or furnishing inspection services, or furnishing product certification, where such agency has been approved by the *code official.*

CODE OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

Explanatory Note: Gas fireplaces are considered combustion equipment, but in some instances they are exempt from the code requirements. See Chapter 3 for more details.

COMBUSTION EQUIPMENT. For this code, any equipment or appliance used for space-heating, service water heating, cooking, clothes drying or lighting that uses *fuel gas* or *fuel oil*.

COMMERCIAL BUILDING. For this code, all commercial buildings and R-Occupancies that are covered by the International Building Code.

Explanatory Note: Core and shell buildings are considered differently than non-core and shell buildings in the model code. This code defines both "Core and Shell" and "First Tenant Finish," both of which must meet certain requirements. AHJs have discretion over whether they require core and shell structures or first tenant finishes to comply with Chapter 3 Electric Ready requirements, or whether both core and shell structures and first tenant finishes each bear partial responsibility for meeting Electric Ready requirements. All core and shell must comply with all Chapter 4 and Chapter 5 of the model code.

CORE AND SHELL. The first phase of a commercial project that has the outer building envelope constructed and may contain interior lighting and heating and has not received a permanent Certificate of Occupancy.

DIRECT CURRENT FAST CHARGER (DCFC) EVSE. Equipment capable of fast charging on a 100A or higher 480VAC three-phase branch circuit. AC power is converted into a controlled DC voltage and current within the *EVSE* that will then directly charge the *electric vehicle*.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, including but not limited to, passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, *EVSE*, a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current. Off-road, self-propelled electric mobile equipment, including but not limited to, industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, and boats are not considered electric vehicles.

Explanatory Note: EV Capable Light Space was a new definition developed by the Board.

ELECTRIC VEHICLE CAPABLE LIGHT SPACE (EV CAPABLE LIGHT SPACE). A designated vehicle parking space that has conduit and/or raceway installed to support future implementation of *electric vehicle* charging installation, and has sufficient physical space adjacent to the existing electrical equipment for future electric upgrades.

Explanatory Note: The definitions for EV Capable Space, EV Ready Space, and EVSE were taken from the state statute of House Bill 22-1362, CRS 24-38.5-401.

ELECTRIC VEHICLE CAPABLE SPACE (EV CAPABLE SPACE). A designated vehicle parking space that has the electric panel capacity and conduit and/or raceway installed to support future implementation of *electric vehicle* charging.

ELECTRIC VEHICLE READY SPACE (EV READY SPACE). A designated vehicle parking space that has the electric panel capacity, raceway wiring, receptacle, and circuit overprotection devices installed to support future implementation of *electrical vehicle* charging.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). An *electric vehicle* charging system or device that is used to provide electricity to a plug-in *electric vehicle* or *plug-in hybrid electric vehicle*, is designed to ensure that a safe connection has been made between the electrical grid and the vehicle, and is able to communicate with the vehicle's control system so that electricity flows at an appropriate voltage and current level.

ELECTRIC VEHICLE SUPPLY EQUIPMENT INSTALLED SPACE (EVSE INSTALLED SPACE). A vehicle parking space that is provided with a dedicated *EVSE* connection.

Explanatory Note: The definition of "First Tenant Finish" indicates that only the first tenant finish in a new structure or core and shell building are subject to this code. If a tenant finish is proposed in an existing building that previously underwent a first tenant finish, the new tenant finish will not be subject to the requirements of this code.

FIRST TENANT FINISH. The first tenant finish(es) in a new structure or *core and shell* building that is credited towards meeting the requirements of this Chapter.

FUEL GAS. A natural gas, manufactured gas, liquefied petroleum gas, or mixtures of these gasses.

FUEL OIL. Kerosene or any hydrocarbon oil having a flash point of not less than 100°F (38°C).

Explanatory Note: "Future Electric Equipment" includes both the primary electrical equipment that will replace any combustion equipment (usually the appliance itself such as the space heater, water heater, stove, etc.), and any supplemental equipment that may be necessary for the installation of electric equipment (such as condensing units, air handlers, etc.).

FUTURE ELECTRIC EQUIPMENT. Equipment or appliances necessary to support future all-electric space and water heating, cooking, or clothes drying.

PLUG-IN HYBRID ELECTRIC VEHICLE. An *electric vehicle* having a second source of motive power.

RESIDENTIAL BUILDING. For this code, one- and two-family dwellings and townhouses as defined in the International Residential Code.

SOLAR-READY ZONE. A section or sections of the roof or building overhang designated and reserved for future installation of a solar photovoltaic system or solar thermal system.

Chapter 3 Electric Ready

PART 1 RESIDENTIAL ELECTRIC READY

SECTION RE301 SCOPE

Explanatory Note: Per state statute (CRS 30-28-211 for counties and CRS 31-15-602 for municipalities), counties and municipalities must adopt an energy code, including the Model Electric and Solar Ready Code, that applies to all new construction and "major renovations and additions". Major renovations and additions are not defined in the state statute or this model code, therefore each AHJ has full discretion in defining what is considered a "major renovation" and "major addition" where the full model code would be enforced. Note: This scope language is consistent throughout the code, with the exception of Chapter 3, Part 2.

RE301.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

RE302.1 Additional Electric Infrastructure. *Combustion equipment* in *residential buildings* must meet the requirements of Sections **RE302.2** through **RE302.6**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.
2. Exterior fireplaces and firepits.

RE302.2 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

Explanatory Note: The code official in each AHJ has full discretion to determine what is considered "reasonable access".

2. An electric receptacle or junction box that meets the requirements of Section **RE302.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated physical space shall be provided for *future electric equipment,* including an electric resistance backup coil for ducted systems, if applicable.

   Exception: Dwelling units with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

RE302.3 Electrical Panel Space. The electrical panel shall have a reserved space for a minimum two-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances.

Explanatory Note: Labeling is required to ensure the reserved space in the electrical panel is reserved for the specific future intended use.

RE302.4 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

Explanatory Note: The 3 feet adjacency requirement for non-HVAC equipment is intended to accommodate the shorter power cords typically provided by manufacturers while allowing up to 6 feet for HVAC equipment to provide more flexibility with regard to equipment location.

RE302.5 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances, or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

> **Exception:** For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

RE302.6 Condensate Drain. Where *combustion equipment* for space heating and water heating is installed, a location shall be provided for condensate drainage.

PART 2 COMMERCIAL ELECTRIC READY

SECTION CE301 SCOPE

Explanatory Note: See explanatory note for "First Tenant Finish" definition.

CE301.1 General. These provisions shall be applicable for all new buildings, additions, and *first tenant finish* permits.

> **CE301.1.1 First Tenant Finishes.** In the case that a *first tenant finish* to a commercial *core and shell* building or unfinished space is credited towards

meeting the requirements of this Chapter, the *code official* shall not issue a Certificate of Occupancy to the tenant until the requirements of Section **CE302** are met.

SECTION CE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

CE302.1 Additional Electric Infrastructure. *Combustion equipment* in *commercial buildings* shall meet the electric infrastructure requirements of Sections **CE302.2** or **CE302.3**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.
2. Exterior fireplaces and fire pits.
3. Additions to buildings that do not provide new space-heating equipment will not be required to provide additional electrical infrastructure to the existing space-heating equipment.

Explanatory Note: The commercial requirements are broken out into two groups. The first is commercial buildings less than 10,000 sq ft ("small") and ALL R-Occupancies, regardless of size. The second group is all commercial buildings equal to or greater than 10,000 sq ft ("large"), not including R-Occupancies (which are covered under the "small" commercial building section). The state statute (CRS 24-38.5-401) included provisions that separated requirements for buildings based on this 10,000 sq ft threshold. The code requirements for R-Occupancies aligned with those of small commercial buildings during code development, which led to this grouping.

CE302.2 Commercial Buildings Less than 10,000 sq. ft. and all R-Occupancies. *Commercial buildings* that have a gross floor area of less than 10,000 sq. ft., and all R-occupancies of any size, shall comply with Sections **CE302.2.1** through **CE302.2.5**.

CE302.2.1 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

2. An electric receptacle or junction box that meets the requirements of Section **CE302.2.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated space shall be provided for all *future electric equipment*, including an electric resistance backup coil for ducted systems if applicable.

   Exception: Buildings with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

Explanatory Note: This section requires that panel space be provided for future electrical equipment and its supplemental equipment. Projects may use their discretion in determining if two-pole or three-pole circuit breakers will be required for future electric equipment.

CE302.2.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

Explanatory Note: Labeling is required to ensure the reserved space in the electrical panel is reserved for the specific future intended use.

CE302.2.3 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

Explanatory Note: As with residential, the 3 feet adjacency requirement for non-HVAC equipment is intended to accommodate shorter power cords provided by manufacturers while still allowing flexibility for up to 6 feet for HVAC equipment.

CE302.2.4 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

Exception: For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

CE302.2.5 Condensate Drain. Where *combustion equipment* dedicated to space heating and water heating is installed, a location shall be provided for condensate drainage.

CE302.3 Commercial Buildings 10,000 sq. ft. or Greater. All *commercial buildings* that have a gross floor area of 10,000 sq. ft. or greater shall comply with the following requirements.

Exception: R-occupancies.

Explanatory Note: Commercial buildings greater than 10,000 sq ft, except R-occupancies, are not required to install electrical wire in the conduit for all future electric equipment. Only conduit and junction boxes are required for this section.

CE302.3.1 Combustion Equipment or Appliances. All *combustion equipment* shall be provided with the following:

1. A junction box that is located in the same physical space as the *combustion equipment* and is reasonably accessible, and that is connected to the electrical panel by continuous conduit and/or

raceways.

2. Dedicated electrical panel space for an appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.
3. Where *combustion equipment* is used for space and water heating, dedicated physical space shall be provided for all *future electric equipment*.

Explanatory Note: This section requires that panel space be provided for future electrical equipment and its supplemental equipment. Projects may use their discretion in determining if two-pole or three-pole circuit breakers will be required for future electric equipment.

CE302.3.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

Explanatory Note: This section requires labeling for the electrical panel that clarifies the intent to use the additional electrical panel space for future electrification.

CE302.3.3 Labeling. The dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled "For future electric equipment".

Explanatory Note: This section requires that physical space be reserved in large commercial buildings for future electrical service infrastructure, which may include additional transformers.

CE302.3.4 Physical Space. Dedicated physical space shall be provided for additional electric equipment, including but not limited to transformers and cabinets, necessary for electrical service to *future electric equipment* or appliances.

Chapter 4 Solar Ready

PART 1 RESIDENTIAL SOLAR READY.

Explanatory Note: This chapter draws directly from Appendix RB Solar - Ready Provisions - Detached One-And Two-Family Dwellings and Townhouses of the 2021 IECC. Any major changes will be described as an explanatory note.

SECTION RS401 SCOPE.

Explanatory Note: See explanatory note for RE301.1.

RS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION RS402 SOLAR READY ZONE.

Explanatory Note: This section was updated to reflect this code's definition of residential buildings. In addition, this section includes a requirement that all low-sloped roofs must meet solar ready requirements.

RS402.1 General. New *residential buildings* with not less than 600 square feet of roof area oriented between 110 degrees and 270 degrees of true north or that is a low-sloped roof, shall comply with Sections **RS402.2** through **RS402.8**.

Explanatory Note: The on-site renewable energy system must be directly connected to the electrical system of the dwelling unit and provide power to that dwelling unit to qualify for Exception 1.

Exceptions:

1. New residential dwelling units with a permanently installed on-site renewable energy system that provides electricity to the dwelling unit's electrical system.
2. A building where all areas of the roof that would otherwise meet the requirements of Section **RS402** are in full or partial shade for more than 70 percent of daylight hours annually.

RS402.2 Construction Document Requirements for Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

Explanatory Note: The Solar-Ready Zone Areas provision includes townhouses and ensures that minimum solar-ready zone areas for townhouses are calculated on a per-townhouse unit basis.

RS402.3 Solar-Ready Zone Areas. The total *solar-ready zone* area for each dwelling unit shall be not less than 300 square feet exclusive of mandatory access or setback areas as required by the International Fire Code. The *solar-ready zone* shall be composed of areas not less than 5 feet in width and not less than 80 square feet exclusive of access or setback areas as required by the International Fire Code.

> **Exception**: New townhouses three stories or less in height above grade plane and with a total floor area less than or equal to 2,000 square feet of conditioned space per townhouse unit shall have a *solar-ready zone* area of not less than 150 square feet.

RS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including but not limited to, vents, chimneys, and roof-mounted equipment.

RS402.5 Shading. The *solar-ready zone* shall be set back from any existing or new permanently affixed object on the building or site that is located south, east, or west of the *solar-ready zone* a distance not less than two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees, and roof plantings either existing at the time of permit application or planned for on the construction documents.

RS402.6 Roof Load Documentation. The structural design loads of roof dead load and roof live load shall be clearly indicated on the construction documents.

Explanatory Note: Designers must include at least one potential pathway for the conduit between the solar-ready zone and the electrical panel in the construction documents, but solar installers are not required to use that pathway at time of installation.

RS402.7 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to the electrical service panel and shall be labeled as "Potential Pathway" on the construction documents.

RS402.8 Electrical Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow the installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

Explanatory Note: Section RS402.9 removed the requirement from the Appendix RB for the builder or a registered design professional to be responsible for posting the certificate.

RS402.9 Construction Documentation Certificate. A permanent certificate, indicating the *solar-ready zone* and other requirements of this Part, shall be posted near the electrical distribution panel, water heater, or other conspicuous location.

PART 2 COMMERCIAL SOLAR READY

Explanatory Note: This chapter draws directly from Appendix CB Solar Ready Zone - Commercial of the 2021 IECC. Any major changes will be described as an explanatory note.

SECTION CS401 SCOPE

Explanatory Note: See explanatory note for RE301.1.

CS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION CS402 SOLAR-READY ZONE

Explanatory Note: This section includes low-sloped roofs in the solar ready requirements.

CS402.1 General. A *solar-ready zone* shall be located on the roof of all new *commercial buildings* that are oriented between 110 and 270 degrees of true north or

have low-sloped roofs. *Solar-ready zones* shall comply with Sections **CS402.2** through **CS402.7**.

Explanatory Note: Section CS402.1 Exception 1 was updated to include a minimum energy production requirement for the qualifying on-site renewable energy system. A building project seeking an exception to the solar-ready zone requirements must install an on-site renewable energy system that meets the minimum energy production requirement. Criteria B of Exception 1 intends to provide flexibility and accommodate site or design constraints with regard to the location of the on-site system.

Exceptions:

1. A building with a permanently-installed, on-site renewable energy system that meets the following criteria.
    a. The system produces the energy output equivalent to covering 40 percent of the net roof area with solar photovoltaic calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code.
    b. The system is located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership.
2. A building with a *solar-ready zone* that is shaded for more than 70 percent of daylight hours annually.
3. A building where a licensed design professional certifies that the incident solar radiation available to the building is not suitable for a *solar-ready zone*.
4. A building where a licensed design professional certifies that the *solar-ready zone* area required by Section **CS402.3** cannot be met because of extensive rooftop equipment, skylights, vegetative roof areas, or other obstructions.

CS402.2 Construction Document Requirements for a Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

Explanatory Note: This section allows the solar-ready zone to be designated on other areas of the building site other than the roof of the main building.

CS402.3 Solar-Ready Zone Area. The total *solar-ready zone* area shall not be less than 40 percent of the roof area calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code. The *solar-ready zone* shall be a single area or smaller, separated sub-zone areas. Each sub-zone area shall be not less than 5 feet in width in the narrowest dimension.

The *solar-ready zone* shall be located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership .

CS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including pipes, vents, ducts, HVAC equipment, skylights, and roof-mounted equipment.

Explanatory Note: This section removes Appendix CB requirement of a minimum 5 lb per sq ft minimum roof load, with the intent to reduce the design burden on engineers and potential costs of over-engineering the roof.

CS402.5 Roof Loads and Documentation. The structural design loads for roof dead load and roof live load shall be indicated on the construction documents.

Explanatory Note: Designers must include at least one potential pathway for the conduit between the solar-ready zone and the electrical panel in the construction documents, but solar installers are not required to use that pathway at time of installation.

CS402.6 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to an electrical service panel and shall be labeled as “Potential Pathway” on the construction documents.

Explanatory Note: This section adds the requirement for a 200 amp bus bar rating to be present in the electrical panel to ensure adequate space is available for future solar PV.

CS402.7 Electrical Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have a reserved space to allow installation of a dual-pole circuit breaker for future solar electric. This space shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the end of the panel that is opposite from the panel supply conductor connection.

PART 3 RESIDENTIAL SOLAR PANEL CAPACITY

Explanatory Note: Part 3 requires electrical panel space be reserved for future solar PV even if the building does not have to comply with the solar ready requirements. This is designed to accommodate future solar PV or solar thermal technologies, or ground mount systems, that could produce some renewable energy output using less or no physical roof space than the required solar-ready zone. In every case, sufficient electrical panel space shall be provided even if the roof does not have the required solar-ready zone, so as to not limit future owners from pursuing solar PV.

SECTION RS410 SCOPE

Explanatory Note: See the explanatory note for RE301.1.

RS410.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

RS410.2 Electric Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

> **Exception**: A dwelling unit that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the dwelling unit's electrical system.

PART 4 COMMERCIAL SOLAR PANEL CAPACITY

Explanatory Note: Part 4 adds a separate requirement that electrical panel space be reserved for future solar PV even if the building does not have to comply with the solar ready requirements. See the explanatory note for Part 3.

SECTION CS410 SCOPE

Explanatory Note: See explanatory note for RE301.1.

CS410.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

CS410.2 Electric Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

> **Exception:** A building that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the building's electrical system.

Chapter 5 Electric Vehicle Ready

Explanatory Note: The provisions of Chapter 5 apply only to NEW parking provided for either residential or commercial buildings. These provisions should not be read to require installation of parking where a developer does not wish to provide parking and is not required to do so by local zoning or land use codes.

PART 1 RESIDENTIAL ELECTRIC VEHICLE READY

SECTION RV501 SCOPE

Explanatory Note: See the explanatory note for RE301.1.

RV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

RV502 Electric Vehicle Power Transfer Infrastructure. New vehicle parking spaces for *residential buildings* shall be provided in accordance with Sections **RV502.1** and **RV502.3**.

RV502.1 One- and Two-family Dwellings and Townhouses. Each dwelling unit with a dedicated attached or detached garage or other onsite designated parking provided for the dwelling unit shall be provided with one *EV ready space* per dwelling unit.

Explanatory Note: The exception for this section is intended to exempt installers from installing a receptacle when the future electric vehicle supply equipment will be hardwired into the building.

RV502.2 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle, located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle for the electrical facilities of this section is installed adjacent to and between both parking spaces.
2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).
3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment".

   Exception: A receptacle need not be provided if a hard-wired *EVSE* is installed.

RV502.3 Identification. Construction documents shall designate the *EV ready space* and indicate the locations of raceway and/or conduit and the termination points serving them. The circuits or spaces reserved in the electrical panel for *EV ready spaces* shall be clearly identified in the panel or subpanel directory.

PART 2 COMMERCIAL ELECTRIC VEHICLE READY

SECTION CV501 SCOPE

Explanatory Note: See the explanatory note for RE301.1.

CV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION CV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

CV502 Electric Vehicle Power Transfer Infrastructure. Where new parking is provided for *commercial buildings,* it shall be provided with *electric vehicle* power transfer infrastructure in compliance with Sections **CV502.1** through **CV502.9**.

CV502.1 Quantity. The number of required *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces* shall be determined in accordance with this Section and **Table CV502.1** based on the total number of provided vehicle parking spaces and shall be rounded up to the nearest whole number. This includes all covered parking under carports or detached garages.

CV502.1.1 Where more than one parking lot is provided on a building site, the number of provided vehicle parking spaces required to have *EV* power transfer infrastructure shall be calculated separately for each parking lot.

CV502.1.1.1 R-2 Occupancies, as defined in Chapter 3 of the International Building Code, shall use the total parking requirement for the entire development to determine the *EV* power transfer infrastructure requirements using **Table CV502.1**.

Explanatory Note: This section allows commercial buildings and R-2 Occupancies to substitute other space types for DC fast chargers.

CV502.1.2 For *commercial buildings* that install a *DCFC EVSE,* each *DCFC EVSE* installed shall be permitted to be substituted for other space types as follows:

1. *Commercial buildings* other than R-2 Occupancies shall be permitted to substitute up to 10 spaces when the building provides a minimum of 20 percent of parking spaces as a combination of *EV Capable*, *EV ready*, or *EVSE installed spaces*.
2. R-2 Occupancies shall be permitted to substitute up to 5 spaces when the building provides a minimum of 60 percent of parking spaces as a

combination of *EV Capable light, EV Capable, EV ready*, or *EVSE installed spaces*.

Explanatory Note: Section CV502.1.3-CV502.1.51.2 were added to allow for EVSE installed spaces, EV ready spaces, and EV capable spaces that exceed the minimum requirement to substitute for less stringent space types.

CV502.1.3 *EVSE installed spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV ready spaces*, *EV capable spaces*, and *EV capable light spaces*.

CV502.1.4 E*V ready spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV capable spaces* and *EV capable light spaces*.

CV502.1.5 *EV capable spaces* that exceed the minimum requirements of this section are permitted to be used to meet the minimum requirements for *EV capable light spaces*.

CV502.1.6 All attached garages with direct connection to a dwelling unit will be required to have one *EV ready space*.

Explanatory Note: Multifamily buildings (R-2 occupancies) are separated out from all other commercial buildings in this table, and the parking lot sizes are broken down between small lots (10 or fewer spaces) and large lots (greater than 10 spaces) for both commercial and multifamily.

Table CV502.1: EV Power Transfer Infrastructure Requirements

Building Type / Space Type	*EVSE Installed Space*	*EV Ready Space*	*EV Capable Space*	*EV Capable Light Space*
All *commercial buildings*, except for R-2 occupancies, with 10 or less parking spaces.	0	2 spaces	0	0
***Commercial buildings*, except for R-2 occupancies, with greater than 10 parking spaces.**	2% of spaces	8% of spaces	10% of spaces	10% of spaces
R-2 occupancies with 10 or less parking spaces	0	15% of spaces	10% of spaces	10% of spaces
R-2 occupancies with greater than 10 parking spaces.	5% of spaces	15% of spaces	10% of spaces	30% of spaces

Explanatory Note: Section CV502.2 defines the requirements for an EV capable light space, which is a new space type introduced in this code. EV capable light spaces require only conduit to be run, and dedicated physical space for future electrical service equipment to be provided. Unlike the requirements for EV capable spaces, EV capable light spaces do not require a building to provide sufficient electrical panel space or actual electric service capacity for future EV charging.

CV502.2 EV Capable Light Spaces. Each *EV capable light space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable light space* and shall be capped. *EV capable light*

includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.

2. Installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
3. Dedicated physical space to accommodate all equipment necessary for electrical service to future *EVSE*.
4. The routing of the raceway and/or conduit must be noted on the construction documents and the raceway shall be permanently and visibly marked "EV CAPABLE" at the load center and termination point locations.

Explanatory Note: The following requirements for EV Capable, EV ready, EVSE, and EVSE installed spaces were included in the state statute requirements (CRS 24-38.5-401).

CV502.3 EV Capable Spaces. Each *EV capable space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable space* and shall be capped. *EV capable* includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.
2. The installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
3. The electrical panel or other electrical distribution equipment to which the raceway and/or conduit connects shall have sufficient dedicated space and spare electrical capacity to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
4. The termination point of the conduit and/or raceway and the electrical distribution equipment directory shall be marked: "For future electric vehicle supply equipment (EVSE)."
5. Reserved capacity shall be no less than 8.3 kVA (40A 208/240V) for each *EV capable space*.

CV502.4 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle or junction box located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle is installed adjacent to and between both parking spaces.
2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).
3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment (EVSE)."

CV502.5 Electric Vehicle Supply Equipment (EVSE). All *EVSE* shall meet all of the following requirements:

1. The installed *EVSE* shall meet one of the following requirements:
    a. A power capacity of at least 6.2 kVa (or 30A at 208/240V) and has the ability to connect to the internet.
    b. An inductive charging system for battery-powered *electric vehicles* that:
        i. Is ENERGY STAR certified; and
        ii. Has the ability to connect to the internet.
2. An *electric vehicle* charging system shall be wall-mounted or pedestal style and may provide multiple cords to connect with *electric vehicles*.
3. An *electric vehicle* charging system shall be listed and labeled for *EV* charging and must comply with the current version of Article 625 of the National Electrical Code.

CV502.6 EVSE Installed Spaces. An installed *EVSE* with multiple output connections shall be permitted to serve multiple *EVSE installed spaces*. Each *EVSE* installed serving either a single *EVSE installed space* or multiple *EVSE installed spaces*, shall comply with all of the following:

1. Have a minimum charging rate in accordance with Section **CV502.7**.
2. Be located within 3 feet of each *EVSE installed space* it serves.
3. Be installed in accordance with Section **CV502.8**.
4. Have a minimum circuit capacity of 8.3 kVA (40A 208/240V).
5. Must meet the requirements of Section **CV502.5**.

Explanatory Note: Section CV502.7 adds a minimum charging rate requirement for EVSE installed spaces. This section includes an allowance for a lower minimum charging rate for EVSE installed spaces served by a load management system.

CV502.7 EVSE Minimum Charging Rate. Each installed *EVSE* shall comply with one of the following:

1. Be capable of charging at a minimum rate of 6.2 kVA (or 30A at 208/240V).
2. When serving multiple *EVSE installed spaces* and controlled by an energy management system providing load management, be capable of simultaneously sharing each *EVSE installed space* at a minimum charging rate of no less than 3.3 kVA.

Explanatory Note: Section CV502.8 includes reference to the Accessibility Chapter in the International Building Code, which governs accessibility of parking, to ensure all EVSE installed spaces are accessible.

CV502.8 EVSE Installation. *EVSE* shall be installed in accordance with NFPA 70 and shall be listed and labeled in accordance with UL 2202 or UL 2594. When serving an accessible parking space, *EVSE* shall be accessible in accordance with the International Building Code Chapter 11.

CV502.9 Identification. Construction documents shall designate all *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces,* and indicate the locations of raceway and/or conduit and termination points serving them. The circuits or spaces reserved for *EVSE installed spaces, EV ready spaces,* and *EV capable spaces* shall be clearly identified in the panel or subpanel directory. The raceway and/or conduit for *EV ready spaces, EV capable spaces* and *EV capable light spaces* shall be clearly identified at both the panel or subpanel and the termination point at the parking space.

COLORADO
Energy Office

Colorado Model Electric Ready and Solar Ready Code

Published: June 1, 2023

COLORADO
Department of Local Affairs

Chapter 1 Scope and Administration

SECTION 101 SCOPE AND GENERAL REQUIREMENTS.

101.1 Title. This code shall be known as the **Electric Ready and Solar Ready Code** of [NAME OF JURISDICTION], and shall be cited as such. It is referred to herein as "this code".

101.2 Scope. This code applies to all buildings and dwelling units, and the buildings' sites and associated systems and equipment.

101.3 Intent. This code shall regulate the design and construction of buildings to prepare new buildings for solar photovoltaic or solar thermal, electric vehicle charging infrastructure, and electrification of building systems. This code is intended to provide flexibility and balance upfront construction costs with the future cost to retrofit buildings to accommodate these systems. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

101.4. Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

> **101.4.1 Residential Buildings.** *Residential buildings* must comply with the Residential Chapters of this code.
>
> **101.4.2 Commercial Buildings.** *Commercial buildings* must comply with the Commercial Chapters of this code.

SECTION 102 WAIVER AND VARIANCE.

102.1 Scope. The following waivers shall be permitted to be requested if buildings meet the following requirements.

> **102.1.1 Commercial Buildings Greater than 10,000 sq. ft.** *Commercial buildings* that have a gross floor area greater than 10,000 sq. ft. shall be eligible to request

a partial waiver to the requirements of this code if they meet the requirements of Section **102.2**.

102.1.2 Buildings Impacted by a Natural Disaster. [NAME OF JURISDICTION] is permitted to authorize, upon appeal in specific cases, a waiver from the requirements of this code where, owing to a declared natural disaster that has destroyed buildings or resulted in other exceptional and extraordinary circumstances as determined by [NAME OF JURISDICTION], and [NAME OF JURISDICTION] determines enforcement of the provisions of this code will result in unnecessary hardship.

102.2 Substantial Cost Differential Waiver. [NAME OF JURISDICTION] shall be permitted to authorize, upon appeal, a waiver from the requirements of this code for an applicant that asserts that compliance with this code will result in a substantial cost differential. [NAME OF JURISDICTION], when authorizing such a waiver, shall be permitted to waive certain requirements of this code only until the cost differential for compliance with the remaining requirements reaches one percent or less. The burden of proof is upon the applicant to provide substantiation of a cost differential, such as quotes or other licensed design professional analyses as *approved* by [NAME OF JURISDICTION].

102.2.1 Substantial Cost Differential. For the purposes of Section **102.2**, "substantial cost differential" means costs incurred as a result of compliance with the requirements of this code would exceed one percent of total mechanical, electrical, and plumbing construction costs inclusive of materials and labor.

SECTION 103 CONSTRUCTION DOCUMENTS.

103.1 General. Construction documents and other supporting data shall be submitted in one or more sets, or in a digital format where allowed by the *code official*, with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the *code official* is authorized to require necessary construction documents to be prepared by a registered design professional.

Exception: The *code official* is authorized to waive the requirements for construction documents or other supporting data if the *code official* determines they are not necessary to confirm compliance with this code.

103.2 Information on Construction Documents. Construction documents shall be drawn to scale on suitable material. Electronic media documents are permitted to be submitted where *approved* by the *code official*. Construction documents shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems, and equipment as herein governed. Details shall include, but are not limited to, the following as applicable:

1. Location and size of the *solar-ready zone.*
2. Structural design loads of roof dead load and roof live load.
3. Pathways for routing of conduit from the *solar-ready zone* to the electrical service panel.
4. Number and location of *EV capable light spaces.*
5. Number and location of *EV capable spaces.*
6. Number and location of *EV ready spaces.*
7. Number and location of *EVSE installed spaces.*
8. Locations of conduit and termination points serving the aforementioned parking spaces.
9. Location for condensate drainage where *combustion equipment* for space heating and water heating is installed.

103.3 Examination of Documents. The *code official* shall examine or cause to be examined the accompanying documents and shall ascertain whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances. The *code official* is authorized to utilize a registered design professional, or other *approved* entity not affiliated with the building design or construction, in conducting the review of the plans and specifications for compliance with the code.

103.3.1 Approval of Construction Documents. When the *code official* issues a permit where construction documents are required, the construction documents shall be endorsed in writing and stamped "Reviewed for Code

Compliance". Such *approved* construction documents shall not be changed, modified, or altered without authorization from the *code official*. Work shall be done in accordance with the *approved* construction documents.

One set of "Reviewed for Code Compliance" construction documents shall be retained by the *code official*. The other set shall be returned to the applicant, kept at the site of work, and shall be open to inspection by the *code official* or a duly authorized representative.

103.3.2 Previous Approvals. This code shall not require changes in the construction documents, construction, or designated occupancy of a structure for which a lawful permit has been heretofore issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within 180 days after the effective date of this code and has not been abandoned; except that the *code official* is authorized to grant one or more extensions of time for additional periods not exceeding 180 days each.

103.3.3 Phased Approval. The *code official* shall have the authority to issue a permit for the construction of part of a solar ready, EV ready, or electric ready installation before the construction documents for the entire system have been submitted or *approved*, provided that adequate information and detailed statements have been filed complying with all pertinent requirements of this code. The holders of such permit shall proceed at their own risk without assurance that the permit for the entire solar ready, EV ready, or electric ready installation will be granted.

I103.4 Amended Construction Documents. Changes made during construction that are not in compliance with the *approved* construction documents shall be resubmitted for approval as an amended set of construction documents.

103.5 Retention of Construction Documents. One set of *approved* construction documents shall be retained by the *code official* for a period of not less than 180 days from the date of completion of the permitted work, or as required by state or local laws.

103.6 Building Documentation and Closeout Submittal Requirements. The construction documents shall specify that the documents described in this section be

provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the certificate of occupancy.

Exception: *Residential buildings.*

103.6.1 Record Documents. Construction documents shall be updated to convey a record of the completed work. Such updates shall include mechanical, electrical, and control drawings that indicate all changes to size, type, and location of components, equipment, and assemblies.

103.6.2 Compliance Documentation. Compliance documentation and supporting calculations shall be delivered in one document to the building owner as a part of the project record documents or manuals, or as a standalone document. This document shall include the specific energy code edition utilized for compliance determination for each system.

SECTION 104 INSPECTIONS.

104.1 General. Construction or work for which a permit is required shall be subject to inspection by the *code official*, his or her designated agent or an *approved agency*, and such construction or work shall remain visible and able to be accessed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain visible and/or able to be accessed for inspection purposes. Neither the *code official* nor the jurisdiction shall be liable for expenses entailed in the removal or replacement of any material, product, system or building component required to allow an inspection to validate compliance with this code.

104.2 Required Inspections. The *code official*, his or her designated agent or an *approved agency*, upon notification, shall make the inspections set forth in Sections **104.2.1** through **104.2.4**.

104.2.1 Solar Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. The location and size of the *solar-ready zone* or the capacity of an installed on-site renewable energy system.
2. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel that are properly labeled.

104.2.2 Electric Vehicle Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. *EV* power transfer infrastructure requirements.
2. Electrical equipment associated with each parking space type, including branch circuits, conduit and/or raceway, junction boxes, receptacles, and *EVSE* are properly labeled and installed.
3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled, if applicable.

104.2.3 Electric Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. Branch circuits, conduit and/or raceway, wiring, junction boxes, and receptacles for *future electric equipment* or appliances are properly labeled and installed, as applicable.
2. Reserved physical space for *future electric equipment* or appliances.
3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled.

104.2.4 Final Inspection. The final inspection shall include verification of the installation and proper labeling of all requirements of this code.

104.3 Reinspection. A building shall be reinspected where determined necessary by the *code official*.

104.4 Approved Inspection Agencies. The *code official* is authorized to accept reports of third-party inspection agencies not affiliated with the building design or construction, provided that such agencies are *approved* as to qualifications and reliability relevant to the building components and systems that they are inspecting.

104.5 Inspection Requests. It shall be the duty of the holder of the permit or their duly authorized agent to notify the *code official* when work is ready for inspection. It shall

be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

104.6 Reinspection and Testing. Where any work or installation does not pass an initial test or inspection, the necessary corrections shall be made to achieve compliance with this code. The work or installation shall then be resubmitted to the *code official* for inspection and testing.

SECTION 105 NOTICE OF APPROVAL.

105.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the *code official*.

105.2 Revocation. The *code official* is authorized to suspend or revoke, in writing, a notice of approval issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

SECTION 106 VALIDITY.

106.1 General. If a portion of this code is held to be illegal or void, such a decision shall not affect the validity of the remainder of this code.

SECTION 107 REFERENCED STANDARDS.

107.1 General. The codes and standards referenced in this code shall be listed in Section **107.2**, and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference.

107.2 Referenced Codes and Standards. The codes and standards referenced in this code are as follows:

1. International Building Code
    a. Chapter 3
    b. Chapter 11
2. International Energy Conservation Code
3. International Fire Code

4. International Residential Code
5. National Electrical Code Article 625
6. UL2202 and 2594

107.2.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

107.2.2 Provisions in Referenced Codes and Standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

107.3 Applications of References. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section, or provision of this code.

107.4 Other Laws. The provisions of this code shall not be deemed to nullify any provisions of local, state, or federal law.

SECTION 108 STOP WORK ORDER.

108.1 Authority. Where the *code official* finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the *code official* is authorized to issue a stop work order.

108.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property, the owner's authorized agent, or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.

108.3 Emergencies. Where an emergency exists, the *code official* shall not be required to give a written notice prior to stopping the work.

108.4 Failure to Comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by [NAME OF JURISDICTION].

SECTION 109 BOARD OF APPEALS.

109.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the *code official* relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The *code official* shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the *code official*.

109.2 Limitations on Authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall not have the authority to waive the requirements of this code.

109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of [NAME OF JURISDICTION].

Chapter 2 Definitions

SECTION 201 GENERAL.

201.1 Scope. Unless stated otherwise, the following words and terms in this code shall have the meanings indicated in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural includes the singular.

201.3 Terms Defined in Other Codes. Terms that are not defined in this code but are defined in the International Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Energy Conservation Code, or International Residential Code shall have the meanings ascribed to them in those codes.

201.4 Terms not Defined. Terms not defined by this chapter or the codes listed under 201.3 shall have ordinarily accepted meanings such as the context implies.

SECTION 202 GENERAL DEFINITIONS.

APPROVED. Acceptable to the *code official*.

APPROVED AGENCY. An established and recognized agency that is regularly engaged in conducting tests or furnishing inspection services, or furnishing product certification, where such agency has been approved by the *code official.*

CODE OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

COMBUSTION EQUIPMENT. For this code, any equipment or appliance used for space-heating, service water heating, cooking, clothes drying or lighting that uses *fuel gas* or *fuel oil*.

COMMERCIAL BUILDING. For this code, all commercial buildings and R-Occupancies that are covered by the International Building Code.

CORE AND SHELL. The first phase of a commercial project that has the outer building envelope constructed and may contain interior lighting and heating and has not received a permanent Certificate of Occupancy.

DIRECT CURRENT FAST CHARGER (DCFC) EVSE. Equipment capable of fast charging on a 100A or higher 480VAC three-phase branch circuit. AC power is converted into a controlled DC voltage and current within the *EVSE* that will then directly charge the *electric vehicle*.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, including but not limited to, passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, *EVSE*, a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current. Off-road, self-propelled electric mobile equipment, including but not limited to, industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, and boats are not considered electric vehicles.

ELECTRIC VEHICLE CAPABLE LIGHT SPACE (EV CAPABLE LIGHT SPACE). A designated vehicle parking space that has conduit and/or raceway installed to support future implementation of *electric vehicle* charging installation, and has sufficient physical space adjacent to the existing electrical equipment for future electric upgrades.

ELECTRIC VEHICLE CAPABLE SPACE (EV CAPABLE SPACE). A designated vehicle parking space that has the electric panel capacity and conduit and/or raceway installed to support future implementation of *electric vehicle* charging.

ELECTRIC VEHICLE READY SPACE (EV READY SPACE). A designated vehicle parking space that has the electric panel capacity, raceway wiring, receptacle, and circuit overprotection devices installed to support future implementation of *electrical vehicle* charging.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). An *electric vehicle* charging system or device that is used to provide electricity to a plug-in *electric vehicle* or *plug-in hybrid electric vehicle*, is designed to ensure that a safe connection has been made between the electrical grid and the vehicle, and is able to communicate with the vehicle's control system so that electricity flows at an appropriate voltage and current level.

ELECTRIC VEHICLE SUPPLY EQUIPMENT INSTALLED SPACE (EVSE INSTALLED SPACE). A vehicle parking space that is provided with a dedicated *EVSE* connection.

FIRST TENANT FINISH. The first tenant finish(es) in a new structure or *core and shell* building that is credited towards meeting the requirements of this Chapter.

FUEL GAS. A natural gas, manufactured gas, liquefied petroleum gas, or mixtures of these gasses.

FUEL OIL. Kerosene or any hydrocarbon oil having a flash point of not less than 100°F (38°C).

FUTURE ELECTRIC EQUIPMENT. Equipment or appliances necessary to support future all-electric space and water heating, cooking, or clothes drying.

PLUG-IN HYBRID ELECTRIC VEHICLE. An *electric vehicle* having a second source of motive power.

RESIDENTIAL BUILDING. For this code, one- and two-family dwellings and townhouses as defined in the International Residential Code.

SOLAR-READY ZONE. A section or sections of the roof or building overhang designated and reserved for future installation of a solar photovoltaic system or solar thermal system.

Chapter 3 Electric Ready

PART 1 RESIDENTIAL ELECTRIC READY

SECTION RE301 SCOPE

RE301.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

RE302.1 Additional Electric Infrastructure. *Combustion equipment* in *residential buildings* must meet the requirements of Sections **RE302.2** through **RE302.6**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.
2. Exterior fireplaces and firepits.

RE302.2 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

2. An electric receptacle or junction box that meets the requirements of Section **RE302.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated physical space shall be provided for *future electric equipment,* including an electric resistance backup coil for ducted systems, if applicable.

   Exception: Dwelling units with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

RE302.3 Electrical Panel Space. The electrical panel shall have a reserved space for a minimum two-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances.

RE302.4 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

RE302.5 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances, or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

Exception: For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

RE302.6 Condensate Drain. Where *combustion equipment* for space heating and water heating is installed, a location shall be provided for condensate drainage.

PART 2 COMMERCIAL ELECTRIC READY

SECTION CE301 SCOPE

CE301.1 General. These provisions shall be applicable for all new buildings, additions, and *first tenant finish* permits.

CE301.1.1 First Tenant Finishes. In the case that a *first tenant finish* to a commercial *core and shell* building or unfinished space is credited towards meeting the requirements of this Chapter, the *code official* shall not issue a

Certificate of Occupancy to the tenant until the requirements of Section **CE302** are met.

SECTION CE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

CE302.1 Additional Electric Infrastructure. *Combustion equipment* in *commercial buildings* shall meet the electric infrastructure requirements of Sections **CE302.2** or **CE302.3**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.
2. Exterior fireplaces and fire pits.
3. Additions to buildings that do not provide new space-heating equipment will not be required to provide additional electrical infrastructure to the existing space-heating equipment.

CE302.2 Commercial Buildings Less than 10,000 sq. ft. and all R-Occupancies. *Commercial buildings* that have a gross floor area of less than 10,000 sq. ft., and all R-occupancies of any size, shall comply with Sections **CE302.2.1** through **CE302.2.5**.

CE302.2.1 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

2. An electric receptacle or junction box that meets the requirements of Section **CE302.2.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated space shall be provided for all *future electric equipment*,

including an electric resistance backup coil for ducted systems if applicable.

Exception: Buildings with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

CE302.2.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

CE302.2.3 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

CE302.2.4 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

Exception: For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

CE302.2.5 Condensate Drain. Where *combustion equipment* dedicated to space heating and water heating is installed, a location shall be provided for condensate drainage.

CE302.3 Commercial Buildings 10,000 sq. ft. or Greater. All *commercial buildings* that have a gross floor area of 10,000 sq. ft. or greater shall comply with the following requirements.

Exception: R-occupancies.

CE302.3.1 Combustion Equipment or Appliances. All *combustion equipment* shall be provided with the following:

1. A junction box that is located in the same physical space as the *combustion equipment* and is reasonably accessible, and that is connected to the electrical panel by continuous conduit and/or raceways.
2. Dedicated electrical panel space for an appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.
3. Where *combustion equipment* is used for space and water heating, dedicated physical space shall be provided for all *future electric equipment*.

CE302.3.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

CE302.3.3 Labeling. The dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled "For future electric equipment".

CE302.3.4 Physical Space. Dedicated physical space shall be provided for additional electric equipment, including but not limited to transformers and cabinets, necessary for electrical service to *future electric equipment* or appliances.

Chapter 4 Solar Ready

PART 1 RESIDENTIAL SOLAR READY.

SECTION RS401 SCOPE.

RS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION RS402 SOLAR READY ZONE.

RS402.1 General. New *residential buildings* with not less than 600 square feet of roof area oriented between 110 degrees and 270 degrees of true north or that is a low-sloped roof, shall comply with Sections **RS402.2** through **RS402.8**.

Exceptions:

1. New residential dwelling units with a permanently installed on-site renewable energy system that provides electricity to the dwelling unit's electrical system.
2. A building where all areas of the roof that would otherwise meet the requirements of Section **RS402** are in full or partial shade for more than 70 percent of daylight hours annually.

RS402.2 Construction Document Requirements for Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

RS402.3 Solar-Ready Zone Areas. The total *solar-ready zone* area for each dwelling unit shall be not less than 300 square feet exclusive of mandatory access or setback areas as required by the International Fire Code. The *solar-ready zone* shall be composed of areas not less than 5 feet in width and not less than 80 square feet exclusive of access or setback areas as required by the International Fire Code.

Exception: New townhouses three stories or less in height above grade plane and with a total floor area less than or equal to 2,000 square feet of conditioned space per townhouse unit shall have a *solar-ready zone* area of not less than 150 square feet.

RS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including but not limited to, vents, chimneys, and roof-mounted equipment.

RS402.5 Shading. The *solar-ready zone* shall be set back from any existing or new permanently affixed object on the building or site that is located south, east, or west of the *solar-ready zone* a distance not less than two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees, and roof plantings either existing at the time of permit application or planned for on the construction documents.

RS402.6 Roof Load Documentation. The structural design loads of roof dead load and roof live load shall be clearly indicated on the construction documents.

RS402.7 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to the electrical service panel and shall be labeled as "Potential Pathway" on the construction documents.

RS402.8 Electrical Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow the installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

RS402.9 Construction Documentation Certificate. A permanent certificate, indicating the *solar-ready zone* and other requirements of this Part, shall be posted near the electrical distribution panel, water heater, or other conspicuous location.

PART 2 COMMERCIAL SOLAR READY

SECTION CS401 SCOPE

CS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION CS402 SOLAR-READY ZONE

CS402.1 General. A *solar-ready zone* shall be located on the roof of all new *commercial buildings* that are oriented between 110 and 270 degrees of true north or have low-sloped roofs. *Solar-ready zones* shall comply with Sections **CS402.2** through **CS402.7**.

Exceptions:

1. A building with a permanently-installed, on-site renewable energy system that meets the following criteria.
    a. The system produces the energy output equivalent to covering 40 percent of the net roof area with solar photovoltaic calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code.
    b. The system is located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership.
2. A building with a *solar-ready zone* that is shaded for more than 70 percent of daylight hours annually.
3. A building where a licensed design professional certifies that the incident solar radiation available to the building is not suitable for a *solar-ready zone*.
4. A building where a licensed design professional certifies that the *solar-ready zone* area required by Section **CS402.3** cannot be met because of extensive rooftop equipment, skylights, vegetative roof areas, or other obstructions.

CS402.2 Construction Document Requirements for a Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

CS402.3 Solar-Ready Zone Area. The total *solar-ready zone* area shall not be less than 40 percent of the roof area calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code. The *solar-ready zone* shall be a single area or smaller, separated sub-zone areas. Each sub-zone area shall be not less than 5 feet in width in the narrowest dimension.

The *solar-ready zone* shall be located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership .

CS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including pipes, vents, ducts, HVAC equipment, skylights, and roof-mounted equipment.

CS402.5 Roof Loads and Documentation. The structural design loads for roof dead load and roof live load shall be indicated on the construction documents.

CS402.6 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to an electrical service panel and shall be labeled as "Potential Pathway" on the construction documents.

CS402.7 Electrical Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have a reserved space to allow installation of a dual-pole circuit breaker for future solar electric. This space shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the end of the panel that is opposite from the panel supply conductor connection.

PART 3 RESIDENTIAL SOLAR PANEL CAPACITY

SECTION RS410 SCOPE

RS410.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

RS410.2 Electric Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

> **Exception**: A dwelling unit that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the dwelling unit's electrical system.

PART 4 COMMERCIAL SOLAR PANEL CAPACITY

SECTION CS410 SCOPE

CS410.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

CS410.2 Electric Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

> **Exception:** A building that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the building's electrical system.

Chapter 5 Electric Vehicle Ready

PART 1 RESIDENTIAL ELECTRIC VEHICLE READY

SECTION RV501 SCOPE

RV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

RV502 Electric Vehicle Power Transfer Infrastructure. New vehicle parking spaces for *residential buildings* shall be provided in accordance with Sections **RV502.1** and **RV502.3**.

RV502.1 One- and Two-family Dwellings and Townhouses. Each dwelling unit with a dedicated attached or detached garage or other onsite designated parking provided for the dwelling unit shall be provided with one *EV ready space* per dwelling unit.

RV502.2 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle, located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle for the electrical facilities of this section is installed adjacent to and between both parking spaces.
2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).
3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment".

   Exception: A receptacle need not be provided if a hard-wired *EVSE* is installed.

RV502.3 Identification. Construction documents shall designate the *EV ready space* and indicate the locations of raceway and/or conduit and the termination points serving them. The circuits or spaces reserved in the electrical panel for *EV ready spaces* shall be clearly identified in the panel or subpanel directory.

PART 2 COMMERCIAL ELECTRIC VEHICLE READY

SECTION CV501 SCOPE

CV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION CV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

CV502 Electric Vehicle Power Transfer Infrastructure. Where new parking is provided for *commercial buildings,* it shall be provided with *electric vehicle* power transfer infrastructure in compliance with Sections **CV502.1** through **CV502.9**.

CV502.1 Quantity. The number of required *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces* shall be determined in accordance with this Section and **Table CV502.1** based on the total number of provided vehicle parking spaces and shall be rounded up to the nearest whole number. This includes all covered parking under carports or detached garages.

CV502.1.1 Where more than one parking lot is provided on a building site, the number of provided vehicle parking spaces required to have *EV* power transfer infrastructure shall be calculated separately for each parking lot.

CV502.1.1.1 R-2 Occupancies, as defined in Chapter 3 of the International Building Code, shall use the total parking requirement for the entire development to determine the *EV* power transfer infrastructure requirements using **Table CV502.1**.

CV502.1.2 For *commercial buildings* that install a *DCFC EVSE,* each *DCFC EVSE* installed shall be permitted to be substituted for other space types as follows:

1. *Commercial buildings* other than R-2 Occupancies shall be permitted to substitute up to 10 spaces when the building provides a minimum of 20 percent of parking spaces as a combination of *EV Capable*, *EV ready*, or *EVSE installed spaces*.
2. R-2 Occupancies shall be permitted to substitute up to 5 spaces when the building provides a minimum of 60 percent of parking spaces as a combination of *EV Capable light, EV Capable, EV ready*, or *EVSE installed spaces*.

CV502.1.3 *EVSE installed spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV ready spaces*, *EV capable spaces*, and *EV capable light spaces*.

CV502.1.4 *EV ready spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV capable spaces* and *EV capable light spaces*.

CV502.1.5 *EV capable spaces* that exceed the minimum requirements of this section are permitted to be used to meet the minimum requirements for *EV capable light spaces*.

CV502.1.6 All attached garages with direct connection to a dwelling unit will be required to have one *EV ready space*.

Table CV502.1: EV Power Transfer Infrastructure Requirements

Building Type / Space Type	*EVSE Installed Space*	*EV Ready Space*	*EV Capable Space*	*EV Capable Light Space*
All *commercial buildings*, except for R-2 occupancies, with 10 or less parking spaces.	0	2 spaces	0	0
***Commercial buildings*, except for R-2 occupancies, with greater than 10 parking spaces.**	2% of spaces	8% of spaces	10% of spaces	10% of spaces
R-2 occupancies with 10 or less parking spaces	0	15% of spaces	10% of spaces	10% of spaces
R-2 occupancies with greater than 10 parking spaces.	5% of spaces	15% of spaces	10% of spaces	30% of spaces

CV502.2 EV Capable Light Spaces. Each *EV capable light space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable light space* and shall be capped. *EV capable light* includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.
2. Installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
3. Dedicated physical space to accommodate all equipment necessary for electrical service to future *EVSE*.
4. The routing of the raceway and/or conduit must be noted on the construction documents and the raceway shall be permanently and visibly marked "EV CAPABLE" at the load center and termination point locations.

CV502.3 EV Capable Spaces. Each *EV capable space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable space* and shall be capped. *EV capable* includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.
2. The installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
3. The electrical panel or other electrical distribution equipment to which the raceway and/or conduit connects shall have sufficient dedicated space and spare electrical capacity to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
4. The termination point of the conduit and/or raceway and the electrical distribution equipment directory shall be marked: "For future electric vehicle supply equipment (EVSE)."
5. Reserved capacity shall be no less than 8.3 kVA (40A 208/240V) for each *EV capable space*.

CV502.4 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle or junction box located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle is installed adjacent to and between both parking spaces.
2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).
3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment (EVSE)."

CV502.5 Electric Vehicle Supply Equipment (EVSE). All *EVSE* shall meet all of the following requirements:

1. The installed *EVSE* shall meet one of the following requirements:
    a. A power capacity of at least 6.2 kVa (or 30A at 208/240V) and has the ability to connect to the internet.
    b. An inductive charging system for battery-powered *electric vehicles* that:
        i. Is ENERGY STAR certified; and
        ii. Has the ability to connect to the internet.
2. An *electric vehicle* charging system shall be wall-mounted or pedestal style and may provide multiple cords to connect with *electric vehicles*.
3. An *electric vehicle* charging system shall be listed and labeled for *EV* charging and must comply with the current version of Article 625 of the National Electrical Code.

CV502.6 EVSE Installed Spaces. An installed *EVSE* with multiple output connections shall be permitted to serve multiple *EVSE installed spaces*. Each *EVSE* installed serving either a single *EVSE installed space* or multiple *EVSE installed spaces*, shall comply with all of the following:

1. Have a minimum charging rate in accordance with Section **CV502.7**.
2. Be located within 3 feet of each *EVSE installed space* it serves.
3. Be installed in accordance with Section **CV502.8**.
4. Have a minimum circuit capacity of 8.3 kVA (40A 208/240V).
5. Must meet the requirements of Section **CV502.5**.

CV502.7 EVSE Minimum Charging Rate. Each installed *EVSE* shall comply with one of the following:

1. Be capable of charging at a minimum rate of 6.2 kVA (or 30A at 208/240V).
2. When serving multiple *EVSE installed spaces* and controlled by an energy management system providing load management, be capable of simultaneously sharing each *EVSE installed space* at a minimum charging rate of no less than 3.3 kVA.

CV502.8 EVSE Installation. *EVSE* shall be installed in accordance with NFPA 70 and shall be listed and labeled in accordance with UL 2202 or UL 2594. When serving an accessible parking space, *EVSE* shall be accessible in accordance with the International Building Code Chapter 11.

CV502.9 Identification. Construction documents shall designate all *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces,* and indicate the locations of raceway and/or conduit and termination points serving them. The circuits or spaces reserved for *EVSE installed spaces, EV ready spaces,* and *EV capable spaces* shall be clearly identified in the panel or subpanel directory. The raceway and/or conduit for *EV ready spaces, EV capable spaces* and *EV capable light spaces* shall be clearly identified at both the panel or subpanel and the termination point at the parking space.

AGENDA ITEM #3

Sustainability Advisory Board Meeting Minutes
Wednesday June 7, 2023

1. **Call to Order and Roll Call**
   The meeting was called to order at 5:02 p.m. and Sustainability Advisory Board (SAB) members present were Vicki Hawse, Angela Hawse, Dana Ivers, Joyce Huang, Dave Jones, JT Thomas., and Ken Mihelich. Town Council member Terry Schuyler and Staff Representative Deb Overton were also present.

2. **Discussion and Action regarding the Regional Climate Action Plan (Cap)**
   Kendra Held with EcoAction Partners explained that the Regional CAP Action Implementation Tracking spreadsheet was a way for municipalities who participated in the CAP to track their progress in meeting their goals. She went over each area of the CAP and updated the spreadsheet for Ridgway as needed. Dave Jones made a motion to recommend to Council that the Town adopt the Regional Climate Action Plan, Joyce Huang seconded the motion and the motion carried unanimously.

3. **Discussion regarding a Sustainability Conference**
   The Board expressed the need for a work session to discuss this topic in more detail. No date has been set for the work session at this time.

4. **Discussion on creating an SAB logo**
   The board asked to move this agenda item to a later meeting due to time constraints.

5. **Approval of minutes from May 3, 2023 regular meeting.**
   JT Thomas made a motion to approve the meeting minutes from the May 3, 2023 meeting. Vicki Hawse seconded the motion and the motion carried unanimously.

6. **Adjournment**
   There being no further business to come before the SAB, the meeting was adjourned. The time was 7:07 p.m.