



# TOWN OF PORTOLA VALLEY

## STAFF REPORT

---

**TO:** Mayor and Members of the Town Council

**FROM:** Laura Russell, Planning & Building Director   
Brandi de Garneau, Assistant to the Town Manager  
Ron La France, Consulting Building Official

**DATE:** October 12, 2022

**RE:** Introduction of an Ordinance to Adopt the 2022 California Building Standards Code and Local Amendments.

### RECOMMENDATION

1. Staff recommends that the Town Council waive the first reading and introduce an ordinance adopting the 2022 California Building Standards Code with local amendments to those codes. (Attachment 1).
2. Staff recommends that the Town Council direct the Sustainability Committee to review, analyze and provide recommendations on updates to the Graywater “Ready” Infrastructure and Reduction of Potable Water Use on Turf requirements with their review of MWELO and other water conservation measures.

### BACKGROUND

The California Building Standards Code (California Code of Regulations, Title 24, Parts 1, 2, 2.5, 3, 4, 5, 6, 8, 9, 10, 11, & 12) is updated and published in its entirety every three years; this is sometimes called the “three year code cycle.” The updated Code is applicable to all buildings and structures that are submitted for building permits during its effective period. The Building Standards Code incorporates regulations applicable to disciplines of the construction industry including the Building, Electrical, Mechanical, and Plumbing Codes.

The California Building Standard Codes are based on model codes written by the International Code Council, the National Fire Protection Association, the International Association of Plumbing and Mechanical Officials, the California Building Standards Commission, and California Energy Commission. The publication of code updates by these

organizations triggers State consideration, amendment, and adoption of an updated set of codes to be used by jurisdictions within the state. Each triennial edition of the California Building Standards Code becomes effective 180 days after its publication date of July 1. Therefore, the 2022 Building Standards Codes go into effect on January 1, 2023 and all applications for building permits submitted after January 1, 2023 will be subject to the 2022 Building Standards Code.

Local amendments to the Building Standards Code can be approved at any time during a triennial code cycle; however, common practice is to have these local amendments approved such that they become effective with the new Building Standards Code to provide for clarity in the building permit application process. The adoption of the Building Standards Code and local amendments is a standard activity with the last adoption by the Town occurring in 2019.

### ***Local Home Hardening Code Amendments***

On December 8, 2021, the Town Council approved an urgency ordinance adopting local amendments related to home hardening to support wildfire resilience. That amendment enhanced fire resistance in new buildings, additions, and alterations to existing buildings to enhance public safety, and reduce the risk from wildfires. The content was developed by the Wildfire Preparedness Committee and implemented by staff and the Woodside Fire Protection District.

### ***Local Green Building Code Amendments***

At the August 10, 2022 Town Council Meeting, staff presented an updated Green Building Ordinance based on the direction given at the May 11, 2022 Council meeting that included requirements for all new construction to be all-electric buildings and electrification requirements to start the conversion process of existing residential multi-fuel buildings to all electric buildings. The electrification requirements are triggered by a building permit with a scope of work that includes the replacement/upgrade to a main electric panel and/or the installation of a new or replacement of an existing air conditioning condensing unit. Depending on the scope of work, the Ordinance requires:

- The reservation of breaker space in the panel to accommodate anticipated future electrification of single and multifamily buildings' electrical load;
- Wiring to a current water heater location to allow for the installation of a heat pump water heater in an emergency repair situation for single-family buildings;
- Wiring to current water heater location in multi-family buildings that have all of the water heaters serving individual units installed in the same location or in buildings with a centralized building water heater; and
- Installation of a reverse cycle air conditioning condensing (heat pump) unit to be installed instead of a traditional air conditioning condensing unit.

The Council supported the addition of the requirements to prepare existing buildings for future electrification when it is most cost effective – during additions, remodels or repairs

where a contractor is already being hired specifically to work on the building's electrical systems. In addition, the Council provided direction to comply with the Cal Green for EV charging in commercial construction, rather than going beyond the code. Below is a summary of the updates to the Green Building Ordinance as well as a review of staff's determination on how to implement the updates.

## **DISCUSSION**

The California Health and Safety Code enables local jurisdictions to modify the California Building Standards Code and adopt different or more restrictive requirements with the caveat that:

- The local modifications must be substantially equivalent to, or more stringent than, the building standards published in the California Building Standards Code; and
- The local jurisdiction is required to make specific or express findings that such changes are reasonably necessary because of local geological, climatic, or topographic conditions.

A local jurisdiction must adopt the current California Building Standards Code in order to also adopt local amendments.

Title 15, Buildings and Construction, of the Town of Portola Valley Municipal Code, incorporates the Building Standards Code plus locally adopted amendments to the codes and is known as the Building Code of the Town of Portola Valley. The Building Code of the Town of Portola Valley applies to the construction of any building or structure in the Town on public or private land except for structures constructed in the public right of way.

The proposed ordinance (Attachment 1) adopts all parts of the 2022 California Standards Building Code with the exception of Parts 7 and 9. Part 7 is vacant but had previously been the California Elevator Safety Construction Code. This code has been moved to a different Title within the California Code of Regulations. Part 9 is the California Fire Code which is enforced by the Woodside Fire Protection District (Fire District). It is expected that the Fire District will be recommending local amendments to the Fire Code in the next few months. As the Town has done in the past, in addition to the standard building requirements, the proposed ordinance also applies Chapter 7A building regulations Townwide. Chapter 7A contains additional requirements applicable to construction in Wildland Urban Interface (WUI) areas.

Staff is proposing local amendments to four Parts of the Building Standards Code, including Parts 2, 2.5, 5, and 11. Part 2 of the Building Standards Code is the 2022 California Building Code (CBC). Part 2.5 is the 2022 California Residential Code (CRC). Part 5 is the 2022 California Plumbing Code (CPC). Part 11 is the 2022 California Green Building Standards Code (CAL Green). Staff is also proposing a reorganization of Chapter 15.04 to provide the construction community easier access to the adopted code amendments. The proposed local amendments are arranged by the following topics and described in more detail below:

- Reorganization,
- Administrative,

- Life Safety,
- Structural,
- Wildland Urban Interface (WUI), and
- Green Building.

### ***Reorganization of Chapter 15.04***

The following changes were made to Chapter 15.04 to provide the construction community easier access to the adopted code amendments.

- Replacement of the existing section 15.030 Administration of the Building code with **Amendments to the California Residential Code**;
- Creation of section 15.040 **Amendments to the California Electrical Code**
- Replacement of the existing section 15.050 Temporary occupancy permits with **Amendments to the California Mechanical code**.
- Creation of 15.060 **Amendments to the California Plumbing Code**.
- Creation of 15.070 **Amendments to the California Energy Code**.
- Creation of 15.080 **Amendments to the California Green Building Standards Code**.

The Town's requirements from the existing 15.030 and 15.050 have been moved into both existing 15.020 **Amendments to the Building Code** and new 15.030 **Amendments to the California Residential Code**.

### ***Administrative Amendments***

The two primary State agencies responsible for the adoption of sections of the California Building Standards Code are the Department of Housing and Community Development (HCD) and the Building Standards Commission (BSC). HCD is responsible for adopting regulations applicable to one- and two-family residences and townhomes and BSC is responsible for adopting regulations applicable to non-residential structures and multi-family structures other than townhomes.

The State statutes that establish the authority for BSC to adopt the California Building Standards Code do not provide BSC with the authority to adopt any provision within the Code related to the administration and enforcement of the Building Standards Code. This allows each jurisdiction the opportunity to establish these requirements to fit their needs. Due to this bifurcation of the Building and Residential codes by building type, the administrative provisions need to be repeated into both the Building and the Residential codes.

The local administrative requirements previously established in section 15.04.030 have been retained as amendments except for the existing language for Certificates of Occupancy because it was less restrictive than the 2022 Building and Residential code language. Additionally, Table **R301.2 Climatic and geographic design criteria** was amended to include the Town's wind speed seismic zone and flood zone information to

provide all of the specific information in a single location for the benefit to the design community.

### ***Life Safety Amendments***

Several life safety amendments are being proposed to address local conditions and common design practices.

#### ***Emergency Escape Openings in Basements:***

Emergency escape openings in basements are a critical life safety element in the overall approach to exiting a structure during a fire or seismic event. These opening also provide first responders access into a structure and help prevent people from being trapped in a basement if the main access point is cut off. The proposed amendments discussed below have been developed based on the Town's proximity to the San Andreas Fault and higher risk for wildfire than other communities in the Bay Area. Additionally, the Town frequently processes applications for large basements with new houses, heightening the need for adequate safety requirements.

Exception 6 of CBC subsection 1031.2 and exception 2 of CRC Section R310.1 removes the requirements for an emergency escape and rescue opening in sleeping rooms located in basements when a dwelling is equipped with an automatic fire sprinkler system. This exception was deleted as part of previous code updates and carried forward for this code cycle.

CRC Section R310.7 addresses emergency escape and rescue opening in existing basements undergoing alterations or repairs. It allows for an existing basement, habitable or non-habitable, to be altered without requiring an emergency escape and rescue opening. A habitable space is defined as,

*“A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.”*

Under the section as written, an existing non-habitable basement that meets the minimum ceiling height for a habitable space of seven feet but is being used as a storage, utility or similar space, could be altered to become habitable space and it would not be required to have an emergency escape and rescue opening.

The proposed amendment includes the term “habitable” to the existing code language. The inclusion of the term results in the requirement for an emergency escape and rescue opening which addresses the increased risk to life safety associated with the space being made habitable. The amended section retains the allowance for an existing habitable basement undergoing an alteration or repair that does not include the creation of a sleeping room or have an existing an emergency escape and rescue opening, to not be required to provide one thus sparing considerable additional cost and poses no greater risk to life safety than before the alteration.

Subsection R310.7.1 allows an existing basement with an operable window that has a clear opening of four square feet to be allowed to be used as an emergency escape and rescue opening when there is a change. This means a non-habitable basement being changed to a habitable basement could be potentially allowed to have a significantly smaller opening than the required 5.7 square feet and poses a greater risk to life safety. The proposed amendment deletes this subsection resulting in an emergency escape and rescue opening of 5.7 square feet being required.

*Automatic Fire Sprinklers:*

The proposed amendments to the CBC and CRC sections on automatic fire sprinklers are identical with the amendments adopted as part of the 2021 Home Hardening Ordinance except at the request of the Fire District, fire sprinklers will now be required in telecommunications buildings. Telecommunication buildings are structures that house electrical and electronic wiring, cabling, and equipment used for providing telecommunication services for users. These structures vary in size from small metal structures to large towers and are typically unoccupied unless repair or maintenance is required. The Fire District will be responsible for deciding when fire sprinklers will be required.

*Energy Storage Systems:*

Energy Storage Systems (ESS) are a device or group of devices assembled together, capable of storing energy in order to supply electrical energy at a later time. The most common versions of the systems are batteries. Section R328 applies to ESS and establishes the fire life safety provisions for the installation of the ESS. The code requires ESS to be tested to certain levels and if the ESS meet the requirements, may be installed in a habitable space of a residential dwelling unit.

The testing protocol is in place to evaluate the potential for thermal runaway or production of flammable gases. Thermal runaway may occur if a battery suffers abuse including damage during construction, operating in temperatures outside of prescribed parameters and/or damage due operational negligence, resulting in the release of toxic and flammable gases. Thermal runaway occurring in a single battery cell can quickly spread, causing a cascading of thermal runaway in adjacent battery cells. Thermal runaway could culminate in a catastrophic high heat release fire event.

Exception 1 to Section R328.1 is being proposed to be deleted as it allows for an ESS to be installed in sleeping rooms, closets, or spaces opening directly into sleeping rooms or in habitable spaces of dwelling units. The deletion of exception 1 will prevent an ESS from being installed in a habitable area and causing a larger structure fire if it were to experience a thermal runaway event due to the radiated heat associated with a wildland fire or misuse.

### ***Structural Amendments***

Table 2308.6.1 of CBC Section 2308.6.1 and Table R602.10.3(3) of CRC Subsection R602.10.3 were amended to include footnotes for wall bracing that disallows the use of several wall bracing systems in seismic design category E due to their poor performance in earthquakes. Shear walls sheathed with lath, plaster or gypsum board are less ductile than plywood shear walls. The poor performance of such shear walls in the 1994 Northridge Earthquake was investigated by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Task Force and formed the basis for this proposed amendment. These proposed amendments are also consistent with shear wall restrictions by American Wood Council (Section 4.3.7 of SDPWS) and ICC ESR-1338 for Gypsum Board.

These proposed amendments were based on the local ICC Tri-Chapter Uniform Code Committee (TUCC) recommendations and incorporated into the Town's Building code based on its proximity to the San Andreas Fault. The TUCC is comprised of Building Officials, private sector consultants, engineers and professionals from various construction industries committed to the enhancement of regional consistency in the application and enforcement of the codes by developing guidelines for code interpretation. As a result, wall bracing is expected to perform better in a seismic event.

### ***Wildland Urban Interface Amendments***

The proposed code amendments related to fire resilience in the Wildland Urban Interface (WUI) were developed in consultation with the Fire District. The Fire Marshal requested two changes which were incorporated into the proposed code amendments:

- The Building Code exception for Automatic Fire sprinklers in telecommunication buildings be deleted (discussed above); and
- All buildings subject to Building permits including accessory buildings meet the WUI requirements, including exterior materials, regardless of their distance to the main building.

Additionally, during discussion regarding the proposed code amendments, a question was raised related to whether the exterior columns supporting roof structures should be constructed of any material allowed by the standard code or should be constructed of noncombustible material or alternately wrapped with noncombustible material. The Fire District requested that the columns be constructed of noncombustible material or wrapped with noncombustible material. All of their requests have been incorporated into the proposed code amendments.

All of the [December 2021](#) Home Hardening code amendments have been carried forward except where the 2022 CBC and CRC have incorporated them into State law (so a local amendment is not necessary) and for the requirements for decking surfaces which applies

to decks, porches, balconies and stairs. The previous amendments mandated noncombustible decking and protection of the deck structure with noncombustible or ignition resistant material for decks within 50 feet of an applicable structure and less than four feet above grade. Since the adoption of the Home Hardening ordinance, design professionals and the Portola Valley community have questioned:

- The allowance of ignition resistant material for the protection of the deck structure but not for the decking (walking surface).
- The relevance the 50 feet has on the overall requirements.
- The relevance the less than four feet has on the overall requirements for the walking surface.

Additionally, it has been pointed out that many decks in Portola Valley are on sloped lots resulting in walking surface partially of noncombustible materials (where less than four feet above grade) and partially ignition resistant material (where four or more feet above grade).

Based on significant community feedback, and consultation with the Fire District, the proposed amendments:

- No longer mandate noncombustible material decking for decks less than four feet above grade resulting in all decking material required to meet State minimum code of ignition resistant material.
- The requirement for deck structure protection for deck structures less than four feet above grade has been retained.
- The application of the requirements to only decks within 50-feet to an applicable structure requirement has been removed at the Fire District's request, resulting in all decks being required to meet the code requirements.

Finally, both the CBC and CRC have an allowance for wall coverings to be of materials other than noncombustible material when there is an attached deck and the decking surface material complies with specified performance standards. The proposed amendments do not retain these allowances because the amendments associated with wall covering require noncombustible wall covering.

### ***Green Building Amendments***

After the August 10th Council meeting, staff and the Town Attorney met with reach code experts to better understand the current process for applying for approval from the California Energy Commission (CEC), including any needed cost-effectiveness studies. Staff learned that there are several different approaches, including amendments to the Energy Code which requires a cost effectiveness study and amendments to Cal Green which does not. Staff also learned that the CEC is recommending that all-electric building standards be included in the Cal Green section of the Building Code rather than the Energy Code, as the measure is determining a fuel type rather than applying increased energy efficiency. As a result, the Town will no longer need to submit the code amendments to the CEC for approval,

only the Building Standards Commission for filing. Portola Valley will be one of the first Peninsula cities to take this new streamlined approach.

Additionally, the use of standalone ordinances for adopting green building standards has changed over time. Many jurisdictions, including Portola Valley, proactively adopted standalone ordinances establishing green building standards prior to the creation and State adoption of Cal Green due to Building Codes at the time not addressing the subject matter. However, since the creation and implantation of Cal Green, the existing and proposed standards fit more logically as Cal Green amendments. Furthermore, the adoption of the green building standards as code amendments continues the consolidation process of all building code related requirements in a single location, which benefits the construction community.

Given the CEC guidance, standard practices, and benefits, staff's updated recommendation is to incorporate the existing and proposed requirements of Chapter 15.10 – Green Building as amendments to the 2022 CA Green Building Standards Code (Cal Green). The requirements presented to Town Council on August 10<sup>th</sup>, as summarized below, have been incorporated into the 2022 Cal Green as amendments and Chapter 15.10 – Green Building will be repealed in its entirety. A cost effectiveness study is also not required for this approach.

While all the existing provisions of Chapter 15.10 that the Council has reviewed have been incorporated in the 2022 Cal Green as amendments, staff is recommending that the Graywater “Ready” Infrastructure and Reduction of Potable Water Use on Turf requirements be referred to the Sustainability Committee to review, analyze and provide recommendations on updates with their review of WELO and other water conservation measures.

Summary of Green Building Amendments to Cal Green as directed by Council:

- All language and definitions now align with the Building Code, Plumbing Code and Energy Code
- Changed the definition of “new residential Construction” to Include the 50% rule language” per Planning Director’s instruction to be consistent with the Home Hardening Ordinance
- Added all-electric build with no exceptions for new residential and multi-family construction
- Added all-electric build for new commercial construction unless receive an exception from the building official for certain cooking needs
- Added all-electric build for new public agency construction with potential exceptions as needed for emergency services
- Added all new residential construction should have EV Ready Space as defined by Energy Code so a charging station can simply be plugged (previously only conduit and panel requirements)
- Clarified that for ADUs that require parking, parking should be EV Ready if convenient, at the discretion of the building official

- Added exception for ADU's to only have to meet the requirements of the applicable section for the Mandatory requirements for Solar Ready Buildings of the Energy Code in effect at the time of Building permit application per direction from Planning Director
- Added electrification requirements for existing buildings triggered by a building permit with a scope of work that includes the replacement/upgrade to a main electric panel and/or the installation of a new or replacement of an existing air conditioning condensing unit (see provisions above)
- Extended third-party verification for CALGreen measures to all building types (previously only commercial as measures were verified by Build It Green GreenPoint raters)

A summary of the additional changes to the adopted 2022 Energy Code is available here:

[https://www.energy.ca.gov/sites/default/files/2021-08/CEC\\_2022\\_EnergyCodeUpdateSummary\\_ADA.pdf](https://www.energy.ca.gov/sites/default/files/2021-08/CEC_2022_EnergyCodeUpdateSummary_ADA.pdf)

### **ENVIRONMENTAL REVIEW**

Pursuant to the Guideline Section 15061(b)(3) of the California Environmental Quality Act (CEQA) adoption of this ordinance is exempt as it does not have a potential for causing a significant effect on the environment.

### **ATTACHMENTS**

1. Ordinance amending Title 15 (Buildings and Construction) of the Town of Portola Valley Municipal Code adopting The 2022 California Building Standards Code Parts 1, 2, 2.5, 3, 4, 5, 6, 8, 10, 11, and 12 and amendments thereto
2. August 10, 2022 Green Building Ordinance Study Session:  
<https://www.portolavalley.net/home/showpublisheddocument/16428/637957476504130000>