



PUBLIC NOTICE
WOODLAND PARK BUILDING DEPARTMENT
BOARD OF REVIEW - WORK SESSION
Thursday, September 15, 2022, 3:30 P.M.
City Council Chambers – 220 W. South Avenue

Zoom link available from the calendar at the bottom of the front page of the City website (www.city-woodlandpark.org). For more information, please contact the Planning & Building Department at 719-687-5202.

- 1. CALL TO ORDER & ROLL**
- 2. PLEDGE OF ALLEGIANCE**
- 3. WORK SESSION**
 - A.** Update and discussion regarding adoption of the 2023 Pikes Peak Regional Building Code which includes by reference the 2021 International Code Council (ICC) Building Code Suite (PPRBD Representatives)
- 4. ADJOURN**

Board of Review - June 16, 2022

Summary of Agenda item IX.A - Building Codes update discussion

- By David Burgess, Planner I with the City of Woodland Park

The International Code Council (ICC) updates its family of codes every 3 years. PPRBD adopts new codes every 6 years. In 2023 they will be adopted by reference the 2021 ICC family of codes for:

- IBC (International Building Code for Commercial Construction)
- IRC (International Residential Code for Residential Construction)
- IMC (International Mechanical Code)
- ISPC (International Swimming Pool and Spa Code)
- IEBC (International Existing Building Code)
- IFGC (International Fuel Gas Code)
- IECC (International Energy Conservation Code)

Other State of Colorado Codes currently adopted that will not be changing are:

- 2018 IPC (International Plumbing Code)
- 2020 NEC (National Electric Code)
- 2019 ASME A17.1 (American Society of Mechanical Engineers – for elevators)

In conjunction with adopting the 2021 ICC family of codes, PPRBD will be adopting its own regional amendments code, which will be known as the “2023 PPRBC” (Pikes Peak Regional Building Code).

The code adoption must be complete by July 1, 2023. PPRBD’s goal is to have all of its jurisdictions adopt the updated codes by June 30, 2023.

John Welton is the Deputy Building Official for PPRBD, and he presented the following: On July 1, 2022, a 60-day public comment period for code changes opens for the first draft of the 2023 PPRBC. There will then be a one-month comment intermission to reconcile those public comments and revise the draft code based on the comments. Following that, there will be another 30-day public comment period. PPRBD will conduct a work session with their Board of Review (BOR) in October 2022. The Woodland Park BOR is planning on conducting its work session at the September 15, 2022 meeting.

On the top/center of PPRBD’s homepage (www.pprbd.org) there is a red-highlighted link that allows design professionals, contractors, homeowners, and members of the public to post their comments on each section of the proposed amendments.

Most of the code changes are minimal, consisting of updates for more modern construction techniques and building industry innovations. PPRBD will be adopting for the first time the ISPC

for swimming pools and spas, whereas the PPRBC was the governing code for those in the past. This will allow for more flexibility and advantages, especially for residential pools.

2021 IECC:

The 2021 IECC will have the greatest and most significant impact of all the proposed code changes. On June 2, 2022, Governor Polis signed HB22-1362¹ into law, requiring that ALL jurisdictions adopt and enforce the 2021 IECC by July 1, 2023. While the code allows for “substantial improvements in efficiency and energy cost savings”, some of the modeling PPRBD has received from the National Association of Home builders (NAHB) projects that the additional cost for home construction to implement the code will be approximately \$6,000 - \$12,000² for a typical single-family home. He stated that with the state’s actions, PPRBD is incrementally closer to losing control over the IECC, just as they have with the IPC & NEC. The way this bill is written, PPRBD has the ability to adopt a code that provides no less energy efficiency than any of the last three model codes.

PPRBD’s proposal is to adopt the 2021 IECC code with minor amendments to reduce some of the most burdensome portions, which would be equivalent to the 2018 IECC. This will only be a temporary reprieve to allow for a “learning curve” and some relief from the code until they are forced to comply with an unamended 2021 IECC code, since they will have to enforce the unamended code by July 1, 2024. The Bill states that after that period, they will have to adopt the latest IECC code version as mandated by the appointed Colorado Energy Commission.

One advantage of the 2021 IECC code is that it provides some relief for some “conditioned space”, such as adding a heating appliance in an unheated garage. Under the 2015 & 2018 codes, if you were to add a heater to a garage, there was no relief for waiving the insulation requirements, including insulation under the garage slab. An unheated garage is considered uninhabited “unconditioned space”. Adding a heater now means this is “conditioned space” and subject to all the insulation requirements as habitable space, no different than the full levels of insulation requirements of the thermal envelope of the habitable space in the home, including wall, ceiling and slab insulation. Many older homes were not required to have the garage slab insulated (below the slab)³. In order to waive these insulation requirements to add a heater to a garage, the homeowner is currently required to apply for a variance before the Board of Review. So far this year, the Woodland Park BOR has held four public hearings for this specific purpose.

Mr. Welton has planned that by March 2023, all comments have been considered and code amendments have been completed, so that all that remains is to present the amendments and code adoptions to all jurisdictions they currently serve. Those governing bodies will then conduct all required postings and hearings for full adoption by June 30, 2023.

HB22-1362 requires that on or before October 1, 2022, the directors of the Colorado Energy Office and the Department of Local Affairs (DOLA) shall appoint and convene a 10-member Energy Code Board to develop both a model electric ready and solar ready code and a model

low energy and carbon code for adoption by counties, municipalities, and state agencies. This basically takes the decision-making authority away from local building departments.

Chairman McVicker thanked Mr. Welton and PPRBD for all the time, effort and attention they spend working so closely with the City of Woodland Park, in spite of being such a small jurisdiction in comparison most of the other jurisdictions they serve.

Some changes in the 2021 IECC will greatly affect home affordability. Most impactful are:

- Requiring R60 ceiling insulation (vs. R49 in the 2018 code)
- Requiring R30 wall insulation (vs. R27 in the 2018 code)
- Requiring 0.30 U-factor for glazing (vs. the current 0.32 for WP due to the elevation)⁴
- Homes must be “EV ready” (pre-wiring for EV charging)⁵
- Homes must be “solar ready” (pre-wired for solar panels)⁶
- Homes must be “electric ready”⁷

Staff footnotes:

¹ Amended by HB22-1218 modifying requirements of pre-wiring for EV charging in commercial & multi-family structures.

² This overall cost could increase as supply and labor expenses increase. The ROI is projected to be many years.

³ Under the 2021 IECC, the slab insulation requirement cannot be waived, meaning that the homeowner may have to tear up the garage slab to insulate beneath a new slab, or will not be allowed to add a heater to their garage. The garage walls and ceilings will also have to comply with the more restrictive insulation requirements of the thermal envelope for habitable space.

⁴ Above 4000-ft. in elevation. The lower the number, the less restrictive. Right now, window manufacturers will not warranty windows of less than 0.32 for elevations above 7000 ft. since the seals are designed for greater atmospheric pressure, they usually fail at higher elevations. This ultimately results in less overall insulation values after the seals fail, and in some cases have resulted in fracturing and breakage of the glazing itself.

⁵ There is no standard for EV chargers. The pre-wiring may not work for all EV chargers. There are variations depending on the EV, even depending on the model from the same EV vehicle manufacturer. The minimum panel capacity that will be required for EV charging is 208 volts & 40 ampere rated circuits.

⁶ “Solar ready” means adequate panel capacity, dedicated electrical panel space, electrical conduit, physical roof space, and structural load to accommodate future installation of solar panels, with exemptions for small roofs and consistently shaded roofs. The maximum allowable grid-tied solar capabilities cannot exceed 10kw with CORE, our only electrical service provider.

⁷ “Electric ready” means adequate panel capacity, dedicated electric panel space, electrical wire, electrical receptacles, and adequate physical space to accommodate future installation of high-efficiency electric appliances including heating, water heating, cooking, drying, and an electric vehicle. This will “Provide compliance pathways for all-electric and mixed fuel use Residential and commercial buildings.” (§14-38.5-401.6.a.III – page 11 of HB22-1362).

COVER MEMORANDUM

The following article dated July 1, 2022, written by Scott Weiser of the Colorado Springs Gazette is being provided in this Board of Review packet to provide additional background information related to the upcoming code changes and is not intended to offer support or opposition by the City of Woodland Park to the proposed code changes, amendments, or adoption.

New statewide building code could cost homeowners \$68 billion by 2031

- By SCOTT WEISER scott.weiser@gazette.com

Jul 17, 2022 Updated 7 hrs ago

A new law that a Colorado think tank says paves the way for converting all homes in the state to electricity for cooking, space and water heating and EV charging could cost Colorado homeowners between \$59 and \$68 billion by 2031, and would exacerbate Colorado's already acute housing shortage.

In its [analysis](#) of House Bill [22-1362](#), which requires the adoption of “green” building codes, the Common Sense Institute puts the incremental cost for each new residential build at between \$6,450 and \$22,352. Of more concern, the report said, are the economic effects of retrofitting existing housing stocks.

The new [2021 International Energy Conservation Code](#) (IECC) addresses energy efficiency on several fronts, including cost, energy usage, use of natural resources and the effects of energy usage on the environment.

House Bill 22-1362 is but the latest in a series of legislation that aims to transition Colorado away from fossil fuels. Supporters argue the transition — although they acknowledge it might be painful in the short term — positions Colorado for a more sustainable and energy-efficient future. They also say it helps wean the country from dependence on foreign oil.

Ultimately, they add, the transition toward green energy is good for the environment and people's health.

Critics maintain the quick transition is failing to protect American consumers, particularly low-income residents, who already contend with soaring inflation, and that the singular focus on alternative energy is short-sighted.

The Governor's Office disagreed with the Common Sense Institute's report.

"This bill provides cost-savings for Coloradans," Melissa Dworkin, a spokesperson for Gov. Jared Polis, said in a statement.

Citing a [study](#) by the Pacific Northwest National Laboratory on behalf of the Department of Energy, Dworkin said new homes built under the new law will "save Colorado residents \$33-\$66 per year."

Dworkin also attacked the Common Sense Institute as a "partisan outfit that often puts out not accurate reports."

"Unfortunately, this is just the latest example of this deceptive practice," Dworkin said.

The Common Sense Institute describes itself as a nonpartisan think tank guided by free market principles.

Evelyn Lim, author of the institute's report and former Regional Administrator for Region 8 of the federal Department of Housing and Urban Development in the Trump administration, said the institute has a strict non-advocacy policy and noted her report relied on a more recent analysis using local costs in implementing the new code from [Group 14 Engineering](#), a Denver consulting firm specializing in [energy and resource efficiency](#).

Lim said Group 14 worked with Pacific Northwest National Laboratory to ensure a consistent set of assumptions.

“Looking at the PNNL analysis, they indicate it would take an average of 17.3 years to recover those costs. That is longer than the average length of time a homeowner stays in their home,” Lim said.

The law creates a 24-member appointed Energy Code Board tasked with developing model language for electric-ready, solar-ready, low energy and carbon codes complying with the 2021 IECC that counties, municipalities and state agencies must adopt by 2023.

The new law requires municipalities amend their building codes to standards that provide equivalent or better performance than the 2021 code.

The statute requires the model codes to be created by the Energy Code Board mandates installation of, among other things, supporting structure and wiring for rooftop solar panels and for all-electric appliances for space and water heating and cooking, even if the builder or buyer plans to use natural gas for all three. It also requires, at a minimum, pre-wiring for installation of chargers for electric automobiles both in single-family homes and apartment building parking spaces.

Polis vetoed another bill, [HB22-1218](#), which would have required commercial buildings and multifamily residences to allocate electric vehicle charging spaces.

In a June 13 interview with [podcast host Ross Kaminsky on iHeart radio](#), Polis said people who want EV charging should have it, but those who don't shouldn't have to pay for unused wiring.

“To mandate it when one of our biggest issues is the cost of housing just didn’t make sense,” Polis said. “We don’t want to do anything that contributes to housing costs. In fact, we want to reduce housing costs.”

Dworkin said the institute’s methodology is flawed and its conclusions don’t add up, but added that “the governor agrees with their top-line recommendations” of ensuring a transparent and fair stakeholder process, allowing for public input, and adopting model codes that prioritize affordability.

Lim says the Governor’s Office is missing the point of the report.

“I’m glad the Governor’s Office agrees with my recommendations, although I’m not sure they read the report, as I am focusing on the cost to implement the new code and what it could potentially mean if the state were to move forward aggressively with beneficial electrification and retrofitting,” Lim said.

While the new building code itself does not specify what kind of energy must be used in new construction, Lim says the code, when combined with the Colorado Clean Heat program that requires providers of natural gas to reduce emissions, creates the pressure to upgrade to all-electric appliances and abandon natural gas.

Lim cited a report by Black Hills Energy that examined the potential costs of full electrification of Rocky Ford, a town famous for its watermelons and cantaloupe in the Arkansas River Valley in Otero County, in extrapolating the overall costs for statewide retrofit electrification.

The Black Hills Energy report says it would cost between \$46.5 million and \$53.8 million to electrify the town of fewer than 4,000 people.

“Transition from gas to renewables can mean additional costs during retrofit to those who are still on natural gas as they will bear the cost of the infrastructure upkeep,” Lim said. “I believe to completely discount these factors isn't fair to the consumer who will bear the cost of how we get to electrification.”

One of the stumbling blocks for developers and homeowners is the kind of high-efficiency electric heaters or air conditioners the code requires, also known as heat pumps, don't work when it's really cold, a Denver developer told The Gazette.

“You can get heat pumps that can operate down to 15 degrees now, but they're very expensive,” said Tim Walsh, CEO and founder of Confluence Companies. “The premise of passing the code is that it will force manufacturers to develop the technology. The comment we received (from manufacturers) was that we're a state of 5½ million people in a country of 330 million people. So, we are a pretty insignificant portion of the country. They're not going to produce something just for Colorado.”

Walsh, a Republican who is running for the state Senate in District 20 (Lakewood) and whose primary race was uncontested, said replacing an existing gas furnace with a heat pump during renovation is probably going to cost \$10,000 to \$12,000. The law does say that replacement of a gas furnace that “has reached the end of its service life” with a like replacement is permitted.

Walsh's \$200 million company develops, builds, owns and operates mostly multi-family residential units along the Front Range of Colorado.

Walsh views Polis' push to quickly transition to renewable energy as too fast. He said the governor has set an unrealistic and unachievable goal that will mostly affect the poorest people in the state.

“The issue is we're at a point of diminishing returns and we're adding a lot of cost to get a very incremental increase in overall building performance,” Walsh said. “That's going to have a huge economic impact, especially on the lowest wage earners in Colorado.”

The U.S. Department of Energy determined the 2021 IECC was 9% more efficient than the 2018 version.

The economic effects on housing development are even more acute for apartment buildings, Walsh said.

The way he put it, the design of high-rise apartments makes it functionally impossible to install heat pumps in every unit. Because they are surrounded by other apartments and generally have only one exterior wall, converting from the industry standard of whole-building gas-fired hot water boilers would be enormously expensive and would waste more energy, not to mention money, than heat pumps would save, he said.

“These are very efficient gas-fired boilers that provide hot water to all the units,” Walsh said. “You’re using the same water that you're using to shower and wash dishes and clothes in the same loop to heat your unit.”

Dworkin, the governor’s spokesperson, insisted the new law will yield savings for homeowners and renters.

“Along with protecting homeowners’ bottom line, these savings will have a huge upside for renters, including those in disproportionately impacted communities, who will see lower utility bills in buildings constructed under the law’s new model low energy and carbon code,” Dworkin said.

Lim said officials pushing for green codes haven't fully analyzed their fiscal effects, concluding they will cost Coloradans much more than anticipated.

"I think when we talk about electrification, it sounds great, but nobody's really done the full analysis about what this would actually cost," she said.

Any additional costs imposed by the plan will ultimately be passed through to the homeowners and renters, Lim said.

"When we talk about how it's impacting lower income and middle-income families, I think there's a whole slew of things that people should consider. One is that housing is so unaffordable in Colorado and these added regulations are just going to increase the cost of housing. I don't know how the average family can buy a home anymore in Colorado," she said.

A nationwide study in 2021 says regulations imposed by all levels of government account for \$93,870, or 23.8%, of the cost of building a new home, according to the National Association of Homebuilders.

"This study illustrates how overregulation is exacerbating the nation's housing affordability crisis," said NAHB Chairman Chuck Fowke.

Lim noted only a few states — California and Washington, for example — have adopted these types of regulations.

"And that leaves Colorado and California and Washington out on their little islands of green energy goals that they have already put into statute," Lim continued. "I think that that's going to have a really dire effect on our economy. It's going to be really, really expensive to live in places like California and Colorado."

Lim's report says the state is nearly 200,000 units behind population housing needs already, and the deficit is projected to reach more than 500,000 units by 2031.

Peter LiFari, executive director of Maiker Housing Partners, Adams County's public housing authority, argued over-regulation is inhibiting the building of housing units.

"We are woefully under-built, and we have over-regulated the housing market to the point that all types of housing costs are really at their max," LiFari said. "We have a highly regulated environment that essentially crushes economies of scale and prohibits the proliferation of competition and innovation. Housing is egregiously expensive. The vast majority of what's driving our housing outcomes today are our land-use planning and zoning methodologies."

The Common Sense Institute report said the ultimate goal of Polis' clean heat and electrification plan is the electrification of all existing homes and businesses, adding that electrification of commercial buildings could cost another \$17.9 billion.

"We just don't have enough resources to go around, especially when we start to look at how can we reach our most vulnerable Coloradans that are on the edge of solvency," LiFari said.

"Generally, older buildings are exempted from new building codes for this very reason. I think it's difficult if not impossible to accomplish a full retrofitting of our existing stock. And I struggle to find precedent in the state or in the United States that would suggest otherwise."

LiFari said the U.S. needs to be more like Europe, which is moving to a more rigid cost benefit analysis and standardization of codes, using research and development to drive innovation in the housing construction industry.

One benefit of that approach, LiFari said, is a stable regulatory environment that encourages developers to use best practices rather than trying to keep up with the ever-shifting sands of politically motivated regulation.

“It's like we're operating in a precautionary environment where any scintilla of any concern and we stop the whole process, as opposed to where the Europeans are moving now,” LiFari continued.

Lim said it's not too late to reassess Colorado's march toward electrification.

“It's not too late to reevaluate where we're going when it comes to electrification. If we actually want to address this in a rational, reasonable way, then we need to make smarter choices, and we shouldn't be racing to something that is currently kind of pie-in-the-sky unachievable,” Lim said. “I think that because there's such a bias one way or the other in this conversation, we're not actually getting to really good, common-sense solutions.”