



Building Code Amendments – Energy Focus

April 9, 2020

Community impacts from climate change: The communities in King County that are most likely to be harmed by climate change include those with many members who are people of color, immigrants, and/or refugees; have low incomes; or are experiencing homelessness. These communities are also the least likely to have resources to respond to climate change.

The Puget Sound region is likely to see more extreme weather due to climate change, including extreme heat, wildfires, rising sea levels, and more-frequent flooding, all of which can harm public health. Direct effects, such as breathing problems from long exposure to wildfire smoke, are already being seen. Lasting heat waves and flooding can cause heat stress, heat-related illness, and reduced incomes in people who work outdoors. Extreme weather can also reduce farm yields, causing food prices to go up and making it harder for low-income families to buy healthy food.

Why building codes are important: The release of greenhouse gases makes climate change worse. In King County, the largest source (62%) of these gases is buildings. Building codes can have a powerful influence on how much greenhouse gas buildings release.

Natural gas and building codes: Reducing the number of buildings that rely on natural gas, a fossil fuel, for things like heat and hot water is an important way for us to cut the greenhouse gases we release. Even large-scale changes in how we make electricity can't make up for the carbon we release by using natural gas. Also, natural gas stoves and ovens are bad for indoor air quality. They can increase a child's chance of developing asthma by 42 percent.¹ Changing building codes now will save us from needing to change heating systems later by retrofitting individual buildings, which would be very time-consuming and expensive.

What King County is proposing: For new construction of, or improvements to, **multifamily buildings** that are four stories or taller, as well as **commercial buildings**, these changes would:

- Require 10% more efficient lighting and windows
- Eliminate substandard **building envelopes** so walls, ceilings, and floors must perform just as well in energy modeling as required by the traditional code. (A "building envelope" is anything that keeps your heated, indoor air inside.)
- Change the flexible energy efficiency credit system so that:
 - More efficiency credits are required
 - Natural gas features, such as HVAC (heating, ventilation, and air conditioning) and water heating, would not qualify for credits

¹ Weiwei Lin, Bert Brunekreef, and Ulrike Gehring, "Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children," International Journal of Epidemiology, Vol. 42, Issue 6, December 2013, pages 1724- 1737, <https://doi.org/10.1093/ije/dyt150>

- Require electrical outlets near gas appliances in multifamily buildings for future gas-to-electric appliance replacements
- Restrict the use of fossil fuel-based and low-efficiency electric resistance space heating
- Require heat pump water heating for multifamily buildings starting in 2022
- Require multifamily buildings to be **solar-ready**
- Require new buildings to provide a small solar panel installation, set at 0.25 watts per square foot of heated or cooled indoor space

A “solar ready” building has an un-shaded, unobstructed area set aside for future installation of solar panels.

For new **single-family homes** and **townhouses**, these changes would require a solar-ready zone of 300 square feet for single-family homes and 150 square feet for townhomes. This requirement doesn’t apply if the roof is shaded 70% of the day.

Affordable housing costs: Access to affordable housing is a challenge in our region. The proposed regulations may affect the cost of housing, but how much depends on the type of housing.

- The proposed energy code amendments **will only affect multifamily developments that are four stories or taller.**
- The costs for multifamily housing buildings that are four stories or taller are estimated to be \$1,000 – \$2,000 per dwelling unit. For a 100-unit development, the regulations will increase the total cost by about 0.4% – 0.8%. The costs, if recovered over a 50-year building life, would increase rent by \$1.67 – \$3.34 per month (not including inflation). Cost savings on utility bills would probably help balance the increase in rent.
- Affordable housing projects would not be required to install solar panels. However, the proposal would allow builders from other projects to meet their solar panel requirements by installing solar panels on affordable housing projects.
- These proposed changes will not apply to existing buildings unless they are being renovated or receiving additions.

How to comment on the proposed code amendments

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