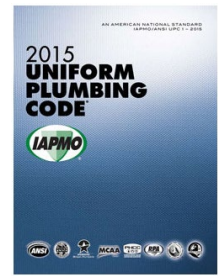
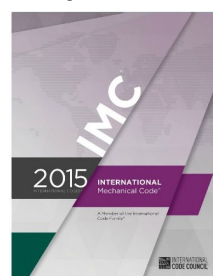
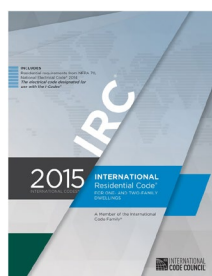
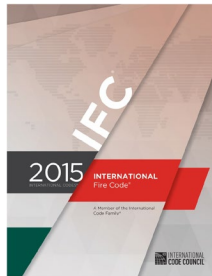
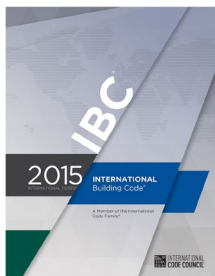




# 2021 Code Updates

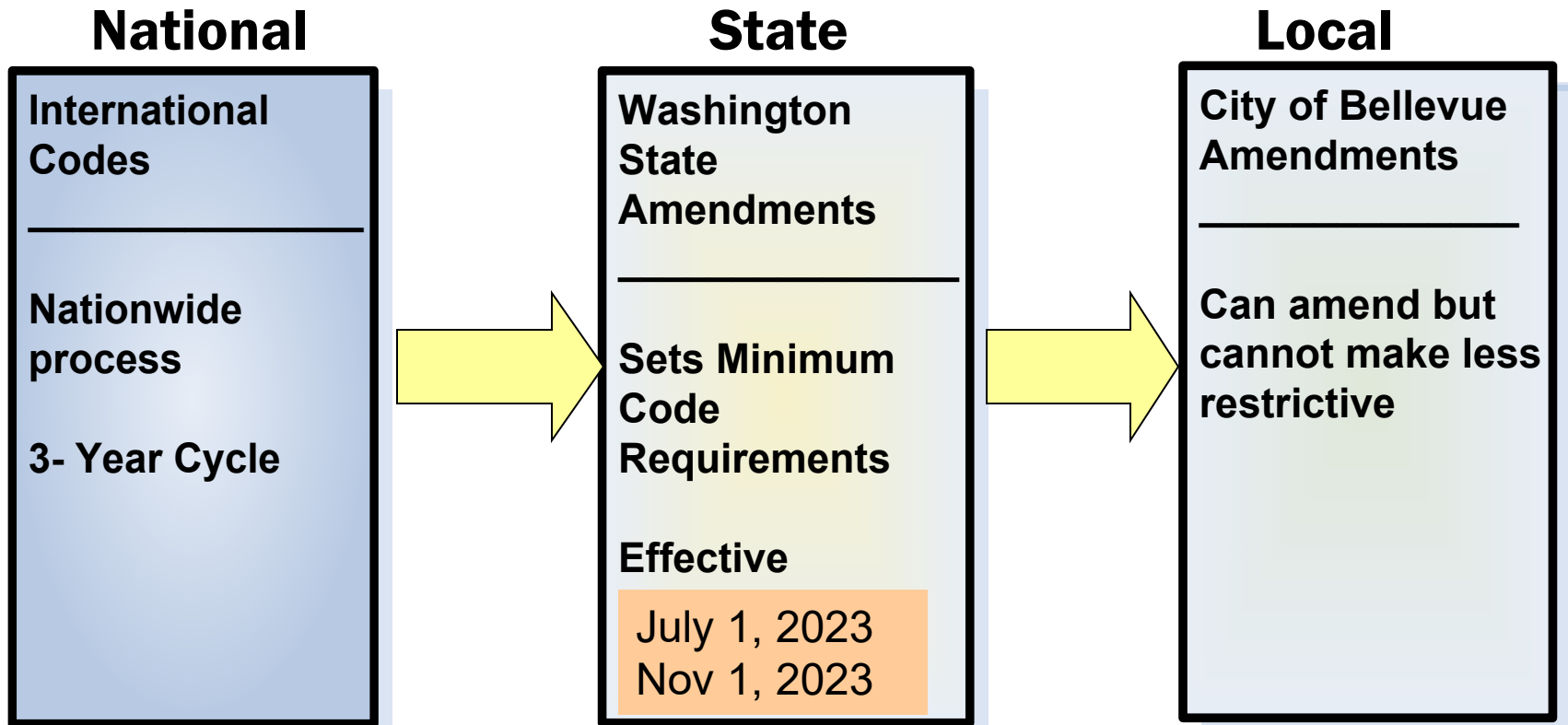
# Which Codes?

- 2021 International Building Code
- 2021 International Existing Building Code
- 2021 International Fire Code
- 2021 International Wildland-Urban Interface Code
- 2021 International Residential Code
- 2021 Washington State Energy Code
- 2021 International Mechanical Code
- 2021 International Fuel Gas Code
- 2021 Uniform Plumbing Code (publ. by IAPMO)
- 2023 National Electrical Code (NFPA 70)





# Washington State Adoption



# Bellevue Adoption Process



- September 2022 established mailbox to solicit stakeholder input ([2021Codes@bellevuewa.gov](mailto:2021Codes@bellevuewa.gov))
- September-November open house(s):
  - 09/29/22 In-person at City Hall Room 1E-108
  - 10/24/22 Virtual meeting (interested parties need to register)
  - 11/21/22 In-person at City Hall Room 1E-108
- Jan – March 2023 draft proposed code changes
- March – April 2023 City Attorney Review
- April/May 2023 – City Council Study Session
- June 2023 – City Council Adoption
- July 1, 2023 – Implementation (or Nov 1, 2023)

# 2021 IBC Significant Changes

- Changes to the Atrium section.
- State amendment to the high-rise definition exempting an occupied roof with an occupant load under 50 may not be adopted in Bellevue.
- New section regulating Puzzle Rooms.
- Changes to Height and Area sections for Type IV construction.
- **704.6.1:** Clarification on the requirements of fireproofing to secondary attachments to structural members.
- Several Chapter 11 changes to align with the 2017 A117.1.
- **1105.1.1:** Automatic door openers now required on certain occupancies
- Adopting the next version of the ACI 318-19. Some significant changes to concrete design.

# 2021 IFC Significant Changes

- No significant changes to the IFC model code for the 2021 edition.
- There will be an amended re-ordering of Chapter 919 – FARS (firefighter air replenishment systems) with the foremost change in this chapter being a requirement to separate exterior EMACs (exterior mobile air connections) 50' from other building system connections, fire protection system connections, and means of egress.
- Many of the 2018 Bellevue IFC Amendments will be redacted in the 2021 code and Bellevue will follow the majority of the Washington State amended IFC prescriptive codes.
- Changes to Section 3308.10.2 – 3308.10.3: Wood frame buildings under construction greater than 80,000 sq ft and wood frame buildings that exceed 350,000 sq ft that are adjacent to other wood frame structures will be required to have a Fire Protection Engineer conduct a fire analysis of the proposed structure in accordance with section 12 of the 2019 edition of NFPA 241 to determine the necessary separation distance and create a mitigation plan.



# 2017 ICC A117.1 Changes

- **Section 107.5;** New distinctions between new construction and existing buildings, which are regulated differently.
- Many changes to account for the standard, larger electronic wheelchairs.
- **Chapters 3 and 4;** Increased sizes in turning spaces, clear floor spaces, and other spaces in new construction.

# 2021 IEBC Significant Changes

## ■ ICC Changes

- When significant portions of a building's exterior wall coverings or exterior wall envelopes are added or replaced, they must comply with the requirements of Chapters 14 and 26 of the IBC. (IEBC 309.1, new section)
- Level 2 and alteration sprinkler requirements have been revised for buildings and areas with higher hazard or risk. (IEBC 803.2)
- Sprinkler requirements for Level 3 alterations have been added to clarify required systems based on the specific occupancy and location of the work area. (IEBC 904.1)
- Clarification on the extent a change of occupancy without alterations requires sprinklers to be added to the building. (IEBC 1011.2.1)

## ■ Proposed State Amendments

- Substantial Damage or Substantial Improvement allow using ICC Building Valuation Data or approved market valuation (for determining flood provisions).
- ICC Building Valuation Data can also be used to determine if work is considered a level 3 alteration. (IEBC 603.1)
- LULAs can serve as part of the accessible route for additions to existing buildings. (IEBC 306.7.8)
- Work on nondamaged components necessary for the repair of damaged components is considered a repair, not an alteration. (IEBC 401.2)
- Demolished and replaced buildings shall comply with the IBC as for new construction. (IEBC 401.4)



# 2021 IRC Significant Changes

- Intermodal shipping containers repurposed for use as buildings or structures, shall be designed in accordance with the structural provisions of the International Building Code.
- New requirements for EV Charging Infrastructure pursuant to HB 1287
- New section added with specific requirements for sleeping lofts within dwellings
- Habitable attics are required to be considered a story above grade plane unless it meets the same restrictions as mezzanines. A dwelling may need to be sprinklered in order for a habitable attic to be constructed.
- New chapter with provisions for existing buildings to allow more flexibility with repairs, alterations, and additions
- State has proposed two new optional appendices:
  - Appendix W is to increase the reuse and recycling of construction materials
  - Appendix X to increase the amount of material salvaged for reuse through the act of deconstruction when a building or structure is demolished.
- Wildland Urban Interface Code (or WUIC) will be enforced for new construction within wildland-interurban interface or intermix areas, as defined by WA DNR map. This requires fire-resistive materials and assemblies, depending on level of hazard.

# 2021 UPC Significant Changes

- **Appendix M** Peak Water Demand to be adopted by State. This appendix provides a method for estimating the demand load for the building water supply and principal branches for single and multi-family dwellings with water conserving plumbing fixtures, fixture fittings and appliances.
- **908.2.4** to be no longer deleted by State amendment. That section requires the toilet to be the most downstream fixture on a horizontal wet vent. Therefore, the toilet will be required to be the most downstream fixture on a horizontal wet vent
- **1101.12** Secondary roof drain sizing. State amendment to be adopted requires the doubling of the rainfall rate for sizing secondary roof drains. The exception to doubling the rainfall rate is if the structural design of the building includes ponding instability in accordance with ASCE 7 for the additional ponding load if the primary drains are blocked.
- **Number of energy code changes** that affect hot water heating systems that plumbers need to be aware of. Relating to type of water heaters and their location inside or outside conditioned space, hot water recirculating system design, hot water insulation requirements, heat recovery in drainage piping.

# 2021 IMC significant Changes

- **401.4 Intake Opening Location:** Exceptions added for Group R occupancies reducing the height of intakes less than 500 CFM and closer than 10 feet from parking lots to 15 feet.
- **403.4.7 Local Exhaust:** Division of enclosed and open kitchens for minimum exhaust requirements.
- **605 Air Filters:** (2) Proposed options.
  - **1) 605.4 Particulate Matter removal:** Minimum MERV 13 for ducted air handlers and ventilation systems serving Groups A, B, E, M, R and I. MERV 8 for groups F, H, S, and U. MERV 4 for unducted air handlers.
  - **2) 605.4 Particulate Matter removal:** MERV 6 for ducted air handlers, MERV 4 for ductless mini-split systems.
    - **605.5 Smoke filtration capability:** Air handlers and Energy recovery ventilators serving occupiable spaces each with individual capacity greater than 500 CFM shall provide fan capacity and a filter box capable of housing a filter with a minimum efficiency of not less than MERV 13.

# 2021 IRC Mechanical significant Changes

- **R202 Definitions:** Enclosed kitchen: A kitchen whose permanent openings to interior adjacent spaces do not exceed a total of 60 square feet.
- **M1503.3 Exhaust discharge:** Exception: Where installed in accordance with manufacturer's instructions, and where continuous local exhaust is provided in an enclosed kitchen in accordance with Table M15.5.4.4(1), listed and labeled ductless range hoods shall not be required to discharge to the outdoors.
- **M1505.4.4.2 Local Exhaust Fans:** Intermittent local exhaust systems serving kitchens shall be rated at a maximum of 3 sones at one or more airflow settings not less than 100 CFM. Continuous local exhaust serving kitchens shall be rated for sound at a maximum of 1 sone at one or more airflow settings not less than 100 CFM.
- **Table M1505.4.4.3 Kitchen range hood airflow rates (CFM) and ASTM E3087 Capture Efficiency (CE) Ratings According to Kitchen Range Fuel Type:**

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<u>Hood Over Electric Range</u>	<u>Hood Over Combustion Range</u>
<u>65% CE or 160 cfm</u>	<u>80% CE or 250 cfm</u>

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# 2021 WSEC Significant Changes

## Commercial:

- **C404.2 Service Water Heating Equipment Performance Efficiency: (2)**  
proposed options.
  - 1) C404.2.1: in new buildings with a combined input rating of the water-heating equipment installed is greater than 1,000,000 btuh the equipment serving occupancies other than R-1 and R-2 shall be one or both of the following: 1. Heat Pump Water Heater 2. Fossil fuel fired with a combined input-capacity-weighted-average of not less than 92 percent per Table C404.2.
  - 2) C404.2.1: Service water-heating equipment shall not use fossil fuels combustion or electric resistance. Service water shall be provided by an electric air-source heat pump water heater.
- **C404.14 Demand Responsive water heating:** Electric storage water heaters with rated water storage between 40 and 120 gallons or less than 12 KW shall be provided with demand responsive controls per ANSI/CTA-2045-B level 2.
- **C406 Additional Efficiency:** Depending on which C404.2 option is selected, credits will increase 16% with option 2, and approximately 33% if option 1 is selected.
- **C411 Renewable Energy:** Requires on-site renewable energy generation for commercial building over 10,000 square feet. Solar readiness requirements are applied to existing buildings.

# 2021 WSEC Significant Changes

## Residential (Note that these changes are not final)

- **R402.1.2 Prescriptive Tab:** New maximum of 0.28 as a prescriptive baseline for new fenestration
- **R403.5.7 Heat Pump Water Heating:** Service water heating in single family dwellings, duplexes, and townhouses be provided by heat pump water heaters.
- **R403.3.5 Duct Testing:** Ducts within conditioned space shall be tested but allowed double the leakage rate per R403.3.6.
- **R403.6.2 Testing:** Mechanical ventilation systems shall be tested and verified to provide the minimum ventilation flow rates per R403.6.
- **R406 Additional Energy Credits:** Likely to be an increase in the number of credits required and a possible change to the credit options. Several proposals for SBCC to decide on.
- **Chapter 5:** Possible changes to the requirements for additions and/or alterations to existing homes.

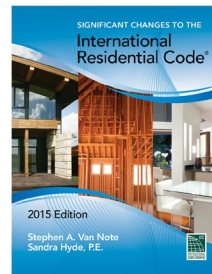
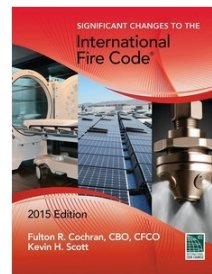
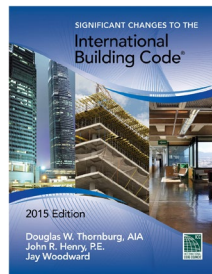


# 2023 NEC significant changes

- 12 new Articles including: Article 512 Cannabis Oil Equipment and Cannabis Oil Systems using Flammable Materials
- Optional installation of peninsula and island receptacles in residential kitchens.
- New load calculations for EV supply equipment.
- GFCI for specific appliances.
- AFCI for sleeping areas of first responder's facilities.
- Use of 10-amp branch circuits.

# Resources

- [International Codes online](#)
- [Washington State Draft Amendments](#)
- [Washington State Building Code Act](#)
- [Existing Bellevue Amendments \(2018\)](#)
- “Significant Changes” Books (From ICC/IAPMO)
- Training ([www.iccsafe.org](http://www.iccsafe.org); [www.wabo.org](http://www.wabo.org))







# Questions For You

- Does Bellevue have existing code amendments that cause you problems?
- Are there existing Bellevue amendments that we should consider deleting or amending?
- Are there amendments that we should consider adding?
- Other general feedback?

# Questions for Us

