



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

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Final Cost Benefit Analysis for the 2021 International Building Code Non-Structural Provisions

I. Code Adoption and Significant legislative Rules

1. Introduction

The Washington State Building Code Council (SBCC) is required to adopt and maintain the state building code, as provided in chapters 19.27, 19.27A, and 70.92 RCW, and the state legislature. The primary objective of the Council is to encourage consistency in the building code throughout the state of Washington and to maintain the building code consistent with the state's interest as provided in RCW 19.27.020. The statewide code adoption process is defined in WAC 51-04 and the Council by-laws. Since 1985, the Council has been responsible for the adoption to update to new editions of the model codes per RCW 19.27.074, including the International Building Code (IBC). The IBC is updated every three years by the International Code Council (ICC). The code development process conducted by the model code organization is open to all interest groups within the design and construction industry and from governmental organizations.

The Council adopts the building codes in accordance with the Administrative Procedures Act (APA). The general procedures for rulemaking are laid out in part III of the Act (RCW 34.05.310 through RCW 34.05.395). Administrative rules governing the procedures for agency rulemaking have been adopted by the Office of the Code Reviser and are found at WAC 1-21-005 through WAC 1-21-180.

2. Adoption of 2021 International Building Code, Non-Structural Provisions.

The Council filed a rule to adopt the 2021 edition of the International Building Code (IBC), non-structural provisions (WAC 51-50), on December 30, 2021 (WSR 22-13-094). The Preproposal Statement of Inquiry (CR 101) to initiate the development of the 2021 IBC, as adopted through WAC 51-50, was filed as WSR 21-07-134 on March 23, 2021. On April 1, 2021, the Council opened a 60-day submittal period for proposals for statewide amendments to the 2021 IBC. All stakeholders and interested parties could submit proposals to meet the legislative goals. All proposals are submitted in writing on the appropriate form with the indicated supporting documentation. Each proponent is required to identify if the proposed amendment has an economic impact and estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance.

The Council has adopted a definition of cost-effectiveness based on RCW 39.35 as recommended by Department of Commerce. A guide on how to evaluate cost-effectiveness is therefore defined by the Council as a code change that has a net present savings over a 50-year life cycle of a building utilizing the Life Cycle Cost Tool (LCCT) as developed by the Washington State Office of Financial Management (OFM). The methodology of the LCCT is based on the NIST Handbook 135 methodology and utilizes specific inputs as determined by the Council with guidance from the Washington State Department of Commerce. The cost effectiveness analysis uses the average useful life years from Appendix 7 of the BOMA Preventive Maintenance Guidebook for all building components that are evaluated. Each submitted code change proposal that is not editorial or explanatory is required to include this analysis. The proponents are also allowed to use an alternate cost benefit analysis.



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In considering amendments to the model code, the Council established and consulted with a technical advisory group (TAG), including representatives of appropriate state agencies, local governments, general contractors, building owners and managers, design professionals, utilities, and other interested parties. The TAG was tasked with reviewing the proposals, identifying pros and cons and whether it helped achieve the broader goals of ensuring buildings and facilities constructed in the state are safe and healthy for building occupants, accessible to persons with disabilities and the elderly, and energy efficient. The TAG also discussed whether modifications were needed to ensure the provisions were correlated with other requirements, technically feasible, commercially available, and cost-effective to building owners and tenants, or if changes were necessary to mitigate any disproportionate impact on small business. 33 proposals were submitted during the two-month submittal period. After hundreds of hours of discussions, the TAG recommended approval of 28 proposals as submitted or as modified. Most of these proposals are exempt from the cost benefit analysis requirement of RCW 34.05.328 as they are editorial or provide additional clarity to existing rules or model code language. There are also 26 significant changes to the model code with economic impact; however, the model code changes are exempt under RCW 34.05.310 (4) (c) and are not part of this report. Section 429 related to electric vehicle charging infrastructure is a statutory mandate pursuant to HB 1287 (2021); this section is also exempt under RCW 34.05.310 (4) (e) and is not part of this report. Nine proposals were identified by the TAG as having a cost (increase or decrease); only three will increase the cost.

The local enforcement authority having jurisdiction administers the codes through the building and/or fire departments. Administrative procedures for state building code compliance are established and will not be changed by the adoption of the 2021 IBC. All businesses, including small businesses, will employ the same types of professional services for the design and construction of buildings and systems to comply with the state building code. The proposed rule updates the state building code and does not require additional equipment, supplies, labor, or other services. Services needed to comply with the building code are existing within the construction industry as required by the local authority having jurisdiction.

The proposed rule makes the IBC consistent with national standards. Businesses with new products or updated test or design standards are recognized in the updated building code. The update will result in some cost outlay for some businesses for specific building projects, for a transition period. Other businesses would see an increase in revenue. The primary intent of the amendments is to improve the safety features in buildings and provide consistency and fairness across the state, for a predictable business environment. The amendments should result in enhanced safety and value in buildings.

II. Code Proposals Identified as Significant.

1. Summary of Probable Benefits vs Probable Costs.

1.1. Section 903.3.1.2 ([21-GP1-021](#)):

Undoes a change that was made to the 2021 IFC and IBC (FS117-18), returning the language in the section to the 2018 text, and aligns the code with the scoping provisions of NFPA 13R. The 2021 change unnecessarily limits the applicability of NFPA 13R systems, particularly for podium buildings, triggering a requirement for a full NFPA 13 system in more buildings. If adopted by the SBCC, the 2021 IFC/IBC requirement would decrease affordability for residential construction, since a full NFPA 13 system would be required in shorter buildings. The new proposal will **decrease** construction cost.



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According to a November 2020 article on the National Fire Sprinkler Association [website](#):

- The National Multifamily Housing Council members estimate a NFPA 13 system costs “an average of \$1 to \$2 more per square foot than NFPA 13R”
- “NFPA Journal notes that installing an NFPA 13 system can cost four to six times more than an NFPA 13R system and include a four to six times greater construction turnaround time.”

1.2. Section 202, new definition for high-rise building ([21-GP1-036](#)):

This change will address a lack of clarity in the code where it is difficult to determine if an occupied roof is considered a floor. Adding an occupied roof with an occupant load of 50 or more to the definition removes ambiguity. This definition will place some buildings into the high-rise category, which will require additional life-safety systems to be installed that otherwise would not have been required. The proponent establishes that additional cost for these systems could be anywhere between \$100,000 to \$1,000,000 per project, depending on the size of the project.

Nevertheless, Council staff research determined that this cost will not be applicable to all projects. Determining what qualifies as a high-rise building is a unique measurement of height that is not based on the definition of “Building height.” The critical measurement is from the lowest ground location where a fire department will be able to set its fire-fighting equipment to a floor level of occupied floors. The term “occupied floor” is not defined in the IBC, and as it is stated in this proposal, the requirements for High-rise buildings are enforced differently throughout the State. Some jurisdictions are considering an occupied roof equivalent to an occupied floor; others do not include it into the height measurement. Therefore, the Council staff considers this proposal clarifies the application of the code and is needed for consistency with enforcement. There is no state-wide direct cost associated with its adoption.

1.3. Sections IBC 903.2.1.3, Chapter 10 (various sections) and 3116 ([21-GP1-66](#); [21-GP1-67](#)):

The code proposals are addressing fixed guideway and passenger rail systems. Proposal # 21-GP1-67 is intended to correlate the IBC/IFC requirements for fire protection to NFPA 130 requirements. The primary purpose is to clarify the requirements for fire protection at open stations. IBC Chapter 9 requires fire protection in Group A3 occupancies and levels from the Group A3 occupancy to the level of exit discharge. However, for open stations, NFPA 130 only requires fire protection in areas with combustible loading. The code and standard are in conflict, but pursuant to Chapter 1 of IBC, the code language prevails. Some jurisdictions have required fire protection at the platform level and at the plaza level while others have not. This code clarification would bring consistency across all jurisdictions and will result in **significant decrease** in building cost. For justification the proponent uses an estimate for elevated station in design in North Seattle, which shows a **significant decrease** in building costs of \$225,348. Proposal # 21-GP1-66 is drawn from NFPA 130 amendments by the City of Bellevue and the City of Seattle for means of egress for light rail stations. The intent is to provide clarity for more consistent application of the IBC and NFPA 130 in the future as light rail service expands and extends into new jurisdictions. The proposal clarifies conflicts between the IBC and NFPA 130; there is no associated cost with the adoption.



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1.4. Sections 420.14 (new), 202, 505.1, 907.2.11.1 907.2.11.2, 1011.14, 1015.2, 1015.3 ([21-GP1-74](#)):

Introduces “lofts” into the IBC as WA amendment. The concept is taken from Section R327 of the IRC, as amended. Lofts have been proposed and used in several jurisdictions for many years in order to put “extra” space to use. However, there is nothing in the code that regulates them. This proposal is intended to provide a reasonable balance between flexibility and safety for these types of spaces. The proponent determined that there will be an **increase** in construction costs including the cost for one extra smoke alarm and guards for each loft. The additional costs will depend on the size and number of lofts in the dwelling unit. Smoke alarms cost less than \$20 each. Based on the price of deck guard systems, the materials for a premanufactured loft guard system will cost between \$15 and \$40 a linear foot. Installation costs will be in addition to the material costs.

Nevertheless, Council staff research determined that there will be no additional cost for businesses if this proposal is adopted. Provisions for lofts are already adopted in the IRC (Section R327) and used, on occasions, for projects constructed under the IBC. Adopting the same or similar requirements in IBC will provide clarity and consistency for enforcement. The provisions originate from the IRC Appendix Q (Tiny Houses), which contains some provisions for “recreational park vehicles” governed by ANSI A119.5. The adoption of Appendix Q was intended to reduce the cost and allow construction of Tiny Homes, not to create more restrictive (and expensive) requirements. This includes the provisions for lofts, which lessens the incentive to misrepresent an intended use and enables building departments to regulate the health and safety of loft spaces based on their actual intended use, ensuring health and safety with minimum loft dimensions, requirements for access and egress, and proper emergency escape and rescue openings. The Council staff considers this proposal is needed to provide more affordable housing, to clarify the application of the code, and for consistency with enforcement. There is no direct cost associated with its adoption if applied to the cost of construction, and not to the lofts only.

1.5. Section 706.3 and 703.4 ([21-GP1-80](#)):

Type III and IV buildings are required to have fire walls made of approved non-combustible materials. Limiting the make-up of fire walls to non-combustible materials can result in problems for taller III and IV buildings. According to the proponent, this change would do away with differential settlement issues making damage to the noncombustible fire wall due to shrinkage of the wood bearing walls less of a factor. The costs associated with this change, as presented by the proponent, would **decrease** building costs depending on material prices.

1.6. Section 510.2 ([21-GP1-82](#)):

This proposal eliminates the Group A 299 occupant load limitation to allow overall provisions found in the IBC to dictate the design of the Group A building or building with a Group A occupancy constructed over the horizontal assembly. If accepted this code change will **reduce the cost** of construction as buildings above a podium building will have a broader choice of types of construction. The cost will depend on the size/type of projects.

1.7. Sections 1208.3 (new), 1208.4, 1208.5 ([21-GP1-84](#)):

Standardizes the minimum size requirements for all dwelling units. The code, as currently written, can be interpreted to allow a one-bedroom unit to be smaller than an efficiency dwelling unit (EDU). The proposal



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makes it clear that a dwelling unit and efficiency dwelling unit are subject to the same size limitations. It also clarifies that sleeping units are subject to the same minimum size requirements as habitable rooms in dwelling units. This proposal, if adopted, would **decrease** the cost of developing a one-bedroom unit because it will not be treated differently from an EDU with respect to size. Since the cost depends on the type, size and location of the project, no cost values are provided by the proponent.

1.8. Sections 602.4.2.2.2, 602.4.2.2.4 ([21-GP1-87](#)):

The proposed increase of allowable unprotected area on the ceiling from 20% to 100% is consistent with the recently completed research conducted at the Research Institute of Sweden (RISE). These fire tests demonstrated that the proposed amounts of unprotected areas on the ceiling and walls, as a function of floor area, can be safely implemented while still achieving the performance objectives specified by the ICC Tall Wood Building Ad-Hoc Committee in the development of the tall building mass timber provisions in the 2021 I-codes. The proposal, if adopted, would **decrease** the cost of construction because it reduces the required amount of noncombustible protection on walls and ceilings in Type IV-B Construction. Since the cost depends on the type, size and location of the project, no cost values are provided by the proponent.

1.9. Sections 503.1.4.2, 1015.2 ([21-GP1-145](#)):

The new amendment requires guards to be provided at the perimeter of the occupied portions of an occupied roof and provides two exceptions (Exception 9 and exception 10). In addition, the new amendment provides a reference to Section 420.14 pertaining to lofts. Pursuant to the proponent, there are many cases where the design of an occupied roof includes only a portion of the entire roof area. The occupied portions of the roof are typically elevated 18" or less above the adjacent unoccupied areas of the roof; therefore, no guard is currently required for these areas. This issue is regularly debated due to the lack of regulatory authority to require the guard in this design scenario. The proposed code change eliminates or drastically reduces the potential for kids and adults who may be inebriated, from falling over the edge of a roof. There will be an **increase** in cost because more guards will need to be installed for occupied roofs where only a portion of the roof area is occupied. The proponent estimates the cost to be approximately \$1/SF of the occupied area of the roof.



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2. List of Code Proposals.

Date: 12/6/2021

Log # [21-GP1-021](#)

Proponent and description: *Jon Sui 2021 IBC Section 903.3.1.2 NFPA 13R sprinkler systems*

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

Purposes—Objectives—Standards.

The purpose of this chapter is to promote the health, safety and welfare of the occupants or users of buildings and structures and the general public by the provision of building codes throughout the state. Accordingly, this chapter is designed to effectuate the following purposes, objectives, and standards:

(1) To require minimum performance standards and requirements for construction and construction materials, consistent with accepted standards of engineering, fire and life safety.

(2) To require standards and requirements in terms of performance and nationally accepted standards.

(3) To permit the use of modern technical methods, devices and improvements.

(4) To eliminate restrictive, obsolete, conflicting, duplicating and unnecessary regulations and requirements which could unnecessarily increase construction costs or retard the use of new materials and methods of installation or provide unwarranted preferential treatment to types or classes of materials or products or methods of construction.

(5) To provide for standards and specifications for making buildings and facilities accessible to and usable by physically disabled persons.

(6) To consolidate within each authorized enforcement jurisdiction, the administration and enforcement of building codes.

(1)(b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule:

The Council is required to adopt and maintain the state building code, as provided in chapters 19.27, 19.27A, and 70.92 RCW, and the state legislature. The primary objective of the Council is to encourage consistency in the building code throughout the state of Washington and to maintain the building code consistent with the state's interest as provided in RCW 19.27.020. The statewide code adoption process is defined in WAC 51-04 and the Council by-laws. All proposals are submitted in writing on the appropriate form with the indicated supporting documentation. Each proponent must identify where a proposed amendment has an economic impact and estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. There are no alternatives to this procedure. If the rule is not adopted, this will be a violation



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of the State Law, which will affect the promotion of fire and life safety in buildings consistent with accepted standards.

(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented:

This proposal undoes a change that was made to the 2021 IFC and IBC (FS117-18), returning the language in the section to the 2018 text, and aligns the code with the scoping provisions of NFPA 13R. The 2021 change unnecessarily limits the applicability of NFPA 13R systems, particularly for podium buildings, triggering a requirement for a full NFPA 13 system in more buildings. If adopted by the SBCC, the 2021 IFC/IBC requirement would decrease affordability for residential construction, since a full NFPA 13 system would be required in shorter buildings. The new proposal will decrease construction cost.

According to a November 2020 article on the National Fire Sprinkler Association website:

- *The National Multifamily Housing Council members estimate a NFPA 13 system costs “an average of \$1 to \$2 more per square foot than NFPA 13R”*
- *“NFPA Journal notes that installing an NFPA 13 system can cost four to six times more than an NFPA 13R system and include a four to six times greater construction turnaround time.”*

(1)(f) Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law:

The primary objective of the Council is to encourage consistency in the building code throughout the state, and to maintain the building code consistent with the state's interest. The rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

(1)(g) Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law:

The adoption and amendment of the 2021 IBC do not impose more stringent performance requirements on private entities than on public entities.

(1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is justified by the following:

This does not differ from any federal regulations or statute applicable to the same activity.

(1)(i) A state statute explicitly allows the agency to differ from federal standards; or

(1)(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated under (a) of this subsection; and

(1)(iii) Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.



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Date: 12/6/2021

Log # [21-GP1-036](#)

Proponent and description: *Lee Kranz 2021 IBC Section 202 Definition of Highrise Building*

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

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- (3) To permit the use of modern technical methods, devices and improvements.
- (4) To eliminate restrictive, obsolete, conflicting, duplicating and unnecessary regulations and requirements which could unnecessarily increase construction costs or retard the use of new materials and methods of installation or provide unwarranted preferential treatment to types or classes of materials or products or methods of construction.
- (5) To provide for standards and specifications for making buildings and facilities accessible to and usable by physically disabled persons.
- (6) To consolidate within each authorized enforcement jurisdiction, the administration and enforcement of building codes.

(1)(b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule:

The Council is required to adopt and maintain the state building code, as provided in chapters 19.27, 19.27A, and 70.92 RCW, and the state legislature. The primary objective of the Council is to encourage consistency in the building code throughout the state and to maintain the building code consistent with the state's interest as provided in RCW 19.27.020. The statewide code adoption process is defined in WAC 51-04 and the Council by-laws. All proposals are submitted in writing on the appropriate form with the



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indicated supporting documentation. Each proponent must identify where a proposed amendment has an economic impact and estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. There are no alternatives to this procedure. If the rule is not adopted, this will be a violation of the State Law, which will affect the promotion of fire and life safety in buildings consistent with accepted standards.

(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented

This proposal addresses a lack of clarity in the code where it is difficult to determine if an occupied roof is considered a floor. Adding an occupied roof with an occupant load of 50 or more to the definition removes ambiguity. This definition will place some buildings into the high-rise category, which will require additional life-safety systems to be installed that otherwise would not have been required. The proponent establishes that additional cost for these systems could be anywhere between \$100,000 to \$1,000,000 per project, depending on the size of the project.

Council staff research determined that this cost will not be applicable to all projects. Determining what qualifies as a high-rise building is a unique measurement of height that is not based on the definition of "Building height." The critical measurement is from the lowest ground location where a fire department will be able to set its fire-fighting equipment to a floor level of occupied floors. The term "occupied floor" is not defined in the IBC, and as it is stated in this proposal, the requirements for High-rise buildings are enforced differently throughout the State. Some jurisdictions are considering an occupied roof equivalent to an occupied floor; others do not include it into the height measurement. Therefore, the Council staff considers this proposal clarifies the application of the code and is needed for consistency with enforcement. There is no state-wide direct cost associated with its adoption.

(1)(f) Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law:

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(1)(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated under (a) of this subsection; and

(1)(iii) Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.



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Date: 12/6/2021

Log # [21-GP1-66](#); [21-GP1-67](#)

Proponent and description: *Kym Williams 2021 IBC Sections 903.2.1.3, Ch 10 (Various Sections), and 3116 Fixed Guideway Transit and Passenger Rail Systems Stations – Fire Protection*

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

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(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented

Both proposals are addressing fixed guideway and passenger rail systems. 21-GP1-67 is intended to correlate the IBC/IFC requirements for fire protection to NFPA 130 requirements. The primary purpose is to clarify the requirements for fire protection at open stations. IBC Chapter 9 requires fire protection in Group A3 occupancies and levels from the Group A3 occupancy to the level of exit discharge. However, for open stations, NFPA 130 only requires fire protection in areas with combustible loading. The code and standard are in conflict, but pursuant to Chapter 1 of IBC, the code language prevails. Some jurisdictions have required fire protection at the platform level and at the plaza level while others have not. This clarification would bring consistency across all jurisdictions and will result in significant decrease in cost. The proponent uses an estimate for elevated station in design in Seattle, which shows a decrease in building costs of \$225,348. Proposal # 21-GP1-66 is drawn from NFPA 130 amendments by the City of Bellevue and the City of Seattle for means of egress for light rail stations. The intent is to provide clarity for more consistent application of the IBC and NFPA 130 in the future as light rail service expands and extends into new jurisdictions. The proposal clarifies conflicts between the IBC and NFPA 130; there is no associated cost with the adoption.

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Date: 12/6/2021

Log # [21-GP1-74](#)

Proponent and description: *Jon Sui 2021 IBC Sections IBC 420.13 (new), IBC 202, IBC 505.1, IBC 1011.14, IBC 1015.2, IBC 1015.3, IFC/IBC 907.2.11.1, IFC/IBC 907.2.11.2 Lofts*

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

Purposes—Objectives—Standards.

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- (5) To provide for standards and specifications for making buildings and facilities accessible to and usable by physically disabled persons.
- (6) To consolidate within each authorized enforcement jurisdiction, the administration and enforcement of building codes.

(1)(b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule:

The Council is required to adopt and maintain the state building code, as provided in chapters 19.27, 19.27A, and 70.92 RCW, and the state legislature. The primary objective of the Council is to encourage consistency in the building code throughout the state of Washington and to maintain the building code consistent with the state's interest as provided in RCW 19.27.020. The statewide code adoption process is defined in WAC 51-04 and the Council by-laws. All proposals are submitted in writing on the appropriate form with the indicated supporting documentation. Each proponent must identify where a



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proposed amendment has an economic impact and estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. There are no alternatives to this procedure. If the rule is not adopted, this will be a violation of the State Law, which will affect the promotion of fire and life safety in buildings consistent with accepted standards.

(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

This proposal introduces “lofts” into the IBC as WA amendment. The concept is taken from Section R327 of the IRC, as amended. Lofts have been proposed and used in several jurisdictions for many years to put “extra” space to use. However, there is nothing in the code that regulates them. This proposal is intended to provide a reasonable balance between flexibility and safety for these types of spaces. The proponent determined that there will be an increase in construction costs including the cost for one extra smoke alarm and guards for each loft. The additional costs will depend on the size and number of lofts in the dwelling unit. Smoke alarms cost less than \$20 each. Based on the price of deck guard systems, the materials for a premanufactured loft guard system will cost between \$15 and \$40 a linear foot. Installation costs will be in addition to the material costs.

Nevertheless, Council staff research determined that there will be no additional cost for businesses if this proposal is adopted. Provisions for lofts are already adopted in the IRC (Section R327) and used, on occasions, for projects constructed under the IBC. Adopting the same or similar requirements in IBC will provide clarity and consistency for enforcement. The provisions originate from the IRC Appendix Q (Tiny Houses), which contains some provisions for “recreational park vehicles” governed by ANSI A119.5. The adoption of Appendix Q was intended to reduce the cost and allow construction of Tiny Homes, not to create more restrictive (and expensive) requirements. This includes the provisions for lofts, which lessens the incentive to misrepresent an intended use and enables building departments to regulate the health and safety of loft spaces based on their actual intended use, ensuring health and safety with minimum loft dimensions, requirements for access and egress, and proper emergency escape and rescue openings. The Council staff considers this proposal is needed to provide more affordable housing, to clarify the application of the code, and for consistency with enforcement. There is no direct cost associated with its adoption if applied to the cost of construction, and not to the lofts only.

(1)(f) Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law:

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(1)(g) Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law:

The adoption and amendment of the 2021 IBC do not impose more stringent performance requirements on private entities than on public entities.



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(1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is justified by the following:

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(1)(i) A state statute explicitly allows the agency to differ from federal standards; or

(1)(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated under (a) of this subsection; and

(1)(iii) Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.



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Date: 12/6/2021

Log # [21-GP1-80](#)

Proponent and description: *Micah Chappell*

2021 IBC Section 706.3 Materials used in fire walls

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

Purposes—Objectives—Standards.

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- (4) To eliminate restrictive, obsolete, conflicting, duplicating and unnecessary regulations and requirements which could unnecessarily increase construction costs or retard the use of new materials and methods of installation or provide unwarranted preferential treatment to types or classes of materials or products or methods of construction.
- (5) To provide for standards and specifications for making buildings and facilities accessible to and usable by physically disabled persons.
- (6) To consolidate within each authorized enforcement jurisdiction, the administration and enforcement of building codes.

(1)(b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule:

The Council is required to adopt and maintain the state building code, as provided in chapters 19.27, 19.27A, and 70.92 RCW, and the state legislature. The primary objective of the Council is to encourage consistency in the building code throughout the state of Washington and to maintain the building code consistent with the state's interest as provided in RCW 19.27.020. The statewide code adoption process



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is defined in WAC 51-04 and the Council by-laws. All proposals are submitted in writing on the appropriate form with the indicated supporting documentation. Each proponent must identify where a proposed amendment has an economic impact and estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. There are no alternatives to this procedure. If the rule is not adopted, this will be a violation of the State Law, which will affect the promotion of fire and life safety in buildings consistent with accepted standards.

(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

Type III and IV buildings are required to have fire walls made of approved non-combustible materials. Limiting the make-up of fire walls to non-combustible materials can result in problems for taller III and IV buildings. According to the proponent, this change would do away with differential settlement issues making damage to the noncombustible fire wall due to shrinkage of the wood bearing walls less of a factor. The costs associated with this change, as presented by the proponent, would decrease building costs depending on material prices.

(1)(f) Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law:

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(1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is justified by the following:

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(1)(i) A state statute explicitly allows the agency to differ from federal standards; or

(1)(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated under (a) of this subsection; and

(1)(iii) Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.



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Date: 12/6/2021

Log # [21-GP1-82](#)

Proponent and description: *Micah Chappell*

2021 IBC Section 510.2 Horizontal building separation allowance

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

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(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

This proposal eliminates the Group A 299 occupant load limitation to allow overall provisions found in the IBC to dictate the design of the Group A building or building with a Group A occupancy constructed over the horizontal assembly. If accepted this code change will reduce the cost of construction as buildings above a podium building will have a broader choice of types of construction. The cost will depend on the size/type of projects.

(1)(f) Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law:

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(1)(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated under (a) of this subsection; and

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Date: 12/6/2021

Log # [21-GP1-84](#)

Proponent and description: *Micah Chappell*

2021 IBC Sections (new) 1208.3, (revise) 1208.4, 1208.5 Dwelling unit size

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

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Standardizes the minimum size requirements for all dwelling units. The code, as currently written, can be interpreted to allow a one-bedroom unit to be smaller than an efficiency dwelling unit (EDU). The proposal makes it clear that a dwelling unit and efficiency dwelling unit are subject to the same size limitations. It also clarifies that sleeping units are subject to the same minimum size requirements as habitable rooms in dwelling units. This proposal, if adopted, would decrease the cost of developing a one-bedroom unit because it will not be treated differently from an EDU with respect to size. Since the cost depends on the type, size and location of the project, no cost values are provided by the proponent.

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Date: 12/6/2021

Log # [21-GP1-87](#)

Proponent and description: *Micah Chappell*

2021 IBC Sections 602.4.2.2.2, 602.4.2.2.4 Interior protection

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

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(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

The proposed increase of allowable unprotected area on the ceiling from 20% to 100% is consistent with the recently completed research conducted at the Research Institute of Sweden (RISE). These fire tests demonstrated that the proposed amounts of unprotected areas on the ceiling and walls, as a function of floor area, can be safely implemented while still achieving the performance objectives specified by the ICC Tall Wood Building Ad-Hoc Committee in the development of the tall building mass timber provisions in the 2021 I-codes. The proposal, if adopted, would decrease the cost of construction because it reduces the required amount of noncombustible protection on walls and ceilings in Type IV-B Construction. Since the cost depends on the type, size and location of the project, no cost values are provided by the proponent.

(1)(f) Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law:

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Date: 12/6/2021

Log # [21-GP1-145](#)

Proponent and description: Lee Kranz 2021 IBC Sections 503.1.4.2, 1015.2 Guards for Occupied Roofs

Compliance with RCW 34.05.328 Significant legislative rules, other selected rules

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements

[RCW 19.27.020](#)

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proposed amendment has an economic impact and estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. There are no alternatives to this procedure. If the rule is not adopted, this will be a violation of the State Law, which will affect the promotion of fire and life safety in buildings consistent with accepted standards.

(1)(d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

The new amendment requires guards to be provided at the perimeter of the occupied portions of an occupied roof and provides two exceptions (Exception 9 and exception 10). In addition, the new amendment provides a reference to Section 420.14 pertaining to lofts. Pursuant to the proponent, there many cases where the design of an occupied roof includes only a portion of the entire roof area. The occupied portions of the roof are typically elevated 18" or less above the adjacent unoccupied areas of the roof; therefore, no guard is currently required for these areas. This issue is regularly debated due to the lack of regulatory authority to require the guard in this design scenario. The proposed code change eliminates or drastically reduces the potential for kids and adults who may be inebriated, from falling over the edge of a roof. There will be an increase in cost because more guards will need to be installed for occupied roofs where only a portion of the roof area is occupied. The proponent estimates the cost to be approximately \$1/SF of the occupied area of the roof.

(1)(f) Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law:

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(1)(i) A state statute explicitly allows the agency to differ from federal standards; or

(1)(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated under (a) of this subsection; and

(1)(iii) Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.