STATE OF WASHINGTON

# STATE BUILDING CODE COUNCIL

May 2018

Log No. _____

**1. State Building Code to be Amended:**

- ☒ International Building Code
- ☐ ICC ANSI A117.1 Accessibility Code
- ☐ International Existing Building Code
- ☐ International Residential Code
- ☐ International Fire Code
- ☐ Uniform Plumbing Code
- ☐ International Mechanical Code
- ☐ International Fuel Gas Code
- ☐ NFPA 54 National Fuel Gas Code
- ☐ NFPA 58 Liquefied Petroleum Gas Code
- ☐ Wildland Urban Interface Code

For the Washington State Energy Code, please see specialized energy code forms

**Section(s): IBC 3116, IBC Chapter 35**

**Title: Fixed Guideway Transit – NFPA 130 Amendments (Fire separations and means of egress)**

**Revised based upon 12/2/2024 meeting Tag Feedback, changes highlighted yellow.**

**2. Proponent Name (Specific local government, organization or individual): Kym Williams**
**Proponent: Sound Transit**
**Title: Director, Permit Administration**
**Date: July 9, 2024**

**3. Designated Contact Person:**
**Name: Mark Murray, PE**
**Title: Principal Fire Engineer**
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**E-Mail address: mark.murray@soundtransit.org**

4. **Proposed Code Amendment**. Reproduce the section to be amended by underlining all added language, striking through all deleted language. Insert new sections in the appropriate place in the code in order to continue the established numbering system of the code. If more than one section is proposed for amendment or more than one page is needed for reproducing the affected section of the code, additional pages may be attached.

   Clearly state if the proposal modifies an existing amendment or if a new amendment is needed. If the proposal modifies an **existing amendment**, show the modifications to the existing amendment by underlining all added language and striking through all deleted language. If a new amendment is needed, show the modifications to the **model code** by underlining all added language and striking through all deleted language.

   **Code(s)** IBC **Section(s)** 1004, 3116.2

   Amend sections to read as follows:

   The following is an amendment to an **existing** amendment.

Table 1004

| FUNCTION OF SPACE | OCCUPANT LOAD FACTOR' |
|---|---|
| Accessory storage areas, mechanical equipment room | 300 gross |
| Agricultural building | 300 gross |
| Aircraft hangars | *500* gross |
| Airport terminal<br>Baggage claim<br>Baggage handling<br>Concourse<br>Waiting areas | <br>20 gross<br>300 gross<br>100 gross<br>15 gross |
| Assembly<br>Gaming floors (keno, slots, etc.)<br>Exhibit gallery and museum | <br>11 gross<br>30 net |
| Assembly with fixed seats | See Section 1004.6 |
| Assembly without fixed seats<br>Concentrated (chairs only-not fixed)<br>Standing space<br>Unconcentrated (tables and chairs) | <br>7 net<br>5 net<br>15 net |
| Bowling centers, allow 5 persons for each lane including 15 feet of runway and for additional areas | 7 net |
| Business areas<br>Concentrated business use areas | 150 gross<br>See Section 1004.8 |
| Courtrooms-other than fixed seating areas | 40 net |
| Day care | 35 net |
| Dormitories | 50 gross |
| Educational<br>Classroom area<br>Shops and other vocational room areas | <br>20 net<br>50 net |
| Exercise rooms | 50 gross |
| Fixed guideway transit and passenger rail systems<br>Platform<br>Concourse/lobby | <br>~~100 gross~~ See Section 3116<br>~~See Section 3116~~ 100 gross |
| Group H-5 fabrication and manufacturing areas | 200 gross |
| Industrial areas | 100 gross |
| Institutional areas<br>Inpatient treatment areas<br>Outpatient areas<br>Sleeping areas | <br>240 gross<br>100 gross<br>120 gross |
| Kitchens, commercial | 200 gross |
| Library<br>Reading rooms<br>Stack area | <br>50 net<br>100 gross |

| | |
|---|---|
| Locker rooms | 50 gross |
| Mall buildings-covered and open | See Section 402.8.2 |
| Mercantile<br>Storage, stock, shipping areas | 60 gross<br>300 gross |
| Parking garages | 200 gross |
| Residential | 200 gross |
| Skating rinks, swimming pools<br>Rink and pool<br>Decks | <br>50 gross<br>15 gross |
| Stages and platforms | 15 net |
| Warehouses | 500 gross |
| For SI: I foot = 304.8 mm, I square foot= 0.0929 m2 | |

**5.3.11 Means of egress lighting.**

**5.3.11.1** Illumination of the means of egress in stations, including escalators that are considered a means of egress, shall be in accordance ~~with Section 7.8 of NFPA 101~~ IBC Section 1008.

**5.3.11.2** Means of egress, including escalators considered as means of egress, shall be provided with system of emergency lighting in accordance with ~~Section 7.9 of NFPA 101~~IBC Section 1008.

**5.3.11.3** In addition to the requirements of Sections 5.3.11.1 and 5.3.11.2:

(1) Lighting for stairs and escalators shall be designed to emphasize illumination on the top and bottom steps and landings.

(2) Where newel- and comb-lighting is provided for escalator steps, such lighting shall be on emergency power circuits.

**Commented [MM1]:** Normal power lighting requirements

**Commented [MM2]:** Emergency power lighting requirements

**Commented [MM3]:** 5.3.11.2 My previous proposal accounted for illuminated exit signs (IBC 1013). NFPA 130 is silent on this subject so the IBC will apply. No amendment needed on exit signs.

These are all **new** amendments to NFPA 130:

**5.2.4.2* Separation Between Public and Nonpublic Floor Areas**. All public areas shall be ~~fire~~ separated from adjacent nonpublic areas in accordance with *International Building Code* Section 508 (occupancy separations) and Section 509 (incidental use) and by at least a one-hour fire barrier for enclosed stations.~~.~~

**5.2.4.5* Separation Between System and Nonsystem Occupancies.**

All station public areas shall be ~~fire~~ separated from adjacent non-system occupancies in accordance with the *International Building Code* 508 (occupancy separations) and Section 509 (incidental use) and by at least a one-hour fire barrier for enclosed stations.~~.~~

**5.3.8.5** Turnstile-type fare barriers in accordance with the *International Building Code* ~~NFPA *101*~~ shall be permitted in the means of egress and shall meet the following criteria:

(1) Dimensions shall be in accordance with the requirements of *the International Building Code*~~NFPA *101*~~.

(2) Turnstiles that drop away from the egress opening under the conditions listed in 5.3.8.2 or 5.3.8.3 shall be credited with a capacity of 50 p/min for egress calculations.

(3) Turnstiles that revolve freely in the direction of egress under the conditions listed in 5.3.8.2 shall meet the following criteria:

(a) Each unit shall be credited with a capacity of 25 p/min for egress calculations.

(b) The turnstiles shall not account for more than 50 percent of the required egress capacity for each egress route.

(4) Security access turnstiles shall meet the requirements of the *International Building Code*.

**6.3.3.10** Exit stairs and doors shall comply with the *International Building Code*, Chapter 10, ~~Chapter 7 of NFPA 101~~, except as herein modified.

**6.3.5.12** Lighting systems for enclosed trainways shall be installed in accordance with the *International Building Code*, Section 1008 and 1013. ~~Sections 7.8 and 7.9 of NFPA *101*, except as otherwise noted in 6.3.5.~~

NFPA

| | | |
|---|---|---|
| | 130-~~20~~23 | Standard for Fixed Guideway and Passenger Rail Systems<br>Table 1004.5, 1005, 1006.2.1, 1006.2.1.1, 1010.3.4.1 |

5. **Briefly explain your proposed amendment, including the purpose, benefits and problems addressed.** Specifically note any impacts or benefits to business, and specify construction types, industries and services that would be affected. Finally, please note any potential impact on enforcement such as special reporting requirements or additional inspections required.

**IBC Table 1004**

A code change approval was approved last cycle to reflect requirements for Fixed guideway transit and passenger rail systems but there was a editorial error made when the table was updated.

**5.3.11 Means of egress lighting.**

This is to correct the reference to IBC 1013 for exit signs and corrects the apparent duplication of a reference to means of egress illumination in two separate provisions of NFPA 130. With this change both IBC 1008 (Means of Egress Illumination) and 1013 (Exit Signs) are referenced.

**5.2.4.2 Separation Between Public and Nonpublic Floor Areas.**

NFPA 130 does not provide clear language on the nature of the separation such as what hourly rating is required. The IBC addresses this topic clearly in Chapter 5 (e.g., Section 508 and 509) and considers many of the factors outlined in Annex A of NFPA 130. By referring to the IBC plans examiners will be able to apply their IBC experience to light rail stations. For open station (open atmosphere) applying IBC rules for separated, nonseparated, and incidental uses provides sufficient level of protection and consistent with the intent of NFPA 130. Note that NFPA 130 does not require open stations to be provided with automatic sprinklers, but a state amendment requires all enclosed rooms to be provided with sprinklers. Enclosed (e.g., tunnel) stations present more risk and a one-hour rating (combined with automatic sprinklers which are required) mitigates the risk.

**Commented [MM4]:** NFPA 130 annex outlines factors to consider.

**A.5.2.4.2** The fire resistance rating of the required fire separation should be determined based on evaluation of such factors as the type of station configuration (open versus enclosed), fire suppression provided in the nonpublic areas, and NFPA *101* requirements for separation of similar occupancies.

**5.2.4.5 Separation Between System and Nonsystem Occupancies.**

NFPA 130 does not provide clear language on the nature of the separation. Nonsystem areas of a light rail station include space not associated with transportation such as a coffee shop. This amendment refers to the IBC to determine where fire separations are required. IBC Chapter 5 provisions will apply including section 508 (occupancy separations) and section 509 (incidental uses). This simplifies work required by the designer and the plans examiner. For open station (open atmosphere) applying IBC rules for separated, nonseparated, and incidental uses provides sufficient level of protection and consistent with the intent of NFPA 130. Note that NFPA 130 does not require open stations to be provided with automatic sprinklers, but a state amendment requires all enclosed rooms to be provided with sprinklers. Enclosed (e.g., tunnel) stations present more risk and a one-hour rating (combined with automatic sprinklers which are required) mitigates the risk.

**A.5.2.4.5** Because of the difference in the potential level of hazard between various stations (e.g., open stations compared to enclosed stations), alternative methods to fire separation could be considered.

**5.3.8.5 Turnstile-type fare barriers**

This amendment refers to the IBC because NFPA 101 is not adopted for light rail stations and the State of Washington uses the IBC for its building code. Referring to the IBC and including a provision to allow security access turnstiles provides clarity for the plans examiner on what code applies.

**6.3.3.10 Exit Stairs and Doors**

Chapter 6 of NFPA 130 applies to trainways (not stations). This revision clarifies the IBC, rather than NFPA 101, applies to exit doors from trainways which include tunnel cross passage doors, stair doors serving tunnels and elevated guideways, and doors from the emergency walkway (where provided) allowing egress from the trainway through a station, for example.

**6.3.5.12 Lighting Systems for Enclosed Trainways**

This amendment refers to IBC Chapter 10 rather than NFPA 101 for lighting systems for the means of egress (e.g., emergency walkway) for tunnels. NFPA 101-7.8 addresses Illumination of Means of Egress. NFPA 101-7.9 addresses Emergency Lighting. IBC 1008 addresses Means of Egress Illumination. While the NFPA is more detailed code, many of the provisions are mirrored in the IBC which is more concise. Clarifying that designers and plans examiners need only apply the IBC is an improvement. Also, referring to the IBC rather than NFPA 101 is logical because the State of Washington uses the IBC for its building code. We acknowledge NFPA has a higher standard for stairs (10 footcandle) and Sound Transit has adopted the higher criteria as an owner requirement.

6. **Specify what criteria this proposal meets.** You may select more than one.
   - ☐ The amendment is needed to address a critical life/safety need.
   - ☒ The amendment clarifies the intent or application of the code.
   - ☐ The amendment is needed to address a specific state policy or statute.
   - ☐ The amendment is needed for consistency with state or federal regulations.
   - ☐ The amendment is needed to address a unique character of the state.
   - ☒ The amendment corrects errors and omissions.

7. **Is there an economic impact:** ☐ Yes ☒ No

   If no, state reason: These amendments do not change what is generally required for fixed transit facilities. They are to help correlate the codes and standards so that designers, plans examiners and building officials can understand and enforce clear rules.

   If yes, provide economic impact, costs and benefits as noted below in items a – f.

   a. ***Life Cycle Cost.*** Use the OFM Life Cycle Cost **Analysis tool** to estimate the life cycle cost of the proposal using one or more typical examples. Reference these **Instructions;** use these **Inputs.** Webinars on the tool can be found **Here** and **Here**). If the tool is used, submit a copy of the excel file with your proposal submission. If preferred, you may submit an alternate life cycle cost analysis.

      NA

b. ***Construction Cost.*** Provide your best estimate of the construction cost (or cost savings) of your code change proposal.
NA

$Click here to enter text./square foot

(For residential projects, also provide $Click here to enter text./ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

c. ***Code Enforcement.*** List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

NA

d. ***Small Business Impact.*** Describe economic impacts to small businesses:
NA

e. ***Housing Affordability.*** Describe economic impacts on housing affordability:
NA

f. ***Other.*** Describe other qualitative cost and benefits to owners, to occupants, to the public, to the environment, and to other stakeholders that have not yet been discussed:

NA

Please send your completed proposal to: sbcc@des.wa.gov

**All questions must be answered to be considered complete. Incomplete proposals will not be accepted.**