



JOHNS HOPKINS
BLOOMBERG SCHOOL
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Johns Hopkins Center for Injury Research and Policy



Vision 20/20



SMOKE ALARM SUMMIT

Residential Smoke Alarms: A Discussion of NFPA 72 Location Requirements

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Learning Objectives

- Describe NFPA 72
- Outline basic spacing requirements for household smoke alarms
- Brief history of code changes
- Explain the life cycle of code adoption
- ~~Make you an EXPERT in fire alarm design!~~

What Is NFPA 72?

- *National Fire Alarm and Signaling Code*
- A model standard to determine what must be included in a fire alarm system
- Applies to all types of buildings (residential, commercial, institutional, etc...)
- Chapter 29 has specific requirements that apply to residential occupancies, including apartments, hotels and houses

Why is it Important?

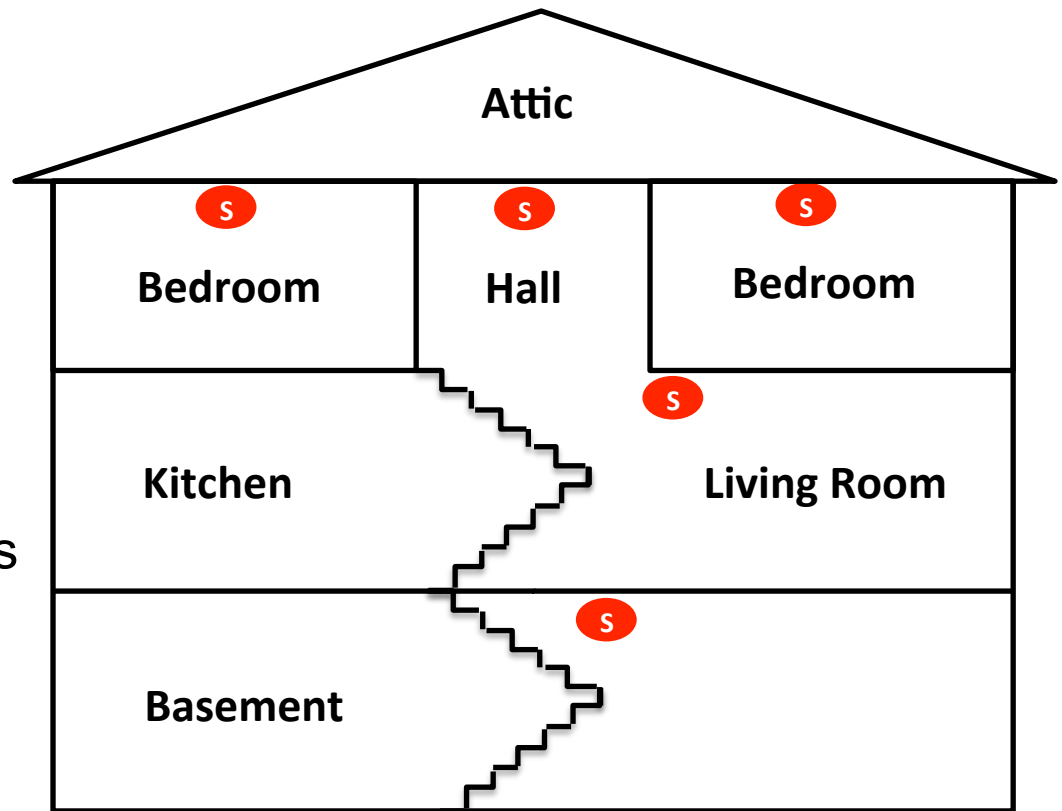
- NFPA 72 is adopted by reference in model building codes, as well as directly into municipal fire codes
 - International Building Code
 - International Residential Code
 - Life Safety Code
- NFPA 72 is the basic underlying document that sets minimum standards for installation of smoke alarms in residences.

History

- Pre-1993
 - Smoke alarms outside of sleeping rooms and on every level
- 1993-2002
 - 2002 Edition, Section 11.5.1.1
 - Outside of sleeping rooms and on every level
 - NEW – In every sleeping room
 - **Exception for existing one and two family dwellings.**
- 2007
 - Eliminate exceptions for existing dwellings on interconnectivity and every room location

Current Location Requirements

- IN every sleeping room
- OUTSIDE all sleeping rooms
- On every level
- Also:
 - NO exceptions for existing dwellings
 - Additional requirements for large homes and rooms.



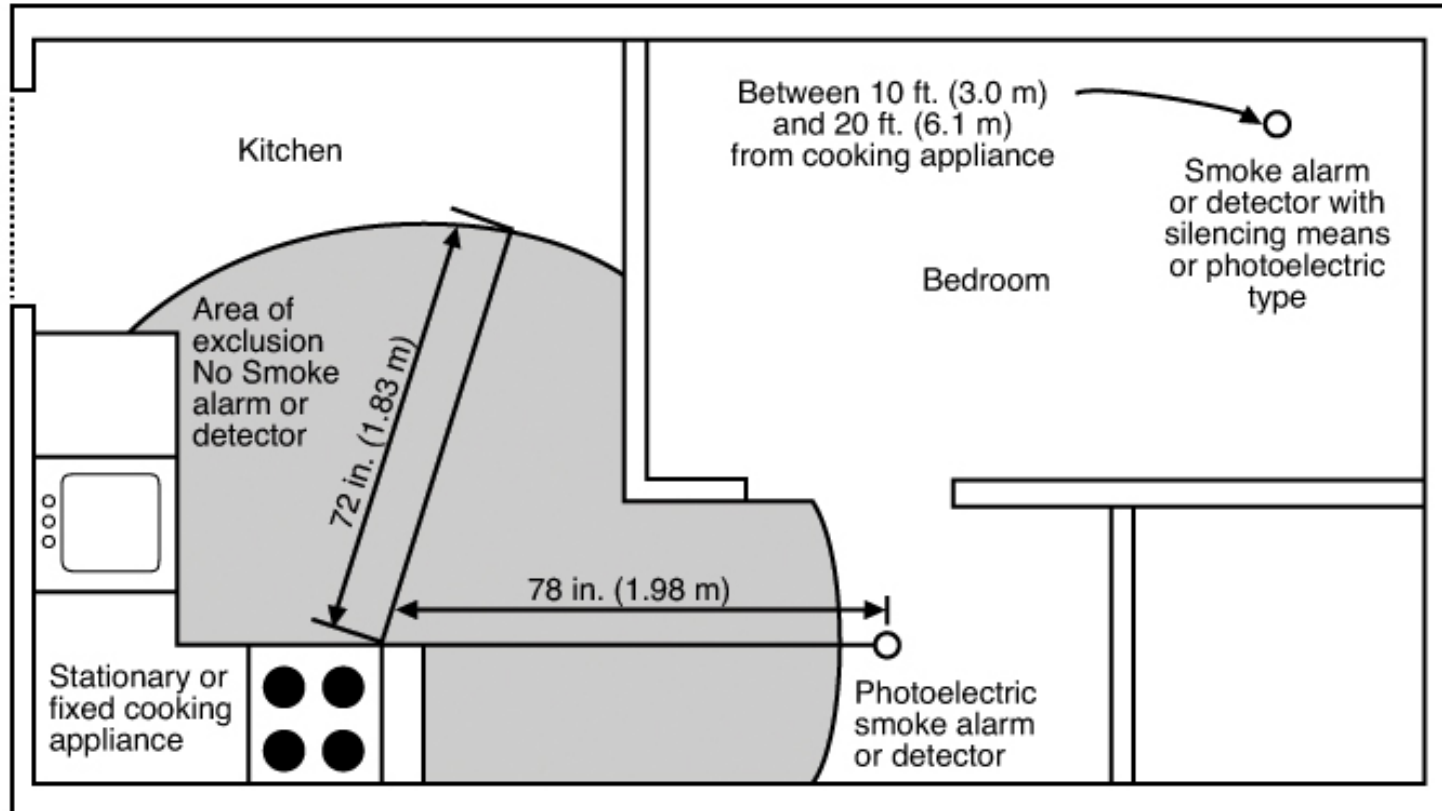
What about Nuisances?

- Section (29.8.3.4(4)) addresses specific locations to reduce nuisances.
 - Not within 36 inches of bathroom doors containing a shower or tub (steam!)
 - Not in unfinished attics or garages with temperatures above 100F or below 40F
 - Not in spaces with incompatible ambient conditions

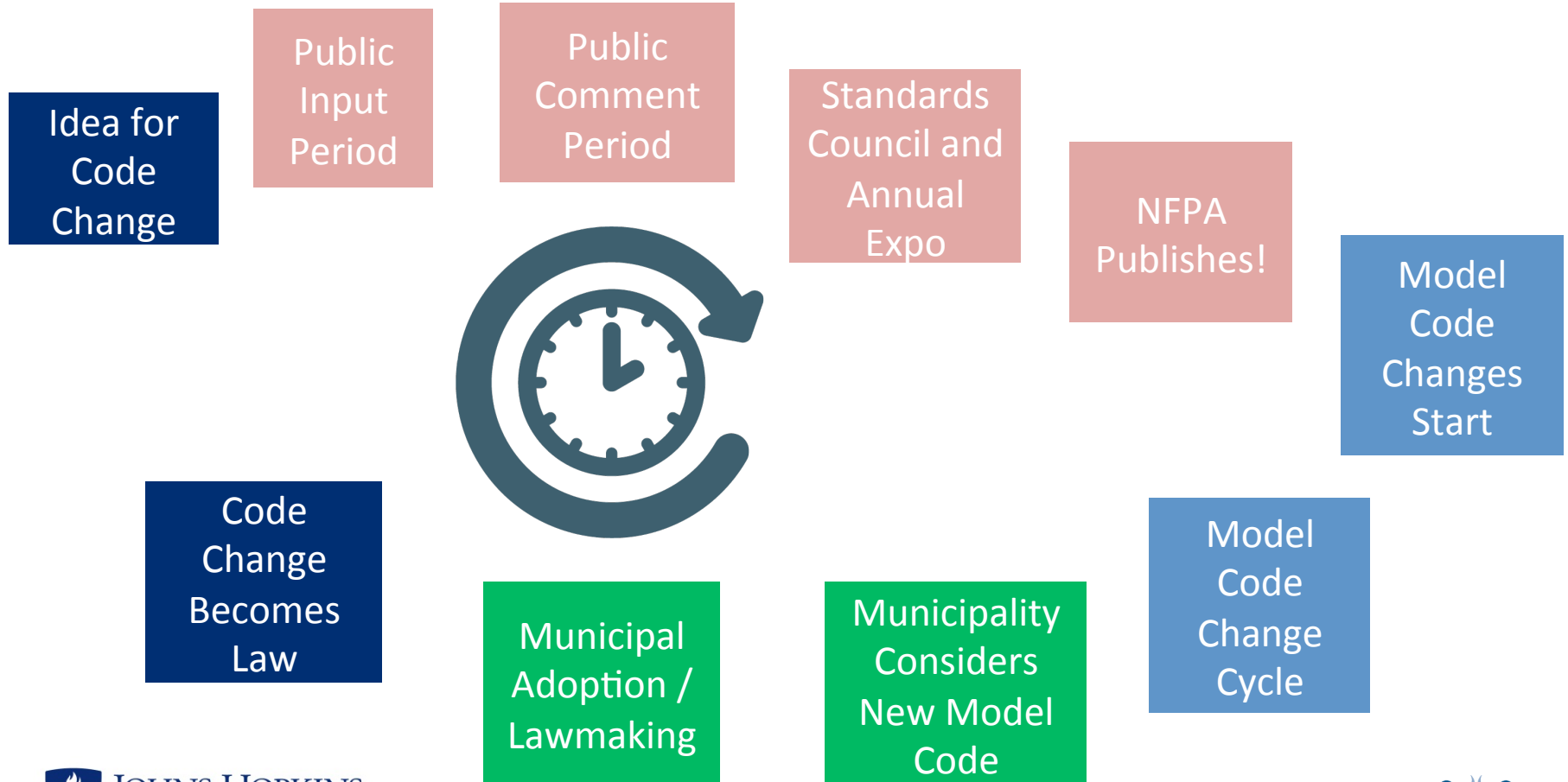
Cooking Nuisances

- Alarms must be installed at least 10-ft away from cooking appliance, unless listed for use near the appliance.
- Alarms between 10-ft and 20-ft must have alarm silence or be photoelectric.
- Exception for small spaces.
 - When adhering to 10-ft minimum would preclude a smoke alarm.
 - Photoelectric between 6-ft and 10-ft
- After 2016, smoke alarms within 20-ft must be listed for cooking nuisance sources. (Code set to change to 2019)

Nuisance Distances



Adoption Time



How Can I Get Involved?

- NFPA 72 is developed through an open consensus process.
- Chapters are managed by technical committees comprised of experts from a cross section of fire protection interests.
- General public provides suggested code changes considered by technical committees every 3 years.
- Work on the 2016 edition of NFPA 72 is near complete. Public input will be accepted for the following edition after the 2016 is published.



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Sources

- NFPA 72, *National Fire Alarm and Signaling Code*, Document Information Page:
 - <http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=72&tab=nextedition>
- Bukowski, et.al, *NIST Technical Note 1455-1, Performance of Home Smoke Alarms: Analysis of the Response of Several Available Technologies in Residential Fire Settings*, December 2007
 - <http://fire.nist.gov/bfrlpubs/fire07/PDF/f07063.pdf>



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