

HISTORICAL EVOLUTION OF BUILDING AND FIRE CODES

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March 29, 2017

“Objectives”

- Understand background of the evolution building codes and fire.
- Review the history of model building codes in the United States
- Consider the ramifications for buildings exposed to fire today.

Definition

- Conflagration:

1. A destructive fire, usually extensive (*Dictionary.com*)
2. A large disastrous fire (*Merriam-Webster.com*)
3. An extensive fire which destroys a great deal of land or property (*Oxford English.com*)

Conflagrations

Name a familiar conflagration

October 1871 The Chicago Fire

- Single source (O'Leary's Barn)
- High winds from southwest
- Spread by flaming brands
- Over 17,000 buildings destroyed
- Almost 100,000 homeless



April 1900 Ottawa-Hull

- Buildings of wood
- Closely spaced
- High wind
- Lack of adequate water supplies & FD equipment.
- Thousands of buildings destroyed

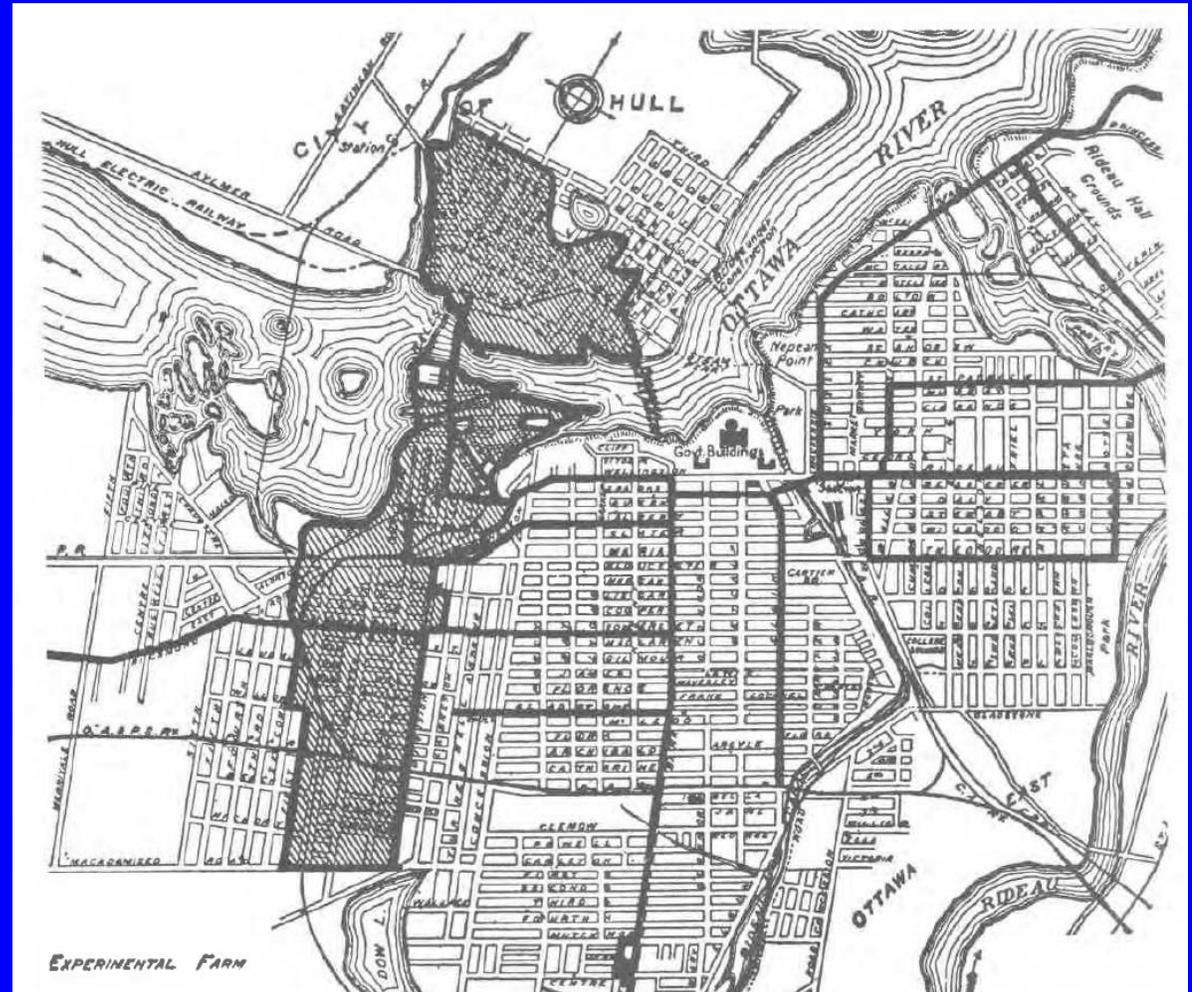




Figure 3 Ruins of Hull Post Office on left; courthouse and jail in the background
(photograph courtesy Public Archives)

May 1901 Jacksonville, FL

- Buildings of wood
- High wind
- 148 city blocks affected
- 2,368 buildings destroyed



April 1904 Toronto

- 2nd major fire (1849)
- 20 acres destroyed
- Mostly business district
- Est \$10 million property damage



City of Toronto Archives, Fonds 1408, #1408_#0008

April 1904 Baltimore

- 24 blocks of business district
- High winds
- 140 acres
- 1,526 buildings destroyed
- Est \$50 million property damage



Early Building Codes

- 1866 - Insurance industry forms National Board of Fire Underwriters (NBFU)
 - Develop fire safety criteria for communities
 - Grade cities on fire risk
 - Establish consistency in insurance industry standards
 - Reduce losses

Early Building Codes

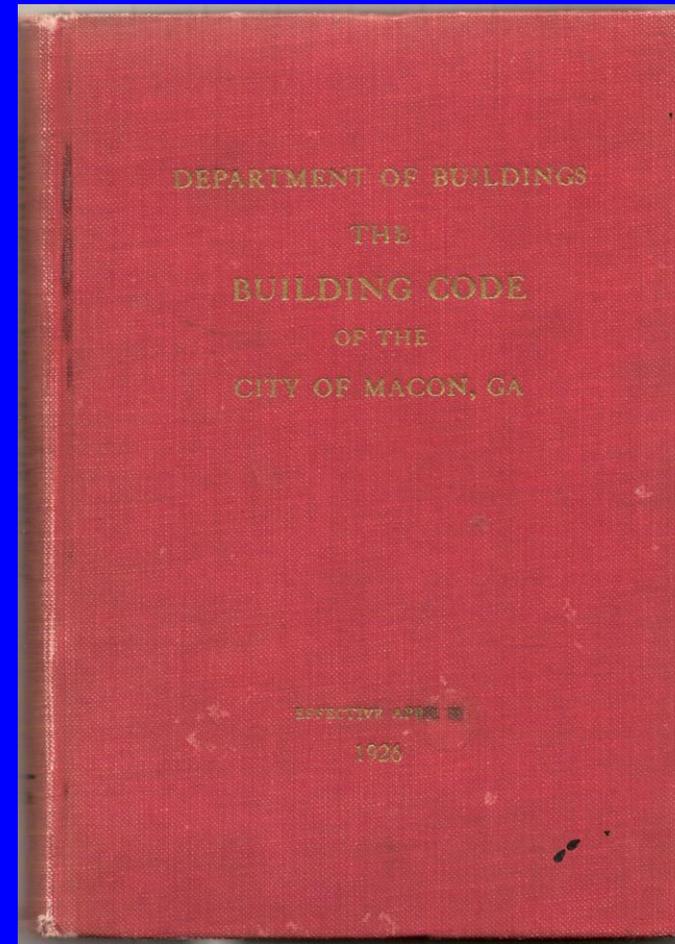
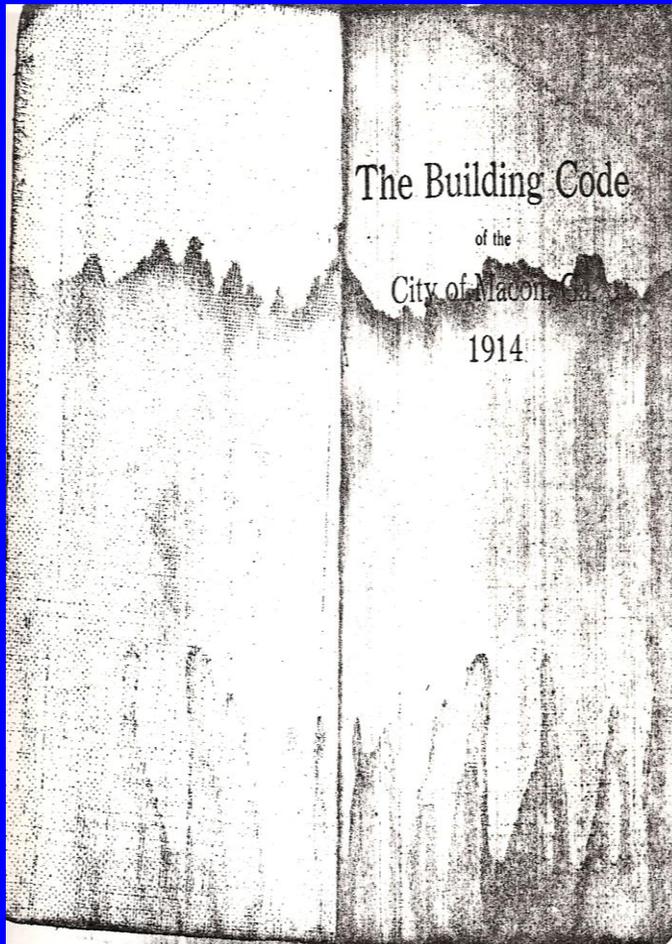
- 1905 - Developed National Building Code (NBC) to serve as model for communities
 - Fire resistive construction in urban areas
 - Municipal water supplies
 - Fire department services and equipment
 - Fire districts

May 1917 Atlanta, GA Fire

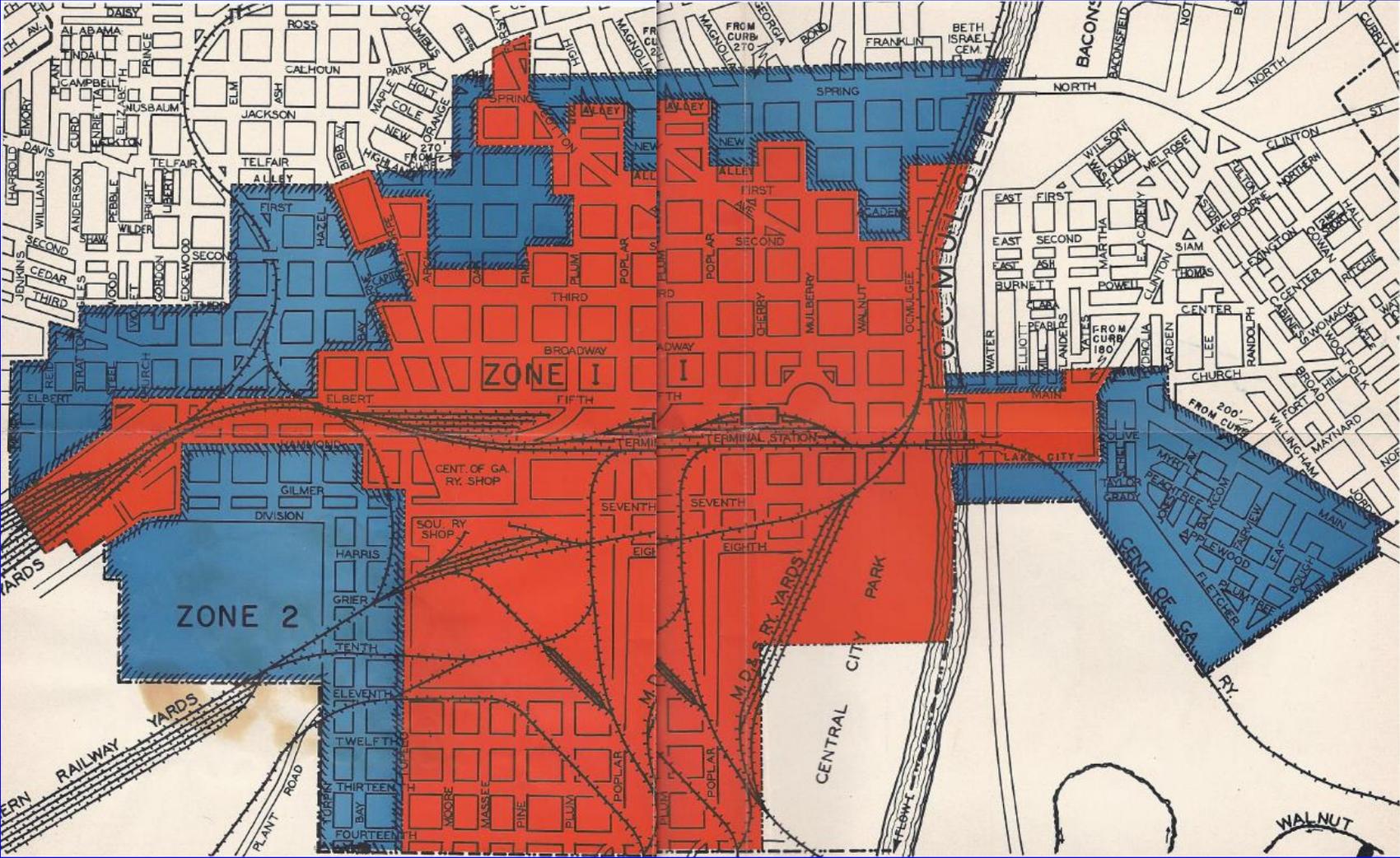
- Buildings of wood
- 300 acres
- 1,900 buildings
- 10,000 people displaced
- Est. \$5 million in damages



Municipal Building Codes



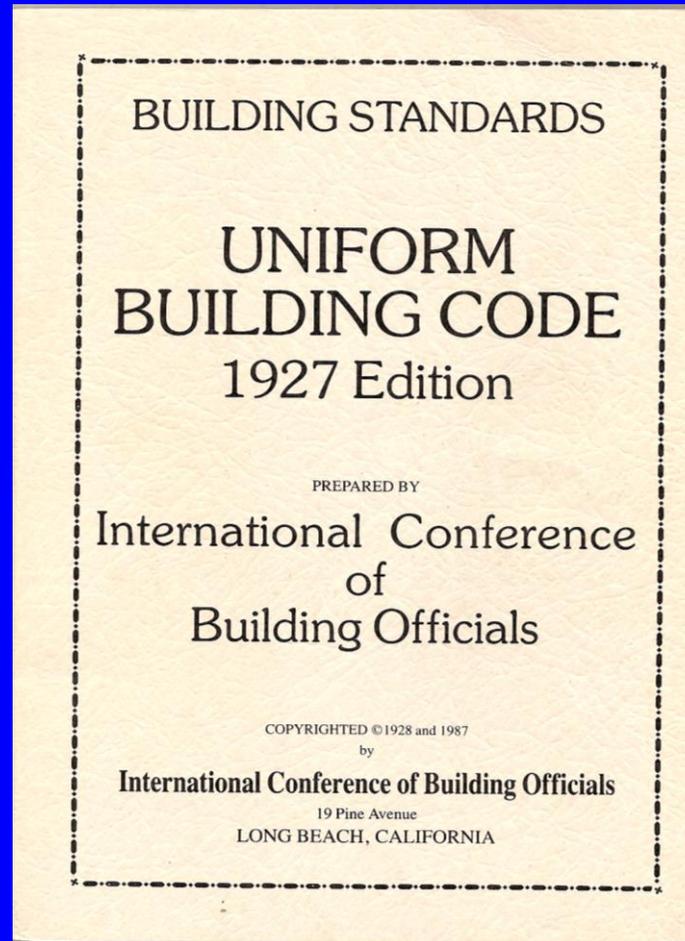
Fire Districts



Fire Districts



Regional Model Building Codes



MODEL CODE GROUPS - BOCA

- Building Officials and Code Administrators
- Formed 1915 – was oldest model code group
- Basic Building Code (BBC) published in 1950
- Purchased rights to National Building Code (NBC) in 1982. NBC was the first model building code - developed by insurance industry since 1905.
- BBC became BOCA National Building Code (BNBC)

MODEL CODE GROUPS - ICBO

- International Conference of Building Officials
- Formed 1922 - second model code group
- Uniform Building Code (UBC) published in 1927

MODEL CODE GROUPS - SBCCI

- Southern Building Code Congress International
- Formed 1941
- Southern Standard Building Code (SBC)
published in 1946
- Southern dropped from title in 1973 edition

CABO

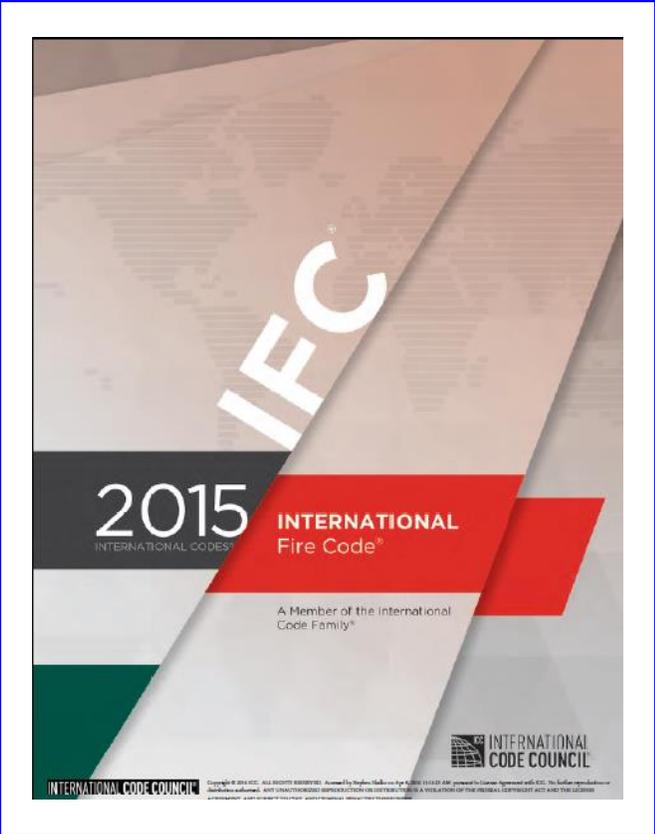
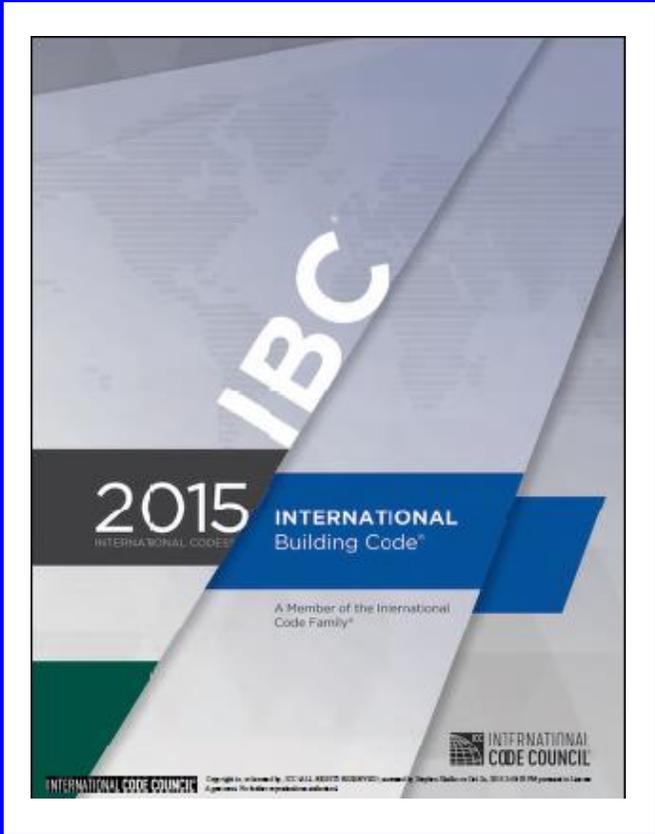
- BOCA, ICBO & SBCCI formed the Council of American Building Officials (CABO) in the early 1970's
- Produced the CABO One and Two Family Dwelling Code in 1974
- Produced the CABO Model Energy Code in 1974

International Code Council - ICC

- BOCA, ICBO and SBCCI formed the International Code Council (ICC) in 1994.
- GOAL - develop single full set of construction codes
- Building, Fire, Plumbing, Mechanical, Gas, Zoning, Energy

International Code Council - ICC

- Because of the I-Codes, BOCA, ICBO & SBCCI stopped publishing their codes in 1999
- The ICC absorbed CABO in 2000 and stopped publishing CABO Codes.
- The members of BOCA, ICBO and SBCCI voted to merge at their joint annual business meeting in Ft. Worth, Texas, 2002.



Why
haven't we
learned our
lessons?



Stephen Szoke

History Repeating?

- **Lindell Ave Apartments, St. Louis, MO**

- June 13, 2007 and July 18, 2012
- 4 story, 197-unit, wood framed apartment building.
- Completed and occupied.
- 2007 fire \$12 million in damage under construction.

- **550 East/500 South, Salt Lake City, UT**

- February 9, 2014
- Four story, wood frame apartment complex
- Under construction
- \$2.5 million in damage.

- **Axis Apartments, Houston, TX**

- March 25, 2014
- 5 story, 396 unit wood-framed apartment building
- Under construction
- Initial 3-alarm fire upgraded to 5-alarm in an hour.
- 400 HFD personnel responded.

- **Apollo Way, Madison, WI**

- August 8, 2014
- Four-story, 105-unit wood-frame apartment complex.
- Under construction
- Insurer estimated damage at “upwards of \$10 million.”

History Repeating?

January 2015
Edgewater, NJ

- Building(s) of wood
- One (?) building
- 230 units destroyed
- 1,000+ people displaced



History Repeating?

March 2017
Raleigh, NC

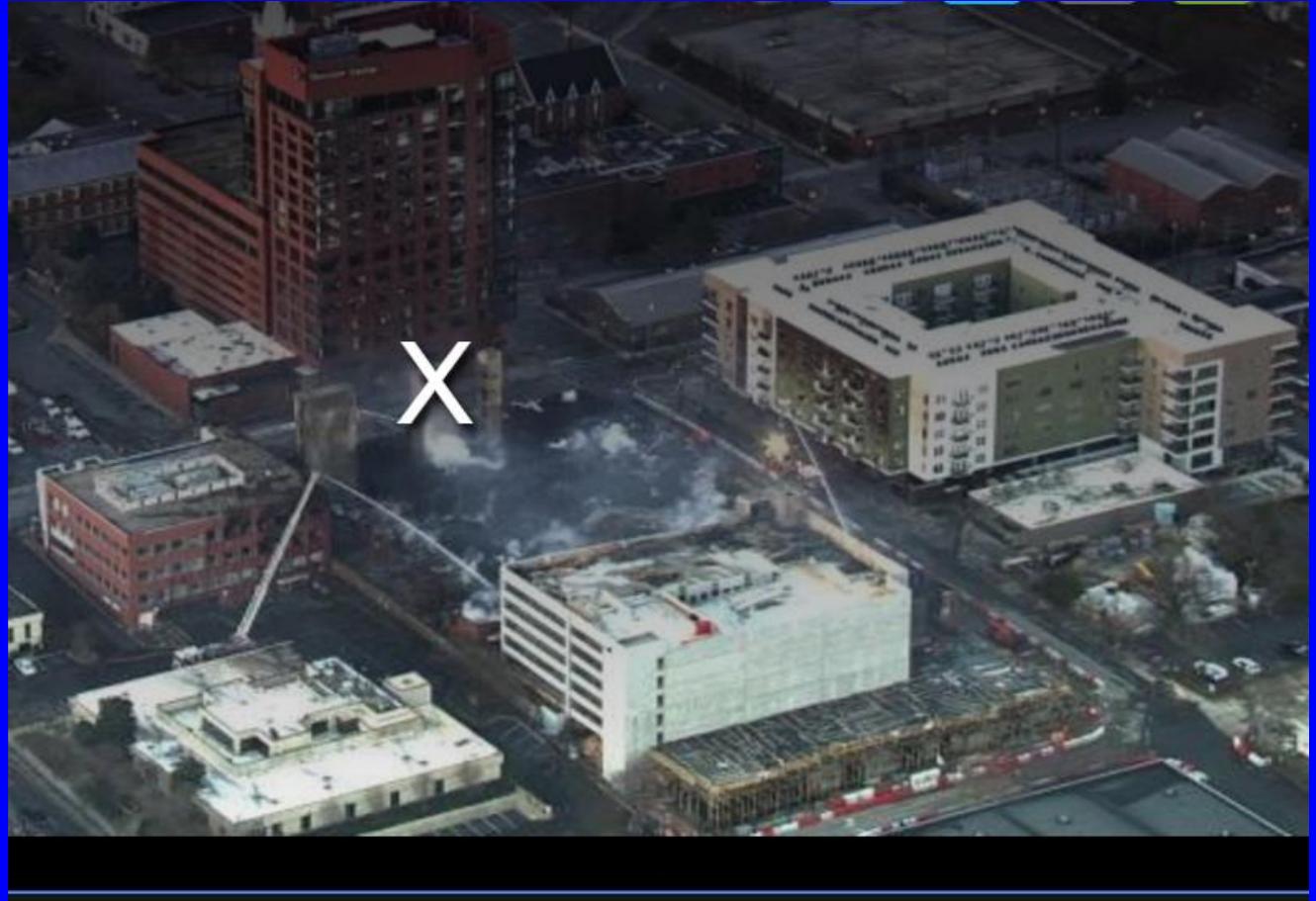
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History Repeating?

March 2017
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- ? people displaced
- ? damages



Questions?

