



**HOUSTON
PUBLIC WORKS**

CONSTRUCTION CODE MODERNIZATION HOUSTON'S 2021 CODE ADOPTION

PRESENTATION TO HOUSTON HOUSING COLLABORATIVE

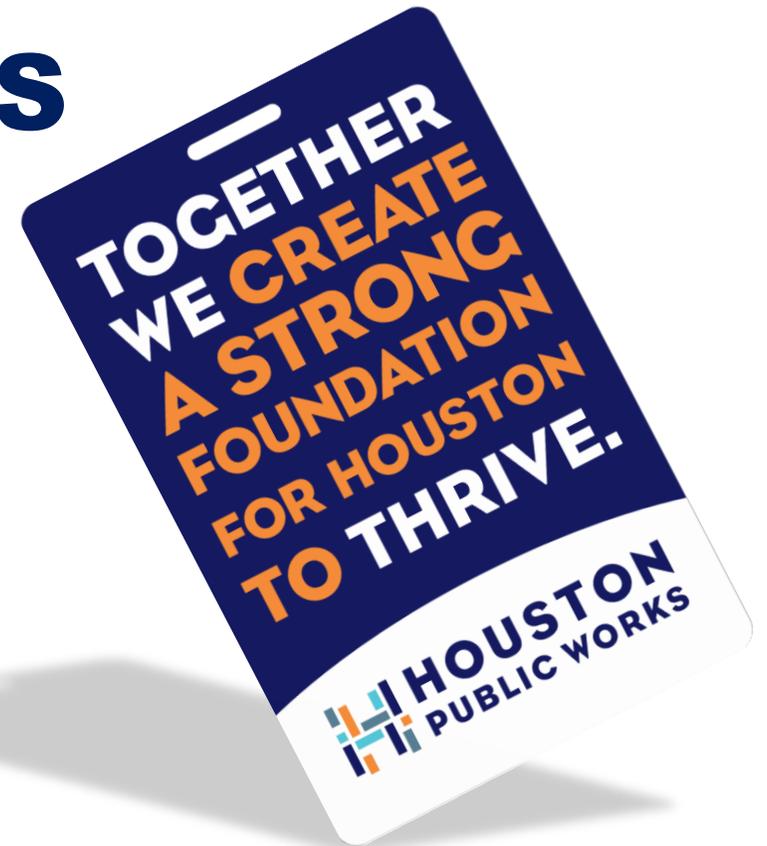
JULY 20, 2023



HOUSTON PUBLIC WORKS

PURPOSE

together we create a strong foundation
for Houston to thrive



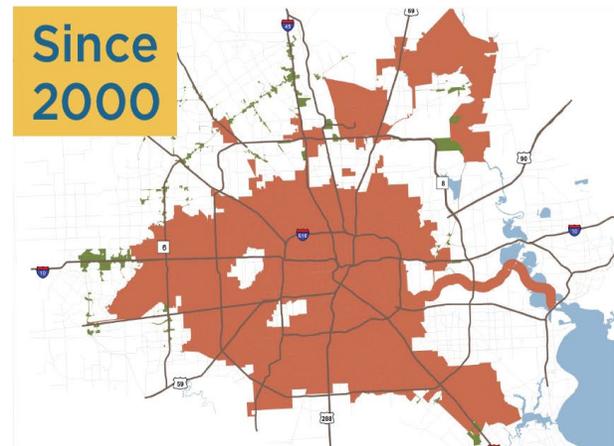
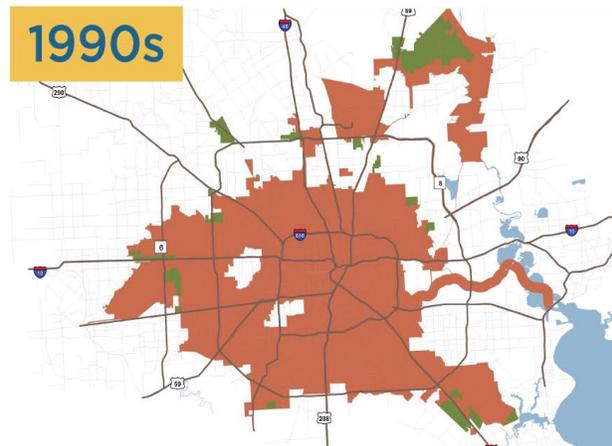
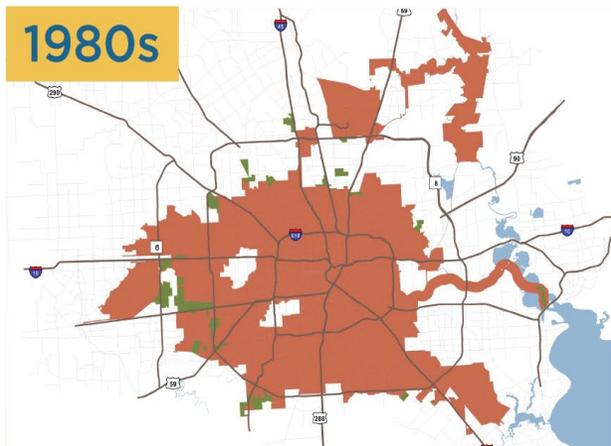
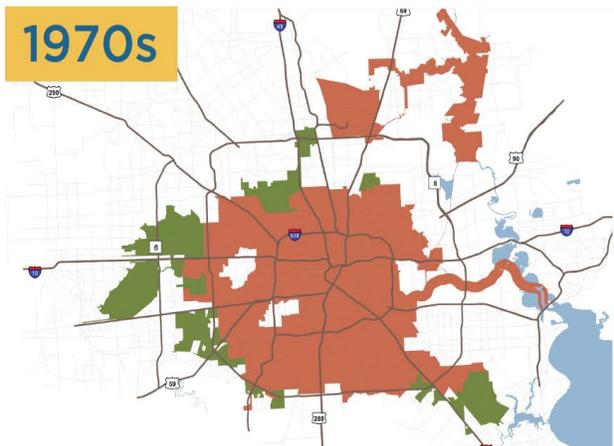
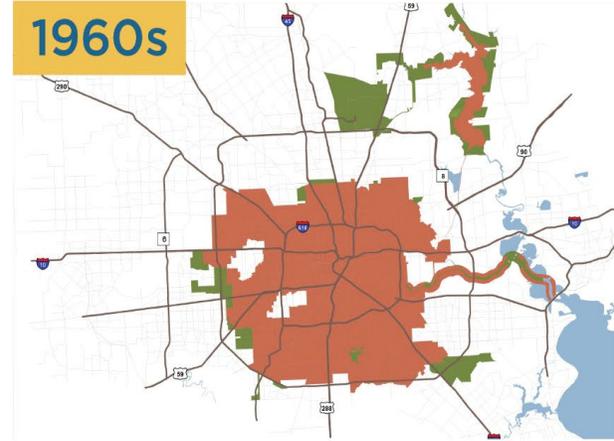
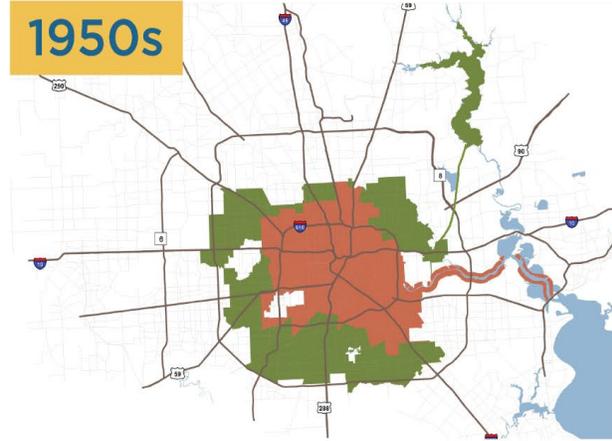
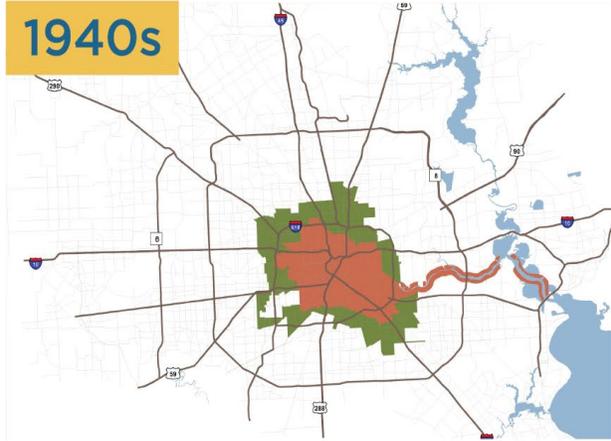
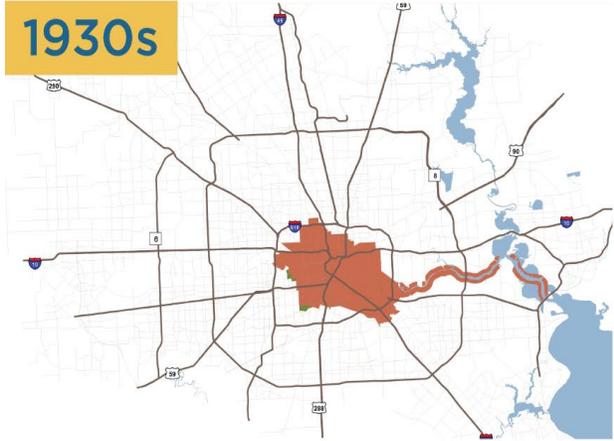
5 TO THRIVE VALUES

respect | ownership | communication | integrity | teamwork

HOUSTON LOOKING BACK AND LOOKING FORWARD



HOUSTON LOOKING BACK AND LOOKING FORWARD

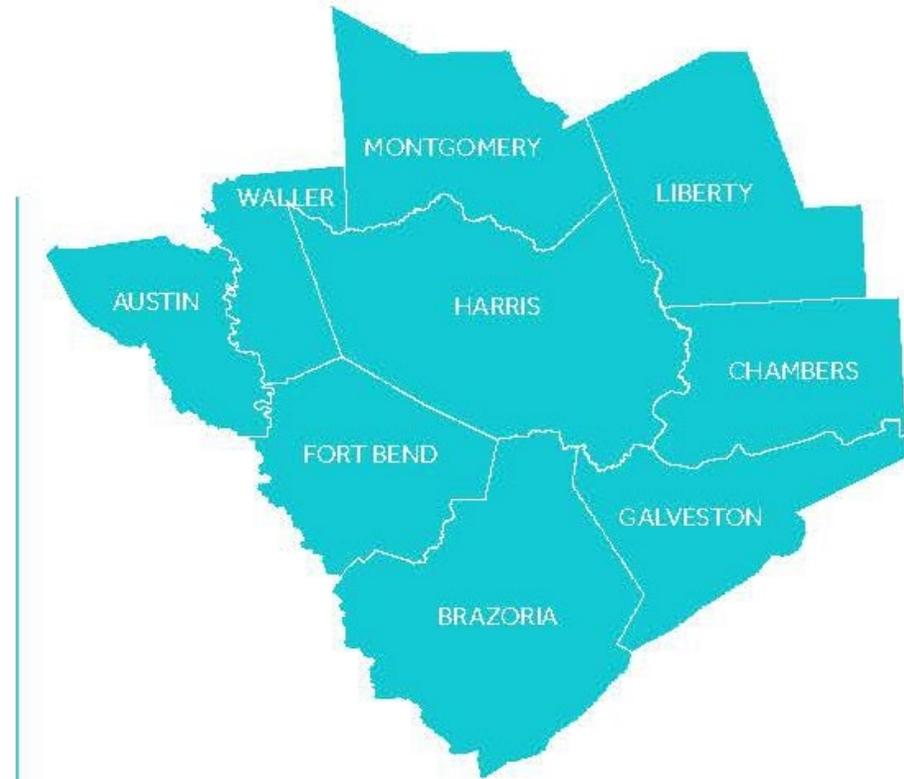


THE REGION

The Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA) contains nine Texas counties:

Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller.

Within these nine counties are 124 incorporated cities and 33 Census Designated Places.



HOUSTON
MSA



HARRIS
COUNTY



CITY OF
HOUSTON

CLIMATE CHANGE AND BUILDING CODES

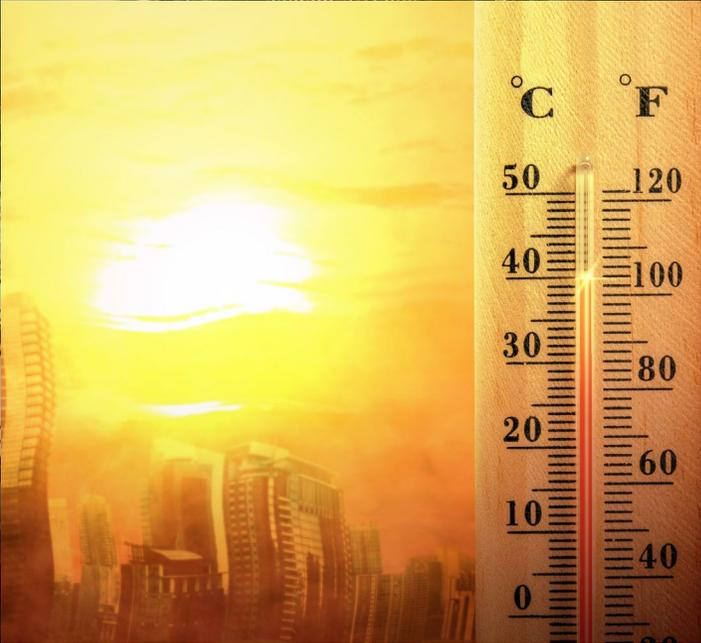


IMPACT OF CLIMATE CHANGE

In August 2017, here at home in Houston, 52 inches of rain in a 5-day period

- 31% of structures in 100- and 500-year floodplain
- 19% of structures outside the floodplain
- \$2.5 billion in damaged city facilities and infrastructure





FROM EXTREME COLD TO HEAT

1. Storm Uri Feb. 2021

ERCOT was four and a half minutes away from complete collapse

2. Heatwave July 2022

Record-setting July comes on the heels of our hottest June on record and our second hottest May on record

IMPORTANCE OF BUILDING CODES



2017

**2008
(1970)**

2001

1972

2000



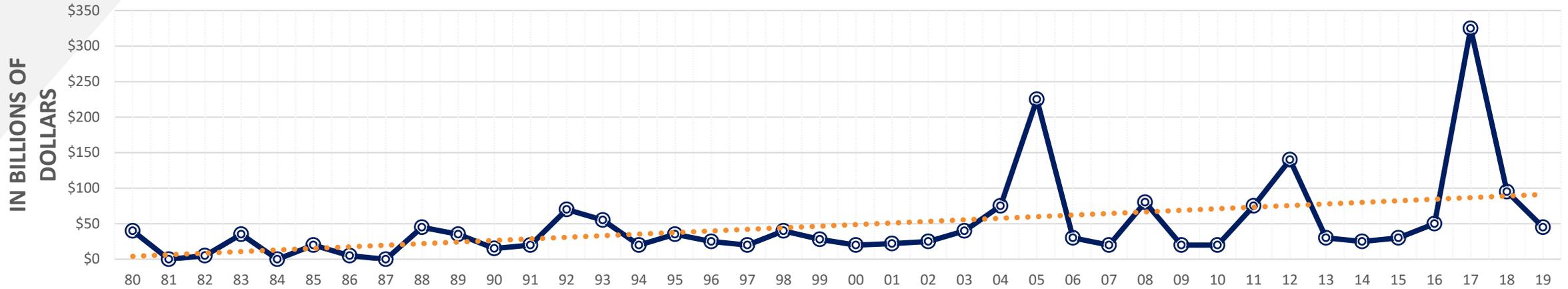
Rockport, Texas after Hurricane Harvey

CLIMATE CHANGE BY THE NUMBERS



CLIMATE CHANGE BY THE NUMBERS

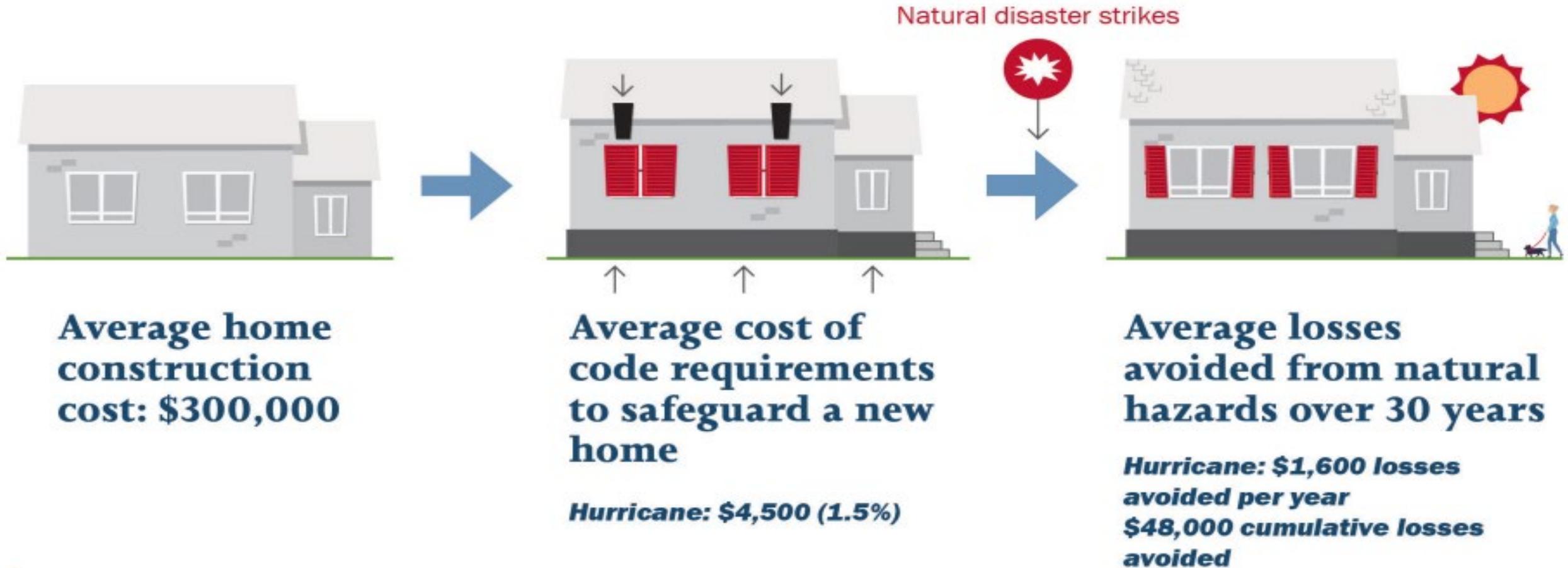
NATURAL DISASTERS NUMBER AND COST OF BILLION-DOLLAR IN UNITED STATES



- **Every \$1 spent on mitigation in new code construction saves \$11 in disaster repair and recovery costs.**
- **Up to 32:1 in the Gulf Coast Region**

BUILDING CODES SAVE \$ AND LIVES

Building Codes Generate Big Benefits at a Low Cost



Sources:

FEMA, "Building Codes Save: A Nationwide Study," 2020; (source of cost data).

NIBS, "Natural Hazard Mitigation Saves: 2019 Report," 2019; (source of dollar spent on mitigation).

HOUSTON'S ENERGY AND WATER OPPORTUNITIES TO SAVE \$

According to the Electricity Reliability Council of Texas (ERCOT) May 2023 Capacity, Demand and Reserves Report shows increases of:

2023	2024	2025	2026	2027
14.8%	33.9%	44.2%	44.1%	42%

On average, Houston, TX residents spend about \$203 per month on electricity. That adds up to \$2,436 per year.

- In Texas, the average savings for a new home built to the 2021 International Energy Conservation Code will save 8.9% annually, about \$179 dollars per year.
- While the downpayment cost will increase by \$161 and the annual mortgage about \$26, it will take less than 2 years for a positive cash flow.



OTHER HOUSTON INITIATIVES

Summary of the proposed changes address four main areas:

- Second Dwelling Unit:** Allows this housing type to be larger and parking based on the unit size where deed restrictions do not prohibit their construction.
- Multi-Unit Residential:** Brings back this affordable housing type which is small scale 3–8-unit apartments with a height restriction to fit better within neighborhoods.
- Courtyard Style Development:** Promotes this housing type where lots are located around a common courtyard, and do not require street frontage. The proposal includes green space requirement per lot, parking could be separate from the units and height restriction so that homes are at neighborhood scale.
- Narrow Lot Development:** Incentivizes this housing type where lots take rear access or shared access to reduce the number of times pedestrians come in potential conflict with automobiles. In addition, these regulations help the redevelopment be more walkable by reducing the driveway widths and preventing vehicles from hanging into the sidewalk.



AFFORDABLE HOUSING BENEFITS IN PERMITTING

1

Continue providing 50% discount on homes 1,800 square feet or less

2

Applicable to all new one- and two-family dwellings and townhouses

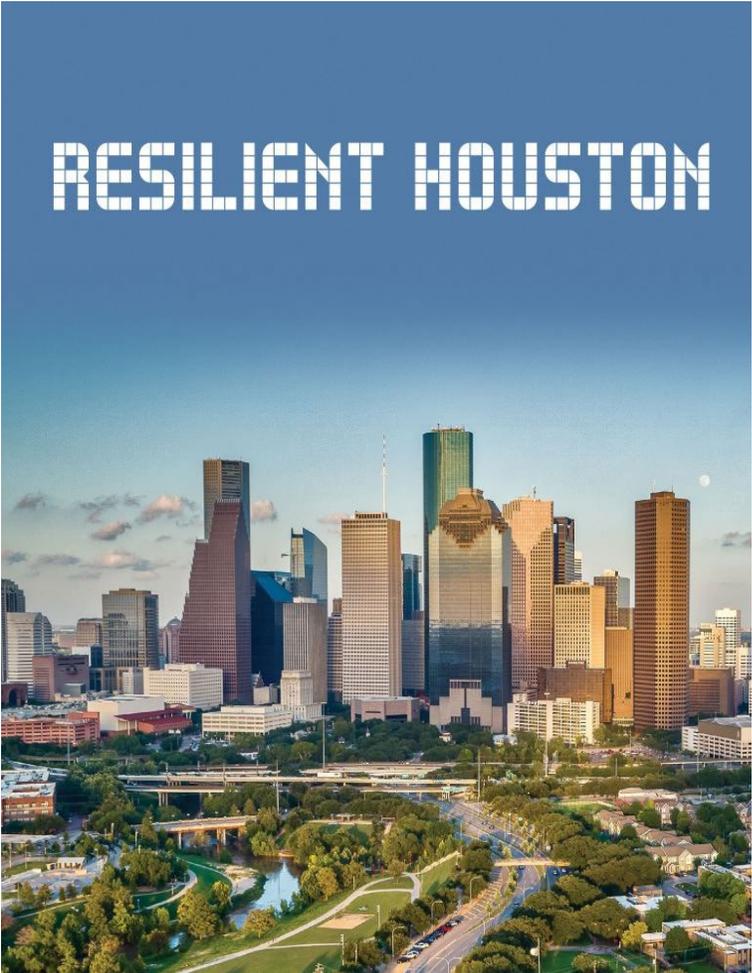
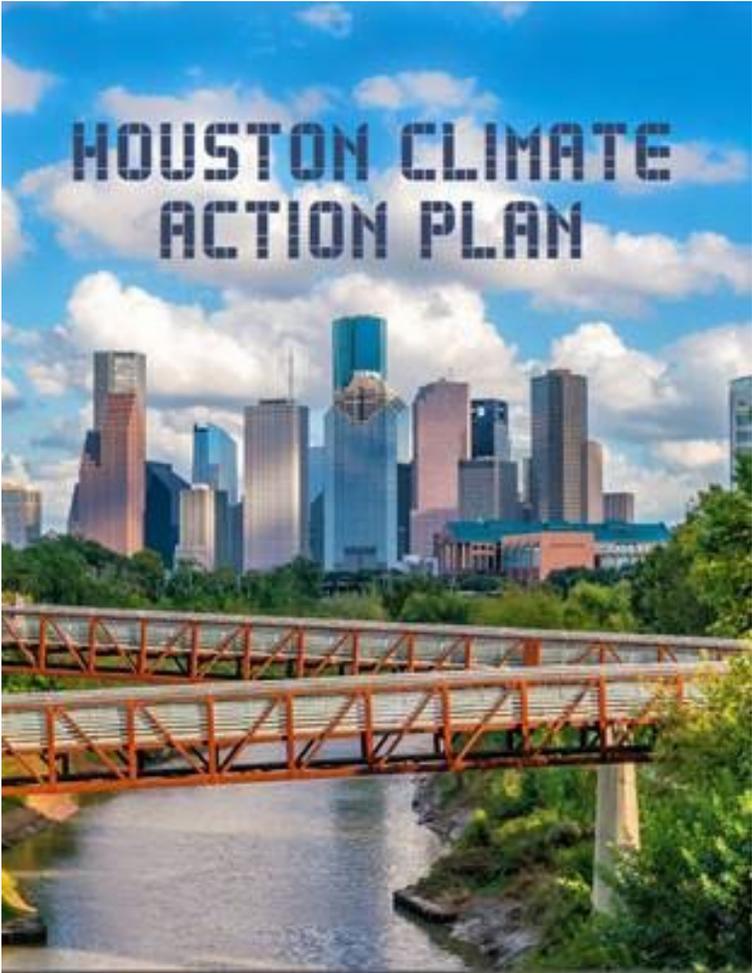
3

Provides savings of around \$543 for each residential permit

BUILDING CODES HOUSTON'S RESILIENT STRATEGY



CLIMATE CHANGE AND RESILIENT HOUSTON BUILDING CODES MAKE A STRONG FOUNDATION





RESILIENT CODES HELP TO STAY SAFE

1

Updates to rain, wind, and tornado loads for more resilient construction

2

Improves roof underlayment in high wind regions and water infiltration in hurricane prone regions

3

Expands the Risk Categories for certain Institutional occupancies and other high-risk occupancies



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2021 BUILDING CODE ADOPTION PROCESS



CONSTRUCTION CODE MODERNIZATION PROJECT

COMMUNITY STAKEHOLDERS

- Air Alliance for Houston
- American Fire Sprinkler Association (AFSA)
- American Fire Systems (AFS)
- American Institute of Architects (AIA)
- American Society of Civil Engineers (ASCE)
- American Society of Plumbing Engineers (ASPE)
- American Society of Sanitary Engineering (ASSE)
- ASHRAE
- Associated Builders & Contractors of Texas
- Associated General Contractors (AGC) - Houston
- Association of Chief Operating Engineers
- Audubon Houston
- Building Commissioning Association (BCxA)
- Building Officials Association of Texas (BOAT)
- Construction Industry Council-Houston Branch (HCIC)
- Construction Specifications Institute (CSI) Houston Chapter
- Greater Houston Builders Association (GHBA)
- Greater Houston Texas Restaurant Association (GHTRA)
- Greentown Labs
- Harris County Flood Control District
- Historic Buildings
- Historic Houston
- Hotel & Lodging Association of Greater Houston (H&LAGH)
- Houston Apartment Association (HAA)
- Houston Archeological and Historical Commission and AIA Historic Resource Committee
- Houston Building Owners & Managers Association (BOMA)
- Houston Business Roundtable (HBR)
- Houston Contractors Association (HCC)
- Houston Galveston Area Council (HGAC)
- Houston Gulf Coast Building & Construction Trades Association (HGCBCTA)
- Houston Habitat
- Houston Housing Collaborative (HHC)
- Independent Electrical Contractor (IEC)
- Institute of Real Estate Management (IREM)
- International Association of Plumbing & Mechanical Officials (IAPMO)
- International Code Council (ICC)
- Mechanical Contractors Association of Houston (MCAA)
- NAIOP, the Commercial Real Estate Development Association
- National Association of Manufacturers (NAM)
- National Electrical Contractors Association (NECA)
- National Fire Sprinkler Association (NFSA)
- National Systems Contractors Association (NSCA)
- New Hope Housing
- Sierra Club
- Society of Fire Protection Engineers (SFPE)
- South Central Partnership for Energy Efficiency as a Resource (SPEER)
- Super Neighborhood Representatives
- Texas Community Watershed Partners
- Texas Institute of Building Design (TIBD)
- Texas Society of Architects
- Texas Water Quality Association (TWQA)
- University of Houston (UH)
- Urban Land Institute (ULI)
- US Green Building Council (USGBC) of Houston (USGBC)
- Water Quality Association (WQA)

CONSTRUCTION CODE MODERNIZATION PROJECT STRUCTURE AND PROCESS



CONSTRUCTION CODE MODERNIZATION PROJECT STRUCTURE AND PROCESS

TFG-1 Commercial

12 Community
Participants

28 City Staff

23 Meetings =
1,179 Hours

TFG-2 Residential

7 Community
Participants

26 City Staff

18 Meetings =
765 Hours

TFG-3 Energy Conservation

6 Community
Participants

13 City Staff

13 Meetings =
325 Hours

TFG-4 Mechanical, Electrical, and Plumbing

17
Community
Participants

20 City Staff

11 Meetings =
523 Hours

PUBLIC COMMENT OPPORTUNITIES

TFG-1 Commercial

108 Days

Published 3
times

58 Proposals

TFG-2 Residential

93 Days

Published 2
times

33 Proposals

TFG-3 Energy Conservation

70 Days

Published 2
times

52 Proposals

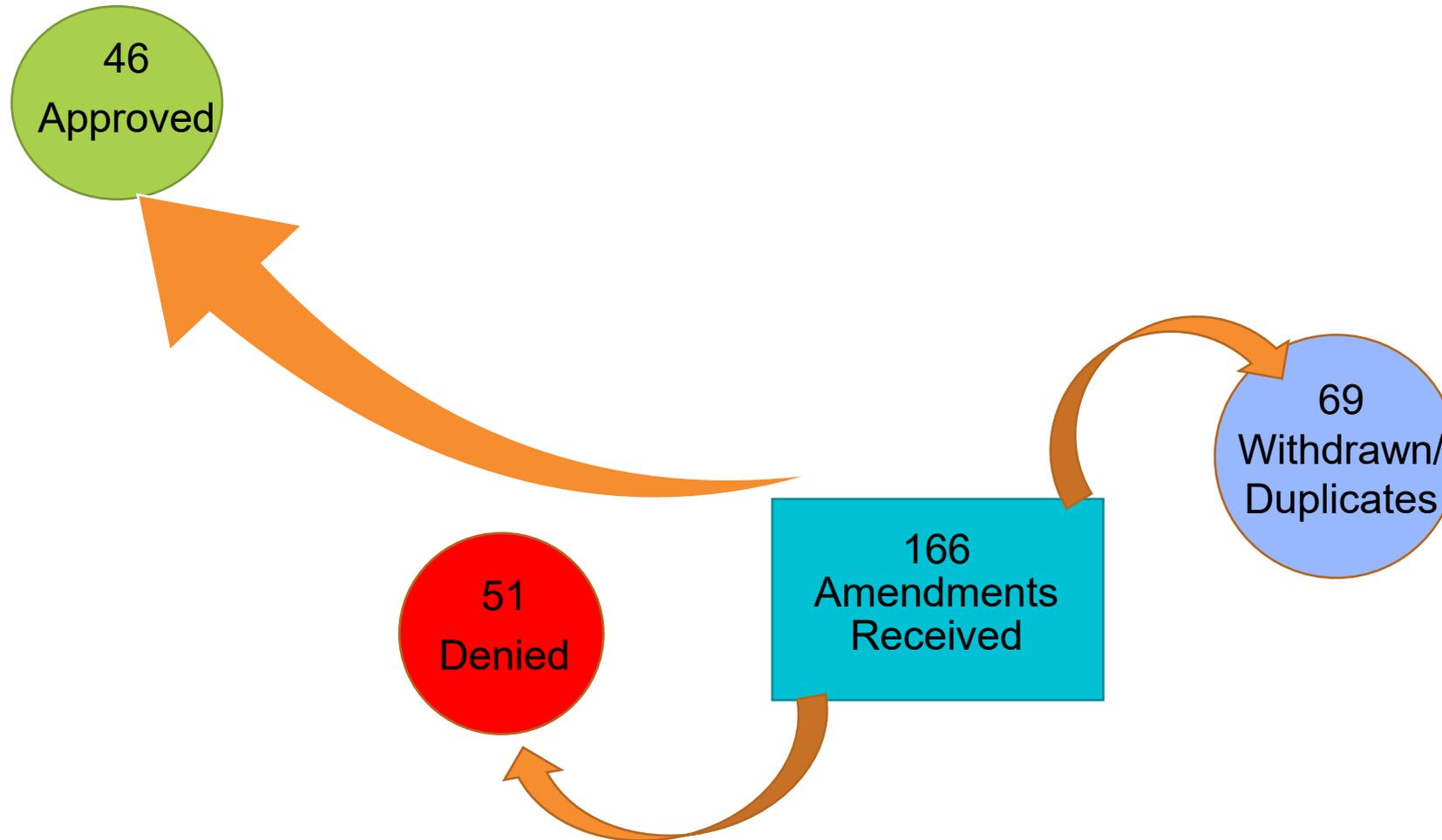
TFG-4 Mechanical, Electrical, and Plumbing

67 Days

Published 2
times

23 Proposals

AMENDMENTS PROCESSED TO DATE*



*As of 07.17.23

CONSTRUCTION CODE MODERNIZATION



For general information email us at:

Info.CCM@houstontx.gov

For updates on the CCM project:

[www.houstonpermittingcenter.org/
construction-code-modernization](http://www.houstonpermittingcenter.org/construction-code-modernization)

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THANK YOU! HOUSTON PUBLIC WORKS



HoustonPublicWorks.org



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