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What does Redlining have to do with Resilience?

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Center for Risk-Based Community Resilience
Planning
A NIST-funded Center of Excellence

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Overview

“Low-income households live in low-quality homes in low-lying areas”

How did these spatial patterns come to be?

How have they perpetuated inequalities in the built environment?



People and households **vary** in their capacity to anticipate, cope with, respond, and recover from disasters.



People and households are not randomly distributed but are concentrated in predictable **spatial patterns** based on household characteristics, especially race/ethnicity and income.



These demographic patterns are coupled with the **inequitable provision** of affordable housing and critical infrastructure.



These patterns **increase exposure** to flooding and other hazards; and have



Short- and long-term consequences for socially-vulnerable populations, including threats to health and wealth.



Moore Park still stands near Corinth and Eighth streets south of downtown Dallas. In the 1940s, when it was known as Eighth Street Negro Park, it was a hub for activities including baseball. The field and homes in the neighborhood remain. (Dallas Municipal Archives)

Segregated parks gone, but they still divide

Historical markers for 'Negro parks' spark dispute over ugly part of Dallas' past

By Melissa Repko | Staff Writer Published Feb. 15, 2016



“Separate but Equal”

1896 *Plessy v. Ferguson* permitted legal segregation of **all public facilities**

- Schools
- Public Transportation, like buses and trains
- Public amenities, like swimming pools, parks, etc.

In place until *Brown v. Board of Education of Topeka*, 1954



Racial Zoning

Zoning—an important tool for land use regulation and planning

- Regulates height, area, location, and use of buildings in any designated part or parts of cities.
- Became a tool for “protecting property values and excluding the undesirables”
- Prominent planners were hired to create legally-defensible racial zoning plans

← → ↺ ⌂ 🔒 <https://projects.statesman.com/news/economic-mobility/> [Icons: Print, Star, Share, etc.]

Statesman Overview A separated city Building a divide Further fracture [Social Media Icons: Facebook, Twitter, Google+]

1928

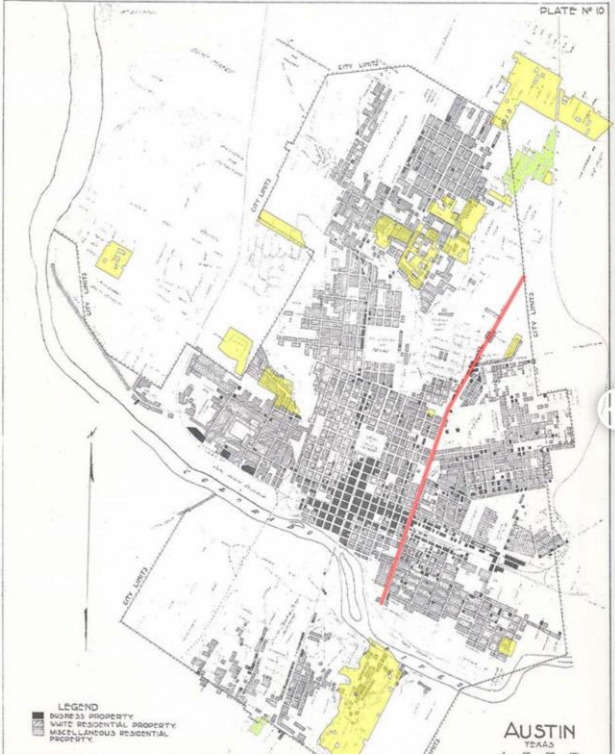
Evolution of a ‘Negro District’

In Austin, the strategy to isolate minorities came in the form of the Koch and Fowler city plan, which in 1928 proposed the creation of a “Negro District” — making it the only part of the city where African-Americans could access schools and other public services.

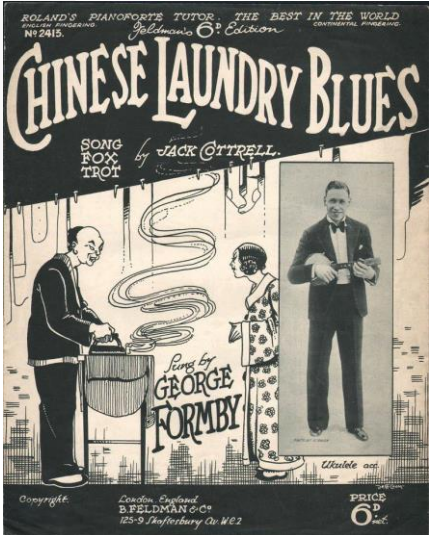
Koch and Fowler also proposed that the district have the city's weakest zoning restrictions, allowing the development of “a number of slightly objectionable industrial uses” — essentially, any use that wasn't specifically outlawed.

Use the slider to compare neighborhoods that barred African-American residents and had tighter zoning restrictions with minority neighborhoods that had few zoning protections.

- Anglo neighborhoods with zoning protections
- Minority neighborhoods without zoning protections
- East Avenue



Koch and Fowler city plan, 1928



Attention White Home Buyers!

**The Largest Restricted White
Community in Washington**

Invites your attention
to the decision of

The U. S. Supreme Court

—that negroes cannot buy
in a restricted white section

Buy or Rent
in the section known as

**Eckington High View
Bloomingdale Edgewood**

For further information apply to:

Executive Committee of

**Bloomingdale Owners
P. W. Pritchett, Chairman
2651 North Capitol St.**

**North Capitol Citizens'
Association
Henry Gilligan, President
2304 1st St. N.W.**

46C

lot shall be nearer than 30 feet to the front street line of said premises hereby conveyed. The said party of the second party hereby further agrees that when he builds on said premises he will build a house to cost not less than \$1,500.00. In the event that the above conditions or any of them are broken by the grantee herein or his heirs or his assigns, then and in that case this conveyance shall be void.

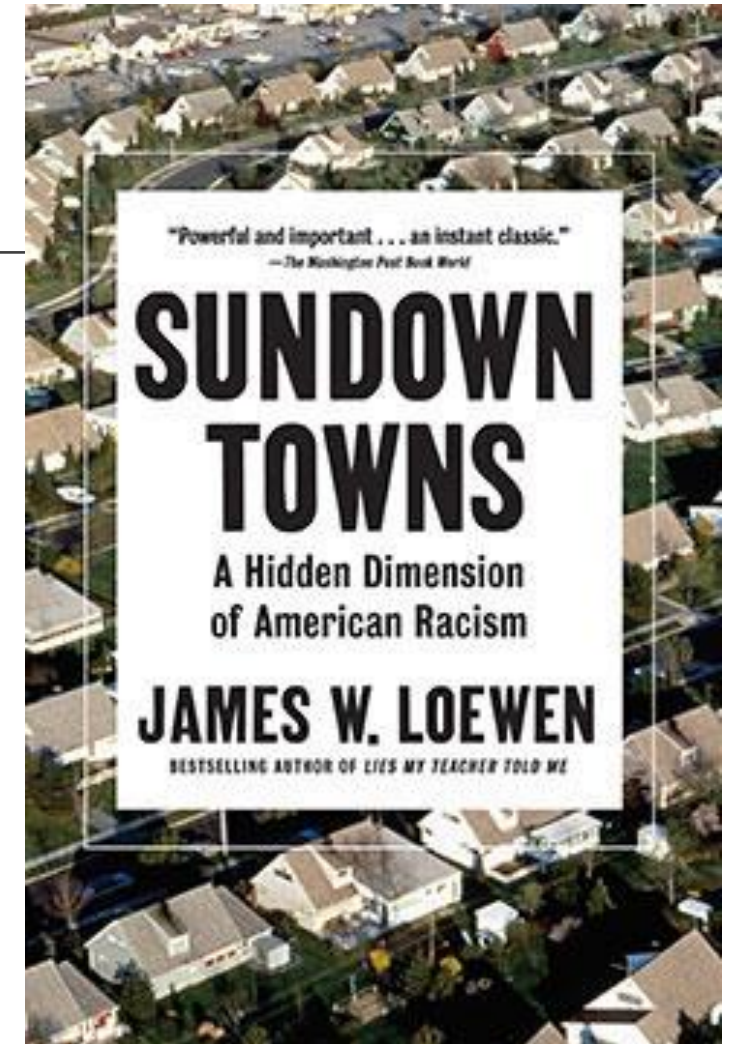
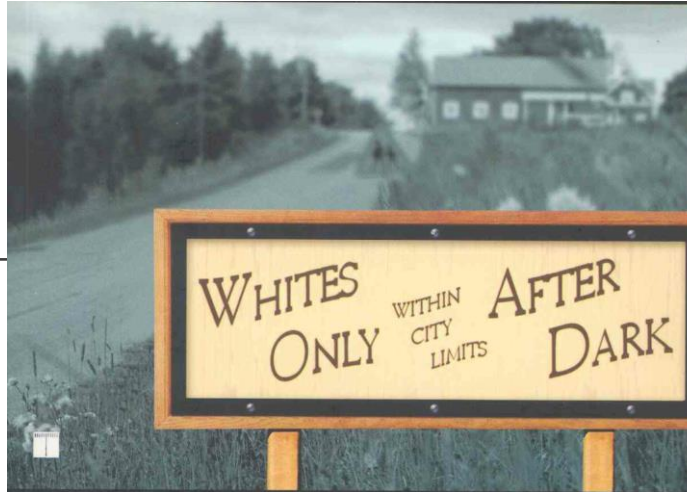
It is further mutually covenanted that the premises hereby conveyed shall not at any time be conveyed, mortgaged or leased to any person or persons of Chinese, Japanese, Moorish, Turkish, Negro, Mongolian or African blood or descent. Said restrictions and covenants shall run with the land and any breach of any or either thereof shall work a forfeiture of title, which may be enforced by re-entry.

Racial deed restrictions

Sundown Towns

See also: Tulsa Massacre
Lynchings

...



Takeaways 1880-1930s

Despite being freed, Blacks were not given equal rights and were actively prohibited from participating as full citizens

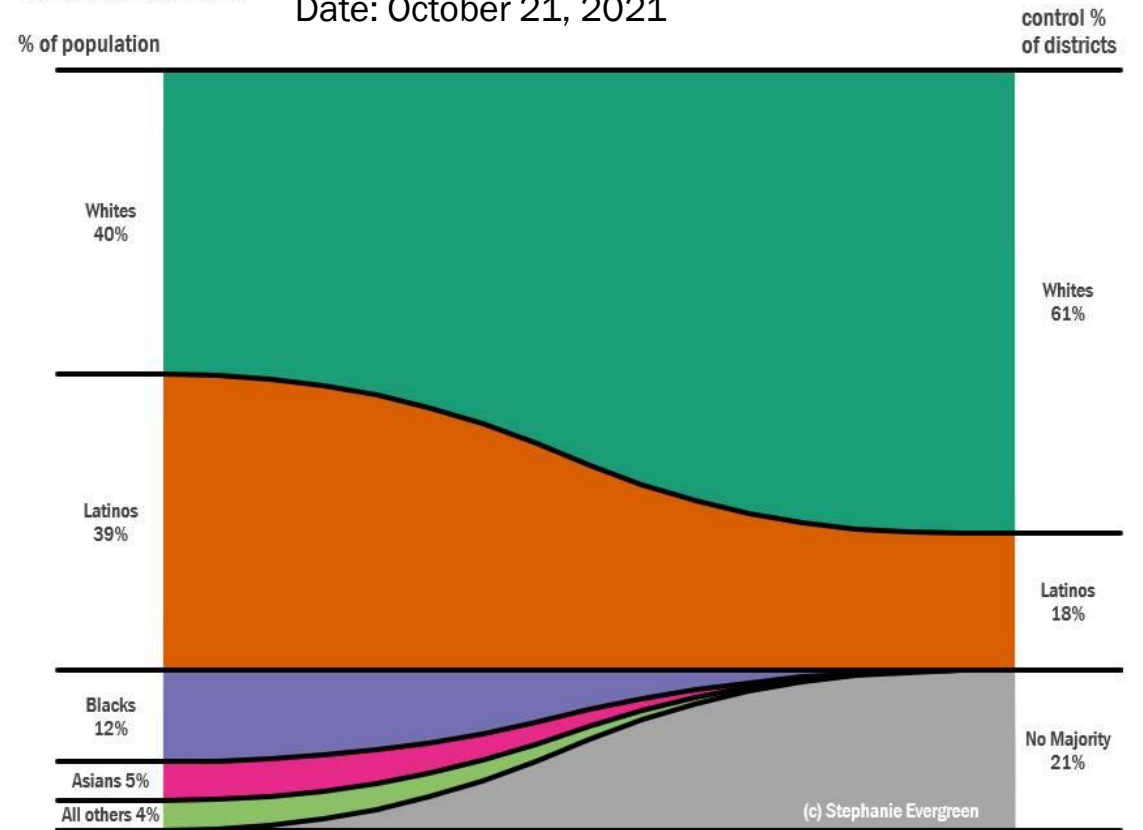
- Voting rights
- Land ownership
- Home ownership
- Public facilities

When Blacks tried to live in white towns or build their own neighborhoods, they were met with racial violence

Texas legislature passed extreme gerrymandered US Congressional maps.

Data Source: Texas Tribune

Date: October 21, 2021



Post-WWII Housing Policy



When veterans returned from WWII, they were met with a housing shortage

The Federal Housing Administration formulated a new policy to help spur construction and make homeownership more accessible

- Insured mortgages
- Created 30-yr, fixed rate mortgages
- Systematized real estate appraisal methods

Home Owner's Loan Corporation (HOLC)

Appraisals based on:

Occupant characteristics, including:

- Income,
- Occupation, and
- race/ethnicity

Housing stock characteristics including:

- Age
- Type of construction
- Price range
- Sales demand
- State of repair

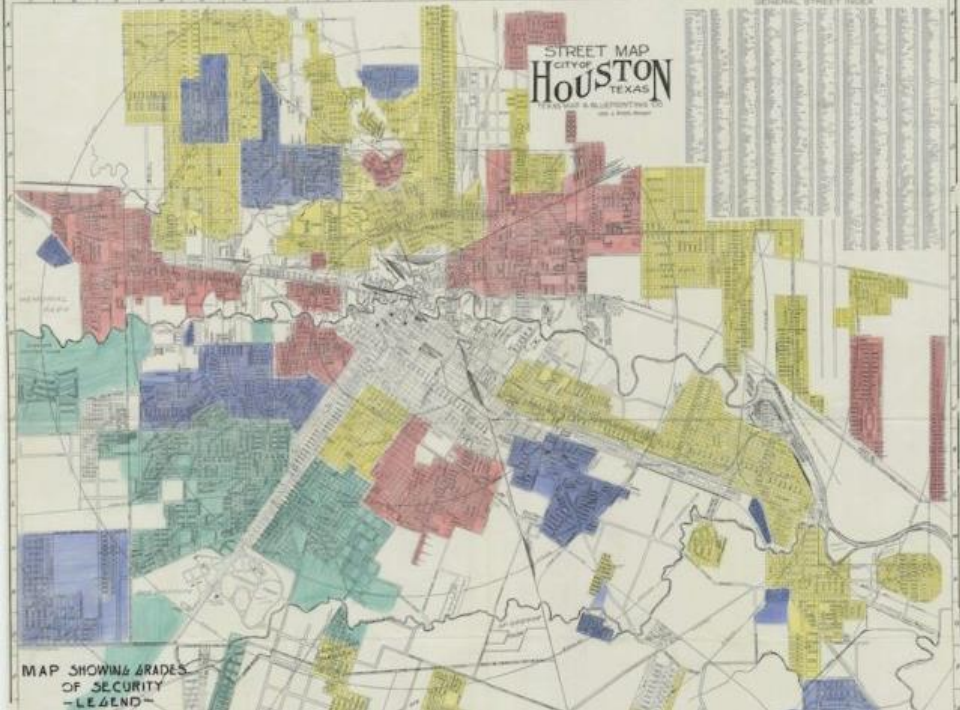
Assigned categories of quality: A, B, C, D

A: 'hot spots'...where good mortgage lenders with available funds are willing to make their maximum loans...—perhaps up to 75-80% of appraisal."

B: "still good" but not as "'hot' as A areas." "They are neighborhoods where good mortgage lenders will have a tendency to hold commitments 10-15% under the limit," or around 65% of appraisal.

C: "obsolescence [and] infiltration of lower grade population." "Good mortgage lenders are more conservative in Third grade or C areas and hold commitments under the lending ratio for the A and B areas."

D: "characterized by detrimental influences in a pronounced degree, undesirable population or an infiltration of it." It recommended lenders "refuse to make loans in these areas [or] only on a conservative basis."

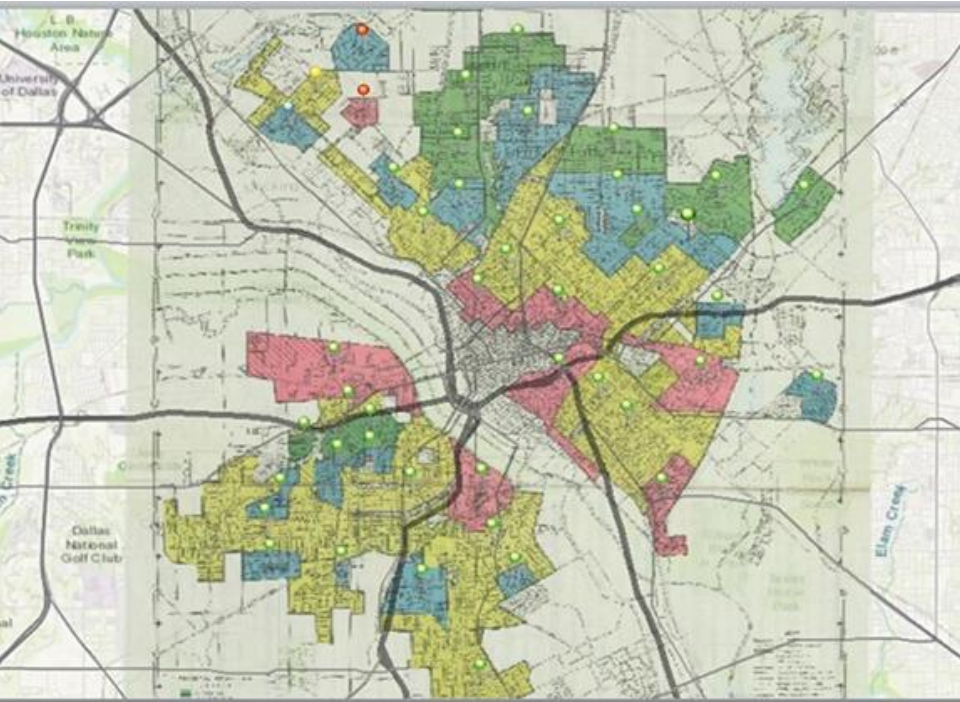


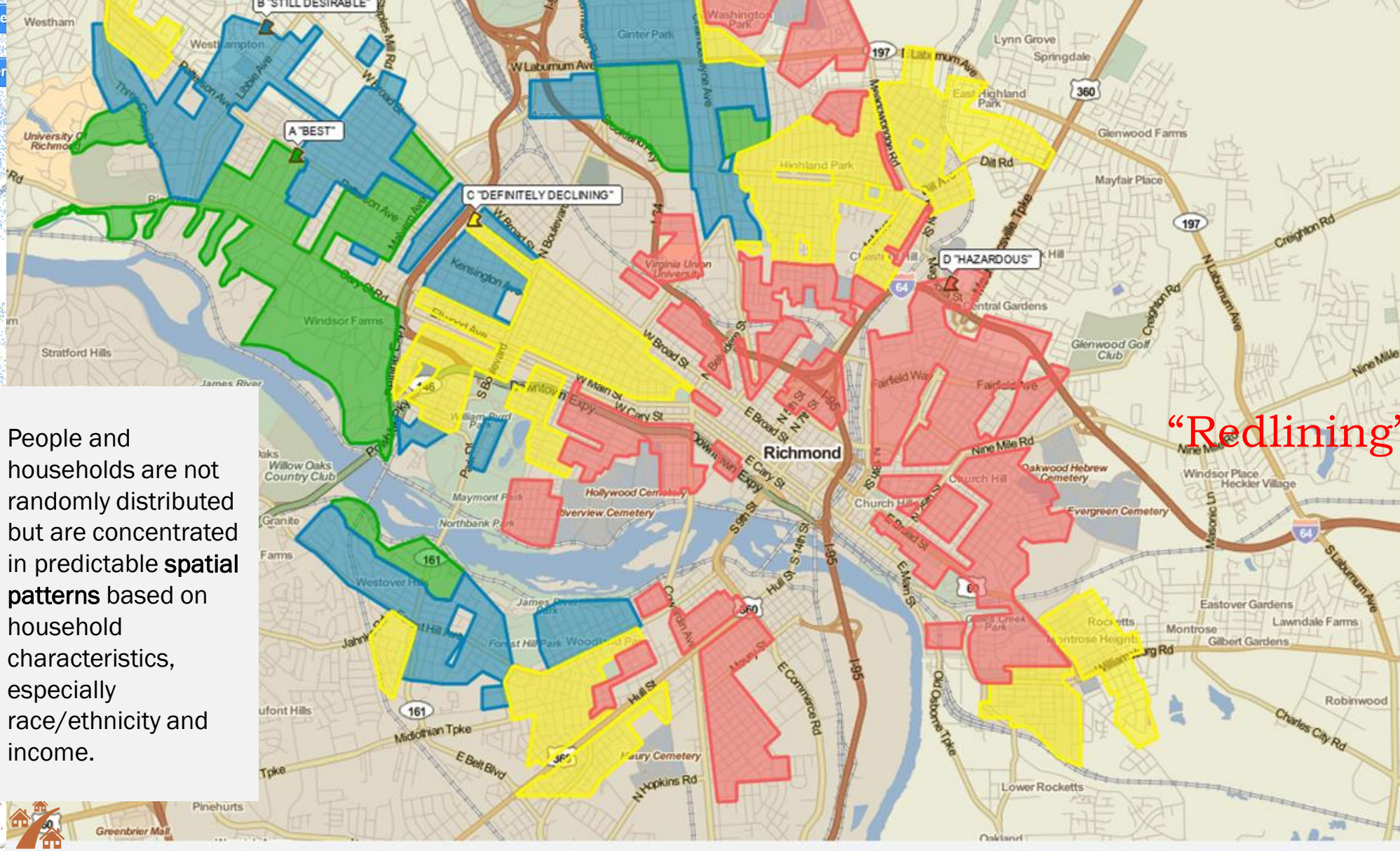
Consequences of HOLC's and FHA's appraisal methods

Home buyers were awarded the best loans for locating in neighborhoods that were:

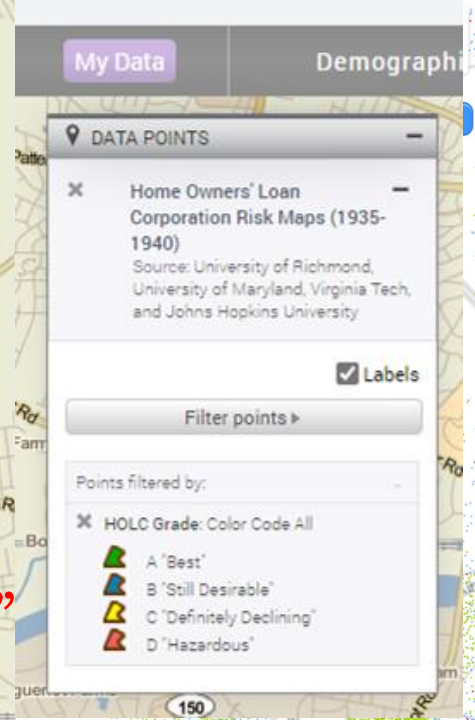
- homogeneous (white),
- had a separation of uses
- farther from the city's center

And were less likely to get loans to live in neighborhoods having diverse ethnic composition, mixed uses or more urban locations





People and households are not randomly distributed but are concentrated in predictable **spatial patterns** based on household characteristics, especially race/ethnicity and income.



“Redlining”

Richmond, VA
2010 Census Block Data

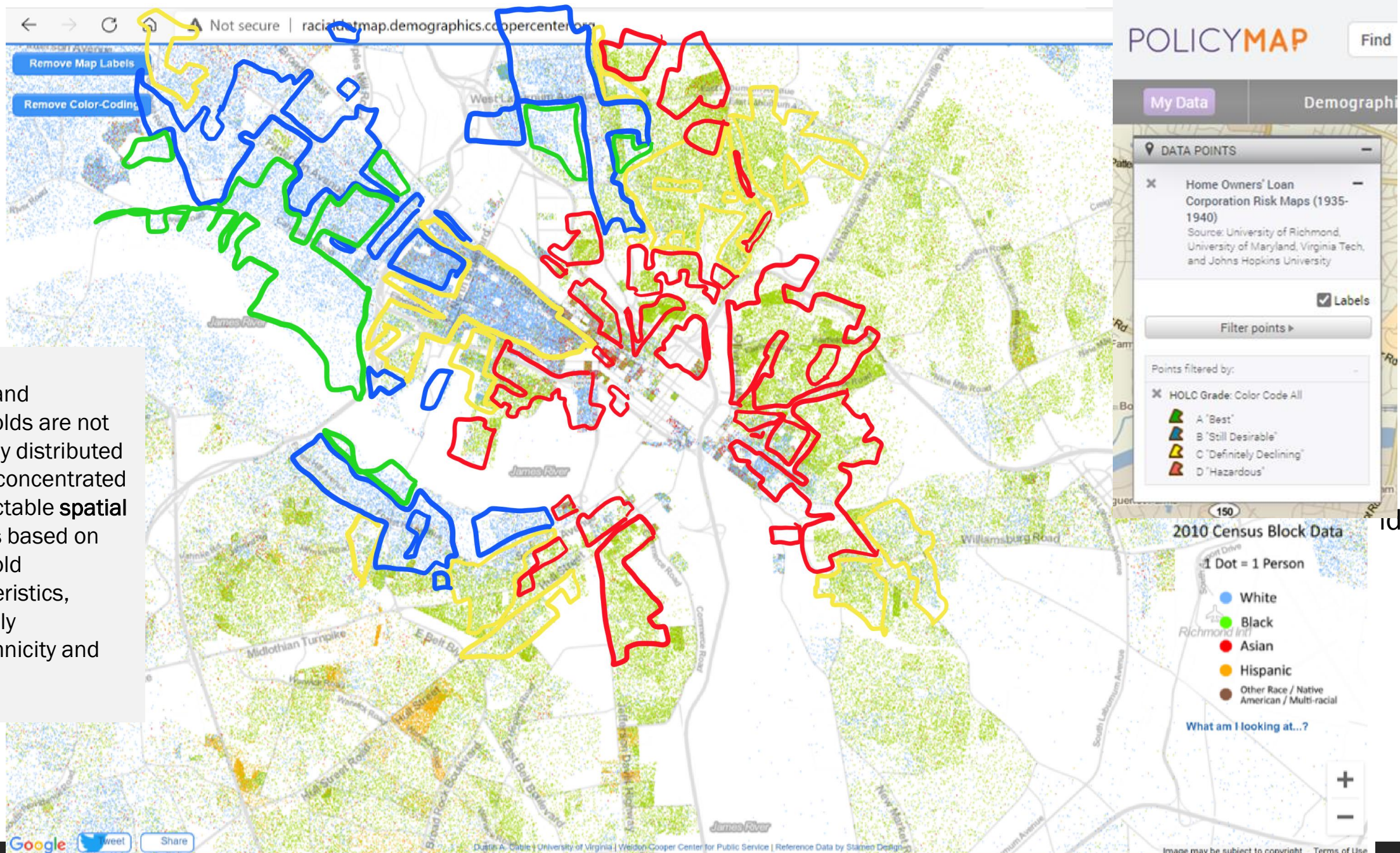
1 Dot = 1 Person

- White
- Black
- Asian
- Hispanic
- Other Race / Native American / Multi-racial

What am I looking at...?

Spatial distribution of people through housing

People and households are not randomly distributed but are concentrated in predictable **spatial patterns** based on household characteristics, especially race/ethnicity and income.



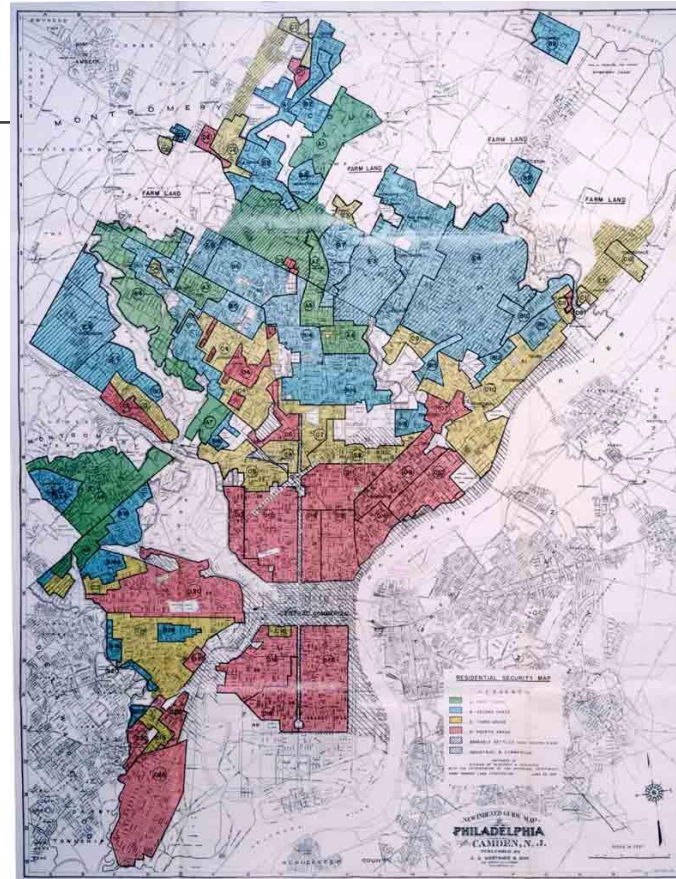
id, VA

Persistent effects

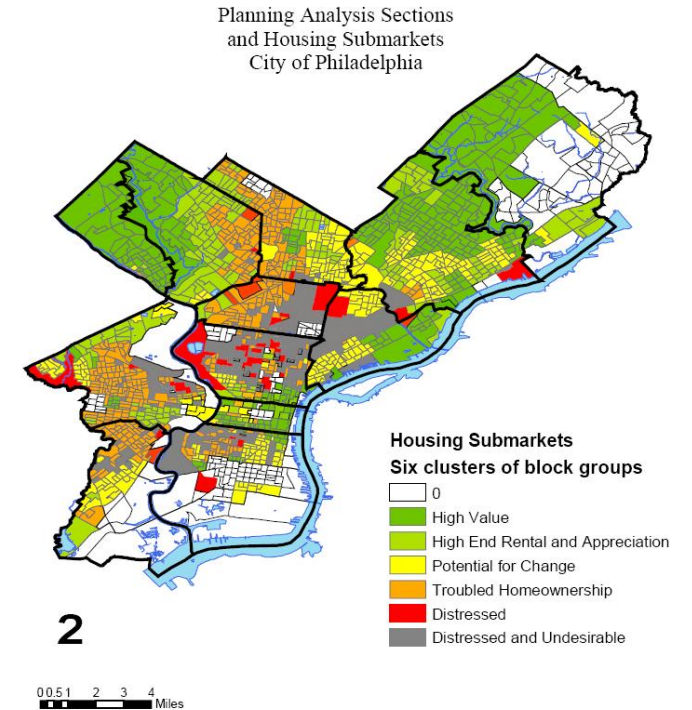
74% of neighborhoods that HOLC graded as “hazardous” more than 80 years ago are low-to-moderate income (LMI) today.

64% of the hazardous-graded areas are minority neighborhoods now.

By comparison, 91% of areas deemed “best” in the 1930s remain middle-to-upper income (MUI) today, and 85% are still predominantly white.



Old HOLC map, from 1936. Hillier.



Analysis of 2000 data, by Bates, 2006.

Fair Housing Act

Civil Rights Act of 1968

Made it illegal to refuse to sell, rent or make a dwelling unavailable on the basis of race, color, religion or national origin,

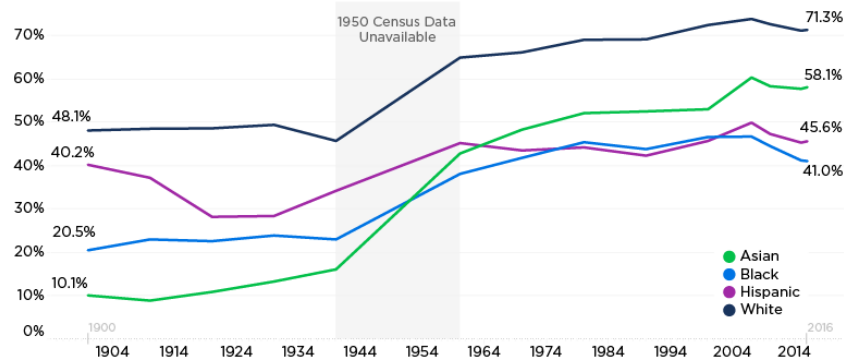
Or to deny a loan or other financial assistance for the purchase, construction, repair or maintenance of a dwelling on any of those bases.

Theoretically put an end to discrimination in housing market.



The Gap Between Black and White Homeownership Rates Has Widened Since 1900

Homeownership rate by race



Zillow

Source: Urban Institute analysis of U.S. Census Bureau, Decennial Census and American Community Survey, 1990-2015, made available by IPUMS-USA, University of Minnesota, www.ipums.org.

Discrimination in Lending denies Black wealth-building

As a result of redlining and other discriminatory practices, Black and other minority borrowers are:

- More likely to be denied loans
- More often charged higher interest rates (subprime or predatory loans)
- Have lower homeownership rates
- More likely to experience lower house price appreciation
- More likely to have homes over-assessed
- Have lower personal wealth and fewer resources

The Assessment Gap: Racial Inequalities in Property Taxation

85 Pages • Posted: 16 Oct 2019 • Last revised: 6 Jul 2021

Carlos Avenancio-Leon

Indiana University - Kelley School of Business

Troup Howard

University of Utah, David Eccles School of Business

Date Written: October 5, 2019

“Black and Hispanic residents face a **10-13% higher tax burden** for the same bundle of public services...”

“...leads to **over-taxation of highly minority communities.**”

BROOKINGS

CLIMATE AI CITIES & REGIONS GLOBAL DEV INTL AFFAIRS U.S. ECONOMY U.S. POLITICS & GOVT MORE



“finding that owner-occupied homes in Black neighborhoods are **undervalued by \$48,000 per home on average, amounting to \$156 billion in cumulative losses.**”

Municipal underbounding denies equal infrastructure



Fig. 5. Densely settled predominately Latino islands were politically excluded from southern Modesto, California (cf. Fig. 4). Excluded neighborhoods were not provided with residential sewer lines, storm drains, or streetlights. Municipal boundaries and sewer lines are from public records in Stanislaus County, Carolina; imagery from USGS DOQQ.

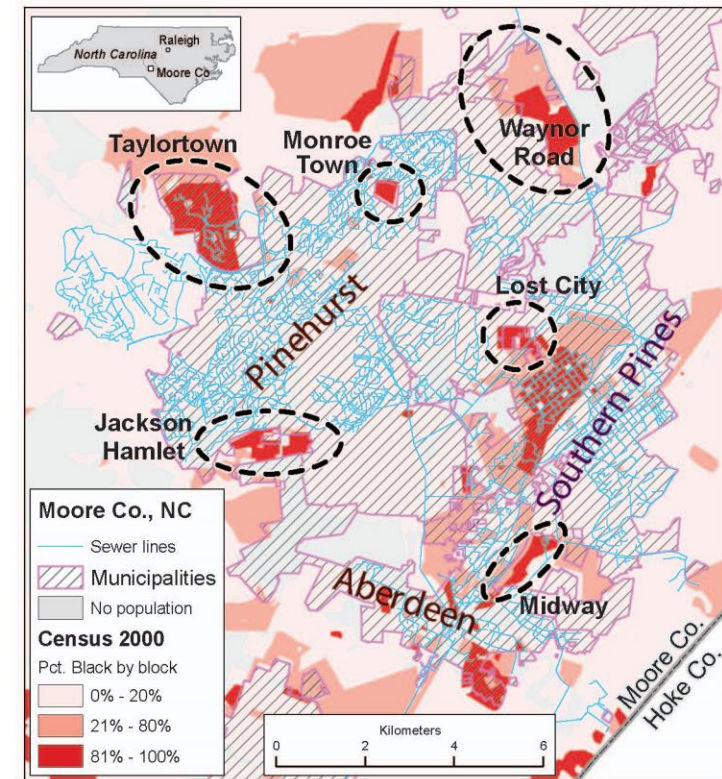


Fig. 3. In southern Moore County, North Carolina five majority-Black neighborhoods were systematically excluded between or within the boundaries of expanding municipalities, with sewer service withheld from these neighborhoods. Taylortown is a majority-Black municipality. Boundaries and demography are from the 2000 U.S. Census; sewer lines from public records in Moore County, North Carolina.

Causes of segregation and concentrated poverty



These demographic patterns are coupled with the **inequitable provision** of affordable housing and critical infrastructure.

PRIVATE SECTOR:



Historic and contemporary discrimination in lending and real estate industries

- Redlining
- Blockbusting
- Steering
- Predatory lending

Exclusionary behaviors

- NIMBY

PUBLIC SECTOR:



Racial zoning

Appraisal practices that result in redlining

Municipal under-bounding

Diversion of capital investment away from poor neighborhoods

Exclusionary zoning

- Not enough/poorly placed MF zoning
- Large lot zoning



These patterns **increase exposure** to flooding and other hazards

Consequences

DISPARITIES IN:



Access to Information



Insurance coverage



Structural quality of homes



Quality of neighborhood infrastructure

POORER ACCESS TO:



Educational Opportunities



Health care, Healthy communities



Public Transportation



Jobs

GREATER EXPOSURE TO:



Crime



Pollution, both air & water



Natural disasters, esp. flooding

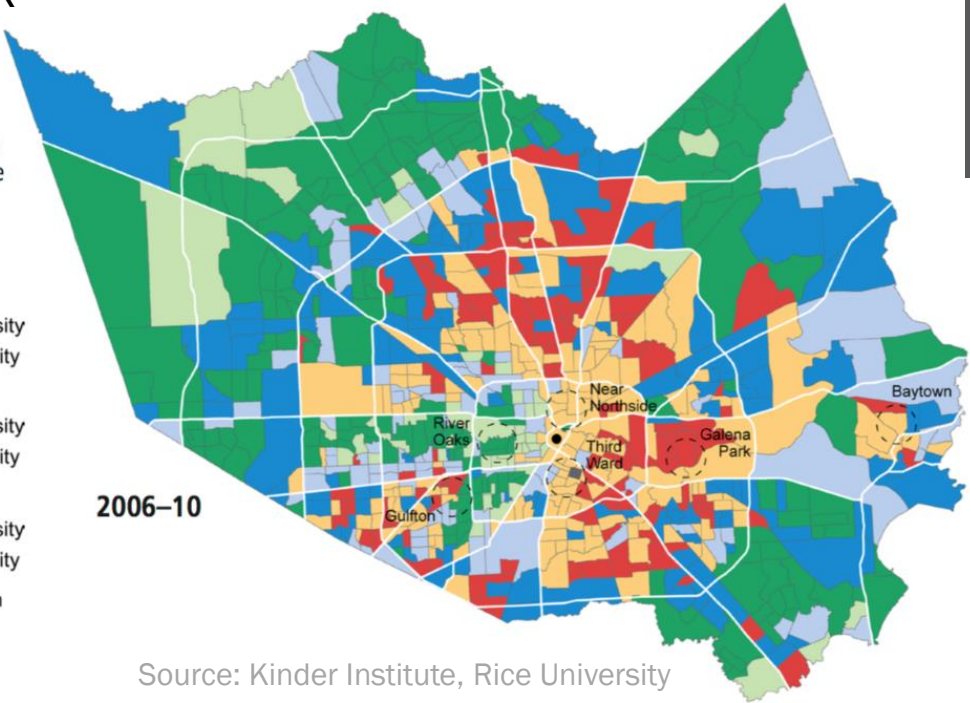
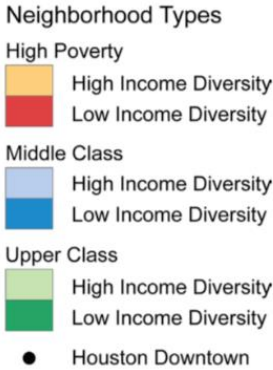


Spread of disease

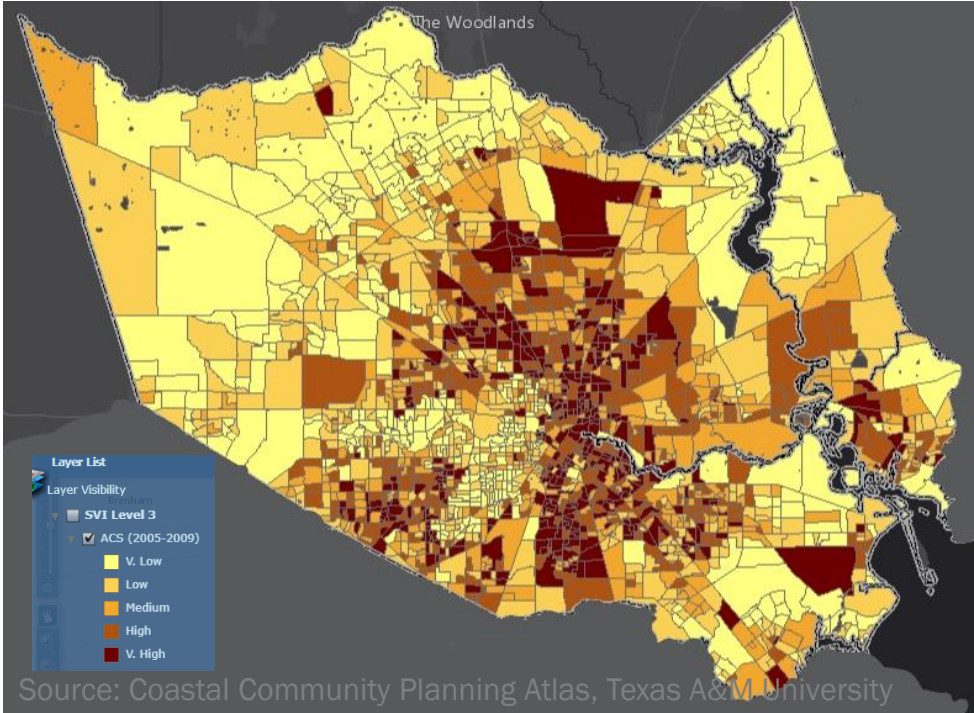
Patterns result in increased *physical vulnerability* for socially vulnerable neighborhoods:

HARRIS COUNTY, TX
(HOUSTON)

Figure 5b. Neighborhoods by Income Level and Income Diversity, 2006–10



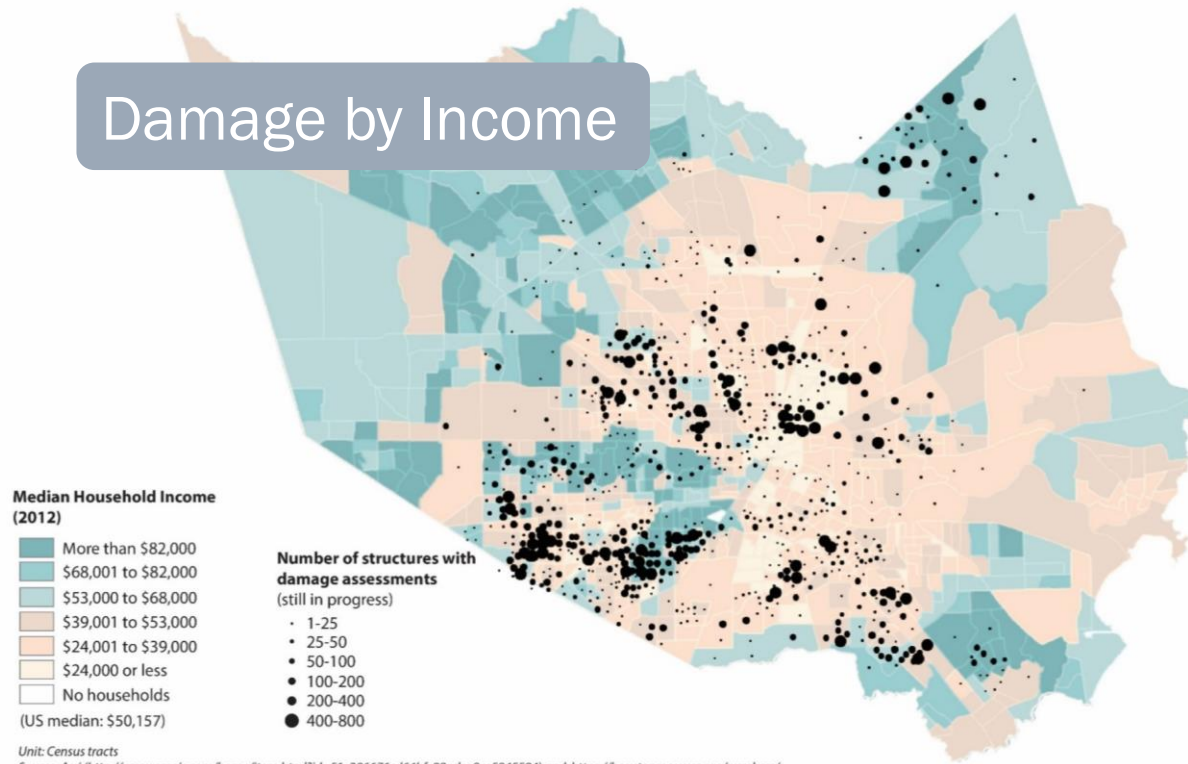
Source: Kinder Institute, Rice University



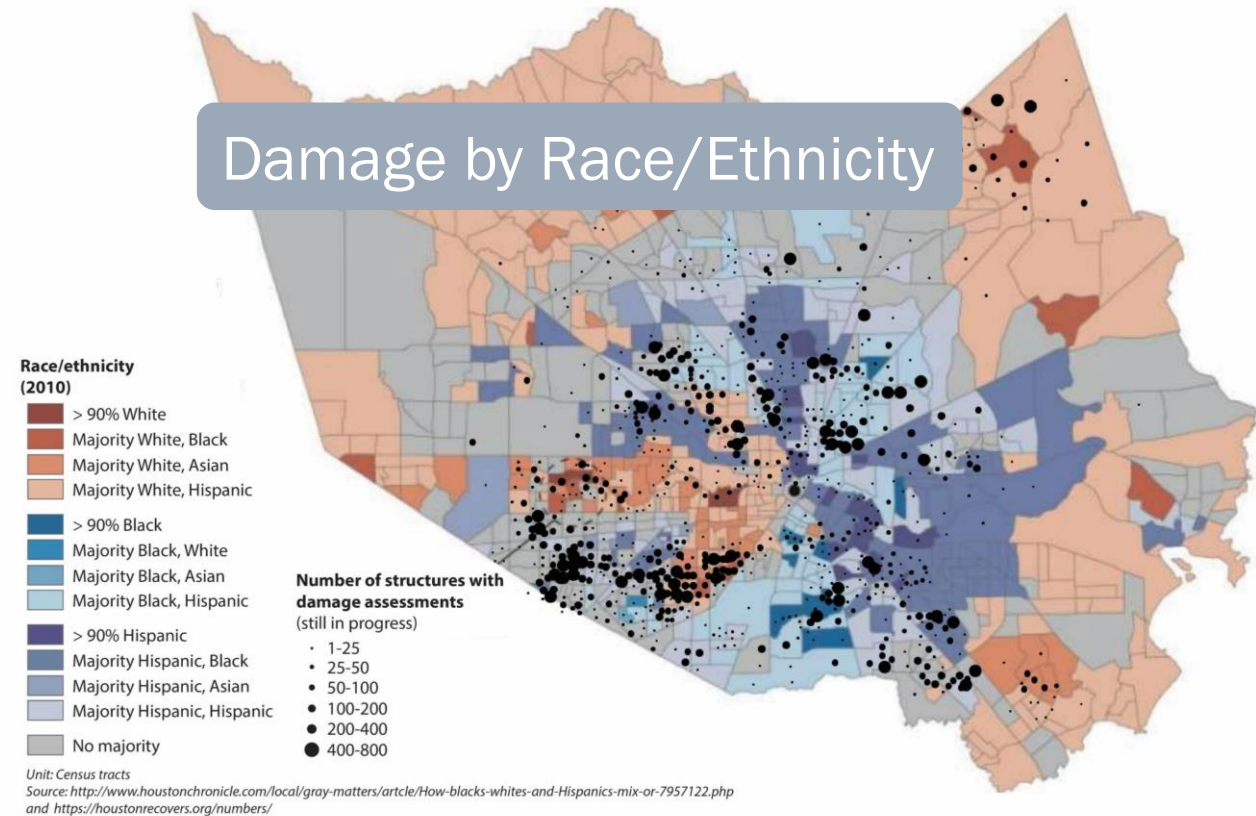
GEOGRAPHY OF VULNERABILITY

GEOGRAPHY OF OPPORTUNITY

Damage by Income



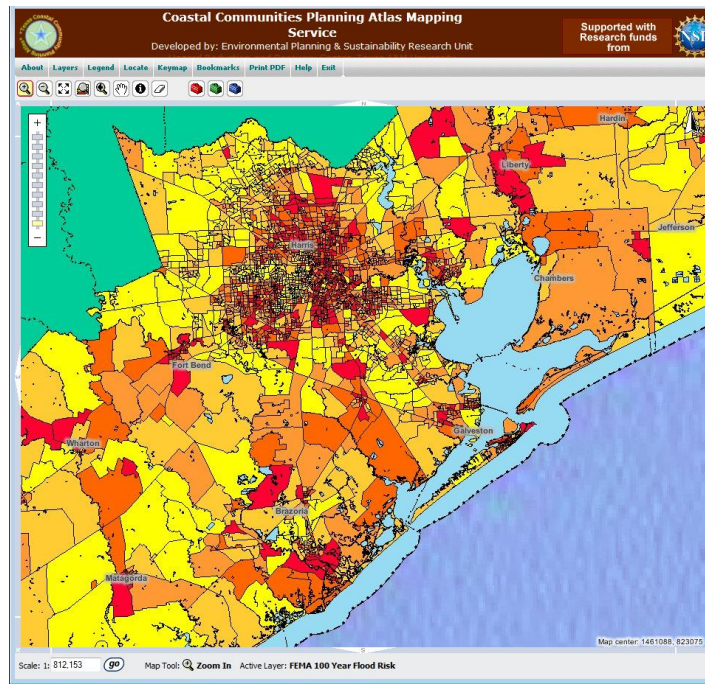
Damage by Race/Ethnicity



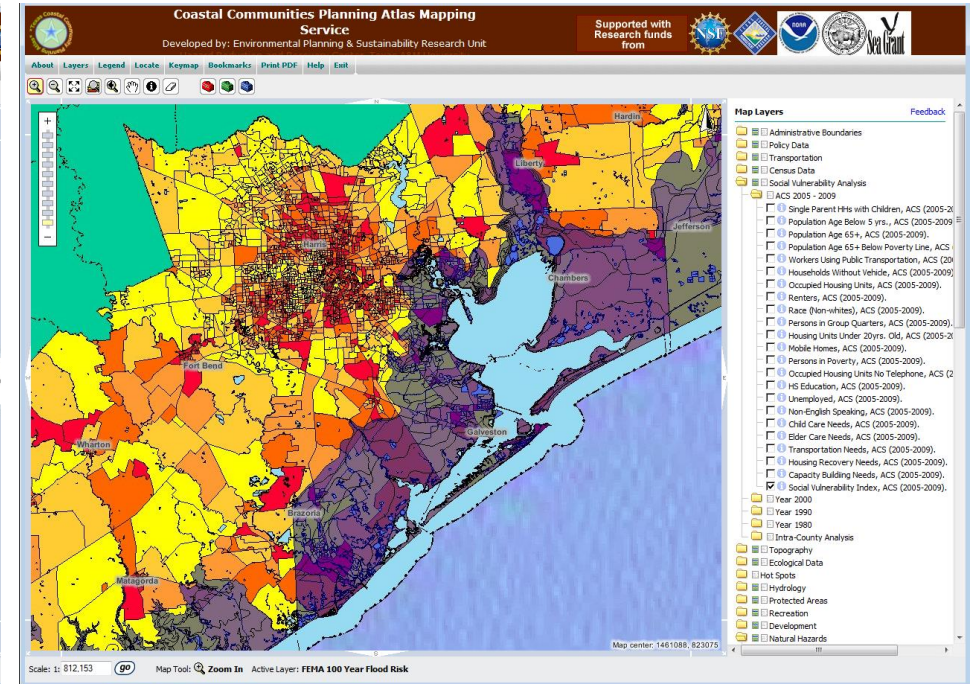
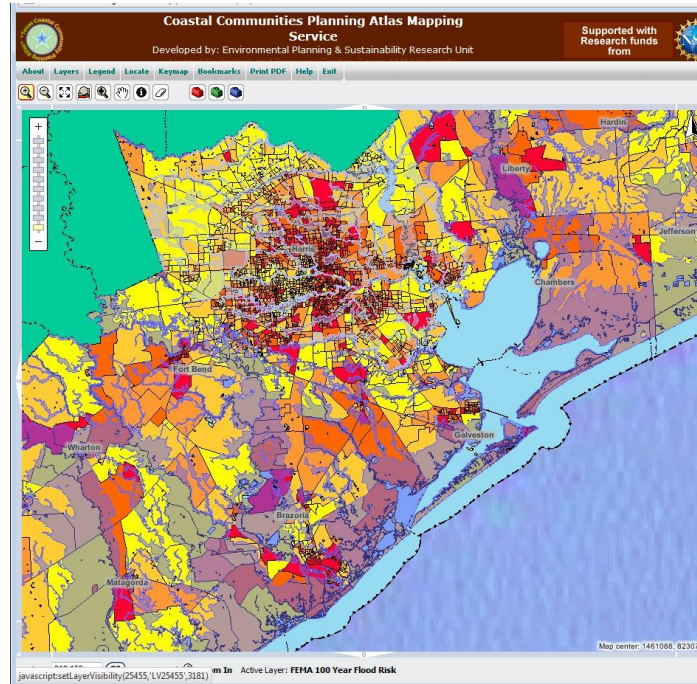
Harris County Damage Patterns

Source: Kinder Institute

Do these patterns matter?



100-year flood plain

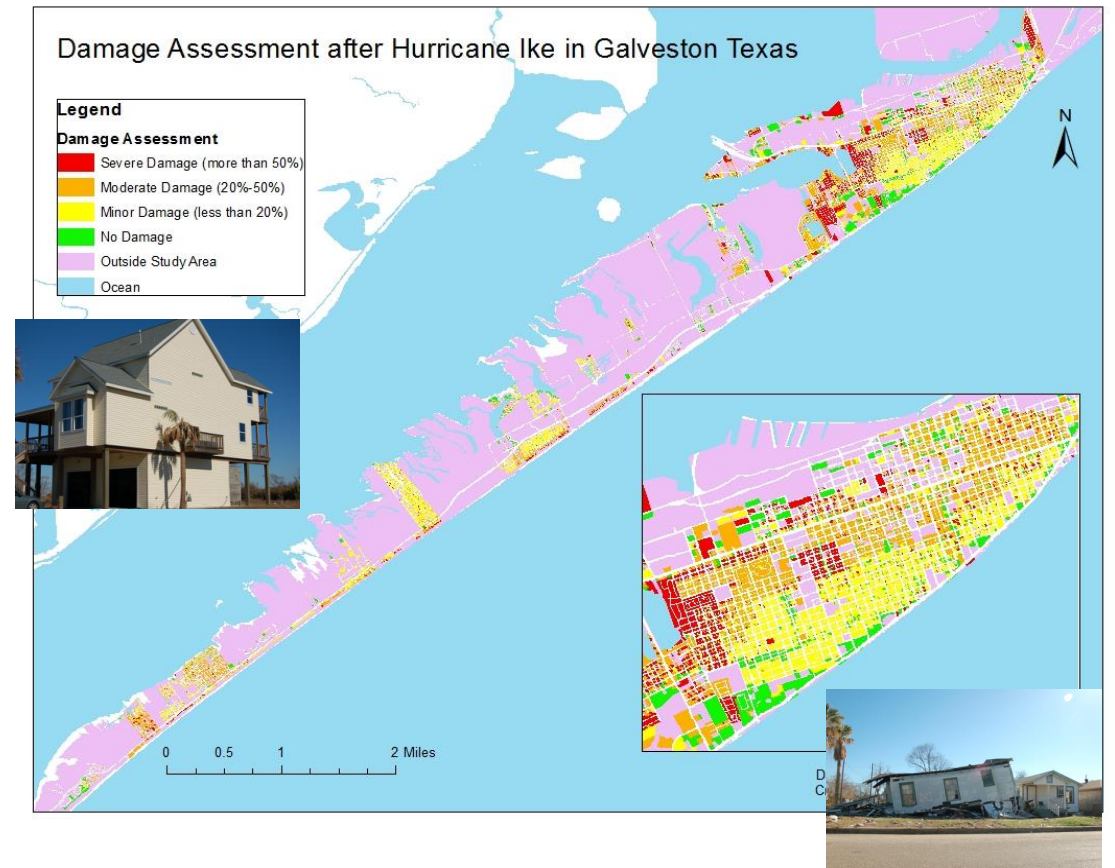


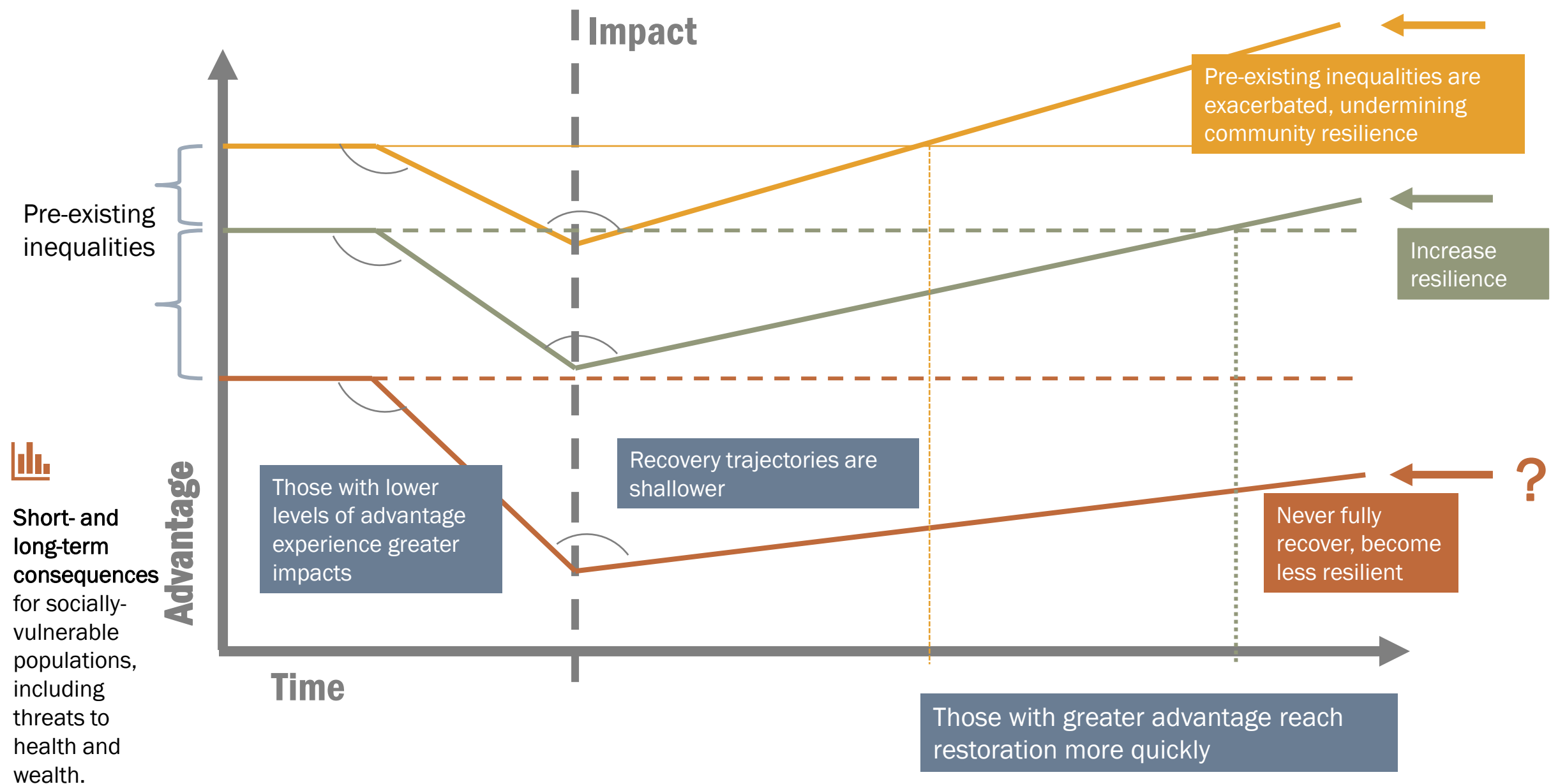
Cat 1 and 2 Surge

Yes! They do.

Findings from Hurricane Ike (2008):

- Transportation-dependent populations evacuated later than others
- Households with high recovery needs had higher levels of overall damage
- Households with high social vulnerability applied less to FEMA and SBA
- Higher levels of damage seen to minority neighborhoods—even after accounting for the age of the housing and the proximity of the housing unit to water and the seawall.

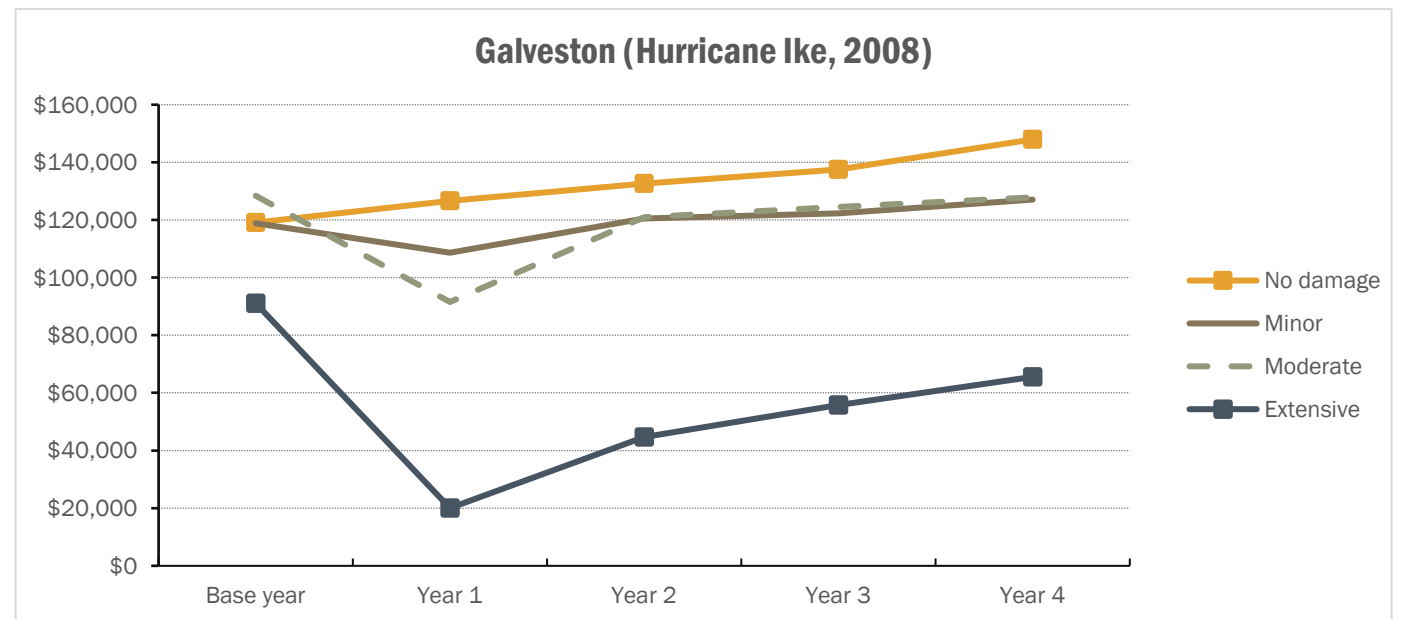
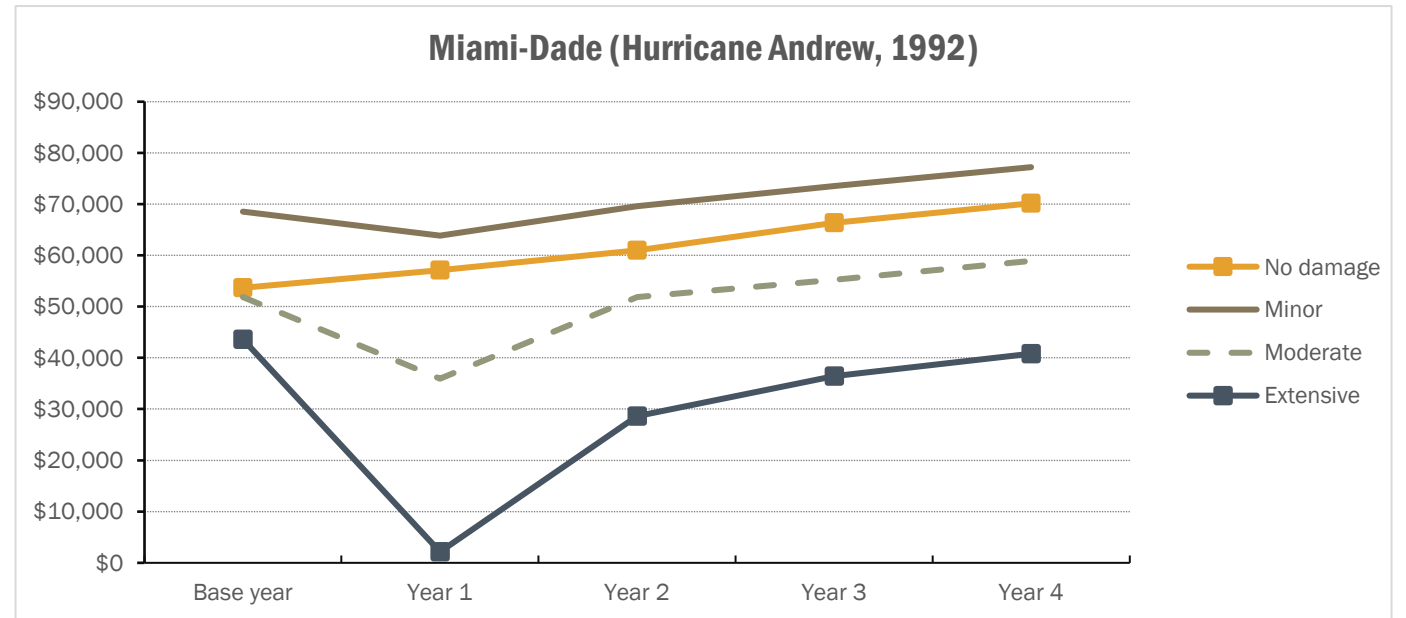






The effects of damage are long-lasting

- Extensively-damaged homes were lower-value to begin with
- Extensively-damaged homes hadn't regained their original value within 4 years.
- Homes with no damage or minor damage recovered quickly (within 2 years)

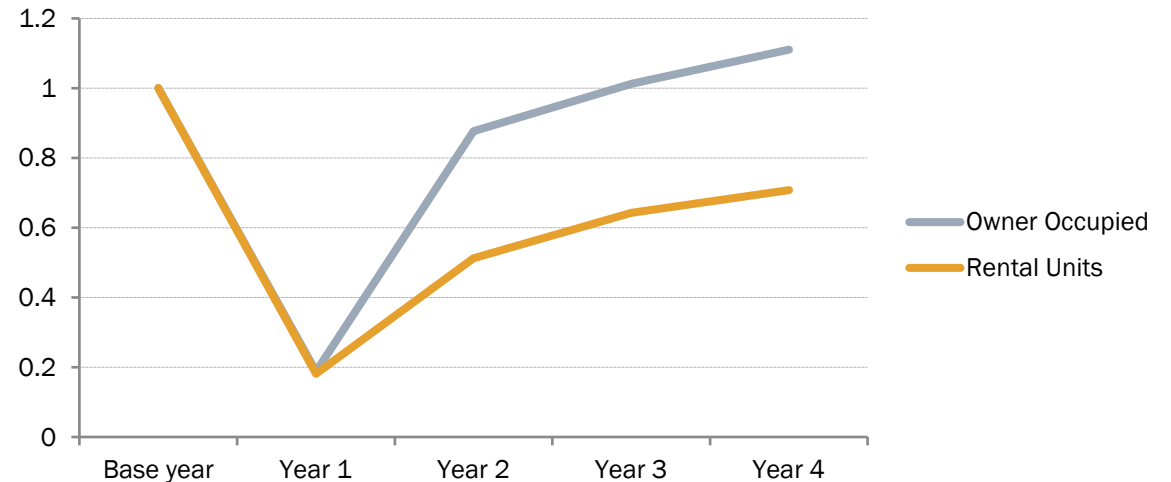


Owner-occupied housing suffers less damage and recovers more quickly

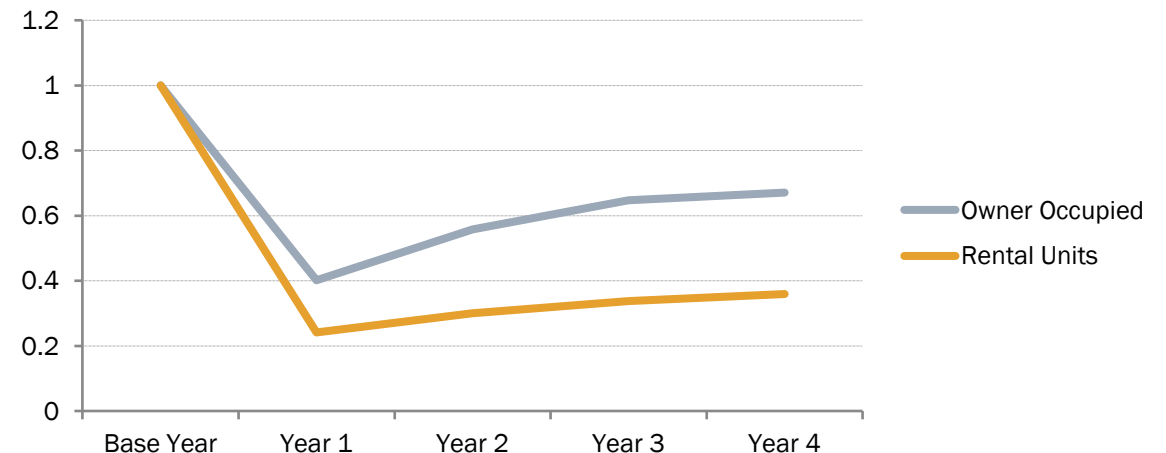
- Many studies overlook housing tenure as a form of social vulnerability
- Renters are particularly hard to track after a disaster
- Renters are more likely to experience long-term displacement
- Renters have almost no control over whether their housing is rebuilt

Recovery by housing tenure

Miami-Dade



Galveston



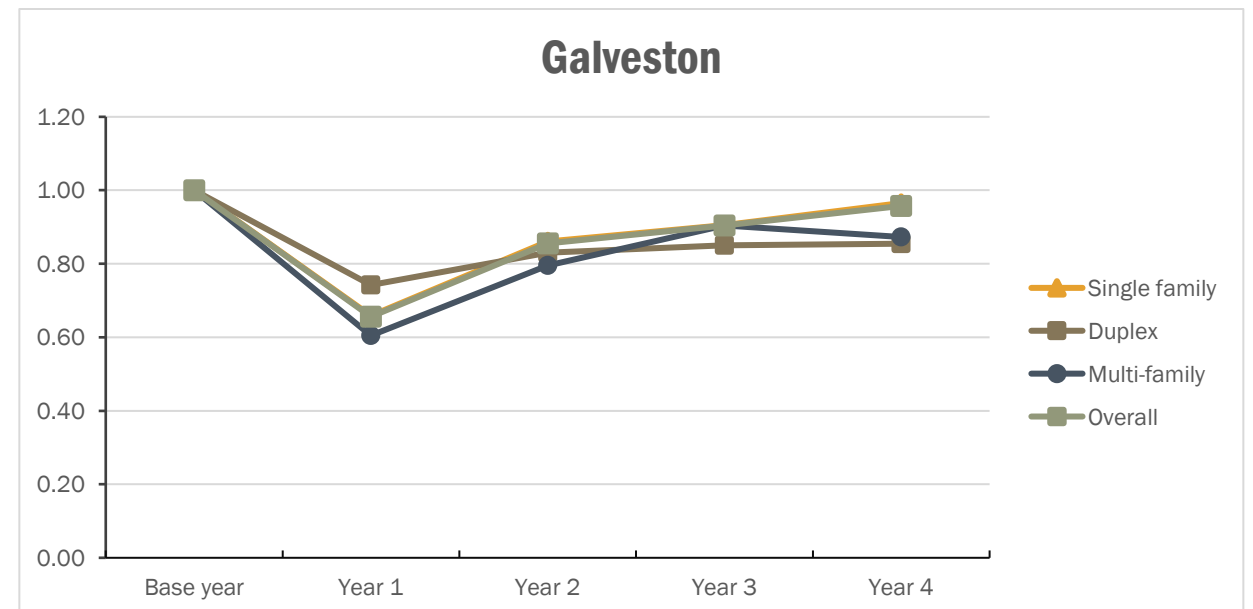
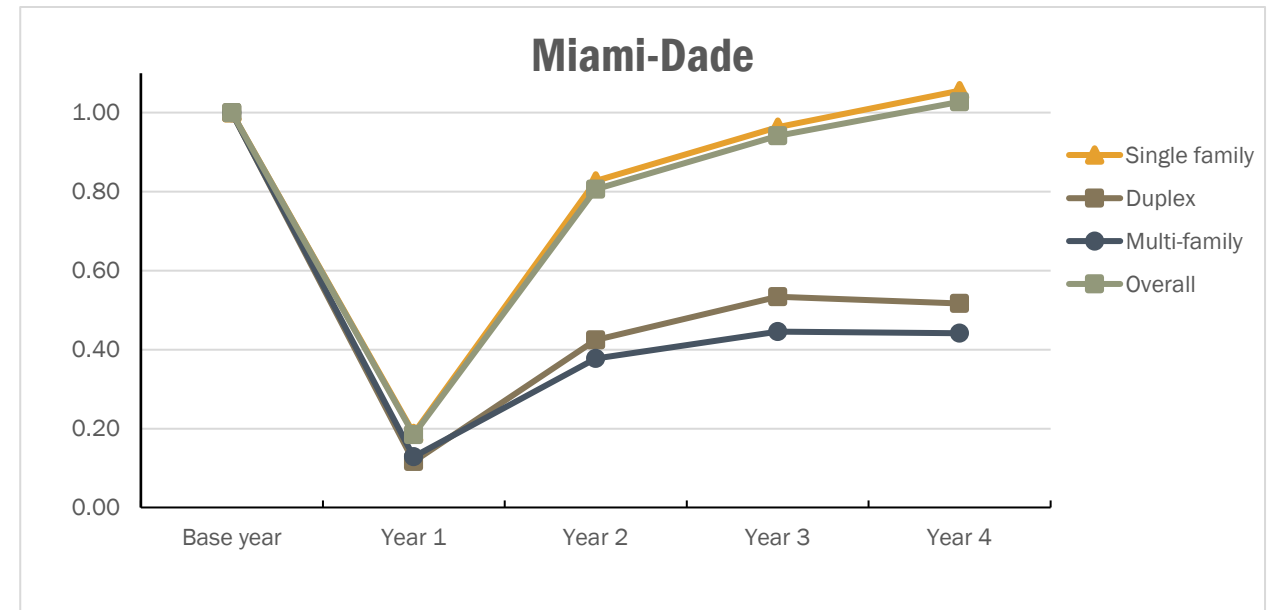
Source: County tax appraisal data



Multi-family housing recovery is more volatile than single-family housing

- In both Miami-Dade and Galveston, multi-family and duplexes recovered more slowly
- Single-family homes recovered within 2-3 years, while other housing types took 4 or more years to regain their pre-storm value.

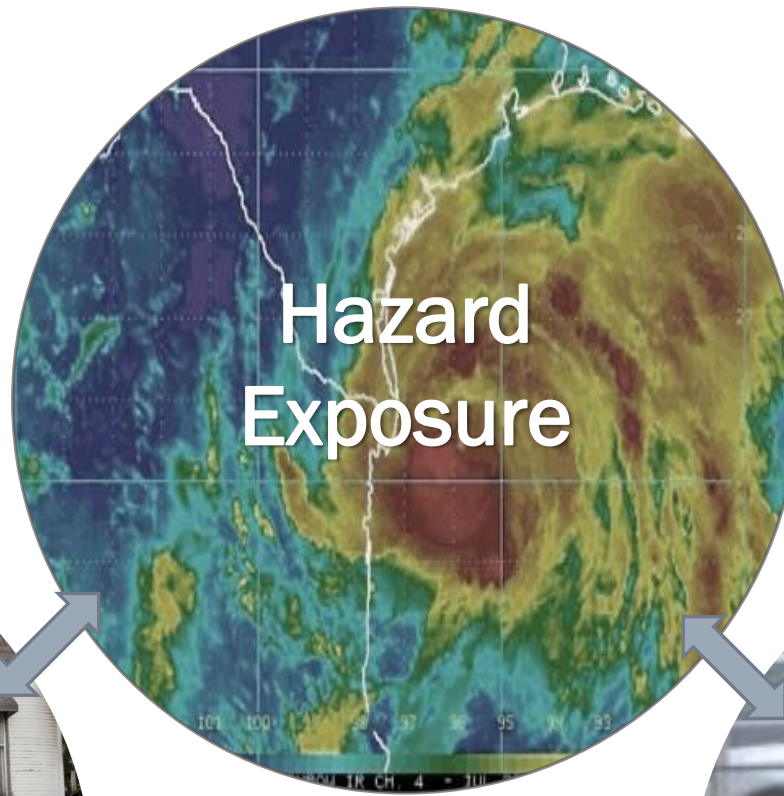
Recovery by housing type



Intersections

These overlap represent hotspots that are prime targets for resiliency planning issues whether considering mitigation, recovery, or other planning activities.






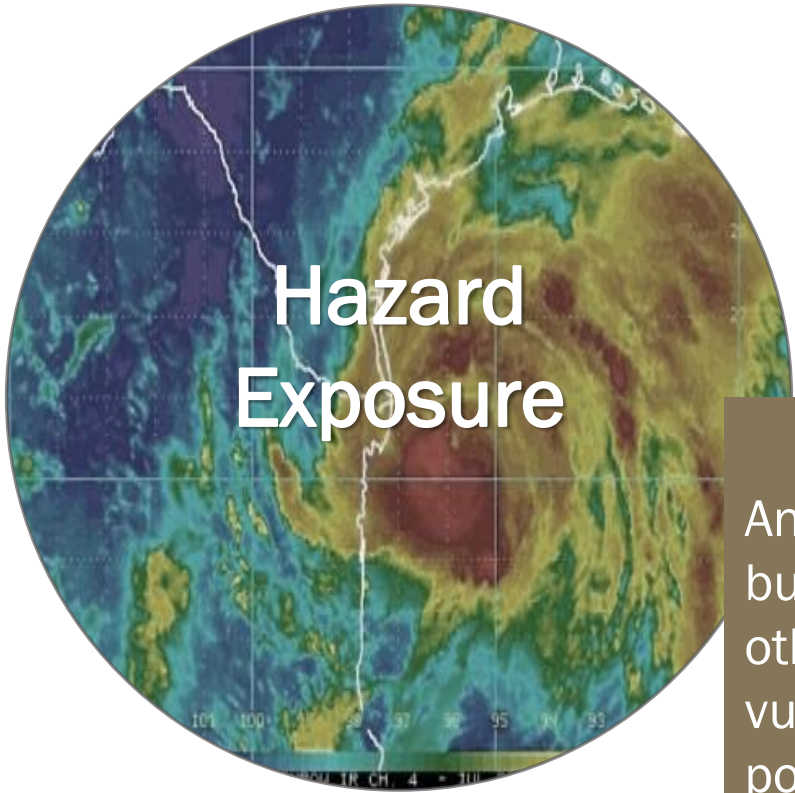
Land Use Planning
Separates structures and
people from hazardous
areas



Structural Mitigation
can *reduce* physical
vulnerability (through
elevation, dams, levees,
building codes, etc.



Physical Vulnerability



Hazard Exposure



Social Vulnerability

Anti-poverty programs, capacity-
building, educational programs, and
other social services can *reduce* social
vulnerability, as can improvements in
policies and practices that penalize the
poor, minorities, women, elderly,
children, renters, etc.

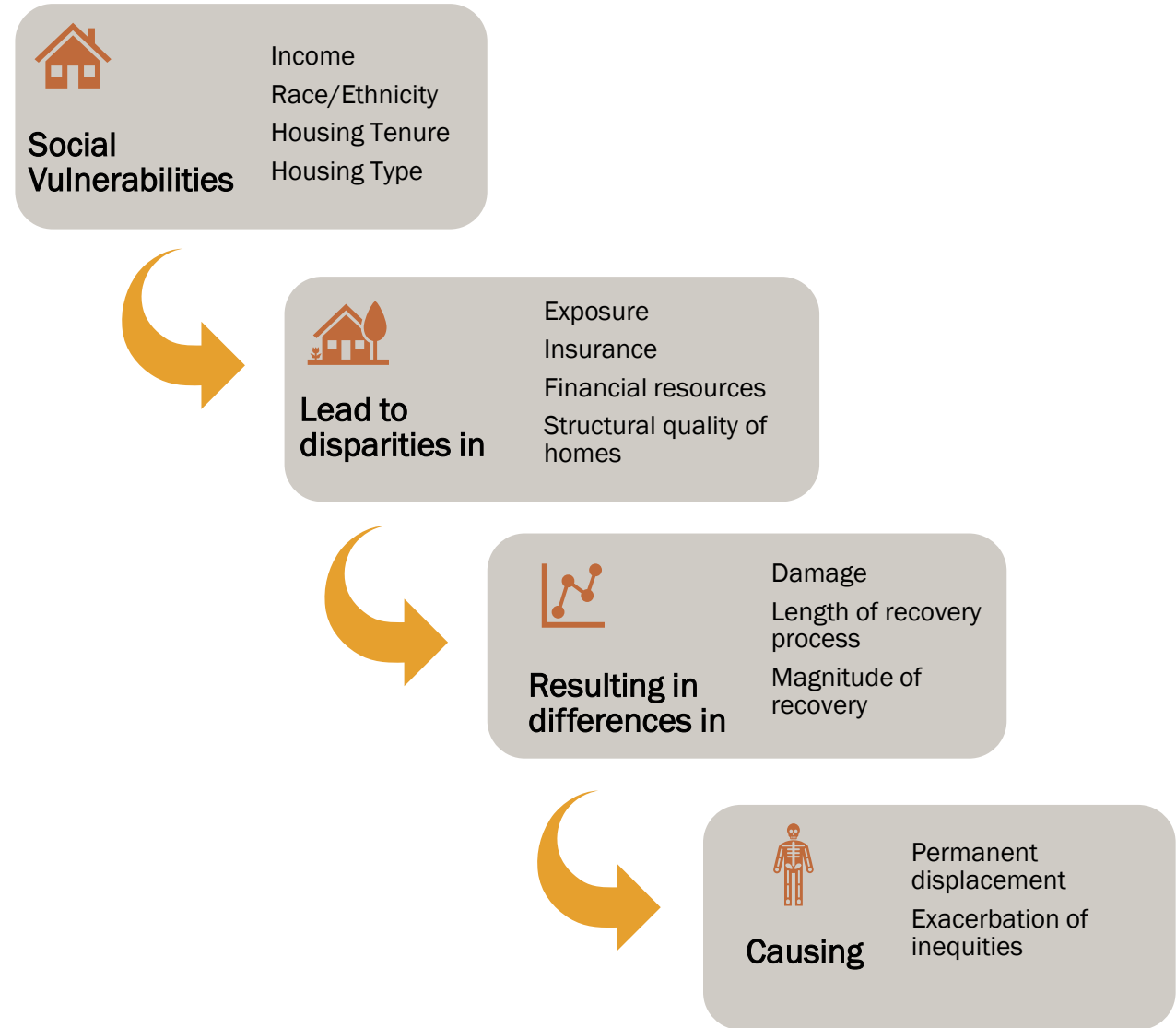
Racism, Bias, and Discrimination
have contributed to the persistence of

Social Vulnerability

Social Vulnerability defined:

“the characteristics of a person or group in terms of their capacity to *anticipate, cope with, resist* and *recover* from the impacts of a natural hazard.”

Blaikie, Cannon, Davis, and Wisner (1994)



Implications for IN-CORE

Need for fine-grained geographies

Need to look past population means

Need to disaggregate populations by race/ethnicity and/or income

Need to examine assumptions re:

- Distribution of housing quality
- Infrastructure provision
- Availability, distribution, and timing of recovery resources (i.e., insurance, SBA loans, etc.)

Also consider:

- The recovery process often (always?) leads to an overall loss of affordable housing; may catalyze permanent population dislocation and/or gentrification
- Increased building standards make homes less affordable for low-income households

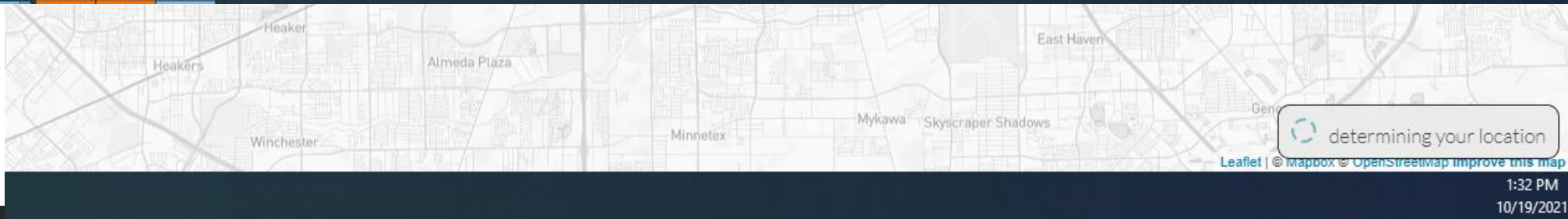
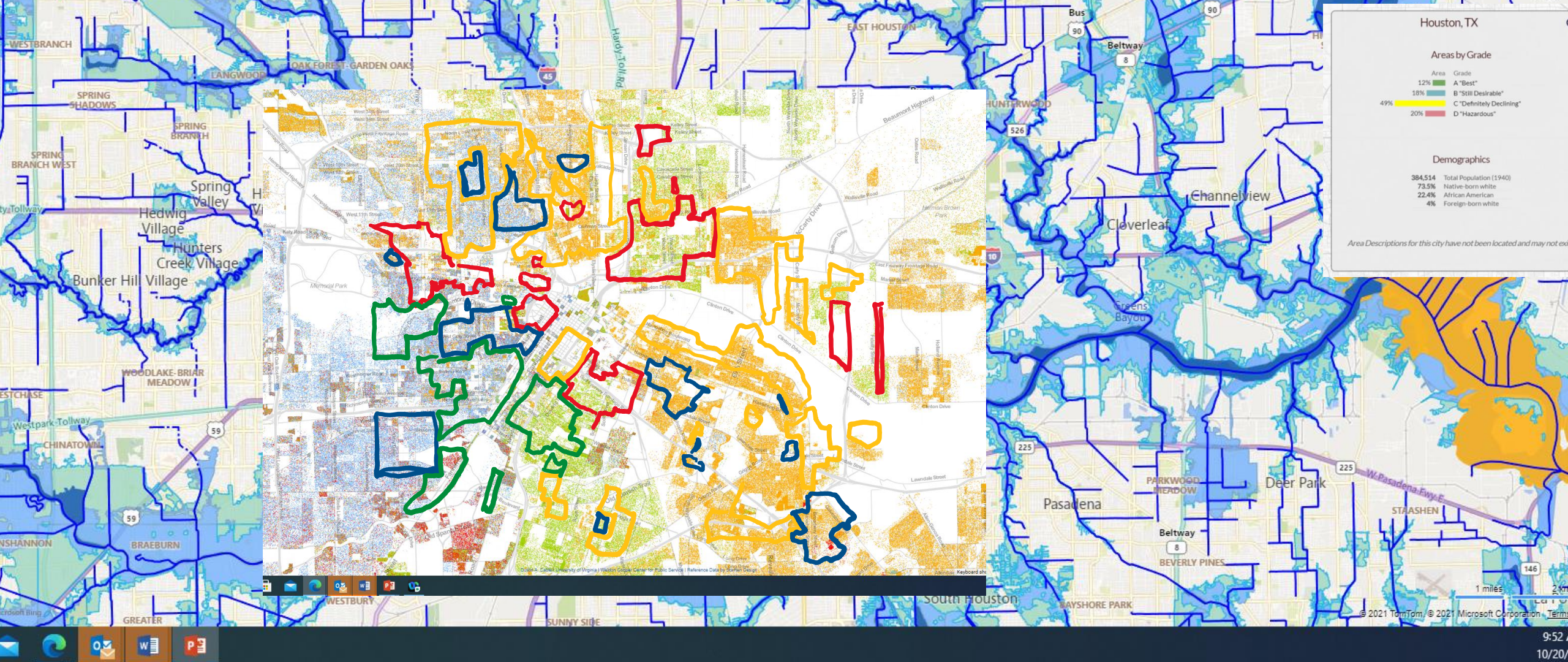
**DAMAGE, RESTORATION
and RECOVERY are more
than just a function of
physical characteristics**

Questions?

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Texas A&M University

Referenced work

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2. Lee, J. Y., & **Van Zandt, S.** (2019). Housing tenure and social vulnerability to disasters: A review of the evidence. *Journal of Planning Literature*, 34(2), 156-170. [10.1177/0885412218812080](https://doi.org/10.1177/0885412218812080)
3. Peacock, W.G. **Van Zandt, S.**, Y. Zhang, and W. Highfield. 2014. Inequities in Long-Term Housing After Disaster. *Journal of the American Planning Association* 80:4, 356-371. DOI:10.1080/01944363.2014.980440.
4. Highfield, W., W.G. Peacock, and **S. Van Zandt**. 2014. Mitigation Planning: Why Hazard Exposure, Structural Vulnerability, AND Social Vulnerability Matter. *Journal of Planning Education & Research* 34: 287-300. DOI: 10.1177/0739456X14531828
5. **Van Zandt, S.**, W.G. Peacock, *D. Henry, H. Grover, W. Highfield, and S. Brody. 2012. Mapping Social Vulnerability to Enhance Housing and Neighborhood Resilience. *Housing Policy Debate* 22(1): 29-55. DOI:10.1080/10511482.2011.624528.



Remove Map Labels

Remove Color-Coding

FLOOD EDUCATION MAPPING TOOL

FLOOD EDUCATION MAPPING TOOL | ABOUT THE TOOL | FAQs | HCFCG.org



ADDRESS SEARCH [HELP](#)
Street Address, City, State, Zip Code **FIND**
e.g. 9900 Northwest Freeway, Houston, TX 77092

MAP VIEW OPTIONS - Select One

Maped Floodplains

- ☒ Floodway
- ☐ 1% (100-year) Floodplain
- ☐ 0.2% (500-year) Floodplain
- ☐ 1% (100-year) Coastal Floodplain
- ☐ Watersheds (color-coded)
- ☐ Ponding

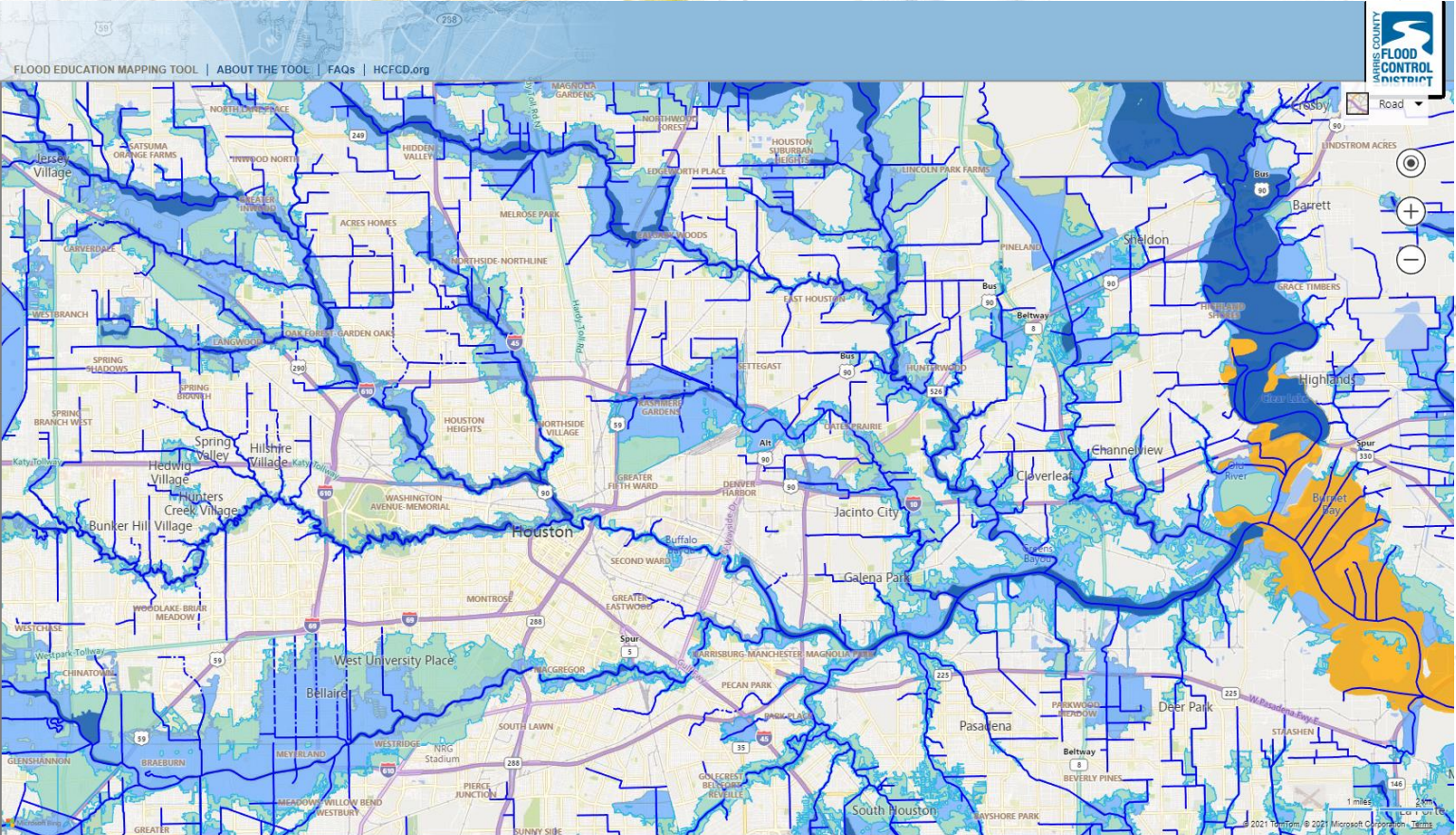
Channels (Bayous and Creeks)

- ☒ Open Channels
- ☐ Enclosed Channels

☒ Harris County Boundary

[Reset to County-Level View](#) [Disclaimer](#)

An interactive mapping tool of the
DISTRICT Harris County Flood District



2010 Census Block Data

1 Dot = 1 Person

- White
- Black
- Asian
- Hispanic
- Other Race / Native American / Multi-racial

What am I looking at...?



Google



Dustin A. Cable | University of Virginia | Weldon Cooper Center for Public Service | Reference Data by Stamen Design

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10/20/2021