




Affordable Housing, Disasters, and Social Equity


LIHTC as a Tool for Preparedness and Recovery

Aditi Mehta, Mark Brennan & Justin Steil


To cite this article: Aditi Mehta, Mark Brennan & Justin Steil (2020) Affordable Housing, Disasters, and Social Equity, Journal of the American Planning Association, 86:1, 75-88, DOI: [10.1080/01944363.2019.1667261](https://doi.org/10.1080/01944363.2019.1667261)


To link to this article: <https://doi.org/10.1080/01944363.2019.1667261>

 View supplementary material [↗](#)

 Published online: 27 Jan 2020.

 Submit your article to this journal [↗](#)

 Article views: 161

 View related articles [↗](#)

 View Crossmark data [↗](#)

Affordable Housing, Disasters, and Social Equity

LIHTC as a Tool for Preparedness and Recovery

Aditi Mehta Mark Brennan Justin Steil

ABSTRACT

Problem, research strategy, and findings: The Low-Income Housing Tax Credit (LIHTC) is the most common financing mechanism for subsidized housing production in America. We investigate how and to what extent states are currently using the LIHTC to prepare for and recover from disasters. We systematically code guidelines in the 2017 LIHTC qualified allocation plans from 53 states and territories to identify disaster-related provisions. Twenty-four states and territories include provisions for preparedness or recovery in their allocation plans, of which 13 include only preparedness provisions, 3 include only recovery provisions, and 8 include both types. Preparedness provisions address project design and siting, whereas recovery provisions direct credits to disaster-affected areas or the replacement of damaged units. Using *t* tests, we compare three sets of states—those without any disaster-related provisions, those with either preparedness or recovery provisions, and those with both types of provisions—across measures of housing cost, demographic composition, disaster exposure, and political ideology. States with higher homeownership rates, lower home values, and lower rents are more likely than other states to have either or both types of provisions. Future research should investigate state adoption of disaster-related LIHTC provisions to better inform affordable housing policy.

Takeaway for practice: State governments could mitigate disaster-related hazards and help speed recovery by including locally relevant preparedness and recovery provisions in their LIHTC allocation plans. These provisions could encourage resilient construction, weigh the social costs and benefits of LIHTC construction in floodplains, or waive program rules to address postdisaster housing shortages.

Keywords: disasters, housing, LIHTC, preparedness, recovery

Evidence suggests the current structure of disaster assistance in the United States is associated with wide wealth inequalities along the lines of race, education, and homeownership (Brand & Seidman, 2012; Howell & Elliott, 2019). Low- and moderate-income renters are often most affected by disasters, yet homeowners receive most federal disaster assistance (Howell & Elliott, 2019; Lee & Van Zandt, 2019; U.S. Government Accountability Office, 2009). Increasing vulnerability to disaster and rising wealth inequality are thus linked by pre- and postdisaster housing policies. In this study, we analyze a program designed to assist low-income renters that should become a more important part of building resilient cities.

The Low-Income Housing Tax Credit (LIHTC) has been the most common financing mechanism for the production and preservation of subsidized multifamily rental buildings in the United States for the past 3 decades (McClure, 2006, 2008), yet there is little research on the potential role of the LIHTC program in improving

the resiliency of affordable housing in communities vulnerable to disaster or for helping low-income renters recover after disaster (see, however, Gotham [2014, 2015, 2016] regarding Hurricane Katrina). The process of rehousing is particularly challenging for low-income renters, who often receive less recovery assistance than homeowners and who are frequently priced out of their former neighborhoods because of a lack of reinstated affordable housing opportunities (Burby, Steinberg, & Basolo, 2003; Lee & Van Zandt, 2019).

Reestablishing a permanent home is fundamental to disaster survivors' abilities to resume everyday activities such as work and school, and delays in accessing permanent housing hinder broader community-wide recovery (Peacock, Dash, & Zhang, 2007). Federal and state-level housing policy, specifically subsidized housing, is therefore an important but understudied aspect of both disaster resilience and recovery. We ask four sets of questions about mitigation, preparedness, and recovery in the context of federal and state housing

policy. First, how and to what extent do states and territories use the LIHTC program to assist with hazard mitigation and disaster preparedness? Second, how and to what extent do states and territories use the LIHTC program to facilitate rebuilding and recovery after disaster? Third, what are the relationships between LIHTC plan provisions and LIHTC construction before and after disasters? Fourth, what differentiates states that do and do not incorporate disaster mitigation, preparedness, or recovery provisions into their qualified allocation plans (QAPs), the state documents that outline the criteria by which states distribute these tax credits among developers?

To answer these questions, we systematically code the 2017–2018 allocation plans for 49 states, the District of Columbia (DC), and three territories. We find that only 24 states and territories include provisions for mitigation, preparedness, or recovery in the allocation plans, of which 13 include only mitigation or preparedness provisions, 3 include only recovery provisions, and 8 include both types of provisions. Next, we find that in states with disaster-related provisions, LIHTC units are more likely to be built in counties after a disaster when compared with states with no disaster-related provisions. Finally, we use *t* tests to compare the characteristics of states with and without disaster-related allocation plan provisions. States with higher rates of homeownership and lower housing costs are more likely than other states to have disaster-related provisions in their allocation plans, whereas states with more LIHTC units overall and more LIHTC units per capita are less likely than other states to include disaster-related provisions. The findings suggest that Congress should require states to incorporate hazard mitigation and disaster recovery provisions tailored to their unique conditions, risks, and needs into their LIHTC allocation plans. Regardless of congressional action, states independently should incorporate them.

Housing and Disasters

Hurricanes Harvey, Irma, and Maria, along with the California wildfires, destroyed more than 420,000 homes across the United States in 2017 and caused an estimated \$300 billion in damages (National Oceanic and Atmospheric Administration, 2017). More than 4.7 million people registered for individual assistance from the Federal Emergency Management Agency (FEMA), which gave more than \$2 billion in grants to survivors; the National Flood Insurance Program paid more than \$6 billion on more than 130,000 flood insurance claims, and the Small Business Administration loaned more than \$7 billion to households for recovery. Congress allocated \$35 billion in recovery funds to affected states and territories through the Community Development

Block Grant—Disaster Recovery Program. Altogether, 2017 federal disaster spending is estimated at \$130 billion (Lingle, Kousky, & Shabman, 2018).

Thirty-nine counties in Texas were declared major disaster areas as a result of Hurricane Harvey, encompassing nearly 90,000 LIHTC units (see Technical Appendix A for further discussion on LIHTC siting and civil rights in Texas). The extent to which future LIHTC construction will create environmentally and socially supportive homes for low-income households depends on what states like Texas do with their LIHTC allocation plans.

Scholarly literature about housing and disasters focuses on social vulnerability in mitigation, preparedness, response, and recovery providing near-term temporary housing and long-term housing construction (Cutter, Boruff, & Shirley, 2003; Cutter & Finch, 2008; Fothergill & Peek, 2004; Levine, Esnard, & Sapat, 2007; Peacock, Van Zandt, Zhang, & Highfield, 2014; Van Zandt et al., 2012). Lee and Van Zandt (2019) review studies of disasters' impacts on renters compared with those on owners by disaster phase and disaster-related housing programs.¹ They note that renters and owners as groups differ from each other in household size and composition, socioeconomic characteristics, and the stability of the physical structures in which they live. These differences shape the capacity of owners and renters to prepare for and recover from disasters, exaggerating the effects of previous vulnerabilities.

For example, low-income renters are more likely than homeowners to reside in older buildings constructed to meet less-rigorous codes, with deferred maintenance situated in higher risk areas (Bolin & Stanford, 1991; Peacock & Girard, 1997). Housing recovery is an uneven process for different population groups, in which non-White, lower income areas tend to sustain more damage and recover more slowly than higher income areas (Howell & Elliott, 2019; Lee & Van Zandt, 2019; Peacock et al., 2014). Attention to housing in mitigation planning can thus minimize physical and social vulnerability and advance racial equity (Peacock et al., 2014; Van Zandt et al., 2012).

Exclusionary patterns in the postdisaster recovery process reinforce historic racial and economic disparities for low-income renter communities (Bates, 2006; Brand & Seidman, 2012; Ellen, Steil, & De la Roca, 2016). After past disasters, wealthy homeowners associations and municipalities have blocked temporary shelter options such as manufactured housing units in their neighborhoods, relegating those needing temporary housing to isolated locations (Duit, 2014; Steil & Delgado, 2019). Policies at any level that prioritize aid for homeowners to rebuild their homes contribute to substantial gaps in levels of assistance between income and racial groups with different rates of homeownership (Bolin, 1993;

Comerio, 2014; Howell & Elliott, 2019; Peacock et al., 2007).

Constructing affordable housing takes longer after disasters than repairing high-income housing and may not reach predisaster levels, deepening poverty in low-income neighborhoods (Comerio, 1998; Fothergill & Peek, 2004; Howell & Elliott, 2019; Spader & Turnham, 2014; Zhang & Peacock, 2009). Low-income renters often have difficulty finding permanent housing near their original homes after disasters because rents increase, at least in the short term (Vigdor, 2008). In the long term, newly rebuilt permanent housing often exceeds low-income disaster survivors' abilities to pay because of the increased costs of labor and the requirements of new building codes, leaving low-income renters unable to return (Bolin, 1993; Fothergill & Peek, 2004).

A Review of Federal Disaster Programs

Since the creation of FEMA in 1979, the emergency management field in the United States has grown and professionalized, involving close collaboration between federal, state, territorial, tribal, and local agencies and focusing on the four phases of emergency management: mitigation (reducing the likelihood or impact of a disaster); preparedness (facilitating response and recovery); response (minimizing damage to people and property during a disaster); and recovery (returning to a [more] sustainable state after a disaster). The current emergency management structure in the United States relies on a model of cooperative federalism, and the most recent strategic plan from FEMA calls for a system that is federally supported, state managed, and locally executed (FEMA, 2018).

At the mitigation stage, the most relevant federal programs are the Hazard Mitigation Assistance Program and the Community Rating Standards Program. The Hazard Mitigation Grants Program and the Flood Mitigation Assistance Program allow states to apply to FEMA for assistance for projects that substantially reduce the risk of future disaster damage, including property acquisition and demolition or relocation, structure elevation, structural retrofitting, floodproofing, flood risk reduction, and wildfire mitigation (Hazard Mitigation Grants Program, 2019; Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1998, 2018). Through the Community Rating Standards Program, localities can adopt floodplain and erosion management policies and other interventions to reduce resident property owners' premiums under the National Flood Insurance Program (National Flood Insurance Reform Act of 1994, 2018).

After disaster strikes, a state can request and the president can authorize federal housing assistance to

respond to and recover from the event. The Robert T. Stafford Relief and Emergency Assistance Act of 1998 (2018) authorizes FEMA to provide financial assistance to rent alternate housing temporarily or to repair or replace owner-occupied private residences. This financial assistance for temporary housing is subject to the cap on individual assistance, which was \$33,000 as of 2018.

The Stafford Act also authorizes direct assistance in the form of temporary housing units, acquired by the federal government through purchase or lease, and provided directly to households "who, because of a lack of available housing resources, would be unable to make use of [financial] assistance" (Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1998, 2018). Like financial assistance, this temporary direct assistance is limited to 18 months after the disaster (unless extended) and can take the form of previously vacant housing units that FEMA has leased and repaired or manufactured housing units or travel trailers, either on a property owner's land or in shared commercial or FEMA-created group housing sites. In addition to these federal programs, some states have designed their own disaster-related voucher, repair, and mortgage assistance programs (Table 1).

If Congress appropriates funding to the Community Development Block Grant Disaster Recovery program, this is usually the largest source for state-led housing programs, but each state creates its own set of housing programs, consistent with U.S. Department of Housing and Urban Development (HUD) guidelines. In short, there is a mix of federal and state policies providing financial or direct assistance, but there is no program specifically targeting the permanent housing needs of low-income renters. The LIHTC program has the potential to fill this crucial gap.

How Does LIHTC Work?

Congress created the LIHTC program in 1986 to leverage federal tax credits for private investment in the construction of affordable housing. LIHTC has since become the primary federal tool to encourage the development of multifamily housing for low- and moderate-income households (McClure, 2008). The Department of the Treasury transfers approximately \$9 billion worth of tax credits to states and territories every year (see Technical Appendix A). Each state or territory develops an allocation plan that outlines the criteria by which the state will distribute the credits among projects proposed by developers (Ellen & Horn, 2018).

State, territorial, or municipal housing finance agencies award the tax credits to affordable housing developers through a competitive application process. The program allows developers to receive federal income

Table 1. Review of federal disaster housing programs.

Mitigation and Preparedness
FEMA
Hazard Mitigation Assistance
Hazard Mitigation Grant Program, Flood Mitigation Assistance, Pre-Disaster Mitigation Assistance <ul style="list-style-type: none"> FEMA assistance to states, tribes, territories, and localities for projects that reduce the risk of future disaster damage. Hazard Mitigation Assistance includes the Hazard Mitigation Grant Program, Flood Mitigation Assistance, and Pre-Disaster Mitigation Assistance (currently being replaced by the Building Resilient Infrastructure and Communities program pursuant to statutory changes in the Disaster Recovery Reform Act of 2018 that sets aside 6% of annual disaster obligations from the Disaster Relief Fund to invest in pre-disaster mitigation).
Community Rating Standard Program <ul style="list-style-type: none"> Reduction in homeowners' National Flood Insurance Program premiums for localities adopting mitigation practices.
HUD
Community Development Block Grant (Disaster Recovery) <ul style="list-style-type: none"> State and local mitigation programs offer a range of assistance (such as housing elevation).
Response & Recovery
FEMA
Public Assistance to State, Tribes, Territories, and Localities
Sheltering and Temporary Essential Power Program <ul style="list-style-type: none"> FEMA provides assistance to states to aid homeowners with limited, temporary repairs to make a home safe, clean, and secure for emergency sheltering.
Assistance to Households and Individuals
<i>Mass Care/Emergency Assistance</i>
Transitional Sheltering Assistance <ul style="list-style-type: none"> FEMA provides short-term assistance for displaced survivors to help the transition from emergency shelters to temporary or permanent housing solutions.
Rapid Temporary Repair <ul style="list-style-type: none"> FEMA provides temporary roofing to prevent additional damage to homes until homeowners can make permanent repairs.
<i>Financial Assistance</i>
Rental Assistance <ul style="list-style-type: none"> Rental Assistance may be used to temporarily rent a house, apartment, manufactured home, recreational vehicle, or other dwelling while the household is repairing or otherwise transitioning to permanent housing.
Home Repair or Replacement Assistance <ul style="list-style-type: none"> Grants to homeowners to permanently repair their homes to a safe and sanitary condition, or to help replace homes destroyed by disaster.
<i>Direct Assistance</i>
Multifamily Lease & Repair Program <ul style="list-style-type: none"> FEMA repairs and then leases previously vacant housing units, temporarily placing survivors in the units.
Temporary Housing Units Program <ul style="list-style-type: none"> FEMA provides manufactured homes or travel trailers to use as temporary housing while permanent housing is repaired or obtained.
Direct Lease Program <ul style="list-style-type: none"> FEMA leases existing residential properties and provides them to eligible applicants to use as temporary housing while permanent housing is repaired or obtained.
Permanent or Semi-Permanent Repair or Construction Program <ul style="list-style-type: none"> Under very limited conditions where no alternative housing resources are available and other forms of assistance are not feasible or cost effective, generally in states or territories outside the continental United States, FEMA may directly contract for the repair or replacement of homes.

HUD
Community Development Block Grant (Disaster Recovery) <ul style="list-style-type: none"> • State and local recovery programs offer a range of recovery assistance (such as rental assistance).
SBA
Disaster Loan Program <ul style="list-style-type: none"> • SBA provides low-interest and long-term loans to cover disaster-related expenses to eligible homeowner or renter applicants to cover personal and/or real property.

Notes: FEMA = Federal Emergency Management Agency; HUD = U.S. Department of Housing and Urban Development; SBA = Small Business Administration.

tax credits for constructing or renovating rental properties for low-income households and operating the affordable housing development under the LIHTC guidelines for a certain compliance period, originally 15 years and now 30 years (Freedman & McGavock, 2015). These developers partner with investors who provide equity for the affordable housing development and, in exchange, receive a tax credit annually over 10 years. The partnership with equity investors through the tax credit program significantly reduces a project's debt service costs and allows the projects to operate with below-market rental income.

There are two types of credits: 9% and 4% credits. The 9% credits are usually applied toward new construction and rehabilitation projects that are not also financed with tax-exempt bonds, and each year (for 10 years) the tax credits equal 9% of the project's cost of construction, also known as the qualified basis. The 4% credit is usually applied toward the acquisition of an existing project or a new construction and rehabilitation project that is also financed with state or local tax-exempt bonds, and each year (for 10 years) the tax credits equal 4% of the project's cost of construction.

Federal law sets out a framework for the LIHTC program, requiring allocation plans to give preference to projects that serve the lowest income tenants, that serve these tenants for the longest period of time, and that are located in qualified census tracts in which the project contributes to a concerted community revitalization plan (Tax Reform Act of 1986, 2018).² Federal law requires that the allocation plans include selection criteria regarding project location, local housing needs, and capacity to house individuals with special needs, among others (Tax Reform Act of 1986, 2018). The federal statute authorizing LIHTC does not, however, include any requirements related to disaster mitigation, preparedness, response, or recovery.

Within this federal framework, state, territorial, or municipal housing finance agencies manage the developer bidding process and allocate the tax credits to developers. Through the plans, each housing finance agency establishes its own priorities, focusing on its unique affordable housing needs. Allocation plan

criteria may be in the form of desired project characteristics for which points are allocated to the project application, undesired characteristics for which points are subtracted, or set requirements for any eligible project. A developer increases a proposal's competitiveness by demonstrating compliance with as many provisions as possible. Housing finance agencies generally update their allocation plans annually or biennially (Ellen & Horn, 2018).

LIHTC and Disasters

Scholars have studied multiple dimensions of the LIHTC program, such as its consequences for fair housing (Dawkins, 2013; Ellen & Horn, 2018; Ellen & Steil, 2019; Powell, 2008), poverty concentration (Ellen, Horn, & O'Regan, 2016; Freeman, 2003; McClure, 2008; Rohe & Freeman, 2001), mixed income housing (McClure, 2006; Vale & Shamsuddin, 2017), political participation (Gay, 2014), and neighborhood revitalization (Deng, 2011; Diamond & McQuade, 2016; Ellen, Schwartz, Voicu, & Schill, 2007). The potential role of the LIHTC program in disaster recovery, however, has received comparatively little scholarly attention.

In practice, some federal agencies have recognized LIHTC as a tool for disaster recovery. For example, the Internal Revenue Service (IRS) temporarily suspends some of the statutory LIHTC requirements for affected buildings after federal disaster declarations (U.S. Department of the Treasury, IRS, 2015a, 2015b, 2015c). The IRS also temporarily suspends certain income limitations for individuals displaced by a major disaster, allowing owners of LIHTC buildings to rent units to households even if their income does not fit within the LIHTC requirements.

Congress has twice authorized additional LIHTC credits to facilitate long-term housing recovery after disasters in affected states, through the Gulf Opportunity Zone (GO Zone) Act of 2005 and the Heartland Disaster Tax Relief Act of 2008. Within 3 years of the devastation wrought by Hurricanes Katrina, Rita, and Wilma on the Gulf Coast, GO Zone LIHTC credits financed the rehabilitation or replacement of 17% of rental housing units

that experienced major and severe damage in Louisiana and 45% in Mississippi (U.S. Government Accountability Office, 2008). Although the GO Zone LIHTC program was crucial for rebuilding rental housing in the Gulf Coast, scholars have criticized the initiative for benefiting less-damaged parts of the region instead of the most affected areas and for naively depending on local implementation to reduce socioeconomic inequalities (Gotham, 2014).

States often allocate some portion of congressional appropriations for the Community Development Block Grant Disaster Recovery program to catalyze LIHTC developments. However, many disasters do not receive congressional appropriations; even when they do, appropriation can take months or years. In this study, we analyze how states and territories are using the LIHTC program on a consistent basis through the guidelines shaping their regular annual allocations and analyze whether these provisions have any relationship to the siting of LIHTC units in relation to disaster locations.

Variation in the inclusion of disaster-related provisions in state allocation plans raises the question: What factors affect state decisions to include these provisions? State policy variation in this intersection of housing and disaster recovery is understudied. To the extent that disaster mitigation, preparedness, and recovery policies may share some similarities to environmental policies, the literature on state variation in environmental policy suggests higher levels of state prosperity (Lester, 1995; Matisoff, 2008), more liberal citizen political ideology (Matisoff, 2008; Ringquist & Garand, 1999), and greater exposure to environmental harms (Bergquist & Warshaw, 2019; Lester, 1995; Matisoff, 2008) are all associated with the adoption of more robust environmental protections. Wiener and Koontz (2010) find that citizen ideology is a predictor of state environmental policies at either end of the ideological spectrum but has a weaker relationship to policy adoption in the middle of the ideological spectrum, where they find economic development is more critical. Bergquist and Warshaw (2019) find that climate concern is modestly responsive to changes in state-level temperatures, reinforcing findings that state environmental policy innovation takes place in response to both citizens' demands and environmental conditions (Matisoff, 2008). In housing policy, citizen political ideology (Kahn, 2011) as well as levels of homeownership and housing cost measures are likely to influence policy adoption, given the significance of "home voters" in shaping politics (Dehring, Depken, & Ward, 2008; Fischel, 2009). For instance, Gay (2014) finds that partisan loyalty shapes state-level housing investment in the LIHTC program. We draw on this environmental and housing policy research to better understand variation across disaster-related provisions in QAPs.

Methods: Qualitative Review of Qualified Allocation Plans

To identify how states have used their LIHTC plans for disaster preparedness and recovery, we review and code all available 2018 and 2017 allocation plans.³ Our sample consists of allocation plans from all 50 states except Alaska,⁴ as well as plans from the District of Columbia (DC), Puerto Rico, the Virgin Islands, and the Northern Mariana Islands. We searched the allocation plans for the following terms: adaptation, climate, cyclone, disaster, emergency, fire, flood, hurricane, mitigation, recovery, resilience, response, snow, storm, sustainability, and tornado. After identifying relevant allocation plan provisions, we categorized them as related either to mitigation and preparedness or to recovery. We then organized these mitigation, preparedness, and recovery provisions into subcategories (described below) depending on their purpose.⁵

Findings: Types of Mitigation, Preparedness, and Recovery Provisions in Qualified Allocation Plans

We categorize allocation plan provisions related to design and siting as disaster mitigation or preparedness provisions. We categorize four other types of provisions as recovery: 1) rehabilitation and replacement of units affected by disaster; 2) recovery in a federally declared disaster area; 3) recovery from a specific named disaster; and 4) support for projects that use other disaster recovery funds.

Overall, we find that surprisingly few states and territories include disaster-related provisions in their LIHTC allocation plans. As Tables 2 and 3 and Technical Appendix B show, only 24 states and territories include disaster-related provisions in the allocation plans, of which 8 include both types of provisions, 13 include only mitigation or preparedness provisions, and 3 include only recovery provisions. Table 2 shows the number of states that included each type of provision in their allocation plans and Table 3 and Technical Appendix B identify which states include which provisions. The following subsections explain each type of provision and provide illustrative examples.

Siting

Siting provisions were the primary mitigation strategy found in the allocation plans. As outlined in Table 2, siting provisions range from requiring flood insurance to prohibiting projects in floodplains. For instance, the Tennessee, Delaware, Alabama, and Kentucky plans all discourage development in a 100-year floodplain and require participation in a flood insurance program if the

property is located in one.⁶ The Arizona and Wyoming plans go further to prohibit any developments in a 100-year floodplain.⁷

Some allocation plans emphasize that projects should adhere to Executive Order 11988 (Floodplain Management, 1977) and Executive Order 11990 (Protection of Wetlands, 1977), which require agencies to avoid floodplain development and limit potential damage if it cannot be avoided (see Technical Appendix A).

Design

These provisions encourage or require projects to incorporate building design elements that reduce vulnerability to natural disasters common in that state or territory. For example, Alabama awards 4 out of 98 possible points for including a storm shelter in the design (Alabama Housing Finance Agency, 2018) and Louisiana

requires hurricane tie-down straps at each bearing location of roof trusses or joists (Louisiana Housing Corporation, 2017). These provisions are examples of how allocation plans can ensure that new buildings include structural elements to protect residents during disaster.

Rehabilitation and Replacement of Units Affected by Disaster

Eight state plans include provisions that encourage the use of LIHTC for the rehabilitation and replacement of units affected by a natural disaster. For example, the Indiana plan awards an additional 2 out of 143 possible points if the development rehabilitates a vacant structure that was affected by disaster within the last 5 years (Indiana Housing and Community Development Authority, 2018) and another 4 points if it “assists in the stabilization of a neighborhood” by “redeveloping property that has been foreclosed, abandoned, [or] affected by a disaster” (p. 58). The Kansas plan “reserves the right to waive application deadlines, and state imposed program rules and requirements, including the ranking of applications under the selection criteria, for the purpose of responding to the housing needs created by natural disasters” (Kansas Housing Resources Corporation, 2018, p. 22). New Mexico, North Dakota, Pennsylvania, Utah, and Vermont include similar provisions in their plans, allowing flexibility for states to easily target the LIHTC program to disaster recovery.

Recovery in Federally Declared Disaster Areas

Two states, Alabama and Nebraska, discussed recovery in federally declared disaster areas in their plans. Alabama awards 10 out of 98 points to a project located in a county with a federally declared disaster (Alabama Housing Finance Agency, 2018), and the Nebraska plan gives preference to projects in a federally declared disaster area if they are part of the state’s workforce development and housing support system.⁸

Table 2. Types of mitigation, preparedness, and recovery provisions in LIHTC-qualified allocation plans.

Provision/Type	No. states
Mitigation & preparedness	
Any	21
Design (energy efficiency, structural)	7
Siting (floodplains, flood hazard areas, flood insurance)	18
Recovery	
Any	11
Rehabilitation and replacement of units affected by disaster	8
Recovery in federally declared disaster area	2
Specific disaster named	1
Project uses other disaster funds	1

Note: Some states have multiple types of provisions (e.g., a design and a siting provision), so the numbers of states do not add up within each subsection of the table.

Table 3. States & territories with mitigation, preparedness, and recovery provisions in qualified allocation plans.

Mean share LIHTC allocations to disaster-prone counties 1–4 years after disaster compared to allocations to disaster-prone counties before (or without) a disaster

State	Provision	Counties not post-disaster	Counties post-disaster	Ratio of post to not post
No provision	–	0.12	0.15	1.28
Any provision	–	0.08	0.12	1.44

Notes: The universe for this analysis is all American counties that experienced an extreme disaster sometime between 2008 and 2015, defined as a disaster that is in the top 90% of damage caused in that state across that time period (damage is adjusted to 2017 dollars). This is one indicator for how disaster-prone a county is. Then, studying 2012–2015, the ‘Counties post-disaster’ column presents the mean share of LIHTC units allocated in a state to those counties that are 1 to 4 years out from a disaster. The ‘Counties not post-disaster’ column presents the mean share of LIHTC units allocated in a state in those counties that are not 1 to 4 years out from a disaster.

Source: Data sources are fully described in the “Statistical Analyses of State Policy Adoption” section. All LIHTC data is from HUD; data on severe disasters are from Arizona State University.

Specific Disaster Named

This category refers to provisions that prioritize a specific, named disaster only. Tennessee's is the only state plan that explicitly focused on a non-federally declared disaster. In 2016, fires destroyed many affordable housing units in the state's Sevier County, and the Tennessee housing finance agency chose to designate part of the state's LIHTC allocation specifically to address this housing need (Tennessee Housing Development Agency, 2017).

Project Uses Other Disaster Funds

This category refers to a provision that awards points for combining different sources of disaster recovery funds. Alabama awards 13 out of 98 points for use of Community Development Block Grant Disaster Recovery Funds (Alabama Housing Finance Agency, 2018, p. 6). This provision allows states to maximize impact by combining sources of funding and to prioritize rebuilding projects that use fewer tax credits or that create units with deeper affordability by combining them with other federal funds.

Methods: Statistical Analyses of State Policy Adoption

Using three sets of states—those with no disaster-related provisions in their allocation plans, those with either mitigation and preparedness or recovery provisions, and those with both sets of provisions—we use standard two-sample, two-tailed *t* tests to compare the sets.

To evaluate the relationship between allocation plan provisions and state socioeconomic characteristics, we include measures of state median income, share of the population below the poverty line, and state demographic composition, all from the 2013–2017 5-year American Community Survey (ACS, 2017). We also include a measure of state gross domestic product per capita from the Bureau of Economic Analysis (2019). To evaluate the effects of housing characteristics, we include measures of the share of housing units that are owner occupied, in single-family structures, and vacant, as well as median rents and home values (also all from the 2013–2017 5-year ACS). We calculate the total number of LIHTC units allocated per state between 1986 and 2015 and between 2013 and 2015 from the U.S. Department of Housing and Urban Development's National Low-Income Housing Tax Credit Database (U.S. Department of Housing and Urban Development [HUD], 2019).

To assess the effect of citizen ideology, we include a measure of the mean ideology for every state, developed by Tausanovitch and Warshaw (2013) from the

Cooperative Congressional Election Study covering 2008–2014. A higher positive score indicates a state's residents on average hold more conservative views, whereas a negative score suggests residents hold more liberal views. We also include Berry, Ringquist, Fording, and Hanson's (1998) updated and widely used measures of citizen ideology using interest group ratings for a state's members of Congress to infer the ideological orientation of the state electorate.

To estimate the effect of exposure to disaster risk, we use four state-level measures of disaster experience. First, we use publicly available data from FEMA that list every federal disaster declaration for each state from 1953 to 2018, and we calculate the number of declarations that each state has had between 1986 (when the LIHTC program was created) and 2017 and also from 2013 to 2017 (the 5 years immediately preceding the drafting of the allocation plans that we analyzed). Second, we focus on severe disasters, defined as those that resulted in more than 10 deaths, and calculate the number of county disaster declarations that each state has had for these severe disasters, consistent with Boustan, Kan, Rhode, and Yanguas (2017). This second measure differs from the first not only in limiting its count to disasters that resulted in more than 10 deaths but also in that it weighs more heavily a disaster that affects more counties in a state than one that affects fewer, which gives an indication of the severity of the event. In other words, if five counties in New Jersey receive a federal disaster declaration for an event and two counties in New York receive a declaration for an event, the second measure would note that there were five declarations in New Jersey and two declarations in New York, whereas the first measure would note that New Jersey and New York each received a federal disaster declaration for an event.

Third, we use data from FEMA that describe the total value of housing assistance that the agency provided to a state between 2013 and 2017. Finally, we use data regarding the number of FEMA-manufactured housing units provided for every disaster from 2013 to 2016. FEMA typically uses manufactured housing units when other housing options have been exhausted, thus providing a measure of the extent to which an event damages housing stock and to which renters may be vulnerable to displacement. (see Technical Appendix A for more information about the various data sets).

The null hypothesis in a two-sample *t* test is that the underlying population means are the same. Using the social, housing, disaster, and ideology measures defined above, we test the null hypothesis that there is no difference a) between states with any disaster-related provisions and those without them and b) between the smaller number of states with both types

of disaster-related provisions and those without any provisions. We assume unequal population variances.

Findings: Comparing States With and Without Preparedness and/or Recovery Provisions

As the findings in Table 3 and Technical Appendix B indicate, states are more likely to allocate LIHTC units to counties after a disaster than they were before the disaster. Further, in states with disaster-related plan provisions, LIHTC units are substantially more likely to be allocated to counties after a disaster than in states without these provisions. The findings in Table 3 and Technical Appendix B also demonstrate that state adoption of disaster preparedness and recovery provisions varies significantly. What can explain this variation?

Only two general types of state characteristics are significantly different between states with no allocation plan provisions and those states with any disaster-related provision as well as those states with both disaster-related provisions: first, housing characteristics, specifically homeownership rates and housing costs; and second, the number of LIHTC units built between 2013 and 2015.

States with disaster-related provisions have homeownership rates that are on average more than 3 percentage points higher than those states without provisions. States with disaster-related provisions have median rents that are \$150 to \$170 lower than those states without provisions. States with disaster-related provisions also have fewer LIHTC units overall and fewer LIHTC units per million residents, as illustrated by Table 4 and Figure 1.

Those states without disaster-related plan provisions allocated 60% more LIHTC units per million residents (703) than those states with any disaster-related provisions (432) between 2013 and 2015. States without disaster-related allocation plan provisions also had higher shares of renters and higher housing costs than those states with provisions.

One might expect disaster exposure to be correlated with the adoption of disaster-related allocation plan provisions. Somewhat surprising, measures of disaster exposure are only marginally significant at the .10 significance level in differentiating states with and without disaster-related provisions. Although the differences are not significant at the .05 significance level, states with a disaster-related provision did have more federal disaster declarations and more counties with severe disasters in the past decade and in the time period since the LIHTC program was created than other states. States with a disaster-related provision had, on average, 18 counties with disaster declarations per million people between 2008 and 2017, whereas those states without

any disaster-related provisions had only seven counties with disaster declarations per million people. Perhaps counterintuitively, states with both types of disaster-related provisions received substantially less FEMA housing assistance between 2013 and 2017 than states with no provisions, despite having more federally declared disasters in that time period (though they also had fewer counties with severe disasters). These findings indicate a need for further research on the interaction of disaster exposure and federal aid, together with housing market characteristics to better understand policymaking with regard to disaster housing.

Planning for Future Disasters Through LIHTC Qualified Allocation Plans

Most states and territories do not include mitigation, preparedness, or recovery provisions in their allocation plans for subsidized units. However, our research identifies a number of provisions that state and territorial housing finance agencies could include in their allocation plans to encourage resilient siting and design as well as facilitate equitable rebuilding. For instance, all states and territories could use their allocation plans to:

- Encourage resilient construction by awarding points for design features that mitigate relevant local hazards (such as fire-resistant landscaping, tornado shelters, or hurricane straps).
- Weigh the social costs and benefits of building in floodplains, discouraging LIHTC construction in 100-year floodplain as appropriate, to the extent that state building code provisions do not already do so.⁹
- Include provisions that waive state-imposed program requirements to address postdisaster housing shortages.

Appropriate, state-specific siting and design provisions will prevent damage to housing during disasters as well as foster more cost- and time-efficient housing recovery for low-income renters after a disaster. Developers' compliance with these provisions will ultimately increase the long-term value of their multifamily properties as well.

Analysis of the allocation of LIHTC units reveals that these subsidized homes are more likely to be allocated to counties after a disaster in those states with disaster-related allocation plan provisions than they are in states without the provisions. Comparison of the characteristics of states that do and do not include disaster-related provisions in their allocation plans reveals that disaster-related provisions are more common in states with lower housing costs, higher homeownership rates, and

Table 4. t Test results comparing states with preparedness and/or recovery provisions and states without provisions.

Measurement	Measure and data			No QAP clauses			Any QAP clauses (H0: M _N = M _A)			Both QAP clauses (H0: M _N = M _B)		
	Years	Summary	Mean (M _N)	N	P	Mean (M _A)	N	P	Mean (M _B)	N	P	
State social and economic characteristics												
Population (millions)	2013–2017	Average	7.68	27	.14	4.84	24	.14	4.76	8	.20	
Median income	2013–2017	Average	60,260	27	.03	53,613	24	.03	55,917	8	.17	
Share poverty (last 12 months)	2013–2017	Average	9.71	27	.19	11.69	24	.19	9.46	8	.80	
Share White (non-Hispanic/Latino)	2013–2017	Average	65.91	27	.49	69.58	24	.49	77.85	8	.01	
Share Black (non-Hispanic/Latino)	2013–2017	Average	11.54	27	.66	10.20	24	.66	9.10	8	.54	
Share Hispanic/Latino (any race)	2013–2017	Average	12.25	27	.61	14.62	24	.61	7.63	8	.06	
Gross state product	2013–2017	Average/capita	58,154	27	.40	53,537	23	.40	55,077	8	.63	
State ideology												
Citizen ideology (1)	2008–2014	Average	-0.04	27	.07	0.08	23	.07	0.18	8	.00	
Citizen ideology (2)	2013–2017	Average	53.22	26	.08	45.36	23	.08	35.82	8	.00	
State housing characteristics												
Share vacant units	2013–2017	Average	12.91	27	.43	13.73	24	.43	12.76	8	.89	
Share units in multifamily structure	2013–2017	Average	38.95	27	.08	34.20	24	.08	33.38	8	.09	
Share owner-occupied units	2013–2017	Average	64.11	27	.04	67.15	24	.04	67.66	8	.02	
Median home value	2013–2017	Average	239,093	27	.02	175,125	24	.02	167,625	8	.01	
Median rent	2013–2017	Average	999	27	.01	846	24	.01	822	8	.00	
LIHTC units allocated	1986–2015	Sum	65,699	29	.07	35,850	24	.07	33,276	8	.06	
LIHTC units allocated	1986–2015	Sum/capita	9,202	27	.06	7,799	24	.06	7,817	8	.13	
LIHTC units allocated	2013–2015	Sum	5,298	29	.03	2,084	24	.03	1,804	8	.02	
LIHTC units allocated	2013–2015	Sum/capita	703	27	.01	432	24	.01	357	8	.00	
State disaster experiences												
Federally declared disasters	1986–2017	Sum/capita	9.21	27	.44	11.77	24	.44	12.07	8	.60	
Federally declared disasters	2008–2017	Sum/capita	4.10	27	.50	5.14	24	.50	4.87	8	.70	
Federally declared disasters	2013–2017	Sum/capita	1.55	27	.38	2.13	24	.38	2.05	8	.61	
Counties with severe disasters	1986–2017	Sum/capita	0.15	26	.51	0.27	22	.51	0.59	8	.37	
Counties with severe disasters	2008–2017	Sum/capita	0.07	26	.07	0.18	22	.07	0.35	8	.36	
Counties with severe disasters	2013–2017	Sum/capita	0.04	26	.83	0.05	22	.83	0.00	8	.08	
Federal housing assistance	2013–2017	Sum	3,177,224	29	.93	2,996,221	24	.93	213,888	8	.04	
FEMA mobile housing units delivered	2013–2016	Sum	6.59	29	.32	205.38	24	.32	1.50	8	.24	

Note: Estimates from ACS and Tausanovitch and Warshaw (2013) are effectively averages in that they take data from many areas and years and present an estimate for a central year but are not simple averages. All per capita measures are per million people.
 Sources: Data sources are fully described in the Statistical Analyses of State Policy Adoption section. All social and housing measures with the exception of those related to LIHTC are from the ACS (2017); the LIHTC measures are based on data from the Department of Housing and Urban Development Low-Income Housing Projects Database (HUD, 2019). Measures of federally declared disasters, mobile housing units allocated to a disaster, and federal housing assistance are based on data sets from FEMA, data on severe disasters are from Arizona State University. Measures of citizen ideology 1) from Tausanovitch and Warshaw (2013) and citizen ideology 2) from Berry et al. (1998). The data on state gross domestic product come from the National Bureau of Economic Analysis.

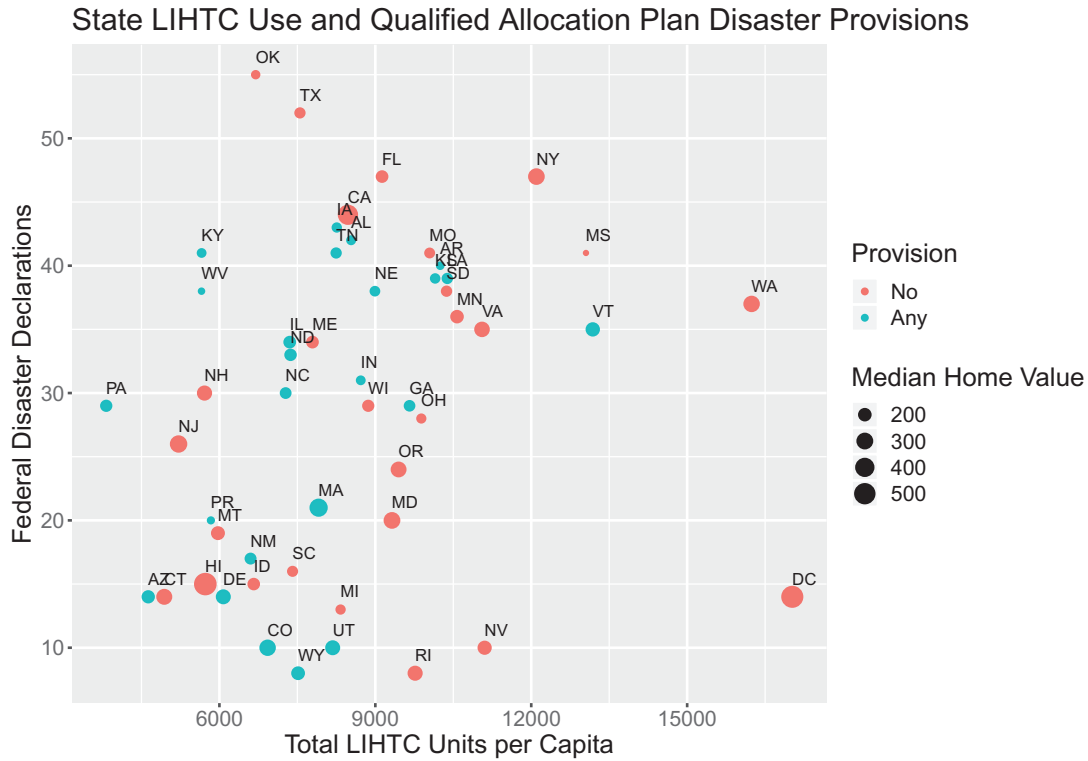


Figure 1. Understanding differences in LIHTC allocations and QAP provisions.

fewer LIHTC units. This means that states with the most LIHTC units and the highest shares of renters do not include strategic provisions that could enhance the durability and resilience of their substantial stock of affordable rental housing. Further, states with more costly housing markets are underusing the opportunity to tailor the nation's largest affordable housing program to local hazard mitigation and disaster recovery needs. The lack of inclusion of disaster-related allocation plan provisions by these high-LIHTC, high-cost states has the potential to worsen economic inequalities after a disaster by making affordable rental housing less resilient and delaying or discouraging the creation of permanent low-income rental housing.

To remedy these potentially inequality-widening structures of state allocation plans for LIHTC funding, Congress could amend the LIHTC statute to require states and territories to include disaster mitigation, preparedness, response, and recovery provisions in their allocation plans. State and local initiatives are equally important. State housing finance agencies can provide guidance through workshops during the application process for developer-applicants about strategies and best practices for building resilient affordable housing. Local planners, regional floodplain managers, and other land use practitioners can simultaneously act to address affordable housing needs, to mitigate local hazards, and to facilitate postdisaster reconstruction through

appropriate land use policies and building codes. Local planners and land use practitioners can also disseminate essential disaster resilience information by providing technical assistance and by building capacity within community development corporations to leverage LIHTC to rebuild after a disaster and implement effective mitigation, preparedness, and recovery strategies (American Planning Association, 2014).

If the funding allocation process for LIHTC units includes more provisions for disaster mitigation and preparedness, these plans can decrease the extent of future damage to LIHTC developments and reduce the vulnerability of subsidized renters, saving human lives and public resources in the long run. Also important, if future allocation plans include provisions for disaster recovery, then LIHTC allocations may be useful for bringing new affordable units into service quickly after future disasters. These simple allocation plan provisions have the potential to reduce the disproportionate effects of disasters that burden and displace low-income renters.

ABOUT THE AUTHORS

ADITI MEHTA (aditi.mehta@utoronto.ca) is an assistant professor of urban studies at the University of Toronto. **MARK BRENNAN** (mbrenn@mit.edu) is a doctoral candidate at the Massachusetts Institute of Technology. **JUSTIN STEIL** (steil@mit.edu) is an associate professor of law and urban planning at the Massachusetts Institute of Technology.

SUPPLEMENTAL MATERIAL

Supplemental data for this article can be found on the [publisher's website](#).

NOTES

1. Lee and Van Zandt (2019) label the phases *preparedness*, *impact*, *emergency*, and *recovery*.
2. "Qualified census" tract are tracts that have a poverty rate of at least 25% or in which 50% or more of the households have an income less than 60% of the area median gross income (Tax Reform Act of 1986)
3. If the 2018 QAP was not available, we used the 2017 QAP. We obtained these QAPs from Novogradac & Company LLP, certified public accountants that share QAPs on their website (Novogradac, n.d.).
4. The Alaska QAP was unavailable.
5. We also searched QAPs from 2000 to 2017 for the term *disaster* to ascertain when mitigation, preparedness, and recovery provisions were introduced; the frequency with which they were included; and identify specific provisions over the past 18 years focusing explicitly on recovery from federally or state declared disasters.
6. For example, the Tennessee QAP (Tennessee Housing Development Agency, 2018) explains, "No portion of the improvements associated with the proposed development may be within a 100-year floodplain unless covered by flood insurance" (p. 23).
7. In Arizona, development is not allowed in the FEMA 500-year floodplain either.
8. The Nebraska Investment Finance Authority administers the CRANE program and works with communities and neighborhoods who have joined with for-profit and nonprofit entities that commit to target specific long-term, interrelated and coordinated job creation/enhancement, economic growth, joint housing, and community development strategies (Nebraska Investment Finance Authority, n.d.).
9. While discouraging construction in the floodplain is essential in many contexts, in some situations, prohibiting LIHTC development in the floodplain altogether can be problematic because it could prevent neighborhood investment in climate-vulnerable, low-income communities of color. In all cases, LIHTC developments should be built to appropriately mitigate relevant hazards and protect their residents.

REFERENCES

- American Community Survey. (2017). *American community survey*. [Online database.] Washington, DC: US Census Bureau.
- Alabama Housing Finance Agency. (2018). *Alabama 2018 housing credit qualified allocation plan*. Retrieved from https://www.novoco.com/sites/default/files/atoms/files/Alabama_2018_final_qap_090617.pdf
- American Planning Association. (2014, June 1). *Affordable housing: Planning for post-disaster recovery paper briefing 4*. Retrieved from <https://www.planning.org/publications/document/9139463/>
- Bates, L. K. (2006). Post-Katrina housing: Problems, policies, and prospects for African-Americans in New Orleans. *The Black Scholar*, 36(4), 13–31. doi:10.1080/00064246.2006.11413366
- Bergquist, P., & Warshaw, C. (2019). Does global warming increase public concern about climate change? *The Journal of Politics*, 81(2), 686. doi:10.1086/701766
- Berry, W. D., Ringquist, E. J., Fording, R. C., & Hanson, R. L. (1998). Measuring citizen and government ideology in the American states. *American Journal of Political Science*, 42(1), 327–348. doi:10.2307/2991759
- Bolin, R. C. (1993). Post-earthquake shelter and housing: Research findings and policy implications. In K. J. Tierney & J. M. Nigg (Eds.), *Socioeconomic impacts* (pp. 107–131). Memphis, TN: Central United States Earthquake Consortium, Monograph No. 5.
- Bolin, R., & Stanford, L. (1991). Shelter, housing and recovery: A comparison of U.S. disasters. *Disasters*, 15(1), 24–34. doi:10.1111/j.1467-7717.1991.tb00424.x
- Boustan, L. P., Kahn, M., Rhode, P., & Yanguas, M. L. (2017). *The effect of natural disasters on economic activity in US counties: A century of data*. National Bureau of Economic Research Working Paper Series No. 23410. Retrieved from <http://www.nber.org/papers/w23410>
- Brand, A. L., & Seidman, K. (2012). *Assessing post-Katrina recovery in New Orleans: Recommendations for equitable rebuilding*. Massachusetts Institute of Technology Community Innovators Lab. Retrieved from <https://www.colab.mit.edu/resources-1/2008/1/7/assessing-post-katrina-recovery-in-new-orleans-recommendations-for-equitable-rebuilding>
- Burby, R. J., Steinberg, L. J., & Basolo, V. (2003). The tenure trap: The vulnerability of renters to joint natural and technological disasters. *Urban Affairs Review*, 39(1), 32–58. doi:10.1177/1078087403253053
- Bureau of Economic Analysis. (2019). *Gross domestic product by state database*. [Online database]. Washington, DC: US Bureau of Economic Analysis.
- Comerio, M. C. (1998). *Disaster hits home: New policy for urban housing recovery*. Berkeley, CA: University of California Press.
- Comerio, M. C. (2014). Disaster recovery and community renewal: Housing approaches. *Cityscape*, 16(2), 51–68.
- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. *Social Science Quarterly*, 84(2), 242–261. doi:10.1111/1540-6237.8402002
- Cutter, S. L., & Finch, C. (2008). Temporal and spatial changes in social vulnerability to natural hazards. *Proceedings of the National Academy of Sciences*, 105(7), 2301–2306. doi:10.1073/pnas.0710375105
- Dawkins, C. (2013). The spatial pattern of Low Income Housing Tax Credit properties: Implications for fair housing and poverty deconcentration policies. *Journal of the American Planning Association*, 79(3), 222–234. doi:10.1080/01944363.2014.895635
- Dehring, C. A., Depken, C. A., & Ward, M. R. (2008). A direct test of the homevoter hypothesis. *Journal of Urban Economics*, 64(1), 155–170. doi:10.1016/j.jue.2007.11.001
- Deng, L. (2011). The external neighborhood effects of Low-Income Housing Tax Credit projects built by three sectors. *Journal of Urban Affairs*, 33(2), 143–166. doi:10.1111/j.1467-9906.2010.00536.x
- Diamond, R., & McQuade, T. (2016). *Who wants affordable housing in their backyard? An equilibrium analysis of low income property development*. National Bureau of Economic Research Working Paper Series No. 22204. Retrieved from <https://www.nber.org/papers/w22204>
- Duit, A. (Ed.). (2014). *State and environment: The comparative study of environmental governance*. Cambridge, MA: MIT Press.

- Ellen, I. G., & Horn, K. M. (2018). Points for place: Can state governments shape siting patterns of low-income housing tax credit developments? *Housing Policy Debate*, 28(5), 727–745.
- Ellen, I. G., Horn, K. M., & O'Regan, K. M. (2016). Poverty concentration and the Low Income Housing Tax Credit: Effects of siting and tenant composition. *Journal of Housing Economics*, 34, 49–59. doi:10.1016/j.jhe.2016.08.001
- Ellen, I. G., Schwartz, A. E., Voicu, I., & Schill, M. H. (2007). Does federally subsidized rental housing depress neighborhood property values? *Journal of Policy Analysis and Management*, 26(2), 257–280. doi:10.1002/pam.20247
- Ellen, I. G., & Steil, J. P. (2019). *The dream revisited: Contemporary debates about housing, segregation, and opportunity*. New York, NY: Columbia University Press.
- Ellen, I. G., Steil, J. P., & De la Roca, J. (2016). The significance of segregation in the 21st century. *City & Community*, 15(1), 8–13. doi:10.1111/cico.12146
- Exec. Order No. 11988, 42 Fed Reg 26951 (May 24, 1977).
- Exec. Order No. 11990, 42 Fed Reg 26961 (May 24, 1977).
- Federal Emergency Management Agency (FEMA). (2018). *Strategic plan: Federal Emergency Management Agency*. Washington, DC: Author. Retrieved from <https://www.fema.gov/strategic-plan>
- Fischel, W. A. (2009). *The homevoter hypothesis*. Cambridge, MA: Harvard University Press.
- Fothergill, A., & Peek, L. A. (2004). Poverty and disasters in the United States: A review of recent sociological findings. *Natural Hazards*, 32(1), 89–110. doi:10.1023/B:NHAZ.0000026792.76181.d9
- Freedman, M., & McGavock, T. (2015). Low-income housing development, poverty concentration, and neighborhood inequality. *Journal of Policy Analysis and Management*, 34(4), 805–834. doi:10.1002/pam.21856
- Freeman, L. (2003). The impact of assisted housing developments on concentrated poverty. *Housing Policy Debate*, 14(1–2), 103–141. doi:10.1080/10511482.2003.9521470
- Gay, C. (2014). *Fighting poverty, mobilizing voters: Housing investment and political participation*. Paper presented at the 2014 Annual Meeting of the American Political Science Association, August 28–31. Retrieved from <https://scholar.harvard.edu/cgay/publications/fighting-poverty-mobilizing-voters-housing-investment-and-political-participation>
- Gotham, K. F. (2014). Mechanisms of mutation: Policy mobilities and the Gulf Opportunity (GO) Zone. *Urban Geography*, 35(8), 1171–1195. doi:10.1080/02723638.2014.960166
- Gotham, K. F. (2015). Limitations, legacies, and lessons: Post-Katrina rebuilding in retrospect and prospect. *American Behavioral Scientist*, 59(10), 1314–1326. doi:10.1177/0002764215591186
- Gotham, K. F. (2016). Re-anchoring capital in disaster-devastated spaces: Financialisation and the Gulf Opportunity (GO) Zone programme. *Urban Studies*, 53(7), 1362–1383. doi:10.1177/0042098014548117
- Gulf Opportunity Zone (GO Zone) Act of 2005, Pub. L. No. 109-135, 119 Stat. 2577 (2006).
- Hazard Mitigation Grants Program, 44 C.F.R. § 206.434(d) (2019).
- Heartland Disaster Tax Relief Act of 2008, Pub. L. 110-343; 122 Stat. 3918 (2008).
- Howell, J., & Elliott, J. R. (2019). Damages done: The longitudinal impacts of natural hazards on wealth inequality in the United States. *Social Problems*, 66(3), 448–467. doi:10.1093/socpro/spy016
- Indiana Housing and Community Development Authority. (2018). *State of Indiana 2018-2019 qualified allocation plan*. Retrieved from <https://www.in.gov/myihcda/files/2nd%20Draft%202018-2019%20QAP.pdf>
- Kahn, M. E. (2011). Do liberal cities limit new housing development? Evidence from California. *Journal of Urban Economics*, 69(2), 223–228. doi:10.1016/j.jue.2010.10.001
- Kansas Housing Resources Corporation. (2018). *Kansas qualified allocation plan for 2018 housing tax credit program*. Retrieved from https://www.novoco.com/sites/default/files/atoms/files/kansas_2018_final_qap_2017.pdf
- 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. doi:10.1177/0885412218812080
- Lester, J. P. (1995). Federalism and state environmental policy. In J. P. Lester (Ed.), *Environmental politics & policy: Theories and evidence* (2nd ed., pp. 39–60). Durham, NC: Duke University Press.
- Levine, J. N., Esnard, A.-M., & Sapat, A. (2007). Population displacement and housing dilemmas due to catastrophic disasters. *Journal of Planning Literature*, 22(1), 3–15. doi:10.1177/0885412207302277
- Lingle, B., Kousky, C., & Shabman, L. (2018). *Federal disaster rebuilding spending: A look at the numbers*. Philadelphia, PA: Risk Management and Decision Processes Center. Retrieved from <https://riskcenter.wharton.upenn.edu/disaster-aid/federal-disaster-rebuilding-spending-look-numbers>
- Louisiana Housing Corporation. (2017). *Louisiana 2017 qualified allocation plan*. Retrieved from https://www.novoco.com/sites/default/files/atoms/files/louisiana_2017_final_qap_041317.pdf
- Matisoff, D. C. (2008). The adoption of state climate change policies and renewable portfolio standards: Regional diffusion or internal determinants? *Review of Policy Research*, 25(6), 527–546. doi:10.1111/j.1541-1338.2008.00360.x
- McClure, K. (2006). The Low-Income Housing Tax Credit program goes mainstream and moves to the suburbs. *Housing Policy Debate*, 17(3), 419–446. doi:10.1080/10511482.2006.9521576
- McClure, K. (2008). Deconcentrating poverty with housing programs. *Journal of the American Planning Association*, 74(1), 90–99. doi:10.1080/01944360701730165
- National Association of Homebuilders. (2017, September 29). *IRS authorizes LIHTC owners to provide emergency housing for disaster victims*. Retrieved from <http://nahbnow.com/2017/09/irs-authorizes-lihtc-owners-to-provide-emergency-housing-for-disaster-victims/>
- National Oceanic and Atmospheric Administration. (2017). *Billion-dollar weather and climate disasters: Overview*. Retrieved from <https://www.ncdc.noaa.gov/billions/>
- Nebraska Investment Finance Authority. (n.d). *Program description*. Retrieved from <https://www.nifa.org/res-dev>
- Novogradac. (n.d). *2018 QAPs and applications*. Retrieved from <https://www.novoco.com/resource-centers/affordable-housing-tax-credits/application-allocation/qaps-and-applications/2018-qaps-and-applications>
- Peacock, W. G., Dash, N., & Zhang, Y. (2007). Sheltering and housing recovery following disaster. In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research* (pp. 258–274). New York, NY: Springer. doi:10.1007/978-0-387-32353-4_15
- Peacock, W. G., & Girard, C. (1997). Ethnic and racial inequalities in hurricane damage and insurance settlements. In W. G. Peacock, B. H. Morrow, and H. Gladwin (Eds.), *Hurricane*

- Andrew: *Ethnicity, gender and the sociology of disasters* (pp. 171–190). Milton Park, UK: Routledge.
- Peacock, W. G., Van Zandt, S., Zhang, Y., & Highfield, W. E. (2014). Inequities in long-term housing recovery after disasters. *Journal of the American Planning Association*, 80(4), 356–371. doi:10.1080/01944363.2014.980440
- Powell, J. A. (2008). Reflections on the past, looking to the future: The Fair Housing Act at 40. *Journal of Affordable Housing & Community Development Law*, 18, 145–168.
- Ringquist, E. J., & Garand, J. C. (1999). Policy change in the American states. In R. E. Weber & P. Brace (Eds.), *American state and local politics: Directions for the 21st century* (pp. 268–299). New York, NY: Chatham House/Seven Bridges Press.
- Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1998, 42 U.S.C. § 5174(c)(1)(B)(i) (2018)
- Rohe, W. M., & Freeman, L. (2001). Assisted housing and residential segregation: The role of race and ethnicity in the siting of assisted housing developments. *Journal of the American Planning Association*, 67(3), 279–292. doi:10.1080/01944360108976236
- Schmidlein, M. C., Finch, C., & Cutter, S. L. (2008). Disaster declarations and major hazard occurrences in the United States. *The Professional Geographer*, 60(1), 1–14. doi:10.1080/00330120701715143
- Spader, J., & Turnham, J. (2014). CDBG disaster recovery assistance and homeowners' rebuilding outcomes following Hurricanes Katrina and Rita. *Housing Policy Debate*, 24(1), 213–237.
- Steil, J. P., & Delgado, L. H. (2019). Limits of diversity: Jane Jacobs, the Just City, and anti-subordination. *Cities*, 19, 39–48. doi:10.1016/j.cities.2018.06.017
- Tausanovitch, C., & Warshaw, C. (2013). Measuring constituent policy preferences in Congress, state legislatures, and cities. *The Journal of Politics*, 75(2), 330–342. doi:10.1017/S0022381613000042
- Tax Reform Act of 1986, 26 U.S.C. § 42(d)(5)(B)(ii) (2018).
- Tennessee Housing Development Agency. (2017). *Low-income housing tax credit 2017 qualified allocation plan*. Retrieved from <https://thda.org/business-partners/lihtc-allocations-qaps-statistics>
- Tennessee Housing Development Agency. (2018). *Low-income housing tax credit 2018 qualified allocation plan*. Retrieved from <https://thda.org/business-partners/lihtc-allocations-qaps-statistics>
- U.S. Department of Housing and Urban Development. (2019). *Department housing and urban development low-income housing tax credit database*. [Online database]. Washington DC: Author.
- U.S. Department of the Treasury, Internal Revenue Service. (2015a). *IRS Rev. Proc. 2007-54*. Washington, DC: U.S. Government Publishing Office.
- U.S. Department of the Treasury, Internal Revenue Service. (2015b). *IRS Rev. Proc. 2014-49*. Washington, DC: U.S. Government Publishing Office.
- U.S. Department of the Treasury, Internal Revenue Service. (2015c). *IRS Rev. Proc. 2014-50*. Washington, DC: U.S. Government Publishing Office.
- U.S. Government Accountability Office. (2008, July). *Gulf Opportunity Zone: States are allocating federal tax incentives to finance low-income housing and a wide range of private facilities*. Report to the Committee on Finance, U.S. Senate, and the Committee on Ways and Means. Retrieved from <https://www.gao.gov/new.items/d08913.pdf>
- Vale, L. J., & Shamsuddin, S. (2017). All mixed up: Making sense of mixed-income housing developments. *Journal of the American Planning Association*, 83(1), 56–67. doi:10.1080/01944363.2016.1248475
- Van Zandt, S., Peacock, W. G., Henry, D. W., Grover, H., Highfield, W. E., & Brody, S. D. (2012). Mapping social vulnerability to enhance housing and neighborhood resilience. *Housing Policy Debate*, 22(1), 29–55. doi:10.1080/10511482.2011.624528
- Vigdor, J. (2008). The economic aftermath of Hurricane Katrina. *Journal of Economic Perspectives*, 22(4), 135–154.
- Wiener, J. G., & Koontz, T. M. (2010). Shifting winds: Explaining variation in state policies to promote small-scale wind energy. *Policy Studies Journal*, 38(4), 629–651. doi:10.1111/j.1541-0072.2010.00377.x
- Zhang, Y., & Peacock, W. G. (2009). Planning for housing recovery? Lessons learned from Hurricane Andrew. *Journal of the American Planning Association*, 76(1), 5–24.