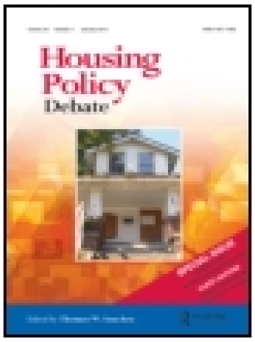

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Weather or Not: Tracking Hurricanes and Changes to Low-Income Housing Tax Credit Program Plans

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ABSTRACT
Climate change poses many threats to residential communities throughout the United States, including by contributing to the increased intensity and duration of disasters like hurricanes and other weather events. Government housing policies may either reduce or amplify vulnerability to storm damage. This article explores how state governments guide affordable housing development to address the risk and damage from hurricanes through the Low-Income Housing Tax Credit (LIHTC) program. Using document review, we examine LIHTC plans for states most severely and less severely affected by major hurricanes in the past 20 years by comparing plans before and after a hurricane event. The results indicate that severely affected states make relatively few changes to their plans after a hurricane, compared with neighboring less affected states, regarding siting and location, construction techniques, disaster preparedness, or other storm-related responses. The findings suggest a missed opportunity to redirect affordable housing resources to better protect vulnerable residents from the risks of climate change.

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climate change; disaster response; housing policy; hurricanes; Low-Income Housing Tax Credit program; qualified allocation plans; state government

Climate change poses major threats to residential communities and the housing stock in the United States. An important source of harm is the contribution of climate change to the increased intensity and duration of disasters like tropical cyclones and other storm events (Bender et al., 2010; Field et al., 2012; Knutson et al., 2010). Communities located along the coasts in the United States are increasingly vulnerable to hurricanes, which can lead to housing damage, housing destruction, and residential displacement (Levine, Esnard, & Sapat, 2007). There is growing concern that hurricanes and extreme weather caused by climate change will compound existing affordable housing problems (Ortiz, Schultheis, Novack, & Holt, 2019; Wiltz, 2019). Hurricanes in the United States have had a substantial impact in the past 20 years compared with previous periods, resulting in more than $750 billion in damage; climate change is predicted to increase the cost of future weather events by 20% (Cambridge Global Risk Index, 2020; National Centers for Environmental Information (NCEI), 2020; Weinkle et al., 2018). Residents, housing developers, advocacy organizations, and others have looked to governments to improve housing planning with regard to preparedness, mitigation, response, and recovery from disasters.

Government policies can influence important aspects of housing development related to disasters but frequently yield uneven results. Many scholars have critically examined government rebuilding efforts and plans for recovery after hurricanes and other disasters (e.g., Berke, Cooper, Aminto, Grabich, & Horney, 2014; Birch & Wachter, 2006; Bullard & Wright, 2009; Burby, 2006; Comerio, 1998; Olshansky & Johnson, 2017; Vale & Campanella, 2005). However, relatively few studies have examined how affordable housing programs are used to address weather disasters (Mehta, Brennan, &

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Steil, 2020). The Low-Income Housing Tax Credit (LIHTC) program is widely used to produce quality affordable housing, including in hurricane-affected states, but most prior work focuses on the demographic and social characteristics of project sites (e.g., Ellen, Horn, & Kuai, 2018; Eriksen, 2008; McClure, 2019). Although states have the power to alter and shape LIHTC plans in preparing for and responding to disasters like hurricanes, we do not know how much—or little—they exercise this discretion.

This article examines how state governments guide affordable housing development plans and projects to address hurricanes. The study focuses on the LIHTC program, currently the largest source of subsidized affordable housing production in the country. State housing finance agencies produce qualified allocation plans (QAPs) to define, establish, and describe the criteria for scoring housing development proposals and ultimately awarding tax credits to applicants. We analyze QAPs for states most severely and less severely affected by 12 major hurricanes that resulted in the costliest damage in the past 20 years. Document review is used to compare state QAPs issued before and after a hurricane event. The results indicate that state housing finance agencies in states severely affected by a hurricane make relatively few disaster-related changes to their QAPs, compared with less affected neighboring states, regarding siting and location, construction techniques, disaster preparedness, or other possible storm-related responses. The findings suggest state governments have missed an opportunity to adapt housing priorities and redirect affordable housing resources to create more resilient places and better protect vulnerable residents from the risks of climate change.

The rest of this article proceeds as follows. The next section presents background information on the LIHTC program. The following section reviews the literature on the relationship between QAPs and LIHTC housing outcomes. Then we describe the document sources, methods, and rationale for choosing the hurricanes used in the study. The following sections present the results and discuss the implications.

Background

LIHTC Program

The LIHTC program was established by the U.S. Congress under the Tax Reform Act of 1986. It is now the largest source of federally supported rental housing production for lower income households in the country, with more than 2.2 million rental units in more than 35,000 developments. The U.S. Treasury Department allocates tax credits to states each year. States may issue tax credits to developers for housing construction or rehabilitation projects that qualify under one of the following conditions: at least 20% of households have incomes below 50% of the area median income; or at least 40% of households have incomes below 60% of the area median income. Qualified projects must meet the affordability requirements for at least 15 years to receive a 10-year tax credit allocation. Developers who are awarded tax credits can use the credits themselves or sell the credits to private investors and use the proceeds to fund development of affordable housing. Investors reduce their federal income taxes by $1.00 for every dollar of tax credit received. The amount of credit available for a development depends on the cost and location of the developments, as well as the proportion of the units that will be set aside as affordable.

Qualified Allocation Plans

The law governing the LIHTC program assigns state agencies the responsibility of determining which housing project applications will receive credits and what credit amount will be allocated. At the state level, the responsibility is typically delegated to a housing finance agency. Section 42 of the Internal Revenue Code requires a state agency to develop a QAP. The QAP must identify the selection criteria that will be used to determine housing priorities that are appropriate or relevant to local conditions and must give preferences to certain types of projects. The selection criteria include project location, housing needs, the characteristics of projects and sponsors, and the energy efficiency of the project. Preferences include prioritizing projects that serve low-income tenants, long affordability periods, and location in qualified census tracts. The QAP also lays out the number of points awarded for certain features, set-asides that reserve a share of credits for a specific purpose, and threshold requirements for eligibility. Beyond the federal LIHTC requirements, states are permitted to implement provisions and incorporate policy language to address changing conditions and advance their housing goals.

Literature: Policy Priorities, QAPs, and LIHTC Outcomes

State governments address various policy priorities, including climate change and disaster planning, through their QAPs. For example, the state housing finance agency in Massachusetts has changed its QAP "[I]n response to the reality of global climate change. . .[and] altered its criteria for evaluating the design and scope proposed for each tax credit project," whereas Delaware is prepared to "[i]ncorporate resilience criteria into its Qualified Allocation Plan (QAP) scoring and ranking system. . . [to] further incentivize applicants to consider their project's vulnerabilities and risks to climate change" (Department of Housing and Community Development, 2020, p. 2; Eisenbrey, 2020, p. 3). A recent study investigated the content of QAPs nationwide to understand approaches to disaster preparedness and recovery (Mehta et al., 2020). Based on the QAPs for 49 states, the District of Columbia, and three territories, the authors find that less than half of the places had provisions for disaster preparedness (e.g., project design and project siting) or recovery (e.g., include guiding credits to areas affected by disasters and replacing housing units damaged by disasters) or both in their QAP for 2017. However, the results are based on searching for a small set of key terms and mostly limited to 1 year.

QAPs are an important and pertinent policy instrument to study because their contents can influence LIHTC outcomes, including what types of projects are proposed and selected (Gustafson & Walker, 2002; Shelburne, 2008). There is suggestive evidence that housing developers closely read QAPs, based on the extensive comments they submit during public comment periods for draft QAPs (Khadduri, 2013). Prior work examines the relationship between QAP changes about preferred neighborhood characteristics and patterns in the neighborhood locations of developments receiving LIHTC across the country (Ellen & Horn, 2018). Based on a review of QAPs from 20 states for 2002 and 2010 and a regression analysis of LIHTC database and census data, the authors find a statistically significant relationship between higher QAP priority placed on development applications in high-opportunity areas, increases in the proportion of tax credits allocated for developments in census tracts with low levels of poverty, and decreases in the proportion of tax credits allocated for developments in census tracts with high percentages of racial minorities. However, there is a large gap in the years of the QAPs considered, so there are many other changes that could be happening in the intervening period that are related to the LIHTC outcomes. One study finds that transit-oriented incentives in QAPs are associated with the share of LIHTC properties near transit stations, based on more than 400 QAPs from 2003 to 2010 (Nedwick & Burnett, 2015). But the analysis treats different types of transit the same way and is limited by QAP search criteria. Another article studies the potential impact of an opportunity provision in the Texas QAP for 2016 (Walter, Wang, & Jones, 2018). Based on analysis of state housing agency LIHTC property data, the results show that after the opportunity provision was implemented, LIHTC developments have been located in San Antonio neighborhoods with lower poverty rates and higher levels of racial diversity. However, the findings are limited to one county and state and a brief time period.

Some LIHTC program outcomes that arise from QAPs may conflict with other important policy concerns. A study of LIHTC development in 12 states finds that LIHTC units are located in neighborhoods with higher estimated levels of carcinogenic, respiratory, and neurological air quality hazards compared with other rental housing units (Ellen et al., 2018), which suggests LIHTC residents may be more likely to be exposed to pollution and environmental health risks. Additional work observes that

LIHTC units are located in neighborhoods with high levels of poverty and high proportions of racial and ethnic minority residents (e.g., Freeman, 2004; Horn & O'Regan, 2011; McClure, 2019; Shamsuddin & Cross, 2020), which suggests the operation of the LIHTC program may run counter to fair housing goals.

To summarize, state governments use QAPs to create, describe, and communicate priorities for affordable housing and changes in those priorities, including priorities related to climate change and disasters. QAP provisions are associated with various LIHTC outcomes, which suggests their influence and supports the importance of studying QAP contents. However, affordable housing production outcomes may come at the expense of other valued and important policy priorities.

Materials and Methods

This article examines how state governments guide affordable housing development through the LIHTC program to address hurricanes. The primary method employed in this study is document review. Document review is used to determine whether and how the language in a state QAP for a given year has changed from a prior year. Changes include the addition of words to the text and the removal of words from the text. Each change is analyzed to determine whether it addresses recent hurricane activity or the potential for future hurricanes. Document review of QAPs is well suited for this study because state governments, through institutions like housing finance agencies, use QAP documents to communicate their priorities for affordable housing development.

We study the costliest hurricanes, as measured by monetary damage and losses, that have hit the United States. Each of these hurricanes resulted in more than $10 billion in damage (see Table 1). These hurricanes are chosen for study because their size and resultant damage had high impact and visibility from the perspective of elected leaders, policymakers, and the public.

In this study, we focus on hurricanes that occurred in the past 20 years. There are several reasons for studying the hurricanes from the most recent two decades. First, there has been growing attention and awareness among elected officials and the public during this period about climate change and its impact on extreme weather events. Second, recent hurricanes have been some of the most severe on record and most expensive in terms of damage. Third, the LIHTC program is fully developed and commonly used for affordable housing development during this time window.

The attention to relatively recent hurricanes (i.e., during the past 20 years) results in the omission of two costly hurricanes. Hurricane Andrew resulted in more than $50 billion in damage, which

Table 1. Costliest tropical cyclones to affect the United States in recent years.

Name of tropical cyclone	Year	Category	Cost (billion 2020$)
Katrina	2005	3	$170.0
Harvey	2017	4	$131.3
Maria[a]	2017	4	$94.5
Sandy	2012	1	$74.1
Irma	2017	4	$52.5
Andrew[a]	1992	5	$50.5
Ike	2008	2	$36.9
Ivan	2004	3	$28.7
Wilma	2005	3	$25.8
Michael	2018	5	$25.5
Rita	2005	3	$25.2
Florence	2018	1	$24.5
Charley	2004	3	$22.4
Hugo[a]	1989	4	$19.3
Irene	2011	1	$15.8

Note. [a]Not included in this study. Costs are given in terms of billions of dollars in 2020 and adjusted for inflation based on the Consumer Price Index.

Costliest U.S. Tropical Cyclones, page 2, National Centers for Environmental Information, 2020, Washington, DC.: National Oceanic and Atmospheric Administration.

makes it the sixth costliest tropical cyclone on record to hit the United States. Hurricane Andrew occurred in 1992, which is more than 10 years earlier than the other costliest hurricanes considered for the study. Hurricane Hugo was responsible for nearly $20 billion in damage, which makes it the fourteenth costliest tropical cyclone to impact the United States. Hurricane Hugo occurred in 1989, which is 15 or more years earlier than the other hurricanes in the study. The LIHTC program and states' use of QAPs may have been substantially different in the late 1980s and early 1990s, which was soon after the LIHTC program was established in 1986. In addition, changes in scientific knowledge, popular communication, and public awareness about the risks of climate change were also different. As a result, Hurricane Andrew and Hurricane Hugo were excluded from the analysis.

Information on which states were affected by a hurricane, including the most affected state (or states) and less affected ones, is provided by the National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information, and National Climatic Data Center (see Table 2). The information is available in NOAA reports, memoranda and webpages, including "The Deadliest, Costliest, and Most Intense United States Tropical Cyclones from 1851 to 2010 (and other frequently requested hurricane facts)," "Billion-Dollar Weather and Climate Disasters: Events," and "Hurricanes in History." We sought QAPs for the state(s) most affected by a given hurricane, as determined by NOAA, and for a less affected state(s), when applicable, that is geographically adjacent or proximate.

We obtain QAPs from state housing finance agencies through their websites. We also use QAP documents available from Novogradac, a professional services company that provides tax and consulting services, and a recognized expert and source of information on the LIHTC program. For a given state, QAPs were obtained for at least 3 years before and 3 years after a hurricane event to create a 6-year window. If a QAP for one of these years is not available, we use the next closest year (earlier or later, as applicable) for which a QAP is available. (For the most recent hurricanes, e.g., Hurricane Michael in 2018, we use draft QAPs if final 2020 QAPs for states are not available; see Appendix Table A1.)

The availability of QAPs results in the omission of one costly hurricane. Hurricane Maria created more than $94 billion in damage and was the third costliest tropical cyclone ever to impact the United States. The hurricane made landfall on September 16, 2017, and hit Puerto Rico. A complete set of QAPs was not available for Puerto Rico, so Hurricane Maria was excluded from the analysis. The final analysis consists of 12 hurricanes.

State QAP documents for two consecutive (or closest) years are compared side by side. We search for and identify any changes in the text. In many cases, we are able to confirm identification of

Table 2. Tropical cyclones and affected states.

Tropical cyclone	State(s) most affected	State(s) less affected
Charley	Florida	South Carolina
Ivan	Alabama	Florida
Katrina	Louisiana	Alabama, Florida, Mississippi
Rita	Louisiana, Texas	Florida
Wilma	Florida	n/a
Ike	Texas	Louisiana
Irene	New Jersey, New York	Connecticut, Maryland, Massachusetts, North Carolina, Rhode Island, Vermont, Virginia
Sandy	New Jersey, New York	Connecticut, Delaware, Maryland, Massachusetts, North Carolina, Rhode Island, Vermont, Virginia
Harvey	Texas	Louisiana
Irma	Florida	Georgia, South Carolina
Michael	Florida	Georgia
Florence	North Carolina	South Carolina

Billion-Dollar Weather and Climate Disasters: Events, National Centers for Environmental Information, 2021, Washington, DC.: National Oceanic and Atmospheric Administration.

Blake, E. S., Landsea, C. W., & Gibney, E. J., 2011. The Deadliest, Costliest, and Most Intense United States Tropical Cyclones from 1851 to 2010, Miami, FL: National Weather Service and National Hurricane Center.

Hurricanes in History, National Hurricane Center, undated, Washington, DC.: National Oceanic and Atmospheric Administration.

changes to the text by using redlined documents, summaries of changes, and related materials available from state housing finance agencies and Novogradac. From the complete set of all changes, we eliminate those changes that can be considered typographical edits, for example document formatting and updating the year listed from one year to the next. We record all remaining changes in a table and assign them to categories according to the headings given in the QAP—for example, application threshold requirements, selection criteria, certification, and allocation (see Appendix Table A2 for an example). Then we determine whether a QAP change is hurricane related. In most cases this is clear, because the QAP change will include language directly referencing some aspect of hurricanes. For example, the Louisiana QAP raised the housing credit ceiling after Hurricane Katrina as part of the Gulf Opportunity Zone Act of 2005. Other changes are likely unrelated to a hurricane event because they refer, for example, to federal audit and certification procedures; or the changes likely would not make a material difference to housing built after a hurricane, for example changes in state agency administrative procedures regarding certifications.

In other cases, it is less clear whether a change is hurricane related. For these remaining cases, we label these changes as possibly hurricane related. In other words, if there is some doubt or question about whether a change is hurricane related, we label those changes as possibly hurricane related, in an effort to capture as many as possible of the potentially hurricane related changes to the QAP that may exist. For example, these can include changes to existing program designations, location preferences and targeting, and minimum application scores. Then we closely review the QAP again to understand the context of the change and compare the changes with earlier and subsequent QAPs.

Limitations

Determining whether a change to the text is related to a hurricane is a subjective process, so this presents an important limitation to the study. We used two readers to review the changes and make this determination, in an attempt to improve reliability and consistency. In instances where the readers made different determinations, they reviewed the text again and discussed their reasoning to seek consensus. Another possible limitation is that QAPs for every year were unavailable in a small number of cases. However, in nearly all of these cases, state housing finance agency staff confirmed that their state had not issued a revised QAP for the year in question and were instead operating based on the prior year QAP.

State officials' shifting beliefs and priorities about the relationship between affordable housing and hurricanes, including damage from previous hurricanes and the threat of future ones, may not be fully encoded in changes to a state QAP. Although the analysis is limited to the QAP time window, some states are hit by hurricanes in different years, so their QAPs are observed over a period of more than 15 years; those QAPs show similar trends. The study does not control for other factors that might be involved, such as differences in exposure, distribution of damage, and size of states. Additional research should address these and other considerations. Finally, it is important to note this is an observational study. Any changes identified as hurricane related may suggest that changes were made in response to the hurricane but do not necessarily mean that a state housing finance agency made a change in the QAP because of a given hurricane event. There could be other reasons for the QAP change.

Results

Hurricane Charley

Hurricane Charley happened over 2 days, on August 13 and 14, 2004. It was a Category 4 hurricane that made landfall at Port Charlotte in the southwest of Florida. Hurricane Charley led to major wind damage and some storm surge damage in Florida. South Carolina also experienced some damage.

The total cost attributed to damage from Hurricane Charley is $22 billion. (Note: all damages are reported in 2020 dollars.)

The Florida QAP issued immediately after Hurricane Charley had only three changes compared with the QAP right before the hurricane. All three changes pertained to the Florida Housing Finance Corporation (FHFC) adding the goal of allocating housing credits to at least one development in two specific counties in Florida. One of these counties was adjacent to the county where Hurricane Charley made landfall, so the change may be related to the hurricane event. However, a total of 25 counties in Florida were declared federal disaster areas because of Hurricane Charley.

In the years before Hurricane Charley, there were nine changes to the Florida QAP; the changes addressed the minimum score for an application to be considered and the requirements for urban infill developments. In the 2006 and 2007 Florida QAPs, after Hurricane Charley, there were nine changes made; the changes involved adding preferences for project-based rental assistance and targeting developments financed with HOPE VI (Housing Opportunities for People Everywhere public housing program) funds. The overall trend for changes to the Florida QAP does not indicate clear reactions to hurricanes.

There were more than 60 changes to the 2005 South Carolina QAP. However, none of these changes directly address Hurricane Charley or hurricanes in general. The changes included adding language explaining the LIHTC program and removing language regarding document requirements, fees, and deadlines. Language was also removed regarding application administration and procedures about topics such as Americans with Disabilities Act (ADA) requirements, fractional rounding, and contact information. In the years prior to Hurricane Charley, the South Carolina State Housing Finance and Development Authority made nearly 90 changes to the QAP. The changes involved application due dates, development progress requirements, submission procedures, market study requirements, and set-asides. In the 2006 and 2007 South Carolina QAPs, by comparison, there were fewer than 35 changes. Text regarding unallowed detrimental site characteristics, including locations in 100-year flood zones, was removed. This type of change would not be expected if the state agency was concerned about reducing the risk of damage from hurricanes. None of the other changes appear to be hurricane related.

Hurricane Ivan

Hurricane Ivan occurred from September 12 to 21, 2004, as a Category 3 hurricane that made landfall in the Gulf Coast region of Alabama. In addition to substantial wind damage, Ivan resulted in storm surges and flooding. The hurricane also affected parts of the Florida Panhandle. Hurricane Ivan caused nearly $30 billion in damage.

The Alabama Housing Finance Authority (AHFA) made 60 changes to the 2005 QAP compared with the 2004 QAP. The AHFA increased the possible number of points for project characteristics, from a maximum of 89 to a maximum of 150. The maximum number of points for location was increased from 2 to 47. The AFHA made other changes, for example adding language clarifying the procedures for handling disputes regarding market feasibility studies. The 2005 QAP also included new language that provided detail about expectations regarding the financial feasibility of a project. Finally, the AHFA raised the application fee from $500 to $2,000 and noted the fee is nonrefundable regardless of the decision on an application. None of these changes appear to be hurricane related.

Prior to Hurricane Ivan, the Alabama QAP added language that allowed existing acquisition or rehabilitation properties to be located in flood plains, which appears to run counter to expectations regarding planning for hurricanes and climate change risk. The additional changes (almost 30) made in prior years were unrelated to hurricanes, including the removal of language specifying the conditions for qualifying as supportive needs housing and complying with accessible and adaptive design requirements of the Fair Housing Act. Several years after Ivan, the Alabama QAP did include changes addressing hurricanes, but these are specific to Hurricane Katrina (see below). (For changes to the Florida QAP, see the subsection on Hurricane Florence above.)

Hurricane Katrina and Hurricane Rita

Hurricane Katrina was a Category 3 hurricane that took place August 25–30, 2005. The hurricane resulted in severe storm surge damage and levee system failure that seriously affected Louisiana, in addition to parts of Alabama, Florida, and Mississippi. More than 1,800 people died and more than one million people were displaced as a result of the storm. Hurricane Katrina is the costliest tropical cyclone ever to impact the United States; it produced catastrophic damage totaling $170 billion. Hurricane Rita occurred a few weeks later, from September 20 to 24, 2005. It was a Category 3 hurricane that hit Texas and Louisiana with significant winds, storm surge flooding, and inland flooding. Florida was also somewhat affected. Hurricane Rita inflicted more than $25 billion in damage. The sets of QAPs for Hurricane Katrina and Hurricane Rita partially overlap because the hurricanes occurred within a few weeks of each other and affected some of the same states, so here we present the QAPs associated with both hurricanes.

The Louisiana Housing Finance Agency (LHFA) made only six changes to the state QAP immediately after Hurricane Katrina and Hurricane Rita, but several of these changes were directly related to the hurricanes. For example, in the introduction to the 2006 QAP, language was added stating:

> The devastation to Louisiana's housing stock and the acute housing crisis caused by Hurricanes Katrina and Rita demand that additional affordable housing be produced to shelter the tens of thousands of displaced Louisiana residents. Pursuant to the Gulf Opportunity Zone Act of 2005 and in response to Hurricanes Katrina and Rita, the United States Congress provided a number of tax benefits for areas defined as GO [Gulf Opportunity] Zones. (p. 2)

The housing credit ceiling for Louisiana was raised to $18.00 times the proportion of the state population living in a GO Zone. In addition, the LHFA allocated a portion of the additional credits to a subpool for projects that were damaged by hurricanes Katrina or Rita. These changes to the QAP appear to be driven by the federal legislation passed by Congress.

In the years prior to Hurricane Katrina, there were some Louisiana QAP modifications that could be related to climate change. Up to 35 points were added to the 2004 QAP for energy efficient windows, heating, ventilation, and air conditioning systems, and appliances. Additional points were given for projects designed to exceed a 15-year maintenance-free exterior and a 30-year roof. The approximately 30 other changes to the Louisiana QAP were mostly administrative, including adding certification requirements for rural development, requiring evidence of community notification and public notice, expanding the definition of supportive services and community service facilities, adding audit submission procedures, and requiring documentation that proposed developments comply with local plans. There were also minor changes to the credit ceiling amount for various subpools and the total development cost per unit amount for various development types.

There were close to 60 changes to the Louisiana QAP in the years following Hurricane Katrina. The clearest hurricane-related changes involved the LHFA adding language acknowledging that the proportionate allocation of housing credits might change because of population movement resulting from Hurricanes Katrina and Rita, revisions to market analysis because of the hurricanes, and waivers of QAP limits because of acute housing needs after the hurricanes. Later, the QAP also began to deduct points for not meeting Federal Emergency Management Agency (FEMA) guidelines regarding project flood elevation. Possible modifications related to climate change included adding definitions for Green Building and Leadership in Energy and Environmental Design (LEED). Other nonhurricane-related changes included adding bonus points for historically underserved areas, information about tiebreaking procedures, exceptions to project and developer limits, and expanded definitions for additional affordability projects, economic development projects, and eligible target population for supportive housing.

There were 20 changes to the Alabama QAP immediately after Hurricanes Katrina and Rita. The only clear hurricane-related change was the following text added to the introduction of the 2006 QAP (p. 4):

> NOTE: Hurricane Katrina, which struck the Gulf Coast in late August 2005, has created a monumental housing shortage throughout the region. Some 23 counties in our State (about a third) have been declared eligible for federal assistance, either Individual or Public. . .. AHFA expects to take advantage of all waivers, special conditions or new programs made available by the IRS [Internal Revenue Service], HUD [the U.S. Department of Housing and Urban Development], or any other federal, state or local agency in response to Hurricane Katrina.

Similar to Louisiana, this change to the Alabama QAP acknowledges federal legislation in the form of the Gulf Opportunity Zone Act of 2005. The AHFA added a point system for energy conservation that included 3 points each for exceeding model energy code, Energy Star-rated appliances, additional attic insulation, ceiling fans in living rooms and all bedrooms, and efficient furnaces or heat pumps. There were some other minor modifications to the QAP that could be hurricane or climate change related: AHFA increased the point allocation from 3 to 4 for a 30-year roof and for brick/cementitious siding. Other alterations that do not appear to be related to hurricanes or climate change included adding a fee for application changes; slightly extending the timeline for progress requirements; and increasing the point allocation from 20 to 22 for projects that provide extra amenities, from 4 to 5 for projects for low-income families with children or 100% elderly, from 1 to 2 for projects seeking households on the waiting list for rental assistance, and from 2 to 3 for projects with dated and executed documents.

In subsequent years, the AHFA made almost 40 other changes to the state QAP. The 2007 QAP added language explaining that "The 'Gulf Opportunity Zone' shall mean the portion of the Hurricane Katrina disaster area determined by the President of the United States to warrant individual or individual and public assistance from the federal government under the Robert T. Stafford Disaster Relief and Emergency Act by reason of Hurricane Katrina that is located within the State of Alabama" (p. 5), and provided specific information about the Baldwin County GO Zone. The remaining modifications do not appear to be directly related to hurricanes and climate change, such as adding information about mailing lists, adding points for projects located in wealthier census tracts, increasing the minimum building standard room sizes, and requiring project amenities to be ADA accessible.

The 2008 QAP lowered the ceiling on the maximum unit count for projects in GO Zones from 200 to 150 and included design quality standards for single-family homes in GO Zones. Other changes involved added information on the process for HOPE VI projects, slightly raising the number of points given for various project and unit amenities and rental affordability, and reducing the maximum points for neighborhood characteristics and deductions for negative accessibility. (For changes to the Alabama QAP in the years before Hurricanes Katrina and Rita, see the section above on Hurricane Ivan.)

There were only six changes to the Texas QAP immediately after Hurricane Rita; none of them seem be hurricane related. The 2006 Texas QAP added documentation requirements for cost certification; specified the notification process for administrative deficiencies; and added definitions for area, community revitalization plan, and intergenerational housing. From 2003 to 2005, the Texas Department of Housing and Community Affairs (TDHCA) made changes to the state QAP that were similar in content, including adding definitions for bedroom and urban/exurban area, removing definitions for general pool and general development, and including procedures for communication with the department. TDHCA also added points for specific neighborhood amenities and deducted points for negative site characteristics.

In subsequent years, the TDHCA made nearly 50 changes to the state QAP that appear unrelated to hurricanes, such as including procedures for application format submission requirements; adding developer fee limits; introducing accessibility requirements; adding points for rehabilitation projects, community support and participation, and developments in census tracts with no other tax credit developments; specifying procedures for application intake and review; and adding definitions for development site, existing residential development, development funding, grant, and neighborhood organization. However, 7 points were added for development sites located in a disaster area. TDHCA added 3 points to the 2008 QAP for projects with Green Building features, including water-conserving fixtures and water collected for irrigation purposes, but also added 1 point for projects with a hot tub or jacuzzi spa. (For changes to the Florida QAP, see Hurricane Florence above.)

Hurricane Wilma

Hurricane Wilma was a Category 3 hurricane that hit southwest Florida near Everglades City on October 24, 2005. It resulted in strong winds and major flooding that damaged parts of south Florida in the Miami/Fort Lauderdale area. Nearly 6 million people lost electrical power, the largest disruption to electrical service reported in Florida up to that point. It was responsible for more than $25 billion in damage. Hurricane Wilma did not hit other states, so we focus on the QAP for Florida.

The FHFC made 10 changes to its QAP in the years leading up to Hurricane Wilma. However, it is important to note that the state agency did not issue a final QAP for 2006, the year immediately following the hurricane. There was only one clear hurricane-related change afterward: Language was added to the 2007 QAP stating that if the Florida state legislature allocates hurricane recovery funding to the FHFC, some part of the housing credit allocation could be allocated for use with the hurricane recovery funds.

Other QAP changes that might have been hurricane related do not appear to reduce damage or risk from future weather events. For example, after the hurricane, language was added to the QAP regarding funding allocations and selection criteria targeting for applications that meet criteria for preserving existing affordable housing. However, this was a statewide effort to preserve affordable housing, not specific to hurricane-affected or hurricane-prone areas. In another example, the 2007 QAP deleted language regarding targeting goals that specified a goal of one development in various counties. If the state sought to avoid building housing in hurricane-risk areas—or even to focus on rebuilding in those areas—we would expect the QAP to add location-specific preferences, not delete them.

There were eight changes to the QAP in total after the hurricane, but the others are unlikely to be hurricane related. For example, the minimum application score to receive housing credits was lowered after Hurricane Wilma, but this score was also lowered in changes made to the QAP before the hurricane so it may be a longer term trend. Another change involved giving a funding preference to applications that show evidence of funding from U.S. Department of Agriculture Rural Development programs, but Hurricane Wilma mostly damaged urban areas in Florida.

Hurricane Ike

Hurricane Ike was determined to be a Category 2 hurricane when it made landfall in Texas. It occurred September 12 to 14, 2008. It was the largest Atlantic hurricane on record by size. The hurricane created storm surges that severely affected Texas, as well as parts of Louisiana. Damage from Hurricane Ike was nearly $37 billion.

The 2009 Texas QAP included one clear hurricane-related change. The TDHCA added text to the QAP stating that developments proposed for Hurricane Ike-eligible counties, as designated by federal law, presidential declaration, and FEMA, could be placed in service by the end of 2012. There was also one alteration to the QAP that reflected climate change concerns: applicants were given 1 point for building designs that optimize daylight penetration, passive ventilation, and shade heating and cooling units, and provide solar screens on windows; and up to 2 points for water-conserving features such as low-flow toilets, bathroom faucets, and showerheads. The other six changes focus on priorities that are not closely related to hurricanes. For example, text was added that defined high-opportunity areas and single-room occupancy. In the years leading up to Hurricane Ike, there were relatively few changes to the Texas QAP (see Hurricanes Katrina and Rita above).

The 2009 Texas QAP included 15 changes, but they were likely not related to hurricanes or climate change. The modifications included adding definitions for governing body, high opportunity, net rentable area, residential rural development, supportive housing, and urban core; increasing minimum unit sizes; and adding compliance monitoring fees. Similarly, the 2010 Texas QAP featured 16 changes, such as adding 6 points for marketing to veterans, requirements for evidence of financial statements, and definitions of managing general partner and material deficiency. The TDHCA added 1 point each for healthy flooring, healthy interior finish materials, and renewable flooring materials.

The 2009 Louisiana QAP also included one clear hurricane-related change: The LHFA created a specific Hurricane Ike credit pool. The other 13 changes involved describing the procedures for verifying bond-financed applications; specifying agency site visits; and adding requirements for developer and management experience, local community notification, and signage display. In the years leading up to Hurricane Ike, the LHFA made many changes to the Louisiana QAP, but they were specific to Hurricanes Katrina and Rita (see above). The nearly 60 changes to the 2010 and 2011 Louisiana QAPs included revising housing credit allocation pools, raising maximum tax credit limits, creating a Tax Credit Assistance Program for projects with funding gaps, adding an asset management fee, establishing binding arbitration for funding disputes, and altering provisions for the reallocation of recaptured tax credits based upon evidence of housing discrimination. These later changes do not appear to be directly related to hurricanes or climate change.

Hurricane Irene and Hurricane Sandy

Hurricane Irene was a Category 1 hurricane that affected states along the Atlantic coast from August 26 to 28, 2011. It resulted in torrential rainfall and flooding in the mid-Atlantic and Northeast parts of the country. There was extensive flood damage in New Jersey and New York. Parts of Connecticut, Maryland, Massachusetts, Rhode Island, and Virginia were also affected. Hurricane Irene resulted in nearly $16 billion in damage. Hurricane Sandy was classified as a Category 1 hurricane when it hit the mainland United States from October 30 to 31, 2012. The hurricane severely impacted New Jersey and New York, and also affected Connecticut, Delaware, Maryland, Massachusetts, and Rhode Island. As a result of Hurricane Sandy, the New York Stock Exchange was closed for two consecutive business days, which had not happened in more than 100 years. Hurricane Sandy inflicted damage exceeding $74 billion. The sets of QAPs for Hurricane Irene and Hurricane Sandy overlap because the hurricanes occurred about 1 year apart and affected the same states, so we present the QAPs associated with both hurricanes.

The New Jersey Housing and Mortgage Finance Agency adopted nearly 50 changes to the New Jersey QAP around the time of Hurricane Irene and Hurricane Sandy. One change that could be related to hurricanes and climate change was the addition of text that allocated points for participating in an energy benchmarking initiative, and completion of a green homes utility form and a green homes benchmarking survey form. In addition, there was new language regarding application requirements and housing credit criteria for incorporating solar hot water and/or water retainage and reuse systems, Energy Star home certification, and LEED certification from the United States Green Building Council.

There were several other changes to the New Jersey QAP in subsequent years, but these changes do not appear to be specifically related to the hurricanes. For example, language was added to the QAP regarding definitions and designations for cores (pedestrian-oriented area for commercial and civic uses, generally including housing and access to public transportation), centers (compact development having one or more cores as well as neighborhoods and green spaces), and main streets (a statewide program to support economic and community development in historic commercial districts). Other new programs included services for independent living, for residents of senior housing developments, and targeted urban municipalities, for cities with poverty rates greater than 8%. These additions seek to promote dense, mixed-use development; revitalize downtowns; assist elderly residents; and help poor areas. The provisions are not limited to hurricane-affected areas. The QAP after the hurricanes added language regarding development cost limits based on building heights and deleted language indicating the state may recalculate developer fees. These provisions apply to all developments. Text was also added setting aside credits for family projects with up to 55% affordability and requirements for executed leases for projects that rely on commercial income. Again, these provisions were not directed to areas affected by hurricanes.

There were few changes to the New York QAP before to and after Hurricane Irene and Hurricane Sandy. The New York State Division of Housing and Community Renewal made only one change that was hurricane related. It added language to the QAP that projects must maintain vacancy records that are updated monthly and provided upon request to the agency to enable the state to quickly respond to natural disasters. There was one change that could be climate change related, but it involved the removal of text describing green building measures, including selecting native or noninvasive plants, installing radon-reduction systems, and using lead-safe work practices.

Other changes to the New York QAP after the hurricanes do not appear to be closely related to hurricanes or climate change. These other changes involved removing text regarding including developer fees in adjusted project costs, and adding text requiring housing program applicants to have commitment for capital financing and to provide an integrated setting that enables individuals with disabilities to live independently. The agency also added fees for providing documentation of a binding agreement for housing credits.

Connecticut, which was less affected by Hurricane Irene and Hurricane Sandy, made several changes to its QAP. The clearest hurricane-related change was that language was added awarding points for Community Development Block Grant—Disaster Recovery Program applicants that are eligible for Hurricane Sandy HUD funding. Other changes did not appear to be hurricane related. For example, text was removed regarding housing credit criteria for supportive housing, and text was added giving preferences for public housing applications with signed agreements for resident participation and commitment of federal or state resources. Housing credit criteria language was also added for historic place or brownfield development and eventual homeownership programs.

Hurricane Harvey

Hurricane Harvey occurred August 25 to 31, 2017. It was a Category 4 hurricane when it made landfall near Rockport, Texas. The hurricane produced a historic amount of rain, including 51 inches of rain during a 7-day period reported in parts of Texas. It led to severe flooding in the Houston area and also affected southwestern Louisiana. Hurricane Harvey created more than $131 billion in damage, including more than 200,000 homes and businesses that were damaged or destroyed.

Immediately after Hurricane Harvey, the Texas QAP included 16 changes. One clearly hurricane-related change was the addition of text that designated 5 points for demonstrating readiness to proceed in counties impacted by disaster, as declared by FEMA. All of the other changes do not appear to be hurricane specific. For example, text was added specifying the documentation required to substantiate application items and clarifying that the state agency procedures manual and frequently asked questions posted on their website were provided as guidance. The TDHCA also added 1 point each for development sites located close to a pharmacy or museum. The 2019 and 2020 Texas QAPs featured nearly 200 changes, but none were clearly responding to Hurricane Harvey. The changes involved tax credit allocation procedures, tie-breaker factors, preapplication requirements, and modifications to selection criteria. (For changes to the Texas QAP in the years before Hurricane Harvey, see the section on Hurricane Ike.)

Immediately after Hurricane Harvey, the Louisiana QAP also included almost 20 changes, but they do not appear to be hurricane related. The LHFA added specified amounts from the Home Investment program and Community Development Block Grants as funding sources, increased developer limits for financing, specified developer and property management experience requirements, and added developer certification procedures. The 2019 and 2020 Louisiana QAPs included multiple changes; none of these appeared to be direct reactions to Hurricane Ike. The changes addressed maximum tax credit amounts, project threshold requirements, placed-in-service procedures, and evidentiary materials. (For changes to the Louisiana QAP in the years before Hurricane Harvey, see the section on Hurricane Ike.)

Hurricane Irma and Hurricane Michael

Hurricane Irma took place September 6 to 12, 2017, and was a Category 4 hurricane when it hit the Florida Keys, where one quarter of the buildings were destroyed and nearly two thirds were significantly damaged. It made landfall in southwestern Florida and also affected parts of Georgia and South Carolina. Hurricane Irma was responsible for more than $52 billion in damage. Hurricane Michael was a Category 5 hurricane that occurred October 10 to 11, 2018. The hurricane made landfall in Florida, near the areas of Mexico Beach and Tyndall Air Force Base. Although it was downgraded to a Category 4 storm upon landfall, later analysis showed that wind speeds topped 160 mph, thus qualifying it for Category 5. More than 90% of buildings in Mexico Beach were reported damaged and nearly 50% were reported destroyed, and all buildings at Tyndall Air Force Base were reported damaged. Parts of Georgia were also affected. Hurricane Michael was the first Category 5 to strike the U.S. mainland in nearly 40 years and only the fourth on record. Hurricane Michael created more than $25 billion in damage. The sets of QAPs for Hurricane Irma and Hurricane Michael overlap because the hurricanes occurred about 1 year apart and affected the same states, so we present here the QAPs associated with both hurricanes.

The 2018 Florida QAP displayed only two changes. One change addressed natural disasters but consisted of changes to wording. (The text was changed from "In the event the Florida Legislature allocates natural disaster recovery funding to FHFC..." to "In the event a natural disaster is declared by the federal or state government....") The other change involved retaining status as a HUD-designated Difficult to Develop Area or Qualified Census Tract. The 2019 Florida QAP had no substantial changes. In the years leading up to Hurricanes Irma and Michael, there were only five changes to the Florida QAP, which involved minor edits to language regarding tax-exempt bonds issued by state and county authorities, and information about qualifications for nonprofits and homeless developments. No changes were made to the Florida QAP from 2019 to 2020.

The 2018 Georgia QAP featured 16 changes, but none appear to be hurricane related. There was one alteration that might address climate change: the Georgia Department of Community Affairs added a requirement that applicants for rehabilitation developments submit energy audit reports that identify energy conservation measures. Other changes included added language describing quality affordable housing, preservation of existing housing credit developments, and state equity pricing.

The 2019 Georgia QAP showed one change (of 24) that was directly hurricane related: It established that credits may be awarded for up to three developments for communities responding to damage from the hurricanes in 2017 and 2018. The Georgia Department of Community Affairs also added a section describing sustainable building, which may have been in response to concerns about climate change. Other changes involved adding language describing cost reasonableness; increasing project award limits; adding documentation requirements for impact fees, taxes, and property insurance; and explaining engagement methods for occupied rehabilitation projects.

There were nearly 80 changes to the Georgia QAP in the years leading up to Hurricanes Irma and Michael. The Georgia Department of Community Affairs added 1 point for properties seeking Sustainable Building Certification, which might reflect concerns about climate change. Other changes involved modifying the state priority list, specifying training for accessibility standards, decreasing the points for properties located in low-poverty census tracts, and adding a definition for incomplete documents. The 2020 Georgia QAP featured 32 changes, including application submission requirements, minimum documentation, and developer fee amounts, but none of these appear to be related to hurricanes or climate change.

Hurricane Florence

Hurricane Florence occurred from September 13 to 16, 2018. It made landfall at Wrightsville Beach, North Carolina, as a Category 1 hurricane that created damage through extreme rainfall, storm surges, and wind gusts. The U.S. military base at Camp Lejune experienced extensive damage. Parts of South Carolina were also affected. Hurricane Florence resulted in $24.5 billion in damage.

There were two changes to the 2019 North Carolina QAP that were clearly hurricane related. The North Carolina Housing Finance Agency added language allowing for additional tax credits and disaster recovery funds, and waived a requirement for a special program loan, for applications in counties declared a federal disaster area under Hurricane Florence. Similar to the hurricane-related changes in other state QAPs, these changes addressed federal action, in this case the declaration of a federal disaster area.

The other nine changes to the 2019 North Carolina QAP primarily involved administrative procedures. There were small increases in application processing fees, allocation fees, and monitoring fees. The 2019 QAP also included language regarding income bands for market analysis, extended use agreement recording requirements, and the public housing Rental Assistance Demonstration (RAD) program. There were nearly 40 changes to the North Carolina QAP in prior years. These changes were also administrative, for example additional selection criteria for development and management experience, adjusting points for neighborhood characteristics and amenities, and increasing development costs. The North Carolina Housing Finance Agency also removed targeting plans for persons with disabilities and for homeless populations. The handful of changes to the 2020 North Carolina QAP included one that addressed hurricanes: removal of language from the 2019 QAP that allowed disaster recovery funds for applications in counties declared federal disaster areas.

The 2019 QAP for South Carolina featured one specific hurricane-related change. The South Carolina State Housing Finance and Development Authority removed a provision that allocated 1 point for development sites in FEMA disaster counties. Another alteration might be related to climate change: the mandatory design criteria increased exterior wall insulation requirements from a minimum R-11 to R-13. The other nearly 20 changes, such as removing details about funding cycles, adding descriptions of Opportunity Zones, and changing tie-breaker criteria for revitalization in qualified census tracts, do not appear to directly address hurricanes or climate change.

South Carolina QAPs in prior years included more than 30 changes regarding application submission materials, odometer calculations for measuring distances, video cameras at developments, the process for reconsidering applications, and increasing development costs. Except for language added to the 2017–2018 QAP that allocated 1 point for development sites in FEMA disaster counties, which was removed the following year (see above), the changes appear unrelated to hurricanes. There were more than 100 changes to the 2020 South Carolina QAP, but none of them addressed hurricanes. One climate-change-related provision added 5 points for applications that commit to green and energy efficient sustainable building certification.

Discussion

In general, state housing finance agencies make multiple changes to their LIHTC QAPs from year to year. The types of changes address a wide range of topics, including program administration, desired distribution of housing, and special programs. Many of these changes are substantive ones, including creating or eliminating designations and preferences, raising or lowering the minimum threshold eligibility score, introducing or removing preferences for types of areas or specific locations, altering the allocation of credits to more populous and less populous parts of the state, and revising policies regarding returned credits. In addition, state housing finance agencies change the priority given to locations considered opportunity areas or having access to specific amenities, community approval, consideration of qualified tracts, and proximity to other affordable housing units (Ellen & Horn, 2018). These findings indicate that QAPs are not static documents; they evolve and respond to shifting needs and priorities.

However, the results of this study suggest that relatively few changes made to QAPs in affected states are directly related or a response to major hurricane events. To be sure, some QAPs do show clear hurricane-related changes, but these mainly reflect legislation and additional funding at the federal level, for example in the case of Hurricane Katrina and the Gulf Opportunity Zone Act. In these cases, state governments—through the QAPs published by state housing finance agencies—appear to be reacting to federal government interventions. It is rare that the agencies—again, based on the QAPs they issue—proactively initiate major LIHTC policy changes soon after a hurricane has affected the state. The changes that occur tend to involve support for rebuilding in disaster-prone areas. In other words, state housing finance agencies do not appear to alter a substantial vehicle for affordable housing development to address the future risk of hurricanes even after the state has experienced billions of dollars in damage from a recent hurricane.

There are many types of changes that could be made to QAPs to guide housing development in ways that account for hurricane risk, reduction of potential damage, and the threat of climate change. The general categories that states might consider are location, design and construction, and energy use. Possible changes include creating special programs regarding adaptation or mitigation; establishing preferences for locations based on hurricane risk and storm damage; and altering the points awarded for severe-weather-resistant building design, construction materials, and energy efficient building systems. Indeed, a few state housing finance agencies have made some of these types of changes to QAPs, primarily regarding energy use and green building. However, they have made relatively minor changes that involve adding only 1, 2, or 3 points to application scores.

There are several possible explanations for why QAPs exhibit few hurricane-related changes from year to year. One possibility is that state governments move slowly because of the need to build consensus and follow administrative procedures. In this case, QAP changes may occur eventually but the observation window is too small to detect them. The examples of Florida, Louisiana, and Texas, which have experienced multiple serious hurricanes and whose QAPs are studied here over a nearly 20-year period, suggest this is not the case. It could be that state housing finance agencies feel their QAPs are already accounting for and addressing hurricane and climate change risks, so no changes are needed. Alternatively, QAPs may not be viewed as a useful tool or the appropriate vehicle to address these risks, or perhaps the possibility of using QAPs in this way has not been recognized or seriously contemplated. Of course, it could simply be the case that QAPs are determined by political considerations and policy priorities lie elsewhere. One direction for future research is to investigate these and other possible reasons for changes to QAPs and the lack thereof.

Ultimately, the results suggest that QAPs represent a missed opportunity for states to consider hurricane risks and climate change threats in guiding housing development. Communities typically want to leave the postdisaster recovery period and reconstruction process with the sense that they are both safer and less vulnerable to future disasters (Levine et al., 2007). A key component of plans after disasters is introducing long-term resiliency issues into short-term recovery work, while recognizing implementation challenges (Berke & Campanella, 2006; Shamsuddin, 2020). Disasters present an opportunity to not only rebuild but to build back better in ways that address broader issues such as climate change, resilience, and equity (Fan, 2013; Hallegatte, Rentschler, & Walsh, 2018; UNISDR, 2015). Indeed, the postdisaster period is often viewed as a window of opportunity to integrate principles related to sustainable development and resilience (Levine et al., 2007; Schwab, Topping, Eadie, Deyle, & Smith, 1998). Sustainable, affordable housing has the potential to serve both climate change mitigation and adaptation goals, in addition to supporting urban resilience (Lovell, 2004; Mehta et al., 2020; Vale et al., 2014). Housing policy decisions after severe weather events such as tropical cyclones can decrease losses, reduce the probability of future damage, and save lives (Comerio, 1998; Vale, Shamsuddin, & Goh, 2014; Van Zandt et al., 2012). QAPs have proven to be useful tools for administering the LIHTC program; they could be valuable in addressing hurricane and climate change risk as well.

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Table A1. Qualified Allocation Plans (QAPs) by state and year.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Charley	*FL*	*FL*	*FL*	*FL*	*FL*	*FL*													
	SC	SC	SC	SC	SC	SC													
Ivan	*AL*	*AL*	*AL*	*AL*	*AL*	*AL*													
	FL	FL	FL	FL	FL	FL													
Katrina		*LA*	*LA*	*LA*	*LA*		*LA*	*LA*											
		AL	AL	AL	AL	AL	AL	AL											
Rita		*TX*	*TX*	*TX*	*TX*	*TX*	*TX*	*TX*											
		LA	*LA*	*LA*	*LA*		*LA*	*LA*											
		FL	FL	FL	FL	FL	FL	FL											
Wilma		*FL*	*FL*	*FL*	*FL*	*FL*	*FL*												
Ike				*TX*	*TX*	*TX*	*TX*	*TX*	*TX*	*TX*	*TX*								
				LA	LA		LA	LA	LA		LA								
Irene							*NJ*	n/a	n/a	*NJ*	n/a	*NJ*	n/a	*NJ*					
							NY	*NY*	n/a	*NY*	n/a	*NY*	n/a	n/a					
							CT	CT	CT	CT	CT	CT	CT	CT					
Sandy							*NJ*	n/a	n/a	*NJ*	n/a	*NJ*	n/a	*NJ*					
							NY	*NY*	n/a	*NY*	n/a	*NY*	n/a	n/a					
							CT	CT	CT	CT	CT	CT	CT	CT					
Harvey														*TX*	*TX*	*TX*	*TX*	*TX*	*TX*
														LA	LA	LA	LA	LA	LA
Irma													*FL*	*FL*	*FL*	n/a	*FL*	*FL*	*FL*
													GA	GA	GA	GA	GA	GA	GA
Michael														*FL*	*FL*	n/a	*FL*	*FL*	*FL*
														GA	GA	GA	GA	GA	GA
Florence													*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
													SC		SC		SC	SC	SC

Note. n/a = QAP not available. Italic formatting indicates more affected state(s). If states span multiple years this indicates that QAP covered those years.
Source: Authors

Table A2. Changes to Alabama Qualified Allocation Plan 2004 to 2005

Category	Description	QAP changes 2004	QAP changes 2005	Page	Notes
Housing priorities	AFHA seeks to promote		[text added]	4	"particularly in the Black Belt counties"
Application content	Market feasibility study	See notes	See notes	6	2004: "Please refer to the AHFA's Market Study Certification Form that is included in the application package for detailed market study requirements." 2005: "AHFA's Market Study Criteria is included in the application package."
Application content	Market feasibility study	See notes	See notes	6	2004: "The applicant must provide a market study demonstrating an adequate market for the proposed units. If AHFA does not agree with applicant's market study or feels that the proposed project would adversely impact existing projects or create excessive concentration, AHFA reserves the right to obtain, at the applicant's expense after prior notice, a market study or other information from an independent consultant for AHFA's consideration in resolving the matter." 2005: "The market study must demonstrate an adequate market for the proposed units and that the proposed project would not adversely impact any existing AHFA projects or create excessive concentration of multi-family units."
Application content	Financial feasibility		[text added]	7	"The financial statements required in the application must demonstrate that the Owner and Management Company have the financial capacity and experience to maintain compliance with Section 42 throughout the compliance period."
Application content	Application fee	$500	$2,000	8	
Application threshold requirements			[text added]	8	"If any of [the] following threshold requirements do not meet AHFA's requirements the application will terminate."
Application threshold requirements	Application fee		[text added]	8	"If the application fee is returned due to insufficient funds, the application will terminate. Regardless of the funding decisions, the application fee is non-refundable."
Application threshold requirements	Market study		[text added]	9	"The market study must demonstrate an adequate market for the proposed units and the proposed units will not adversely impact any existing AHFA projects or create an excessive concentration of multi-family units. If the market study does not satisfy AHFA's requirements, the application will terminate."
Application threshold requirements	Flood certification		[text deleted]	10	"from a nationally recognized flood data service or"
Application evaluation	Completeness		[text added]	10	"AHFA will not transfer information from one application file to another. AHFA will not call applicants for missing items related to scoring the application. AHFA may call applicants for clarification of any document submitted with the application."
Application evaluation	Financial feasibility		[text added]	10	"Applications that are not financially feasible at the time of submission because additional sources of funds are necessary will not be considered for funding."
Application evaluation	Financial feasibility		[text added]	11	"per unit annually (for ten years)"
Application evaluation	Financial feasibility	See notes	See notes	12	2004: "Identity of Interest is defined by HUD and is repeated in the application instructions contained in the AHFA's Multifamily Funding Application package." 2005: "Identity of Interest is defined in Section II (G) (3) of the Housing Credit Plan."
Allocations	Language	"tax credit"	"housing credit"	13	

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Category	Description	QAP changes 2004	QAP changes 2005	Page	Notes
Allocations	Ceiling		[text added]	13	"The intent of the ceilings is to promote fair and objective administration of the Housing Credit program by ensuring that no single applicant can receive an excessive share of the available Housing Credits in any application cycle. Parties that have an identity of interest are presumed to be sufficiently related for them to be treated as single applicant for purposes of the ceilings. As described below, AHFA may in its discretion identify other parties whose relationship is sufficiently close to cause them to be treated as a single applicant for purposes of the ceilings. A significant factor in AHFA's evaluation will be whether, based on the facts and circumstances, a primary purpose of a party's involvement in a project appears to be avoidance of the ceilings."
Allocations	Ceiling		[text added]	13	"For purposes of Section II (G) (3), the following relationships constitute an identity of interest for purposes of identifying related parties in order to apply the ceilings: (i) Individual persons are considered related to each other (a.) if they have any of the following direct relationships: parent, child, spouse, son in-law, daughter-in-law, father-in-law, and mother-in-law, including any such direct relationship created by marriage, remarriage, adoption, or any other legally recognized status, or (b.) if one individual is an employer, by common law or otherwise, of the other. (ii) Entities are considered related to each other (a.) if any director, shareholder, partner, member or any other type of owner of any entity would be considered a related individual (under item a. above) to any director, shareholder, partner, member or any other type of owner of another entity, (b.) if the entity has the ability to control another entity, or (c.) if the entity owns a material interest in another entity. An entity will be presumed to control another entity if it has a percentage of ownership in the other entity or the ability to appoint a percentage of the members of the other entity's governing body (i.e., board of directors, board of trustees, partners, managers, etc.) that would permit it to control the other entity either by operation of law or by agreement. A material interest means any ownership interest in excess of 20% of the stock, partnership interests, membership interests or other forms of ownership of any entity; provided, however, that ownership interests held by housing credit investors, housing credit syndicators or special administrative partners or members shall be disregarded for purposes of 20% test. (iii) Without limiting the above, a trust will be considered related to any individual or entity if any trustee, trustor, grantor, settlor, beneficiary, permissible distributee, any person or entity serving a role similar to the foregoing, or any person holding power of appointment (general or limited) over trust property would be considered related to the individual or entity under items a. or b. above. (iv) Any other relationship which, while not specifically listed above, is determined to constitute an identity of interest because it is a relationship at least as close as an identity of interest described above or because it would permit an allocation that violates the intent of the"

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Category	Description	QAP changes 2004	QAP changes 2005	Page	Notes
Allocations	Progress requirements		[text added]	14	"AHFA may grant a thirty-day extension of certain items for a fee of $1,000."
Allocations	Progress requirements	10 days	15 days	14	
Allocations	Progress requirements	30 days	60 days	15	
Allocations	Progress requirements	60 days	75 days	15	
Allocations	Progress requirements		[text added]	16	"Remit a check (no cash accepted) in an amount equal to $500 ($250 if Housing Credits are combined with HOME funds from AHFA) per unit for the project's Housing Credit Compliance Fee."
Allocations	Progress requirements		[text added]	16	"Any AHFA fee returned due to insufficient funds."
Points	Scoring system	See notes	See notes	18	2004: "If there still remains a tie, AHFA will fund the project that has received a commitment for donated land and/or existing building(s) from the appropriate municipality or county. The land and/or building(s) must be valued at $50,000 or more. Donated land and/or building(s) must have an appraisal completed by a State Certified General Real Property Appraiser indicating a value of $50,000 or more. If there is an existing building(s) on the land being donated and the building(s) are being demolished the land only must be valued at $50,000 or more in the appraisal. The municipality or county must certify in writing as part of the commitment letter that no one directly or indirectly provided any funds or other property to enable the municipality or county to donate the land and/or building(s). Also, a letter from the city attorney that the commitment is a legal and binding commitment must be provided." 2005: "If there still remains a tie, AHFA will fund the project in county with the fewest number of Housing Credit and HOME/Housing Credits (combined) projects funded in the past seven years."
Points	Project characteristics	Max 89	Max 150	18	
Points	Type of construction	Max 29	Max 44	18	
Points	Type of construction	See notes	See notes	18	2004: "A maximum of 5 points (1 point each) will be given to projects which provide extra unit/project amenities such as common laundry facilities, washer/dryer connections in each unit, gazebo, community TV, etc." 2005: "A maximum of 20 points will be given to projects which provide extra unit/project amenities."
Points	Type of construction		[text added]	18	"Points will be awarded for providing the following amenities. Only the amenities listed below will be eligible for points. 3 Points Clubhouse Washer/Dryer provided in each unit Security package (includes cameras, alarms, lighting) 2 Points Community laundry Playground Computer center (two or more computers with printer and internet access) Swimming pool Splash Center Exercise room with equipment 1 Point Dishwasher in each unit Garden area for each unit Garbage disposal in each unit Community TV with cable Microwave in each unit Basketball court Ice maker in each unit Enclosed bus stop shelter Cable hookup in each unit Gazebo Wiring for internet service Picnic area with grills Ceiling fans in living room and bedrooms Emergency pull cord/call button Washer-dryer connections in each unit"

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Category	Description	QAP changes 2004	QAP changes 2005	Page	Notes
Points	New construction		[text added]	19	"(Maximum of 15 points)"
Points	New construction		[text added]	19	"Single-family projects may receive points for having all on-site paved areas by having all concrete driveways, walkways, and a 10 foot by 10 foot back patio on all units. The streets are not required to be concrete if they meet all city or county code requirements."
Points	Rent affordability	Max 22	Max 18	20	
Points	Rent affordability	See notes	See notes	20	2004: "5 points will be given to projects, which have a commitment for $50,000 or more from the Federal Home Loan Bank for Affordable Housing Program (AHP) funds, or a commitment from HUD for HOPE VI funds, or a commitment from a city and/or county for HOME funds (AHFA HOME funds does not qualify for points)." 2005: "A maximum of 5 points will be given to projects, which have a commitment for additional subsidies from the Federal Home Loan Bank for Affordable Housing Program (AHP) funds, commitment from HUD for HOPE VI funds, HOME funds (AHFA's HOME funds do not qualify), USDA RD, or a commitment from a city and/or county for CDBG. $1,000—$1,999 per unit 1 point $2,000—$2,999 per unit 2 points $3,000—$3,999 per unit 3 points $4,000—$4,999 per unit 4 points $5,000 and above per unit 5 points"
Points	Rent affordability	See notes	See notes	20	2004: "A maximum of 5 points will be given to projects which have committed in writing to extend the low-income set-aside beyond the 15 years required by law. ° 5 points for extending 10 years (minimum 25 year low-income set-aside) ° 3 points for extending 5 years (minimum 20 year low-income set-aside)" 2005: "4 points will be given to projects which have committed in writing to extend the low-income set-aside 5 years beyond the 15 years required by law."
Points	Rent affordability	[text deleted]		20	"5 points for (project-based rental assistance, the assistance must be available for 100% of the low-income qualified units and be based on the tenant's income. For example, USDA RD and HUD programs. A Housing Assistance Payments (AHAP) contract from HUD is required when the application is submitted to receive the points.)"
Points	Rent affordability	Max 3	Max 5	20	for owner-financed project-based rental assistance
Points	Rent affordability		[text added]	20	"for owner-financed project-based rental assistance: 5 points for $50 per unit per month, 4 points for $40 per unit per month"
Points	Rent affordability	[text deleted]		21	"4 points will be given to projects which commit to renting 100% of the total units at the 50% rent level or fair market value, whichever is less throughout the compliance period. This election only restricts the rents charged and does not effect or change the income election of the property."
Points	Rent affordability	3	4	21	will be given to projects, which elect to designate 100% of the rental units for low-income housing tenants
Points	Special needs housing	Max 13	Max 10	21	
Points	Special needs housing	Max 5	Max 3	21	for specific services and activities for tenants
Points	Special needs housing	2	1	21	will be given to projects which have committed in writing to target households on the public housing waiting list
Points	Readiness issues	Max 12	Max 15	22	
Points	Readiness issues	4	5	22	"will be given to applicants with evidence of attendance at the AHFA sponsored HOME/ Housing Credit Training Seminar."

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Category	Description	QAP changes 2004	QAP changes 2005	Page	Notes
Points	Readiness issues	4	5	22	"will be given for evidence that the applicant has secured construction and permanent financing sufficient to complete the project. . .."
Points	Readiness issues	2	3	22	"will be given for evidence of availability of all utilities to the site or evidence that they will be provided. . .."
Points	Project type	Max 11	Max 16	23	
Points	Project type	3	5	23	"will be given for applicants that apply for a four percent (4%) credit only"
Points	Project type	2	4	23	"will be given to HUD and USDA RD distressed properties."
Points	Project type	1	2	23	"will be given for applicants that propose a project intended for eventual tenant ownership"
Points	Location	Max 2	Max 47	23	
Points	Location		[text added]	23	"Site Selection (Maximum 30 points) (1.) Neighborhood Characteristics (Maximum 25 points) Points will be awarded for the following services located within the specified distance of the site. Distance will be measured by odometer from the automobile entrance of the proposed project site to the closest automobile entrance to the parking lot of the applicable service. Applicant should ensure that the service is suitable for the targeted population. Points will only be awarded for the services listed below. 4 points (1 mile) Grocery store Public Transportation Hospital/Doctor Office Elementary School Daycare/After School Pharmacy/Drug Store 3 points (2 miles) Public Library Convenience Store Bank/Credit Union Post Office Dept. of Human Resources/Public Health 1 point (2 miles) Public Athletic Fields Public Swimming Pools Movie Theater Church Municipal Parks"
Points	Location		[text added]	24	"Negative Neighborhood Services 5 points each will be deducted if any of the following incompatible uses are adjacent or within ½ mile of the site. (The following list is not inclusive). Junk yard/dump Pig/chicken farm Salvage yard Processing plants Wastewater treatment facility Industrial Distribution facilities Airports Liquor store Utility substations Railroads Prisons Adult entertainment/video/theater Solid waste disposal"
Points	Location		[text added]	24	"Accessibility (Maximum 10 points Deducted) 5 points will be deducted if the condition of the streets and sidewalks are unsatisfactory. The width of the streets will be taken into consideration. 5 points will be deducted if access to the site is on a 4-lane highway."

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Category	Description	QAP changes 2004	QAP changes 2005	Page	Notes
Points	Location		[text added]	24	"Environmental (5 points) The applicant must provide a completed Phase I Environmental Site Assessment that shall conform, but not be limited to, the minimum standards as defined by the American Society for Testing and Materials Practice Standards E-1527-00 to qualify for the points. The report must be addressed to AHFA. 5 points will be awarded if the Phase I submitted with the application indicates all of the following:—No recognized environmental conditions—No environmental regulatory concerns—No further action/investigation recommended"
Points	Location		[text added]	24	"Black Belt Counties (15 points) will be given to projects located in the following Black Belt counties: Bullock Choctaw Dallas Greene Hale Lowndes Macon Marengo Perry Pickens Sumter Wilcox"
Points	Location		[text added]	25	"AHFA defines such a plan as a published document, approved and adopted by the local governing body by ordinance or resolution, that targets local funds to specific geographic areas (the geographic area cannot be the entire town or city that has adopted the plan) for low-income residential developments (serving residents at, or below, 60% of the area median income). AHFA will not consider a Consolidated Plan the same as a Revitalization Plan for the purpose of receiving points."
Points	Applicant characteristics	Max 11	Max 25	25	
Points	Applicant characteristics	3	10	25	"will be given to owners (individual(s), corporation(s), or in the case of a limited partnership, the general partner(s)) who have previous successful experience in the development of multifamily housing."
Points	Applicant characteristics	See notes	See notes	25	2004: "3 points (150+ units) 2 points (100–149 units) 1 point (50–99 units)" 2005: "10 points (1000+ units or 10+ projects) 9 points (900–999 units or 9 projects) 8 points (800–899 units or 8 projects) 7 points (700–799 units or 7 projects) 6 points (600–699 units or 6 projects) 5 points (500–599 units or 5 projects) 4 points (400–499 units or 4 projects) 3 points (300–399 units or 3 projects) 2 points (200–299 units or 2 projects) 1 point (100–199 units or 1 project)"
Points	Applicant characteristics		[text added]	25	"A maximum of 10 points will be given to applicants with sound experience as managing agents of low-income housing. This experience is defined by the highest number of units currently managed. Only those units in projects that are considered low-income units will be counted in this total. 10 points (1000+ units or 10+ projects) 9 points (900–999 units or 9 projects) 8 points (800–899 units or 8 projects) 7 points (700–799 units or 7 projects) 6 points (600–699 units or 6 projects) 5 points (500–599 units or 5 projects) 4 points (400–499 units or 4 projects) 3 points (300–399 units or 3 projects) 2 points (200–299 units or 2 projects) 1 point (100–199 units or 1 projects)"
		[text deleted]		29	"Site Selection (Maximum Loss of 13 Points) • A maximum of 10 points will be deducted from the project's score for any detrimental characteristics on or adjacent to the site exist. These include, but are not limited to, utility substations, landfills, railroad tracks, major highways, industrial plants, topography inconsistent with proposed use, etc. • A maximum of 3 points will be deducted on the following scale regarding the project's distance from a grocery store (Contains bread, milk, over the counter medicines) or pharmacy. See application instructions for the definition of services and for determining the distance from project: Distance Point Deduction Over one mile 1 point Over two miles 2 points Over three miles 3 points"

Notes. AFHA = Alabama Housing Finance Authority.
Source: Authors