Post-disaster recovery for real estate development

An analysis of multi-family investment from the perspective of a low income housing tax credit (LIHTC) project

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Abstract

The 2004 hurricane season in Florida and resulting development of low income housing tax credit (LIHTC) projects in the years following the disaster are used as a case study to examine how public policy can influence redevelopment during recovery. The extent of housing losses in Florida after four hurricanes hit within six weeks, costing billions of dollars in property damages with hundreds of thousands of low-income housing units damaged or destroyed, clearly demonstrates the risks associated with coastal development for this vulnerable population. To identify the influence of public policy on development patterns and assess the risk associated with government directives, a content analysis of Florida’s Qualified Action Plans for the LIHTC program from 2004 to 2010 was undertaken and results revealed that in the first year counties in the direct path of the hurricanes were given development preference. In 2006, the second year after the disaster event, preferences were expanded to more heavily populated counties, such as Miami-Dade. The location of new LIHTC developments built between 2005 and 2010 were then analyzed to determine how many had been approved and built in locations that would be impacted by storm surges from Category 3 or 5 hurricanes. More than two-thirds of new LIHTC projects post-2004 were constructed within storm surge boundaries, suggesting the need for proactive site planning from public and private stakeholders during the pre-construction phase of LIHTC development, or a shift in public policy to give preference to locations that are not as vulnerable to flooding.

Introduction

During disaster recovery, homeowners and businesses get the bulk of subsidies, grants, and low-interest loans to expedite recovery efforts. Owners of low-income multi-family housing face barriers that inhibit gaining access to grants or low-interest loans to help them fully participate
in rebuilding their investments. Current policies surrounding subsidies, grants, and loans do little to address the additional risks faced by owners of multi-family housing, particularly for low-income housing projects in areas at risk for natural disasters. The low income housing tax credit program (LIHTC) is the primary subsidy available to help promote development of affordable multi-family housing in the USA. It is used across the country, set by federal law but administered at the state level, to help provide affordable housing. It is useful to use this program to better understand the impact that existing policy can have on promoting real estate development and to examine the potential unintended consequences that might arise for post-disaster redevelopment for the LIHTC multi-family housing sector.

Gaining a better understanding of the historical and economic factors that have created the current conditions requires an examination of past policies and implementation for both disaster relief and housing. To that end, a history of these policies and practices in the USA is included in this chapter. A short evaluation of how an LIHTC project is typically structured is presented along with discussion of the risks and rewards from the perspective of a real estate developer. The development patterns of LIHTC projects and the effect of government policy preferences on the location of these projects will be examined with a content analysis of the Qualified Action Plans that were set in Florida in 2005 and 2006, after a particularly bad hurricane season in 2004. Risks associated with development in general and LIHTC projects in particular are then highlighted and the chapter ends with some suggestions for mitigating these risks for future LIHTC development in areas that are prone to natural disasters.

The evolution of disaster policy and affordable housing recovery

1950–1979: Disaster Relief Act and implementation of FEMA and HUD

In 1950, the Disaster Relief Act was signed into law, which put into effect a permanent disaster relief program for the USA that included general disaster relief. In 1965, Hurricane Betsy hit Florida with a six-foot storm surge that flooded Miami and Ft. Lauderdale. A few days later, it turned and hit the Gulf Coast (National Hurricane Center, 1965). The National Flood Insurance Protection Act followed in 1968 establishing the National Flood Insurance Program, which is still a primary source of funding for disaster recovery today.

In the meantime, the first authorization for production of public housing occurred in 1955. While 810,000 units were authorized for construction, only 125,000 were ultimately built. At the time, urban renewal and slum clearance projects were a priority, which resulted in the destruction of more low-income housing units than were replaced (Thomas, 1997; Teaford, 2000). This would be repeated more than 50 years later during the recovery phase of Hurricane Katrina in 2005, when 4,500 public housing units, marginally damaged by the storm, were demolished and sold to private investors for redevelopment with LIHTC and Hope VI programs. One-to-one replacement of low-income housing was not a priority, resulting in displacement of renter households (PolicyLink, 2007; Unity of Greater New Orleans, 2010).

The 1960s ushered in housing legislation that adopted affordable housing production for the elderly and the disabled as well as the support of non-profit organizations as development partners. In 1963, when Lyndon Johnson took office, his vision of a Great Society to eliminate poverty and racial injustices resulted in establishment of the Department of Housing and Urban Development (HUD) and the underfunded Model Cities Program.

Disaster recovery and housing policy merged in 1973 when responsibility for post-disaster relief and reconstruction was assigned to the Department of Housing and Urban Development
(HUD) under the Office of Emergency Preparedness (Lindell et al., 2006, p. 17). The 1970s also ushered in federal legislation establishing executive offices of technological hazards programs including Dam Safety Coordination, Earthquake Hazard Reduction Program, and the Warning and Emergency Broadcast system, among others (p. 18). The National Governor’s Association also got engaged in setting policies and procedures focusing efforts on the adoption of a comprehensive emergency management plan, particularly mitigation and recovery (Drabek, 1991, p. 18). In 1979, all federal disaster agencies were consolidated under the Federal Emergency Management Act (FEMA) including agencies under the Department of Defense, HUD, the National Weather Service (NWS), and the Executive Office of the President.

In 1974, the Community Development Block Grant (CDBG) program was created to provide state controlled subsidies for housing and urban development. By the 1980s, the private sector was heavily involved in low-income housing production with direct payments made to private developers and non-profit organizations (Schwartz, 2014) while HUD coordinated both disaster and non-disaster related housing resources for the public and private sector.

1980–2001: the growth of FEMA and HUD

Disaster legislation in the 1980s began with a response to the partial nuclear meltdown at Three Mile Island in late 1979. Legislation encompassed nuclear contingency planning, the Superfund law, and coordination at every level of government for emergency contingency plans. In 1988, the Robert T. Stafford Disaster Relief and Emergency Assistance Act was signed into law. This established federal cost sharing for planning and public assistance while assisting local and state authorities in the development of emergency management plans. Over the following three years, Hurricane Hugo in the south–east, the Loma Prieta earthquake, and Hurricane Andrew in Florida were all major disasters causing tremendous damage. In all three cases, FEMA was heavily criticized for failing to respond adequately to these events. As noted by Tierney et al., “the public expects government to respond swiftly and effectively in emergencies and has little tolerance when those expectations are not met” (Tierney et al., 2001, p. 152). During the 1990s, disaster programs began to focus on mitigation. The 1993 Hazard Mitigation and Relocation Act was the first proactive legislation to reduce flood hazards through relocation and acquisition of floodplains.

Major changes were also taking place in housing policy during the 1980s. Budget cuts forced state housing agencies to cut back on maintenance, resulting in the deterioration of low-income housing projects that had been built 20 years earlier. The low-income housing tax credit (LIHTC) program was established under the Tax Reform Act of 1986 to balance the need for low-income rental housing production against the increase in homeownership incentives that were also included in the Tax Reform Act. The goal of LIHTC was to encourage private investment in multi-family housing for low-income households by increasing equity contributions from investors and reducing debt burdens on multi-family developments so that some of the units could be leased at below market rents. The program was innovative because it moved the production of low-income housing from direct government funding to the Internal Revenue Service. Instead of direct payments, investors purchase tax credits to offset taxable income that are used to provide more equity for the low-income housing projects. Since it began, LIHTC has been used to produce over half of the multi-family rental housing constructed around the USA (Khadduri et al., 2012) with more than 2.6 million housing units being built between 2006 and 2013 according to HUD. The program is currently the single largest subsidy for low-income rental housing production (Schwartz, 2014, p. 135). A detailed explanation of the LIHTC program follows.
2001–current: low-income housing and disaster recovery

The 9/11 terrorist attacks on the World Trade Center led to the creation of the Department of Homeland Security (DHS). More than 22 agencies, including FEMA, were folded into DHS and operated under a single cabinet agency. In 2005, all emergency preparedness activities under FEMA were moved to the Office of Preparedness and FEMA was left to focus on response and recovery. When Hurricane Katrina struck in 2005, FEMA was put to the test under this new agency. In spite of multiple evacuation exercises prior to Katrina, funding shortfalls prevented FEMA from making improvements to address deficiencies.

Subsidies were available for housing recovery in the Gulf Coast states of Florida, Mississippi and Louisiana in 2005 as a response to the devastation caused by Hurricane Katrina. Businesses could apply for economic development assistance with New Market Tax Credits, CDBG, and HOME Investment Partnership subsidies through the state, and disaster loans and grants through HUD (see Table 20.1). CDBG subsidies have historically been used for housing assistance, business assistance, and reconstruction of infrastructure after disaster. Both CDBG and HOME funds have been used in conjunction with LIHTC to address low-income housing needs.

Income provisions tied to CDBG are often waived during disaster recovery allowing states to allocate additional funds for needed development. Income provisions typically require at least 70 percent of CDBG funds to benefit low- to moderate-income households but these targets have been reduced during disasters. For instance, income provisions were reduced to 50 percent after the Florida hurricanes of 2004 (Boyd, 2011).

Disaster programs and policies that favor homeowners and commercial interests during recovery do not always extend to multi-family housing developers. Owners and developers of affordable and low-income multi-family housing often struggle post-disaster because recovery programs do not meet their financial needs (Wu and Lindell, 2003). Priorities for subsidies and low-interest loans are directed toward infrastructure, economic development, and homeowners (Comerio et al., 1994; Mueller et al., 2011). A lack of incentives for investors results in housing disparity and shortages in affordable housing for several years after the initial disaster. McCarthy and Hanson (2008) found permits for multi-family housing were issued less often than for single-family units. After Katrina, even single-family housing units with less severe damage were more likely to be issued permits quicker than multi-family units with extensive damage contributing to the overall supply shortages of available low-income rental housing during recovery (McCarthy and Hanson, 2008; Unity of Greater New Orleans, 2010).

The LIHTC program

LIHTC is the biggest supply-side program for low-income multi-family housing production in the United States. LIHTC developers can combine government subsidies, such as Community Development Block Grants (CDBG) or HOME Investments Partnership Program (HOME), with the federal LIHTC program to reduce reliance on debt for housing production. In return for tax credits, developers agree to maintain a percentage of housing units at affordable rents calculated according to area median income. Tax credits are awarded annually through a competitive process. Each state uses the same basic structure but is given flexibility to identify housing preferences according to local needs.
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Table 20.1 Housing subsidies and loans for disaster recovery

<table>
<thead>
<tr>
<th>Program</th>
<th>Purpose</th>
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<tr>
<td>HOME Investments Partnerships Program</td>
<td>Provides grants to states and localities that are often used in partnership with local non-profits. Eligible activities include constructing, buying, and rehabilitating affordable housing. Funds can be targeted for rentals or home ownership. Low income households may qualify for direct rental assistance. HOME is the largest block grant program available for affordable housing.</td>
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<tr>
<td>Community Development Block Grant (CDBG)</td>
<td>Provides resources to communities for a wide range of community development needs. Annual grants are allocated to larger cities and urban counties for housing and expansion of economic opportunities. The primary beneficiaries are principally low- and moderate-income households. CDBG has multiple programs for a wide variety of activities. Disaster Recovery Assistance is a flexible grant dispersed under the program and is subject to availability.</td>
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<tr>
<td>Supplemental LIHTC</td>
<td>Supplemental LIHTC were granted by Congress after Hurricane Katrina. In some cases, credits were advanced from traditional LIHTC that were to be awarded in future years.</td>
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<tr>
<td>Federal Disaster Loans</td>
<td>Individual assistance in the form of housing, grants for personal use, low interest loans, counselling and other assistance. Public assistance is available for communities. Low interest loans for renters and homeowners may be available. Issued through the Small Business Administration (SBA).</td>
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<tr>
<td>Hazard Mitigation Grants (HMG)</td>
<td>Applicants come from state, local government, Indian tribes, and private non-profit organizations. According to FEMA, homeowners and businesses must apply through one of these applicants.</td>
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<tr>
<td>Disaster Bonds</td>
<td>Tax exempt debt instruments issued by Congress and administered by states to direct private investment dollars to disaster recovery.</td>
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<tr>
<td>New Market Tax Credits</td>
<td>Targeted tax credits to low income markets. Credits are used to encourage investment in economic development and jobs creation in low income communities.</td>
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<tr>
<td>Physical Disaster Loans</td>
<td>Administered under the SBA, Physical Disaster Loans can be used to repair or replace real and personal property. Businesses of any size are eligible. Interest rates are capped at 4% if no other financing is available or 8% if credit can be obtained elsewhere.</td>
</tr>
<tr>
<td>Small Business Administration (SBA) Loans</td>
<td>Other types of disaster loans include Home and Personal Property Loans, Economic Injury Disaster Loans, and Military Reservists Economic Injury Loans.</td>
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The process

Tax credits are awarded annually on a competitive basis according to the priorities identified by the state housing finance agency (HFA) in each state (Figure 20.1). Each year, the Internal Revenue Service (IRS) awards tax credits to each state on a per capita basis. Tax credits are managed and awarded through the HFAs who publish criteria with guidelines and preference systems in a Qualified Action Plan (QAP). QAPs are published each year with the input of
various stakeholders, including developers. When responding to disaster, priorities might include location preferences that coincide with housing losses. This was the case in Florida after the 2004 hurricanes caused devastating damage to the housing supply, which will be analyzed in more detail later in this chapter.

Developers use the QAP criteria to prepare proposals for potential LIHTC projects that are then awarded in a competitive bid process. As with most government programs, there are limited subsidies available compared to housing needs and developers have strict eligibility guidelines that must be met in order to participate. In most states, there are more proposals than funds available so the awards are very competitive. Typically, state housing agencies choose the winning proposals using either a point system or a subjective process depending on state rules.

Once a project is accepted by the HFA, tax credits are awarded to the developer who will either keep the credits for their own income taxes or find investors that can use the tax credits, often through a third-party organization called a Syndicator. The Syndicator puts together an investment fund for investors. The equity raised through the sale of tax credits typically covers development costs and reduces the debt incurred by a project. This reduction in costs is what allows the developer to charge below market rent for some of the units in the project. The goal of the tax credit program is to maximize investor participation so that debt can be minimized and rent can be kept at a below market rate for a portion of the units. Maximum tax credits are achieved when projects designate all units as affordable units.

**Figure 20.1** Key steps and entities in the LIHTC process

*Source: Modified from a diagram prepared for Congressional testimony, Danter Company, 2015.*
The value and risk of tax credits

Tax credits give investors the ability to offset future income, dollar for dollar, over a ten-year period. In return, developers agree to operate under LIHTC guidelines for 15 years. Two types of tax credits can be claimed under LIHTC, either for new construction or to renovate existing buildings (see Table 20.2). The 9 percent LIHTC covers 70 percent of new construction that does not include other subsidies. The 4 percent LIHTC funds 30 percent of new construction that can include other subsidies. It also can be used to fund the acquisition costs of existing buildings. Land, cash reserves, and some financing costs cannot be covered under LIHTC. The annual credit is derived from the development costs (qualified basis) multiplied by the applicable federal rate published annually by the IRS. Basis boosts are also set in the policies and give the HFAs flexibility to address local priorities. Boost provisions can be awarded for difficult development areas (DDAs), development in qualified census tracts (QCTs), elderly housing, disaster areas, or households with a targeted income. The Gulf Opportunity Act of 2005 (Go Zone) legislation, signed into law on December 15, 2005 after Hurricanes Katrina and Rita, designated DDAs in Louisiana, Mississippi, and Florida making them eligible for a 130 percent basis boost. The impact of the basis boosts on eligible tax credits is illustrated in Table 20.2.

Qualified action plans

A qualified action plan (QAP) is the tool used to communicate LIHTC priorities to the real estate development community. Under federal law, each state must develop a QAP annually. The QAP specifies the criteria used to select LIHTC proposals and preferred characteristics that will be given greater weight between competitive projects. The QAP process includes early input from stakeholders and advocacy groups, including LIHTC developers.

The QAP serves as an information document that explains how the LIHTC program will be administered in the context of local housing needs within established set-asides and preferences (Hollar, 2014). Set-asides are the minimum number of units that must meet

<table>
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<th>Table 20.2 Comparison of 9% and 4% tax credits</th>
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<tr>
<td><strong>9% LIHTC</strong></td>
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<tr>
<td>a. Total development costs</td>
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<td>b. LESS: ineligible costs (land, cash reserves,</td>
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<td>some financing costs)</td>
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<td>c. Eligible basis (row a – row b)</td>
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<td>d. Applicable fraction</td>
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<td>e. Qualified basis (row c × row d)</td>
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<td>f. Applicable % (AFR) as of July 2006</td>
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<tr>
<td>g. Annual credit (row e × row f)</td>
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<tr>
<td>h. Basis boost (130%)</td>
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<tr>
<td>i. Annual credit after basis boost</td>
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<td>j. Total credit over 10 years (i × 10)</td>
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established criteria, for instance the number of very-low-income units, or numbers of units set aside for families, to be eligible to be considered for the tax credits. Preferences allow states to determine specific criteria that include characteristics or amenities that are preferred by the state. Some common characteristic preferences might include housing targeted to serve rural communities, single parent families, or seniors. Preferences for amenities might be the inclusion of a business center, community room, or activity center. Federal statutes require certain set-asides and preferences to be included in QAPs, however states may incorporate additional criteria, such as set-asides for additional units for extremely low income households or specific location requirements. States can also reserve flexibility for project preferences through public policy statements and basis boosts (Gustafson and Walker, 2002). A basis boost is an additional credit bonus of up to 30 percent for projects meeting special criteria, such as building in a difficult to develop area (DDA). Basis boosts are only available to 9 percent tax credit projects, and since the Housing and Economic Recovery Act of 2008, can be awarded whenever they are needed for project viability.

**Set-asides**

LIHTC projects must meet minimum set-asides for the total number of low-income units in a project. Developers can choose to comply with either a 20-50 rule or a 40-60 rule. Under the 20-50 rule, at least 20 percent of units must be set aside as affordable to households who have incomes of 50 percent or less of area median income (AMI). The 40-60 rule requires at least 40 percent of units be set aside as affordable to households with incomes of 60 percent or less of AMI. These minimum set-asides are irrevocable and cannot be revised for the duration of a 15-year compliance period. The minimum set-aside must be met within 12 months from when the development is placed into service. Failure to maintain these set-asides during the compliance period results in the recapture of tax credits claimed by investors.

**Syndicators and investors**

Nearly all tax credits are sold to syndicators who act as an intermediary between investors and developers. Syndicators will package tax credits into funds that can include one or more developments. Several LIHTC projects can be included in a single equity fund that is sold to multiple investors. The investment funds are the source of equity dollars a developer will supplement with conventional loans. Some developers acquire additional subsidies from bonds, block grants, CBDG, HOME funds, and low interest loans. Equity raised through tax credits and other subsidies reduces the debt burden on the LIHTC property, making lower rents financially feasible. Investors benefit with a dollar-for-dollar tax credit against their future income for a ten-year period. That is, if an investor buys $10,000,000 in tax credits they will have a $1,000,000 credit against their tax liability each year for 10 years. The greatest risk to investors is the risk of recapture on previously filed tax returns if there is a period of non-compliance. In other words, if management fails to maintain the ratio of low income units for a 15-year period, investors will be required to refund any tax credits claimed in their tax filings.

**Hurricane disaster and affordable housing recovery**

When communities engage in post-disaster recovery, the initial focus is on economic development. A limited pool of resources is primarily dedicated to infrastructure and commercial development to try to expedite a swift economic recovery (Comerio et al., 1994;
Mueller et al., 2011). Studies of previous hurricane events have demonstrated that multi-family housing recovery often occurs at a slower pace than that of the single-family housing market (Comerio et al., 1994; GAO, 2010; Wu and Lindell, 2003). Homeowners have access to federal disaster assistance and low-interest loans as well as insurance coverage to carry out recovery activities. In addition, rental housing shortages are not uncommon as affected homeowners temporarily occupy available rental units resulting in an imbalance between supply and demand. This, of course, causes rental rates to increase. As a result, rising rents disenfranchise low-income families who cannot compete in the rental market.

To make matters worse, after any presidentially declared disaster in the USA, IRS policies provide some relief for investors and owners of LIHTC properties by relaxing rules for transient households. Often income limits are lifted so LIHTC housing can accommodate local property owners who need temporary housing while they repair damage to their homes. This provision amplifies the reduction in supply of housing for the low-income populations in a market.

Thus, recovery in the single-family housing sector gets underway while owners of multi-family housing face barriers that slow the process (Comerio et al., 1994). Owners of multi-family housing, particularly LIHTC, are less likely to qualify for meaningful disaster assistance so reconstruction of the damaged units is delayed. Increased risk is also a factor since the available disaster relief programs compel owners to take on additional debt in spite of constraints and limitations for increasing rental income (Wu and Lindell, 2003). This is particularly true for LIHTC properties because there are few disaster relief programs specific to multi-family housing. Of the disaster programs that are available for multi-family owners, such as disaster loans or low interest loans from the Small Business Administration (SBA), nearly all of them involve taking on additional debt. LIHTC properties constructed in communities subject to ongoing hazards, such as in coastal counties, present additional risks to taxpayers and LIHTC owners when subsidies and tax credits fund these projects on high hazard sites.

Natural disaster risk for LIHTC properties in coastal counties: the case of Florida

Urban coastal environments are particularly subject to the challenges of climate change. According to the latest Intergovernmental Panel on Climate Change (IPCC) report, Florida and Texas are the most vulnerable states in the USA and are likely to see extreme storm effects and sea level rise as a result (IPCC, 2014).

Florida has experienced exponential growth over the last 40 years. Between 1970 and 2010, Florida’s population grew 195 percent (Florida Department of Health, 2012). The effects of population growth and global warming in coastal areas intensify damage caused by extreme tropical storms and hurricanes with associated flooding and storm surges.

It is well understood that hurricanes are the most prevalent natural disaster risk for Florida. In 2004, in a span of six weeks, the state was hit with four hurricanes, costing billions of dollars in housing losses alone. Each of the four hurricanes contributed to one of the worst single years of hurricane disasters in Florida history, particularly with the devastating number of housing units damaged or destroyed as a result of storm surges and wind damage. The first to make landfall was Hurricane Charley when it hit Port Charlotte as a Category 4 hurricane on August 13. Storm surges were relatively small, not exceeding 7 feet, and reached only 6 to 7 miles from the center (Pasch, Brown, and Blake, 2011). In spite of the small storm surges, Charley caused damage estimated at $15 billion, making it the second costliest hurricane in US history.

Property damage in Florida was $5.4 billion. Nearly 95 percent of buildings in downtown
Arcadia in DeSoto County were damaged. Hardee County saw nearly 5,000 houses damaged or destroyed not including 23,000 buildings damaged near Lake Wales.

Charley was followed by Hurricane Frances which hit on September 4, in both Palm Beach and Martin counties. Frances was a Category 2 storm with winds of 105 miles per hour and rains that caused a portion of Interstate 95 to collapse. The storm surge was 6 feet along the east coast where Frances hit with total damage at an estimated at $9.5 billion, including more severe losses in the housing sector. In 2011, Frances ranked as the eighth costliest hurricane in the USA (Beven, 2014, p. 4).

When Hurricane Ivan hit the panhandle as a Category 3 hurricane on September 16, an additional $18.82 billion in damage was added to the already devastating losses. A portion of Interstate 10 collapsed as a result of the storm surge and wave action. Baldwin, Escambia, and Santa Rosa counties lost thousands of homes. Ivan was the third costliest hurricane in the USA (Stewart, 2011, p. 6). The final hurricane made landfall just ten days later, following the same path as Hurricane Frances. Jeanne was a Category 3 storm with storm surges from 3.5 feet to 6 feet along the east coast. Total damage was estimated at $7.66 billion (Lawrence and Cobb, 2014). Initial damage from all four storms was estimated at $51 billion, but as response and recovery efforts unfolded, it became obvious that these initial figures barely scratched the surface of losses in infrastructure, housing, and business assets.

According to the Housing Working Group, convened by Governor Jeb Bush to analyze storm damage, all of Florida’s 67 counties felt the impact of the hurricanes. The housing sector was expected to sustain losses of more than $213 billion with more than 700,000 homes damaged or destroyed (HWG, 2005). Households occupying 52,916 multi-family housing units registered with the Federal Emergency Management Agency (FEMA) for housing assistance. FEMA provided rental assistance to 148,803 households; Structural Housing Assistance was provided to 116,000 households. An estimated 250,000 households were in need of rental units as a result of the hurricanes. Many of these households were placed in available LIHTC units temporarily, regardless of income, creating a shortage in supply of affordable units for low-income households. In response, the Florida State Housing Finance Corporation (HFC) looked to the LIHTC program to direct housing recovery in areas that experienced significant housing losses.

After the 2004 hurricane season in Florida, HFC included additional location preferences in the 2005 and 2006 QAPs. Normally, Florida QAPs limited location preferences to small, medium and large counties in general. Specific counties were not identified in Florida QAPs in any other year from 2004 through 2010. A point system was used in Florida to rank preferences, but it was limited to the project application and unit amenities without regard for location. Instead of assigning point values to location characteristics within the QAP, Florida maintained flexibility in project selection by including specific keywords to identify preferences. Preference keywords included the phrases “targeted” and “gives preference.” Searching for these keywords in QAPs between 2004 and 2010 indicated that priorities for LIHTC were given for counties directly impacted by hurricanes Charlie, Frances, Ivan, and Jeanne in the 2005 and 2006 QAP. In 2006, some of the directly hit counties were replaced with counties that did not have severe housing losses, but did have large populations, such as in Miami-Dade. After 2006, specific county preferences were no longer identified for LIHTC development through the 2010 QAP.

Policy preferences were also expressed in statements from other agencies. After the 2004 hurricanes, Florida Governor Jeb Bush assembled the HWG to identify the extent of housing losses throughout the state. The HWG then issued policy statements that essentially supported
HFA preferences as defined in the 2005 and 2006 QAPs (HWG, 2005). In 2005, targeted statements within the QAP supported assistance for counties with the most severe housing losses, primarily coastal counties. When HWG completed their work, these were the counties identified with the most severe housing damage. In 2006, coastal counties with large populations and some rural counties were targeted in the QAP even though these counties had a smaller percentage of housing losses. The HWG report singled out all but two of these counties for significant to severe housing damage (HWG, 2005). In spite of the potential economic risk resulting from future storms, HFA and HWG preferences were primarily in coastal counties. In other words, LIHTC were earmarked for the highest risk counties for natural disasters.

**Hurricane risk for LIHTC projects in Florida**

Given the risk of storm surge as a result of hurricanes, Florida LIHTC properties are subject to significant potential financial losses when a hurricane hits. According to the Florida Finance Housing Corporation, over $201 million in housing credits have been allocated for over 53,000 affordable units in Florida since 1987. In just the two years following the 2004 hurricane season, over $65 million was awarded in tax credits for LIHTC development in Florida.

To analyze this potential loss, Hammett (2015) identified almost 45,000 LIHTC units that were constructed in Florida between 2004 and 2010 and found 74 percent of them were located in coastal counties. Using Geographic Information Systems (GIS) and a Sea, Lake, and Overland Surge from Hurricanes (SLOSH) model, Hammett modeled two possible storm hazards: an average Category 3 hurricane at median tide and a worst-case scenario with a Category 5 hurricane hitting the coast at high tide. Results indicate that slightly over 26,000 LIHTC units along the Florida coast would be subject to storm surges between 5.2 and 23.3 feet in the first scenario (Category 3 hurricane) with estimated damage of close to $1 billion ($988 million). The county with the highest financial risk was Miami-Dade with estimated damage of slightly over $300 million while Monroe County had the highest percentage of its LIHTC units at risk (98 percent).

In the second scenario (Category 5 hurricane), over 48,000 LIHTC units would be subject to storm surges between 4.2 and 37.9 feet with estimated damage of over $1.8 billion. More than half of all LIHTC units in Miami-Dade would be at risk (12,833) with estimated damage of more than $485 million.

**Additional development risk post-disaster**

In addition to typical real estate development risk, LIHTC is vulnerable to recapture risk because of complicated management and reporting requirements (Roberts, 2009). Recapture risk after disaster occurs when the required numbers of low-income units are not back online within a specified grace period. Management plays a significant role in maintaining the required number of LIHTC units, therefore management and recapture risk are closely tied when disaster strikes, especially if redevelopment subsidies are unavailable or inadequate to repair damaged units.

The risk of foreclosure increases after disaster. Typically, foreclosure risk among LIHTC is less than 1 percent even with tight cash flow margins (Reznick, 2011). However, disaster-related costs have a negative effect on performance of an LIHTC investment if rehabilitation costs fall above the break-even point for operations. Considering the low profit margins typically achieved by LIHTC, damage to units after disaster could increase the incidence of...
foreclosure if they cannot be brought back online in a reasonable amount of time. Risk of recapture due to a brief noncompliance period from downed units is reduced because the IRS typically waives compliance requirements, at least temporarily, during the disaster response and restoration period. When foreclosure does occur, IRS rules provide for an extended compliance period and recapture is again mitigated under the assumption that a subsequent owner will continue affordability status. Regardless, the risk of recapture is one of the greatest concerns for tax credit investors.

Strategies for managing private sector risk have received some attention. Harrington (2006) uses economic theory to propose catastrophic risk insurance while Kunreuther (2006) uses risk decision theory to argue for a comprehensive natural disaster insurance program. Both of these ideas increase developer costs, creating a barrier for participation because of the tight profitability margins associated with LIHTC. In a post-disaster community, rising insurance costs put negative pressure on profitability.

Conclusions

Policies that drive LIHTC housing production also drive LIHTC developers into high hazard areas creating additional risk to investors. As detailed by Hammett (2015), over 340 LIHTC developments in Florida are located within storm surge boundaries with potential flooding between 4.2 to 37.9 feet, putting more than 48,000 LIHTC units at risk from storm surge. Given that Florida averages 2.6 persons per household, this means that approximately 125,315 people live in LIHTC properties that are susceptible to significant damage in the wake of storm surges from a Category 5 storm. Millions of dollars in physical damage and financial losses are at risk, both to owners and taxpayers who subsidize these developments. Ultimately, government policy and proactive developers need to take steps to mitigate risk in hazardous storm surge areas.

As the coastal population continues to increase, policy and market forces are likely to continue to support LIHTC growth in hazardous coastal communities. Potential losses for at-risk development suggest that an assessment should be undertaken to identify solutions to mitigate risks for both public and private interests. As more is understood about the impact of climate change on coastal systems, it has become obvious that a concerted effort should be made to identify risks and adopt policies for adaptation and risk reduction techniques before development approval is given and LIHTC credits are awarded. Public and private participants should proactively analyze potential development sites and assess the storm surge risk during the pre-development stage and policies should be implemented to not allow development in low-lying areas with significant storm surge risk.

Storm surge analysis can also be used to identify existing LIHTC sites that are in storm hazard locations and would allow existing owners to take a proactive approach to address potential capital expenditures should a storm surge occur and cause major damage to existing projects. These existing LIHTC projects could then be supported by redevelopment subsidies that allow for adaptation and mitigation techniques to reduce potential damage such as the construction of artificial barriers and physical defenses to storm surge hazards. In addition, non-structural solutions could be implemented as well, such as the use of natural vegetation, protecting coastal wetlands, and creating a wide buffer with natural canopies as an aesthetic amenity.

Technology already exists that will allow local governments and LIHTC developers to identify storm surge boundaries and to mitigate potential damage by improving site analysis and building design. Additional hazard insurance can be obtained to reduce risk once existing inventory at risk is identified. Disaster grants, mitigation grants, CDBG, HOME funds, and
low-cost loans for multi-family development can be combined with LIHTC awards to encourage development in non-hazardous areas. In addition, grant programs could be developed to encourage developers toward adaptation measures for resilience in existing LIHTC developments. Cooperative efforts of public and private interests can reduce risk for LIHTC development in areas like Florida that are prone to hurricane disaster. In short, climate change is inevitable and storm surges are relatively predictable so all levels of government as well as the private sector should work to ensure that our most vulnerable citizens are not the ones put in harm’s way in the event of a hurricane.

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References

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