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### **When Retreat Is the Best Option: Flood Insurance after Biggert-Waters and Other Climate Change Puzzles, 47 J. Marshall L. Rev. 695 (2013)**

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# WHEN RETREAT IS THE BEST OPTION: FLOOD INSURANCE AFTER BIGGERT- WATERS AND OTHER CLIMATE CHANGE PUZZLES

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## I. INTRODUCTION

Commentators argue, with good reason, that flood risk polices are soft on retreat.<sup>1</sup> We Americans are more interested in fortifying our castles or building them higher than in moving out of harm's way. And that is despite warnings of rising seas and stronger storms associated with climate change.<sup>2</sup> But the impulse to stay put may be eroding. In particular, the practices and policies of the Federal Emergency Management Agency (FEMA) are gradually encouraging retreat over other alternatives. As one example, FEMA's current Mitigation Best Practice Database, the agency's new National Disaster Recovery Framework (NDRF), now contemplates retreat mechanisms. These developments are significant, but could benefit from a uniform set of principles to guide them. For a while, Congress, too, beat the drums of retreat. The Biggert-Waters Insurance Reform Act of 2012 (BW-12),<sup>3</sup> promised to remove important insurance subsidies for flood-prone

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1. See, e.g., Blake Hudson, *Reconstituting Land-Use Federalism to Address Transitory and Perpetual Disasters: The Bimodal Federalism Framework*, 2011 B.Y.U. L. REV. 1991, 2002-03 (2011) (discussing St. Louis, Missouri's retreat options); Lisa Grow Sun, *Smart Growth in Dumb Places: Sustainability, Disaster, and the Future of the American City*, 2011 B.Y.U. L. REV. 2157, 2160-61 (2011).

2. THE NATIONAL CLIMATE ASSESSMENT AND DEVELOPMENT ADVISORY COMMITTEE, THIRD NATIONAL CLIMATE ASSESSMENT 2013 (DRAFT) 8, available at <http://www.globalchange.gov/resources/reports> [hereinafter "NCA 2013 (Draft)"].

3. Pub. L. No. 112-141, 126 Stat. 958 (2012).

homes, forcing some residents to consider relocation as a cost-saving option. Two years later, in response to public backlash, Congress repealed the law's strongest retreat-based incentives. For reasons we'll discuss, that's probably just as well. But retreat as a tool of insurance reform is not likely to recede, nor should it. Congress is statutorily bound to revisit the National Flood Insurance Program (NFIP) by 2017. Given the projected rise in flood events across the country and NFIP's multi-billion dollar deficit, Congress cannot forego retreat as an option. But it must do a much better job shaping the incentives and making them fair.

In this article, we consider retreat as a strategy of hazard-risk reduction, with reference to the developments in FEMA practice and policy listed above. As global warming increases the risk of floods and other extreme events, we also see FEMA's evolving retreat strategies as an important part of the nation's climate adaptation efforts. Unfortunately, initiatives like the new NDRF and Congress's insurance reforms are developing piecemeal, with blind spots large enough to drive a tornado through. We believe that policy makers would do better to have a set of principles to guide them when considering and implementing strategies that are intended or will have the effect of encouraging retreat. In particular, we think that Congress could have avoided the embarrassing failure of BW-12 if lawmakers had more fully recognized the complex issues at stake in retreat-based policies. One aim of our analysis is to suggest what a successful reform of the NFIP might look like, setting the foundation for more detailed conversations about flood insurance as the 2017 deadline approaches.

We make our case in four parts. First, we define retreat policy in the context of the broader climate change problem, particularly the challenge of adapting to flood-related disasters caused by global warming. Second, we offer a set of principles to guide decision makers in shaping and implementing retreat-based initiatives as an adaptive solution. Third, we identify some ways that FEMA appears to be encouraging retreat-based options, paying special attention to the NDRF and to Congress's flip-flop on insurance reform. In that part, we then evaluate these developments under our recommended principles. We conclude that while reforms in disaster policy should be praised for opening up a discussion on managed retreat, there is still a long way to go.

## II. RETREAT AND THE CLIMATE TOOLBOX

### A. *The Challenge*

Climate change has become our largest environmental

problem. The phenomenon, caused mainly by human activity,<sup>4</sup> is increasing average temperatures, disrupting rain patterns, elevating the seas, and juicing up storm cycles.<sup>5</sup> In short, global warming is shaping a future that promises to be a lot hotter, wetter, drier, and weirder.

### B. Options for Adaptation

Of course, people have always adapted to changes in climate. They resist. They adjust. Or they retreat. These strategies make up the basic “climate toolbox,” now being deployed, with tremendous energy and innovation, to adapt to climate change.<sup>6</sup> Resistance might refer to coastal engineering activities that reduce the risk of flooding, erosion, or inundation of land and structures. Adjustment refers to the many ways that communities have learned to live with excess water, heat, or other stressors. On the coast, it might involve elevating buildings in flood-prone areas. In the desert, it might require building codes that emphasize passive cooling technologies and the capture and reuse of rainwater.

Retreat involves the migration of people, property, businesses, and perhaps wildlife. Its goal is to minimize hazards and environmental impacts by removing development (or animal habitat) from the most vulnerable areas. In its most extreme form, retreat means abandoning development that cannot reasonably be protected or serviced in another way.<sup>7</sup> But retreat can also mean imposing limits, such as restricting development in existing communities or prohibiting development in sensitive undeveloped landscapes.<sup>8</sup> Although in this article we address retreat in the context of flood-prone communities, the strategy might also be considered in forested areas susceptible to wild fire or desert towns parched by drought.

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4. U.S. ENVIRONMENTAL PROTECTION AGENCY, ENDANGERMENT AND CAUSE OR CONTRIBUTE FINDINGS FOR GREENHOUSE GASES UNDER SECTION 202(A) OF THE CLEAN AIR ACT; FINAL RULE, 74 FED. REG. 66496, 66497 (Dec. 15, 2009), available at <http://www.epa.gov/climatechange/endorment> (relying on scientific assessments by the U.S. Global Change Research Program, the Intergovernmental Panel on Climate Change, and the National Research Council).

5. NCA 2013 (Draft), *supra* note 2, at 8.

6. Robert R.M. Verchick & Joel Scheraga, *Protecting the Coast*, in THE LAW OF ADAPTATION TO CLIMATE CHANGE: UNITED STATES AND INTERNATIONAL ASPECTS 5-7 (Michael B. Gerard and Katrina Kuh, eds., 2012).

7. See ANNE SIDERS, MANAGED COASTAL RETREAT: A LEGAL HANDBOOK ON SHIFTING DEVELOPMENT AWAY FROM VULNERABLE 19 (2013), available at [http://web.law.columbia.edu/sites/default/files/microsites/climate-change/files/Publications/ManagedCoastalRetreat\\_FINAL\\_Oct%2030.pdf](http://web.law.columbia.edu/sites/default/files/microsites/climate-change/files/Publications/ManagedCoastalRetreat_FINAL_Oct%2030.pdf) (noting that typically governments are reluctant to employ retreat).

8. See *id.* at 85 (positing that if governments are not careful, building restrictions could constitute a taking under the 5<sup>th</sup> amendment).

### C. Retreat as an Option

The option of retreat has much to recommend it. It is precautionary, meaning it minimizes place-based risks that threaten uncertain harm to public safety and the natural environment. It maximizes investment by minimizing the need to respond to or recover from place-based disaster. It serves other related interests, including the avoidance of sprawl and the ethical desire to live consistently with the natural world.<sup>9</sup> But there are disadvantages too. Retreat can be expensive, particularly where government bears the cost of buying out owners or providing space for relocation. When residents and businesses leave, local governments lose tax revenue. Owners on the coast or river shorelines also pack political clout and may resist efforts to drive them away.<sup>10</sup> Existing laws, designed to promote opportunity and stability in ownership, also make it hard to keep or move people out. (As one example, consider the parade of post-*Kelo* reforms in state eminent domain law, designed to protect residents from forced buyouts.)<sup>11</sup> There are technical difficulties too. The extreme consequences of relocation would seem to require a convincing scientific case for climate risk. But there is still a lot that scientists don't know about the effects of climate on precipitation patterns and regional hydrology. The scientific debate about the effect of global warming on storms continues without firm conclusions.<sup>12</sup> Finally, efforts to keep people out or relocate them are highly susceptible to discriminatory motives and disparate impacts. History is replete with cautionary examples, from the aftermath of the 1928 Okeechobee flood to the aftermath of Hurricane Katrina.<sup>13</sup>

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9. See Rose A. Kob, *Riding the Momentum of Smart Growth: The Promise of Eco-Development and Environmental Democracy*, 14 TUL. ENVTL. L.J. 139, 151 (2000) (decrying the evils of sprawl); Jedediah Purdy, *American Natures: The Shape of Conflict in Environmental Law*, 36 HARV. ENVTL. L. REV. 169, 210 (2012) (praising development that is consistent with the natural world).

10. See VICKI BEEN, *Lucas v. the Green Machine: Using the Takings Clause to Promote More Efficient Regulations*, in PROPERTY STORIES 299, 301-02 (Gerald Corngold & Andrew Morriss, eds., 2d ed., 2009) (discussing the story of David Lucas).

11. DANIEL A. FARBER, JIM CHEN, ROBERT R.M. VERCHICK, AND LISA GROW SUN, *DISASTER LAW AND POLICY* 357-363 (2d ed. 2009).

12. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *CLIMATE CHANGE 2007: SYNTHESIS REPORT* 72-73 (Lenny Bernstein et al. eds., 2008), available at [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf) (noting that climate change is a certainty, but exactly how climate will change is uncertain).

13. See ROBERT R.M. VERCHICK, *FACING CATASTROPHE: ENVIRONMENTAL ACTION FOR A POST-KATRINA WORLD* 107-11 (2010) (discussing the discriminatory effects of disaster throughout U.S. history).

## II. SOME PRINCIPLES FOR MANAGED RETREAT

With these concerns in mind, we recommend some principles that should be used to evaluate policies or individual decisions that encourage retreat.

### A. *First Principle*

*The federal government should play an active role in larger-scale retreat efforts.* The need for government involvement in hazard mitigation was recognized as early as 1755 when the Portuguese imposed seismic building codes after the great Lisbon earthquake.<sup>14</sup> Today, government participates at all stages of disaster policy, from planning to emergency response to recovery. Frequently, that work is guided or supported by federal agencies. But federal officials have been reluctant to involve themselves very directly in retreat efforts.<sup>15</sup> Given the particularized knowledge required and local interests at stake, that's understandable. But where larger-scale retreat efforts are involved, federal participation is required to provide the services that state and local governments cannot. In the era of climate change, one significant service is the provision of climate projections and other scientific information necessary to understand local risk. Funding is another resource. A third way the federal government can help is in helping to control trans-border spillover effects of retreat strategies—situations where residents or jobs leave one state or region for another. Price signals in the marketplace are not enough. Government should play a role in developing risk-based information (like accurate flood maps), communicating risk in accessible ways to the public, designating or assembling land to receive new populations, and facilitating the transfer or development of needed infrastructure to receiving areas. Minority and low-income communities often bear the brunt of relocation efforts, particularly where important decisions are left to market forces.<sup>16</sup>

### B. *Second Principle*

*Decisions about and implementation of retreat options must be based on sound science. Where significant uncertainties exist, decisions should employ decision-making tools designed for contexts in which all facts cannot be known or easily predicted. Decision makers should seek flexibility and avoid path dependence.* This principle addresses the role of uncertainty in risk assessment—a significant challenge where future climate impacts are concerned. One way to combat uncertainty is through better information. Every year scientists get better at projecting future

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14. *Id.* at 1.

15. See SIDERS, *supra*, note 7, at 2.

16. VERCHICK, *supra* note 13, at 136-39.

average temperatures, downscaling climate impact models, and understanding local hydrology. Those efforts must continue. The insight they provide must be communicated in ways that are accessible to decision makers and the public. But there is a limit to how accurate scientific information can be in an area as complex as climate change. Dealing with large residual uncertainties will require new ways of assessing and managing risk. Traditional cost-benefit analysis, so dependent on ball-park probabilities, to be of value, may have to give way to multiple-scenario planning or explicit precautionary assumptions.<sup>17</sup> Uncertainty also requires a willingness to be flexible and to choose options that minimize the possibility of future regret.<sup>18</sup>

### C. Third Principle

*The choice of retreat as an option, its design, and implementation must come from a process with fair and robust public participation. This is so whether or not retreat is offered as a voluntary choice, is encouraged, or is legally mandated.* Because retreat involves interests so central to one's life, job, family, and community, public participation is key to any acceptable outcome. This is particularly so where science and probabilities do not point to any obvious course of action. Robust public participation will also insure that important local information and values are integrated into policy making.

### D. Fourth Principle

*Managed retreat should emphasize the needs of socially vulnerable populations; these include low-income and minority populations, children, the elderly, the disabled, and other similar groups.* Planners should early on identify populations of concern and consider how a managed retreat option would affect them positively or negatively. In developing a retreat and relocation plan, decision makers should think not just about avoiding undue harm to vulnerable groups, but also how to improve their baseline status in the receiving area.

### E. Fifth Principle

*Plans for retreat and relocation should be developed with involvement from both the retreating community and the receiving communities in order to insure fair and workable transitions.* Ideally, retreating and receiving communities should be located within the relevant jurisdictional lines to preserve the existing tax base and existing service flows (education, medical care, public transportation, and so on). Fulfilling this principle will often

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17. VERCHICK, *supra* note 13, at 216-22, 246-49.

18. *Id.*

require agreements between neighboring jurisdictions or involvement from a higher level of government such as the state or the federal government.

#### F. Sixth Principle

*Managed retreat should not create other significant adaptation challenges in other geographic areas and should not significantly conflict with the goals of climate mitigation.* In an era rife with uncertainty, unintended consequences are bound to pop up; but we should avoid them when we can. Removing residents from a flood plain does no good if that leads to exurban development near forests prone to wildfire. And don't forget that any new development will expand the community's carbon footprint. The point is not to *eliminate* the downside, but to identify it beforehand and minimize it. Of course, if a retreat plan ultimately causes more trouble than it solves, it should be reconsidered. Assessments like this will sometimes require looking beyond the jurisdiction directly involved to avoid trans-boundary spillovers.

### III. FEMA HEADS FOR THE HILLS

#### A. Recent History

Many of FEMA's earlier managed-retreat efforts have been completed on an ad hoc basis. Projects can best be described as a patchwork. Before any hazard mitigation planning or other coordinated efforts, most managed-retreat projects were implemented only as local, state, and federal funds became available. After a disaster, many communities would unspool projects without rhyme, reason, or plan.

Almost always, the relocation of developed arrears is first spurred by local and state governments. The federal government, after all, does not sweep into disaster-torn communities, demanding forced relocation. The federal government does offer incentives, but the impetus for managed retreat, especially before formalized federal grant programs, must come from the community itself. And many communities work diligently to reduce the number of structures in the floodplains.

Several communities stand out in their efforts. Birmingham, Alabama; Tulsa, Oklahoma; Fargo, North Dakota; and even a tiny town like Gays Mills, Wisconsin, have all used managed retreat to nearly eliminate disaster losses in their respective communities. Many of these projects used FEMA mitigation funds to assist in project completion. Birmingham successfully removed 735 structures from the floodplain over a 20 year-period.<sup>19</sup> In

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19. FED. EMERGENCY MGT. AGENCY, *Acquisition, Evaluation, and Analysis: Acquisition Successes in Birmingham*,



cooperation with the state and federal government, the city returned the floodplain to its natural function of flood retention and simultaneously saved property and lives in the process.<sup>20</sup> Tulsa also used a combination of federal, state, and local funding to acquire over 100 homes in the floodplain and reverted the area to park and a water detention site.<sup>21</sup>

Perhaps one of the most tested managed retreat projects occurred along the Sheyenne and Red Rivers in North Dakota.<sup>22</sup> From the 1970s to 2011, the city of Fargo acquired 200 properties along the rivers, funded by federal grants *and* a half-cent sales tax approved in 2009.<sup>23</sup> Recent record floods have illustrated to the city and the nation the value of managed retreat.<sup>24</sup> Currently, the city is working to acquire another 140 homes in the rivers' floodplain.<sup>25</sup>

Even the smallest of towns can implement managed retreat techniques. The village of Gays Mills, with a population of approximately 500 people, was able to pull together and relocate their community out of a floodplain.<sup>26</sup> After two 500-year flood events within 10 months, the citizens felt it was the time to move to higher ground.<sup>27</sup> Roughly 33 homes were removed from the floodplain using FEMA and state funds.<sup>28</sup> Many other federal, state, and local funds were used to relocate businesses, private residences, and government buildings.<sup>29</sup>

The National Oceanic Atmospheric Administration (NOAA) highlights two communities that have employed coastal managed retreat strategies.<sup>30</sup> The city of Pacifica, California used a strategy that combined "soft" stabilization techniques to enhance a fish habitat, reduce flooding threats and preserve the beach. In addition, they chose to remove vulnerable structures along the

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<https://www.llis.dhs.gov/content/acquisition-evaluation-and-analysis-acquisition-successes-birmingham> (last visited Jan. 15, 2014).

20. *Id.*

21. FED. EMERGENCY MGT. AGENCY, *Acquisition of Floodprone Structures*, <https://www.llis.dhs.gov/content/acquisition-floodprone-structures> (last visited Jan. 15, 2014).

22. FED. EMERGENCY MGT. AGENCY, *North Dakota City Combines Multiple Mitigation Measures*, <https://www.llis.dhs.gov/content/north-dakota-city-combines-multiple-mitigation-measures> (last visited Jan. 15, 2014).

23. *Id.*

24. *Id.*

25. *Id.*

26. WISCONSIN EMERGENCY MGT., *Moving a Town: The Story of Gays Mills*, <http://www.slideshare.net/WAFSCM/moving-a-town-the-story-of-gays-mills> (last visited Jan. 15, 2014).

27. *Id.*

28. *Id.*

29. *Id.*

30. NAT'L OCEANIC AND ATMOSPHERIC ADMINISTRATION, *Managed Retreat Strategies*, [http://coastalmanagement.noaa.gov/initiatives/shoreline\\_ppr\\_retreat.html](http://coastalmanagement.noaa.gov/initiatives/shoreline_ppr_retreat.html) (last visited August 9, 2013).

beach. The city of Ventura, California, chose a strategy which removed existing riprap, restored the beach to its natural habitat, provided for on-going beach re-nourishment, and advocated for the removal of the nearby dam.<sup>31</sup> The Ventura officials found it difficult to convince others that planned retreat would be the best economic and environmental solution to the community's problems.<sup>32</sup> A change in leadership at one key agency helped push the managed retreat alternative.<sup>33</sup>

In late 2004, FEMA endorsed a more holistic approach to managed retreat.<sup>34</sup> Emergency Support Function (ESF) #14: Long-Term Community Recovery was a support function of the National Response Framework (NRF) that coordinated the resources of federal departments and agencies to support long-term recovery of States and communities.<sup>35</sup> The primary goal was to reduce or eliminate risk from future incidents.<sup>36</sup> ESF #14 was FEMA's first real attempt to address the "whole" community with a focused recovery process.<sup>37</sup> The Emergency Support Function #14 no longer exists within the current NRF. However in 2013, FEMA released a stand-alone document, the National Disaster Recovery Framework (NDRF), which speaks directly to a holistic approach to recovery, mitigation, and managed retreat.<sup>38</sup>

### B. Current Efforts

FEMA has recently revised some policies in ways that promote managed retreat. Consider its updated policies concerning the acquisition and removal of floodplain properties that are substantially damaged. Before the FY13 Hazard Mitigation Assistance (HMA) program guidance, communities could only use a "Substantial Damage" waiver for the acquisition/demolition of properties under HMGP.<sup>39</sup> It was a stand-alone policy memo that was not incorporated into program

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31. *Id.*

32. *Id.*

33. *Id.*

34. FED. EMERGENCY MGMT. AGENCY, *Long Term Recovery*, <http://www.fema.gov/long-term-recovery> (last updated June 14, 2012).

35. *Id.*

36. *Id.*

37. *Id.*

38. FED. EMERGENCY MGMT. AGENCY, *National Disaster Recovery Framework*, <http://www.fema.gov/national-disaster-recovery-framework> (last updated May 9, 2013) [hereinafter *National Disaster Recovery Framework*].

39. FED. EMERGENCY MGMT. AGENCY, *Hazard Mitigation Assistance Unified Guidance: Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program* 102 (July 12, 2013), [http://www.fema.gov/media-library-data/15463cb34a2267a900bde4774c3f42e4/FINAL\\_Guidance\\_081213\\_508.pdf](http://www.fema.gov/media-library-data/15463cb34a2267a900bde4774c3f42e4/FINAL_Guidance_081213_508.pdf).

Damage of any origin sustained by a building whereby the cost of restoring the building to its before-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred. *Id.*

guidance. In contrast, the 2013 HMA guidance includes and expands the policy for all mitigation programs (PDM, HMGP, and FMA). Specifically, the policy provides for an “expedited cost-effectiveness methodology available for property acquisition projects when certain conditions are met”.<sup>40</sup> Structures that are declared “Substantially Damaged” as a result of riverine flooding in a Special Flood Hazard Area (SFHA) are considered cost effective for acquisition projects.<sup>41</sup>

Congress began wiring retreat measures into the National Flood Insurance Program as early as 1994. The 1994 Reform Act added the Increased Cost of Compliance (ICC) provision, which “encourages enforcement of the 50% Substantial Damage rule by providing funds to be used for eleva[tion]” or acquisition.<sup>42</sup> The 1994 Reform Act also added the Community Rating System (CRS). This provision is meant to promote and encourage communities to reduce NFIP claims.<sup>43</sup> By employing managed retreat, along with other floodplain management techniques, a community can help reduce premiums for policyholders in the community.<sup>44</sup> Unfortunately, these two provisions are not readily used. Communities generally do not want to bother with CRS requirements and insurance agents do not want to deal with ICC claims.

### *C. The National Disaster Recovery Framework*

#### *1. Description*

In 2013, FEMA rolled out its national framework for disaster recovery, the NDRF.<sup>45</sup> The document sets guidelines for state disaster-recovery plans.<sup>46</sup> It provides a process by which communities can collaborate to “restore, redevelop and revitalize . . . its . . . health, social, economic, [and] natural and environmental fabric.”<sup>47</sup> The NDRF defines core recovery principles, roles and responsibilities for officials and an overall process by which communities can rebuild safer, stronger, and most importantly, smarter.<sup>48</sup>

The NDRF includes six Recovery Support Functions (RSFs), which are similar to the “emergency” support functions in the

40. *Id.* at 48.

41. *Id.* at 48-49.

42. Extension Disaster Education Network, *National Flood Insurance Program and Reforms*, [http://eden.lsu.edu/Topics/Hazards/Floods/NFIP/Pages/NationalFloodInsurance\(NFIP\).aspx](http://eden.lsu.edu/Topics/Hazards/Floods/NFIP/Pages/NationalFloodInsurance(NFIP).aspx) (last updated Apr. 3, 2013).

43. *Id.*

44. *Id.*

45. *National Disaster Recovery Framework*, *supra* note 38.

46. *Id.*

47. *Id.*

48. *Id.*

NRF. The RSFs include community planning, economic development, health and social services, housing, infrastructure systems, and natural and cultural resources.<sup>49</sup> These functions encompass the core recovery capabilities of the federal departments, state agencies, local governments, non-profits, and other key stakeholders.<sup>50</sup> The NDRF's goal is to bring together all resources into a one-stop-shop for a community's recovery needs. At its core, the NDRF is designed to help communities pre-plan to insure that their values and community vision are not lost after a disaster. It is imperative that managed retreat principles and mitigation be considered in the pre-planning process.

## 2. Evaluation

In evaluating the NDRF against our six managed retreat principles, the NDRF addresses some, but not all. The NDRF misses key opportunities to provide communities with sound managed retreat and mitigation options. Specifically, the NDRF does a good job in addressing how government should play a role in large-scale retreat efforts, encouraging public participation and emphasizing the needs of socially-vulnerable populations. However, the NDRF does not provide for the input of neighboring communities, including those that could be on the receiving end of a relocation plan. In addition, the framework does not devote enough attention to potential spillover effects outside the jurisdiction.

The framework does an excellent job discussing how to encourage government to spearhead the recovery at all levels. It suggests that depending on the size of the disaster, the levels of government participation may vary. For larger scale events, the state and federal government may operate through a Joint Field Office (JFO)<sup>51</sup> to coordinate valuable recovery resources.<sup>52</sup>

Additionally, the NDRF is strong in its discussion of public participation. The framework focuses on community-centric technical assistance teams that work with the citizens.<sup>53</sup> Further, the NDRF calls for all community perspectives to be represented in the phases of recovery planning.<sup>54</sup> Key to any public planning process is transparency and accountability, which needs to occur

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49. FED. EMERGENCY MGT. AGENCY, *National Disaster Recovery Framework: Strengthening Disaster Recovery for the Nation* 37 (July 13, 2013), [http://www.fema.gov/media-library-data/20130726-1820-25045-5325/508\\_ndrf.pdf](http://www.fema.gov/media-library-data/20130726-1820-25045-5325/508_ndrf.pdf).

50. *Id.*

51. FED. EMERGENCY MGT. AGENCY, *supra* note 49, at 42. A Joint Field Office is operational after a Presidentially-declared disaster and houses both the state and federal government agencies to aid in disaster recovery. *Id.*

52. FED. EMERGENCY MGT. AGENCY, *supra* note 49, at 25-26.

53. *Id.* at 47.

54. *Id.* at 15.

early and often.<sup>55</sup> Finally, the framework suggests that public information should be accessible to keep all citizens informed through the recovery process.<sup>56</sup> Quality public participation is essential in legitimizing any project, especially managed retreat efforts.

Another managed retreat principle that is evident in the NDRF is an emphasis on the needs of socially vulnerable populations. The framework clearly explains to communities how to involve these populations in the planning process.<sup>57</sup> It also identifies pertinent acts and Executive Orders which communities should be mindful of during the planning process.<sup>58</sup>

Unfortunately, the NDRF lacks when evaluating against the sound science principle. Overall, science and technology are notably absent from the document. The framework discusses adaptability at a high level but does not go any further.<sup>59</sup> While it is widely understood that the NDRF is a planning guidance document, it misses an opportunity to suggest ideas and ways for communities to adapt. The framework uses key buzzwords like “resilience” and “adaptability” without giving concrete examples. In situations where small communities attempt to implement the framework on its own, these lack of examples may prove problematic. Another critique of the NDRF is that the Housing RSF does not discuss the idea of managed retreat. Overall, the Housing RSF only addresses immediate housing needs rather than examining essential citizen long-term housing needs.<sup>60</sup>

Finally, the NDRF is silent on two of our identified managed retreat principles. It does not address the receiving communities nor does it consider the possibility of causing new problems elsewhere. It is important that when planning long-term recovery, it is not done in a bubble. Floods and other disasters do not recognize political boundaries. It is important to involve adjacent communities in the planning process, whether it is response or recovery planning.

The NDRF is a good start but does have room for improvement when considering managed retreat principles. In future revisions of the framework guidance, it benefits both communities and state and federal agencies to address the key managed retreat principles, especially when deciding the best course of recovery for a community.

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55. *Id.*

56. *Id.*

57. *Id.* at 17.

58. *Id.* at 71-75.

59. *Id.* at 48.

60. *Id.* at 55-57.

#### D. *The Biggert Waters Flood Insurance Reform Act of 2012*

##### 1. *Description*

###### a. *Flood Insurance before the 2012 Reform*

Created in 1968, the NFIP offers federal flood insurance to property owners in communities that agree to adopt and enforce minimum floodplain-management regulations.<sup>61</sup> As of 2011, more than 20,000 communities participated in the program, including nearly all with significant flood hazards.<sup>62</sup> The program also identifies and maps the nation's floodplains so as to promote effective floodplain-management and to inform insurance markets of actuarial risk. Older structures that pre-date the program (and the floodplain maps) were often constructed without a full understanding of the exposed risk. For this reason, Congress elected to offer subsidized rates for these "existing buildings," which are often referred to as Pre-FIRM (Flood Insurance Rate Map) buildings. Policies for Pre-FIRM buildings now make up about a quarter of all policies in the NFIP portfolio.<sup>63</sup> (That fraction has steadily declined over the years.)

The federal government could not offer insurance at affordable rates without the accompanying risk reduction offered by mandatory floodplain-management standards. Early on those standards were set to protect against a "1-percent-annual-chance flood," more commonly (but inaccurately) known as a "100-year flood".<sup>64</sup> The standard was thought to provide a meaningful level of protection without saddling owners with extreme mitigation costs.<sup>65</sup>

As Oliver Houck wrote in 1985, "[i]t would be hard to find a program which cuts against more fundamental grains: freedom to choose where to live and build, freedom from government restriction (the federal government, at that), and freedom to maximize a profit from the land, buyer beware."<sup>66</sup> The more than

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61. FED. EMERGENCY MGT. AGENCY, *National Flood Insurance Program: Program Description*, 13 (Aug. 1, 2002), available at [http://www.fema.gov/media-library-data/20130726-1447-20490-2156/nfipdescrip\\_1\\_.pdf](http://www.fema.gov/media-library-data/20130726-1447-20490-2156/nfipdescrip_1_.pdf).

62. FED. EMERGENCY MGT. AGENCY, *National Flood Insurance Program: Fact Sheet*, 1 (May 2011), available at [http://www.fema.gov/pdf/media/factsheets/2011/mit\\_natl\\_flood\\_ins.pdf](http://www.fema.gov/pdf/media/factsheets/2011/mit_natl_flood_ins.pdf).

63. William O. Jenkins, Jr., FED. EMERGENCY MGT. AGENCY, *Oversight and Management of the National Flood Insurance Program Testimony before the Subcommittee on Housing and Community Opportunity, Committee on Financial Services, U.S. House of Representatives* (Oct. 20, 2005), available at <http://www.gao.gov/assets/120/112438.html>.

64. *Id.*

65. *Id.*

66. Oliver A. Houck, *Rising Water: The National Flood Insurance Program and Louisiana*, 60 TUL. L. REV. 61, 159 (1985).

forty years that the NFIP has muddled through is longer than many would have expected.

The program's weaknesses became apparent soon after its implementation. First, the program's subsidized rates and coverage of properties with repeated loss encouraged owners to remain in their risky locations. When rebuilding, many owners did not even redesign their structures to make them safer. Government grants intended to encourage such improvements seldom provided enough; and owners, who could continue their coverage at subsidized rates, understandably took a pass. Second, because the program was not designed to be actuarially sound, it sometimes lost money.<sup>67</sup> And in the last ten years, it lost a lot. After a parade of storms, including hurricanes Katrina, Rita, Ike, and Sandy, the NFIP is now \$24 billion in debt.<sup>68</sup> Third, the NFIP has continually struggled to provide timely and accurate floodplain maps. The reasons range from difficulties in coordinating with private contractors and local governments to external pressures imposed by developers and realty trade groups.<sup>69</sup>

Many infirmities in the law can be traced to the fact that FEMA, the supervising agency, must ultimately rely on other parties to fulfill many of the program's goals.<sup>70</sup> In the fall 2005, just weeks after hurricanes Katrina and Rita, a senior official at the Department of Homeland Security put it this way:

FEMA's role is principally one of establishing policies and standards that others generally implement on a day-to-day basis and providing financial and management oversight of those who carry out those day-to-day responsibilities. These responsibilities include ensuring that property owners who are required to purchase flood insurance do so, enforcing flood plain management and building regulations, selling and servicing flood insurance policies, and updating and maintaining the nation's flood maps.<sup>71</sup>

In 2012, a reform act sponsored by Congresswomen Judy Biggert and Maxine Waters eliminated most of the troublesome subsidies, while leaving the other structural problems intact.<sup>72</sup> By

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67. Christine M. McMillan, *Federal Flood Insurance Policy: Making Matters Worse*, 44 HOUS. L. REV. 471, 495 (2007).

68. Alex Newman, *Fixing the National Flood Insurance Program, in Three Charts*, ALJAZEERA AMERICA (Oct. 27, 2013), available at <http://america.aljazeera.com/multimedia/2013/10/fixing-the-nationalfloodinsuranceprograminthrecharts0.html>.

69. Theodor Meyer, *Using Outdated Data, FEMA Is Wrongly Placing Homeowners in Flood Zones*, PROPUBLICA, available at: <http://www.propublica.org/article/using-outdated-data-fema-is-wrongly-placing-homeowners-in-flood-zones> (last accessed Mar. 20, 2014).

70. McMillan, *supra* note 68, at 489.

71. Jenkins, *supra* note 63.

72. Jessica Grannis, GEORGETOWN CLIMATE CTR., *Analysis of How the Flood Insurance Reform Act of 2012 May Affect State and Local Adaptation Efforts*, <http://www.georgetownclimate.org/sites/default/files/>

making the NFIP “actuarially sound,” the BW-12 removed the perverse incentive that encouraged people to live in floodplains and promoted instead a policy of managed retreat. But because the reform ignored many basic issues of practicality and fairness, a backlash ensued.<sup>73</sup> In March 2014, Congress reinstated many of the subsidies BW-12 had removed.<sup>74</sup> But because BW-12 only authorized the NFIP until 2017 (an arrangement that remains intact), Congress will be forced to revisit the details of the flood insurance program in the next three years.<sup>75</sup> This offers a unique opportunity to re-evaluate BW-12’s strategy and build something more politically and economically sustainable. Our general principles on climate retreat, we think, should help steer this discussion.

#### b. Elements of the 2012 Reform

BW-12 had<sup>76</sup> modified the NFIP in three important ways by affecting subsidies, mapping, and hazard mitigation.<sup>77</sup> Most notably, the act removed subsidized rates on certain classes of structures and allows premiums to increase gradually (25% per year) until actuarial rates were achieved.<sup>78</sup> For the 81% of policyholders who already paid actuarial rates, nothing would change.<sup>79</sup> Owners of pre-FIRM multi-family dwellings (representing 4% of the total), would also not see any immediate increase.<sup>80</sup> But owners of commercial properties, vacation homes, and severe repetitive loss properties (including primary residences) would see 25% annual increases until the true risk premium was reached.<sup>81</sup> That category represents about 5% of all insured properties, or 252,851 existing policies.<sup>82</sup> Owners of pre-

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Analysis%20of%20the%20Flood%20Insurance%20Reform%20Act%20of%202012.pdf (accessed July 27, 2013).

73. See, e.g., Coral Davenport, *Popular Flood Insurance Law Is the Target of Both Political Parties*, N.Y. TIMES (Jan. 28, 2014), <http://www.nytimes.com/2014/01/29/us/politics/popular-flood-insurance-law-is-target-of-both-political-parties.html> (describing “enthusiastic bipartisan effort to gut [the Biggert-Waters Act]”).

74. H.R. 3370, 113th Cong., 2d Sess. (2014).

75. Pub. L. No. 113-89, § 3(a)(2) (2014).

76. Pub. L. No. 112-141, 126 Stat. 958 (2012).

77. Grannis, *supra* note 73.

78. Assn. of State Floodplain Managers, *Summary of Content: Biggert-Waters Flood Ins. Reform Act of 2012*, July 6, 2012, available at [http://www.floods.org/ace-files/documentlibrary/2012\\_NFIP\\_Reform/2012\\_NFIP\\_Reform\\_Act\\_ASFPM\\_Summary\\_of\\_Contents.pdf](http://www.floods.org/ace-files/documentlibrary/2012_NFIP_Reform/2012_NFIP_Reform_Act_ASFPM_Summary_of_Contents.pdf).

79. FED. EMERGENCY MGT. AGENCY, *Who Will Be Impacted by Rate Increases Nationally under Section 205?* (Dec. 31, 2012), available at [http://www.fema.gov/media-library-data/20130726-1910-25045-4019/bw12\\_impact\\_fs\\_04092013\\_natl\\_508.pdf](http://www.fema.gov/media-library-data/20130726-1910-25045-4019/bw12_impact_fs_04092013_natl_508.pdf).

80. *Id.*

81. *Id.*

82. *Id.*



FIRM properties used as primary homes would retain their subsidies until the property was sold to a new owner or the policy was allowed to lapse. That category represents 10% of the total, or 578,312 policies.<sup>83</sup>

In addition, BW-12 made much needed changes to the mapping NFIP's project. The act reestablished the Technical Mapping Advisory Council. The Council's main task is to provide recommendations to FEMA about how to update and improve the FIRM process.<sup>84</sup> Other tasks included finding ways to streamline and improve the cost-effectiveness of the mapping process, data collection, distribution, and dissemination.<sup>85</sup>

The other mapping component of the act included the National Flood Mapping Program. The act required that flood maps show 100-year and 500-year floodplains for all populated areas, areas of possible growth, and areas with risk behind levees or below dams.<sup>86</sup> Reforms also required that new flood maps use the most accurate topography and elevation data available, as well as require new ground elevation data when necessary.<sup>87</sup> BW-12 also required FEMA to notify property owners when the properties are included in the floodplain or removed from it. Additionally, Congressional members are to be notified when their districts or states are affected by a map change.<sup>88</sup>

BW-12 authorized four hundred million dollars for flood mapping from 2013-2017 and limitations are removed on state contributions for updated flood mapping. Finally, the Act required a study on federal interagency coordination on flood mapping, including collection and utilization of data among all governmental users.<sup>89</sup>

As for mitigation programs, the BW-12 consolidated programs for Repetitive Flood Claims (RFC), Severe Repetitive Loss (SRL), and Flood Mitigation Assistance (FMA) and appointed ninety million dollars per year to fund them.<sup>90</sup> Areas of "residual risk" meant areas "behind a levee or near a dam or other flood control structure; and that would be subject to flooding in the base flood if not for the protective structure".<sup>91</sup> Owners of property in residual risk areas were not required to purchase flood insurance.<sup>92</sup>

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83. *Id.*

84. Assn. of State Floodplain Managers, *supra* note 69, at 2-3.

85. *Id.*

86. *Id.*

87. *Id.*

88. *Id.*

89. *Id.*

90. *Id.*

91. *Id.*

92. *Id.*

## 2. Reform of the Reform

In the spring of 2014, Congress blunted the impact of BW-12 by repealing its most dramatic changes and delaying most “actuarial” reform until 2017. This turn of tide can be credited, at least in part, to Hurricane Sandy.

President Obama signed BW-12 on July, 6, 2012, one month into hurricane season. In states outside the Gulf of Mexico’s storm belt, public debate had been limited. But that changed after Sandy, the largest Atlantic hurricane on record,<sup>93</sup> plowed into the Eastern Seaboard. As recovery crews in New York and New Jersey appeared regularly on the evening new, Americans everywhere gave insurance reform a second look.<sup>94</sup> Around that time FEMA also began rolling out its updated flood maps, showing homeowners and developers what “actuarially sound” premiums in accurately defined flood plains would really mean. For homeowners in pre-FIRM structures or in newer homes now drawn into flood plains, the news was alarming. In Queens, New York, residents recovering from Sandy worried that a \$458 annual premium could explode to \$15,000.<sup>95</sup> Residents of Plaquemines Parish, Louisiana, who are still rebuilding after Hurricane Isaac (2012), were bracing for increases of up to \$28,000 per year.<sup>96</sup> Preliminary flood maps in South Hampton Roads, Virginia, were expected to increase insurance premiums there up to 850%.<sup>97</sup>

Instinctively, politicians began backing away. Congresswoman Maxine Waters, the law’s co-author, expressed outrage over the expected increases and (rather unconvincingly)

93. Danielle Ivory, *Hurricane Sandy’s \$180 Million Federal Tab Tops Cost of Irene*, WASH. POST (Dec. 2, 2012), [http://www.washingtonpost.com/business/economy/hurricane-sandys-180-million-federal-tab-tops-cost-of-irene/2012/12/02/940f7fb4-39a6-11e2-8a97-363b0f9a0ab3\\_story.html](http://www.washingtonpost.com/business/economy/hurricane-sandys-180-million-federal-tab-tops-cost-of-irene/2012/12/02/940f7fb4-39a6-11e2-8a97-363b0f9a0ab3_story.html).

94. See Scott Gurian, *Putting Biggert-Waters Flood Insurance Reform Act in Perspective*, NJ SPOTLIGHT (Nov. 12, 2013), available at <http://www.njspotlight.com/stories/13/11/11/explainer-putting-biggert-waters-flood-insurance-reform-act-in-perspective> (discussing the Biggert-Waters Reform Act and the effect it will have on homeowners affected).

95. See Jenny Anderson, *Outrage as Homeowners Prepare for Substantially Higher Flood Insurance Rates*, N.Y. TIMES (July 28, 2013), available at <http://www.nytimes.com/2013/07/29/nyregion/overhaul-and-a-hurricane-have-flood-insurance-rates-set-for-huge-increases.html?pagewanted=all> (discussing the drastic increases in flood insurance premiums and the local reactions to these increases).

96. See Juliet Linderman, *Parish Presidents Band Together to Fight against Biggert-Waters, Flood Insurance Rate Hikes*, NEW ORLEANS TIMES-PICAYUNE (May 17, 2013), available at [http://www.nola.com/environment/index.ssf/2013/05/parish\\_presidents\\_band\\_togethe.html](http://www.nola.com/environment/index.ssf/2013/05/parish_presidents_band_togethe.html) (discussing the reaction of homeowners when confronted with the incredible increase in the cost of flood insurance).

97. Sarah Kleiner Varble, *Cost of Flood Insurance Poised to Rise for Thousands*, VIRGINIAN PILOT (Sept. 24, 2013), available at <http://hamptonroads.com/2013/09/cost-flood-insurance-poised-rise-thousands>.

blamed the problem on FEMA.<sup>98</sup> Governor Chris Christie invoked the urgency of storm recovery. “[F]oisting the additional burden of a flood-insurance rate increase on home and business owners as currently proposed,” he wrote, in a letter to Congress, “would be financially devastating.”<sup>99</sup>

Waters later maintained that no one in Congress ever anticipated the “harm and heartache” the reform act would cause. But the claim is dubious.<sup>100</sup> In 2008, the Government Accountability Office (GAO)—Congress’s own research service—predicted exactly this kind of crisis if lawmakers chose to remove flood insurance subsidies without properly providing for the transition.<sup>101</sup> Fearing that soaring premiums would drive homeowners out of the market, the GAO recommended ameliorating efforts, including expanded mitigation efforts and subsidized premiums based on financial need.<sup>102</sup> But these recommendations, both of which would have cost more money, were not included in the final bill.

Pressures from local and state governments, interest groups like the National League of Cities, National Association of Homebuilders, the National Association of Realtors, and homeowners led to the 2014 reform. The governments and private interests feared the ramifications of increased homeowner flood insurance policies under BW-12. The opponents of BW-12 supported new legislation that “would help stop, slow or reverse the skyrocketing flood insurance premium rate increases called for by BW-12.”<sup>103</sup> Opponents wanted new legislation that would take steps to resolve unintended consequences of BW-12, including premium spikes and impacts on the sale, construction, and remodeling of homes across the nation.<sup>104</sup> That legislative fix, called the Homeowners Flood Insurance Affordability Act

98. Kathleen Pender, *Backlash over Changes in Flood Insurance*, S.F. CHRON. (Nov. 16, 2013), available at <http://www.sfgate.com/business/networth/article/Backlash-over-changes-in-flood-insurance-4988143.php>.

99. Gurian, *supra* note 84 (quoting Gov. Chris Christie).

100. Laura Vecsey, *Coastal Area Residents Stunned by Flood Insurance Rate Hikes*, FORBES (Oct. 22, 2013), available at <http://www.forbes.com/sites/zillow/2013/10/22/coastal-area-residents-stunned-by-flood-insurance-rate-hikes> (quoting Rep. Maxine Waters).

101. U.S. Gov’t Accountability Office, *Options for Addressing the Financial Impact of Subsidized Premium Rates on the National Flood Insurance Program* (Nov. 2008), available at <http://www.gao.gov/assets/290/283427.pdf> (hereinafter “GAO Report”).

102. *Id.* at 23.

103. NAT’L LEAGUE OF CITIES, *Federal Advocacy Update* (Feb. 28, 2014), available at <http://www.nlc.org/influence-federal-policy/resources/federal-advocacy-update/federal-advocacy-update-week-ending-february-28-2014>.

104. Natl. Ass. of Homebuilders, *It’s All About Boosting Your Bottom Line*, <https://www.nahb.org/generic.aspx?genericContentID=221337&print=true> (last visited Mar. 23, 2014).

(HFIAA),<sup>105</sup> eased through both houses of Congress and was signed into law on March 21, 2014.<sup>106</sup>

The HFIAA does not quite repeal BW-12, but it makes significant changes. The Act, for instance, *retains* the 25% increase in annual premiums for certain properties, namely, non-primary residences, businesses, and those marked by “severe repetitive loss.”<sup>107</sup> But for properties outside those categories, the Act *reduces* annual increases to *no more than* 18%.<sup>108</sup>

The HFIAA also reinstates the NFIP’s original grandfathering provision, meaning homes that complied with previous flood maps cannot be charged higher premiums when maps are updated to reveal greater risk.<sup>109</sup> It also repeals the provision that required an immediate hike to actuarial levels when a homeownership changes hands.<sup>110</sup> The HFIAA retains the “best science” mapping reforms of BW-12. But it strengthens community participation in the mapping process by supplementing notice and comment procedures and reimbursing individuals for successful appeals of mapping designations.<sup>111</sup> The HFIAA also recognizes a wider range of sensible “flood proofing” techniques (beyond elevation of the structure) in order to accommodate the realities of older urban buildings.<sup>112</sup> BW-12 had required FEMA to study how to increase participation in the insurance program as well as how to make it more affordable. The HFIAA gives FEMA a two-year deadline and increases the funding for that work from \$750,000 to \$3 million.<sup>113</sup>

BW-12 re-authorized the National Flood Insurance Program (NFIP) through September 30, 2017.<sup>114</sup> Before BW-12, the NFIP had been operating under stopgap extensions and shutdown twice for several weeks.<sup>115</sup> Under HFIAA the NFIP must still be

105. Pub. L. No. 113-89, § 1(a) (2014).

106. Bruce Alpert, *President Obama Signs Flood Insurance Bill into Law*, NEW ORLEANS TIMES-PICAYUNE (March 21, 2014), [http://www.nola.com/politics/index.ssf/2014/03/do\\_not\\_run\\_president\\_obama\\_sig.html](http://www.nola.com/politics/index.ssf/2014/03/do_not_run_president_obama_sig.html).

107. Pub. L. No. 113-89, § 5(b)(5) (2014); Dan Farber, *Sea Level Rises, Premiums Not So Much*, LEGAL PLANET BLOG (March 24, 2014), <http://legal-planet.org/2014/03/24/sea-level-rises-premiums-not-so-much/>.

108. Pub. L. No. 113-89, § 5(b)(5) (2014); Farber, *supra* note 108; Alpert, *President Obama Signs Flood Insurance Bill*, *supra* note 107.

109. Pub. L. No. 113-89, § 4(a) (2014); Farber, *supra* note 108; Alpert, *President Obama Signs Flood Insurance Bill*, *supra* note 107.

110. Pub. L. No. 113-89, § 3(a)(1) (2014); Farber, *supra* note 108; Alpert, *President Obama Signs Flood Insurance Bill*, *supra* note 107.

111. Pub. L. No. 113-89, §§ 18(a), 30 (2014).

112. *Id.* at § 26.

113. *Id.* at § 16(c).

114. Pub. L. No. 112-141, § 100203(b), 126 Stat. 958 (2012).

115. See NAT’L ASSOC. OF REALTORS, *Legislative Analysis*, <http://www.realtor.org/topics/national-flood-insurance-program-nfip/legislative-analysis> (last visited Mar. 23, 2014).

reauthorized by 2017.<sup>116</sup> With a deficit of more than \$24 billion, it seems inevitable that in the near future we will see new proposals to make the NFIP actuarially sound and, in some cases, to encourage managed retreat. That's desirable. An examination of what BW-12 got right and what it got wrong can help researchers and policy makers shape that debate.

### 3. Evaluation

#### a. BW-12 before the HFIAA

How does the BW-12 look in light of our six principles for managed retreat? There are a few wins, some big losses, and matches yet to be determined. In the final analysis, the 2012 reform was much more about controlling government losses than reducing public risk. While saving taxpayer money is a good thing, reforms should have been led by concerns for public safety, followed by responsible efforts toward program solvency.

Taking up our first principle on the importance of federal participation, BW-12 too often left FEMA on the sidelines. Local enforcement of floodplain-management regulations and building codes have always been the weak spot in the NFIP's risk-reduction strategy. And, despite mandates that most owners in floodplains carry insurance, the program has never had deep enough penetration among at-risk owners. Indeed, NFIP's implementation, as Houck once noted, is exactly the opposite of what you would want—strong in lower risk communities and soft in higher-risk communities.<sup>117</sup> With a strapped budget and weak authority, FEMA can hardly be blamed for this contradiction. And BW-12 did little to change it.

Phasing out subsidized premiums would surely have spurred retreat in some areas, but there is no reason to suggest retreat would be uniform, well-conceived, or "managed." People hit with high premiums would have to make choices. Those who could afford it would continue to pay. Others would move. But many, we suspect, would have stayed put and dropped out of the insurance market entirely, leaving the cost of the next bailout to taxpayers. In neighborhoods where the cost of insurance makes houses unsalable, housing markets would have collapsed and owners would have seen the value of their largest family asset disappear overnight. Communities and social relationships might have frayed or disintegrated. Neighborhoods on higher ground might have seen their populations suddenly increase, with few resources to manage the influx.

On a positive note, BW-12 did add heft to federal mapping requirements, an elaboration of federal responsibility that brings us

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116. Pub. L. No. 113-89, § 3(a)(2) (2014).

117. Houck, *supra* note 66, at 158.

to the second principle, concerning the use of sound science and risk communication techniques. Accurate and current flood maps are vital to effective risk-mitigation strategies. By insisting on an expert-driven advisory council and use of the most accurate elevation data, the act opened the door for the use of climate projections in developing new maps. Such a move, which has never before happened, would instantly bring projected climate impacts into the local land-use decisions of thousands of American communities. From the perspective of climate adaptation, this opportunity is the most significant part of the act.

Still, we must remain cautious. We doubt, for instance, that FEMA, on its own, will be able to meet the demand for science-based information—particularly climate-based information—and technical assistance. Without deeper relationships with agencies studying climate (for instance, NASA, NOAA, and the EPA), FEMA could easily be overwhelmed. In addition, decision-making tools used by FEMA continue to be overly reliant on benefit-cost analysis with too little precaution built in to acknowledge uncertainty. Benefit-cost analysis does not account for the uncertain but real consequences of climate change. In turn, we fear that the rigidity of benefit-cost analysis will inhibit sensible climate change retreat and mitigation-based projects .

Our third principle, emphasizing robust public participation, was essentially ignored in the Biggert-Waters reform. There was no new opportunity for the public to engage in planning issues related to retreating or receiving communities. The expert-driven mapping process, which we otherwise like, did not formally involve community members as participants. And the public debate over the Biggert-Waters bill virtually ignored the effects of skyrocketing premiums on certain communities.

BW-12 ignored the needs of socially vulnerable populations as well. Many floodplain communities, in suburban Sacramento, the rural Bread Basket, or coastal Louisiana are not the playgrounds of the rich, but the working-class neighborhoods whose low property values attracted and maintained residents over time. The NFIP did not serve these communities well by creating perverse incentives for them to stay put without making responsible investments in structural mitigation. It did not serve them well by turning a blind eye to lax local enforcement of zoning rules and building codes, or by ignoring the importance of current and accurate mapping.

But cutting subsidies adds only insult to injury. The strategy could lead to sudden instability in local housing markets and push financially strapped owners out of the insurance market altogether, increasing their vulnerability. Delaying implementation, the approach now being debated in Congress, would do little to solve the actual problem and could discourage policyholders from taking risk

mitigation measures.<sup>118</sup> The better solution would be to offer premium discounts (or, alternatively, vouchers) low-income households and to create a generous loan and grant program to encourage risk mitigation.<sup>119</sup> In more extreme cases, buyouts should be considered. It simply makes no sense to foist the costs of bad government policy on the backs of stressed out homeowners.

Our fifth and sixth principles both involve attention to unintended consequences. We want policy makers to involve receiving communities into retreat-based efforts. We think it crucial that incentives to relocate be undertaken so as not to compromise resilience efforts or carbon reductions in other communities. BW-12 is silent on these issues, relying instead on one braying market signal—increased insurance premiums—to do the work.

#### b. BW-12 after the HFIAA

The HFIAA is not so much a reform of the program as it is a retrenchment. Still we have some brief points to make. To no one's surprise, the HFIAA continues to keep FEMA and other federal actors on the sidelines. Without better code enforcement, mitigation assistance, and market penetration, price signals can only go so far. Congress should be praised for preserving annual premium increases (established in BW-12) of 25% for commercial properties, vacation homes, and properties marked by severe repetitive loss. Congress wins points for expanding community involvement in the mapping process. But it will be up to FEMA to maintain the delicate balance between honoring public participation and defending the use of "best science." The HFIAA is correctly concerned with the financial hardship that less affluent homeowners faced under BW-12. The 18% limit on individual properties, the return to grandfathering, the return to portable subsidies (in the event of property transfer), and the premium refunds for higher payments since 2012 will all lessen the economic burden of thousands of households.

These changes seem calculated to appeal to the middle class more than the poor. Flat limits on premium hikes are by nature regressive: on the margin they benefit wealthier households more. In addition, low-income households are much more likely to rent.<sup>120</sup> Rental properties are not covered by the 18% cap, but

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118. Carolyn Kousky & Howard Kunreuther, *Addressing Affordability in the National Flood Insurance Program* (Aug. 2013), available at <http://www.rff.org/rff/documents/RFF-IB-13-02.pdf> (issue brief by Resources for the Future and the Wharton Risk Management and Decision Processes Center).

119. See *id.* (discussing the affordability and the feasibility of the program); GAO Report, *supra* note 91, at 23.

120. Joint Center for Housing Studies, *America's Rental Housing: Evolving Markets and Needs at 3* (2013),

rather seem governed by the 25% cap that remains in place for commercial properties.<sup>121</sup> The effects of these policies on low-income populations should be watched carefully. The HFIAA, in fact, requires FEMA to review premium effects on “residences” (which we think should be interpreted to include rental properties as well as owner-occupied homes) and report affordability concerns to Congress.<sup>122</sup>

While we commend Congress’s concern for affordability, we don’t pretend this fix is perfect, or sustainable in the long term. A better approach would have been to scale premium hikes to a property owner’s ability to pay, with modifications to addresses rental properties as well. Or Congress could have left BW-12 intact, but added a subsidy program, granting affordability vouchers to lower-income households or landlords serving lower-income communities to be used to pay part of an increased premium. The subsidy, however structured, would have to be phased out over some reasonable time in order to encourage people mitigate or eventually retreat.

This brings us to most significant criticism of the HFIAA: it does little to reduce physical flood risk or to provide the means for needy households to mitigate or retreat. Those hard policy choices have instead been put off until 2017.

#### 4. *Recommendations for Reauthorization in 2017*

The failures in BW-12 and the HFIAA can almost all be traced to a single mistake. When Congress contemplated changes to the pre-2012 NFIP, it was not thinking in terms of designing affordable and managed retreat. It was stanching a hemorrhage—a flow of billions of dollars in red ink pouring out of a subsidized insurance program. But the nation needed more than a tourniquet. It needed a long-term strategy focused on not only hedging loss, but on increasing community resilience. As NFIP reauthorization approaches in 2017, lawmakers must put community resilience first. Any insurance reform must include retreat-based strategies. But those strategies must go beyond simple price signals. A fair and effective retreat-based strategy would expand the role of government monitoring and enforcement, remain committed to the best science (while arming agencies with the means to adequately interpret that science and act upon it through appropriate decision-making processes), expand opportunities for public involvement, and carefully address affordability issues to make sure that housing markets do not collapse and that households have incentives to stay in the insurance market. FEMA should be

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[http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/jchs\\_americas\\_rental\\_housing\\_2013\\_1\\_0.pdf](http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/jchs_americas_rental_housing_2013_1_0.pdf).

121. Pub. L. No. 113-89, § 5(b)(5) (2014); BW-12, at § 100204 (2).

122. *Id.* at § 29.



encouraged to anticipate migration flows and work with local communities to accommodate such relocation.

## V. CONCLUSION

For most of its history, FEMA has been unable, and occasionally unwilling, to address property loss in the long term. Instead the agency has focused on the prompt bail-out and the quick fix. But in an era of soaring claims and rising seas, that strategy cannot be sustained. The system needs reform.

On a positive note, the federal government should be praised for assuming a more active role in retreat-based initiatives. The NDRF is a starting point for communities to begin thinking about how to truly address their reoccurring disaster issues. For the first time through the NDRF, FEMA conveys to the public that disaster recovery planning is as important as disaster response planning. However, FEMA missed an opportunity in not providing possible retreat-based projects when implementing their disaster recovery plans. Pre-disaster planning is the best time for communities to consider these important decisions; not when community officials are knee-deep in floodwaters.

On the key issue of flood insurance, Congress has short-suited FEMA—and the American public—once again. BW-12, while correct in emphasizing actuarial soundness, did not sufficiently consider the effect that skyrocketing flood insurance rates and the effect it would have on socially vulnerable communities. Resulting premium hikes seemed likely to drive some low-income owners out of the insurance market, break up cohesive neighborhoods, and cause a housing bust in coastal communities. The HFIAA repealed the most dramatic changes introduced by BW-12. But that left the insurance program in most ways back to where it was before 2012. Real reform was postponed until 2017. All this is a debacle to be sure. But the silver lining is that lawmakers have nearly three years to put something better in its place. It's time to get to work.