

MANAGING THE NEXT DELUGE: A TAX SYSTEM APPROACH TO FLOOD INSURANCE

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The National Flood Insurance Program (NFIP) has fallen short in fulfilling its promise as a social safety net for flood loss victims. In place of the NFIP, this Article proposes a mandatory social insurance plan that would harness the strengths of the federal taxing authority to provide basic relief for flood losses occurring at an individual's primary residence. Any plan for addressing flood loss must navigate hotly debated, competing views about government intervention, redistribution, private markets, environmental protection, and property rights. This Article argues that government intervention in flood loss relief is inevitable, at least in the foreseeable future, and that the focus of that intervention should be on the ex ante provision of a social safety net. The program proposed in this Article is also intended to provide additional levers for addressing the complexities of flood loss, including the reduction of negative environmental externalities, and to provide the impetus needed for harmonizing existing tax provisions and grant programs.

I. INTRODUCTION

Early on the morning of August 30, 2015, the life of Alice and her son will change forever when floodwater rips through the ground floor apartment rented by Alice. Miraculously, Alice will have sufficient

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warning of the imminent collapse of a dam that she and her son will be able to escape with their lives.¹ Many of the personal possessions that will be destroyed in the disaster are irreplaceable — the first baby tooth lost by her son and saved by Alice, the family photographs that Alice never has had the time or money to digitize and upload to the cloud, the souvenirs Alice purchased on a road trip taken many years ago when times were better. Alice will, however, be able to take some comfort in the knowledge that with each paycheck she has received over the past three years, she has been participating in a national flood loss security plan — a plan that will now help her in making a dignified fresh start.

If, however, the National Flood Insurance Program (NFIP) continues on its present course, the outcome for Alice may well be very different. Without new legislation, the program will not even exist in 2015; in 2010 the program briefly lapsed,² and in 2011 the program has been extended for multiple short-term periods with the most recent extension ending on December 23, 2011.³ Even if Congress acts to extend the current version of the NFIP, Alice will almost certainly not have purchased flood insurance because of the low participation rates associated with the NFIP. Instead, Alice will likely be scrambling for *ad hoc*, piecemeal post-disaster assistance.⁴ She may think back to the news coverage of ten years before⁵

¹ See Henry Fountain, *Danger Pent Up Behind Aging Dams*, N.Y. TIMES, Feb. 22, 2011, at D1, available at <http://www.nytimes.com/2011/02/22/science/22dam.html?pagewanted=all> (“[O]f the nation's 85,000 dams, more than 4,400 are considered susceptible to failure . . .”).

² See Rebecca Mowbray, *Lapses in National Flood Insurance Program Bring Policy Renewals to a Halt*, NOLA.COM (June 30, 2010, 6:53PM), http://www.nola.com/business/index.ssf/2010/06/lapses_in_national_flood_insur.html.

³ As of December 21, 2011. See Resolution Making Further Continuing Appropriations, Pub. L. No. 112-68 (extension through Dec. 23, 2011); Resolution Making Further Continuing Appropriations, Pub. L. No. 112-67, 125 Stat. 769 (extension through Dec. 17, 2011); Consolidated & Further Continuing Appropriations Act, 2012, Pub. L. No. 112-55 § 101, 125 Stat. 552 (extension through Dec. 16, 2011); Continuing Appropriations Act, 2012, Pub. L. No. 112-36 § 130, 125 Stat. 386 (extension through Nov. 18, 2011); Continuing Appropriations Act, 2012, Pub. L. No. 112-33, 125 Stat. 363 (extension through Oct. 4, 2011); National Flood Insurance Program Reextension Act of 2010, Pub. L. No. 111-250, 124 Stat. 2630 (to be codified as amended at 42 U.S.C. § 4026) (extension through Sept. 30, 2011). Additional extensions have been proposed, including one that would extend the NFIP through May 2012. See H.R. 3628, 112th Cong. (2011); S. 1548, 112th Cong. (2011).

⁴ See Christine A. Klein & Sandra B. Zellmer, *Mississippi River Stories: Lessons from a Century of Unnatural Disasters*, 60 SMU L. REV. 1471, 1473

and realize that she has become trapped in her own version of Hurricane Katrina.

Flood losses are only likely to escalate in the coming years.⁶ Before the next massive flood occurs⁷ — indeed before the next flood that devastates an individual life occurs — Congress should enact a new program for flood loss relief that provides a better social safety net than the current NFIP. This Article suggests a mandatory social insurance plan that

(2007) (“Too often, those who suffer most are the poorest members of society. . . .”). Cf. Saul Levmore & Kyle D. Logue, *Insurance Against Terrorism—And Crime*, 102 MICH. L. REV. 268, 277 (2003) (predicting that “public and charitable relief will more likely be forthcoming if there is (or is perceived to be) less than full private insurance.”).

⁵ Hurricane Katrina made landfall on August 29, 2005, and the levees failed on August 30, 2005. See Joseph B. Treaster & N.R. Kleinfield, *Hurricane Katrina: The Overview; New Orleans Is Inundated As 2 Levees Fail; Much of Gulf Coast Is Crippled; Toll Rises*, N.Y. TIMES, Aug. 31, 2005 at A1, available at <http://query.nytimes.com/gst/fullpage.html?res=940CE4DF1731F932A0575BC0A9639C8B63&pagewanted=all>; Joseph B. Treaster & Kate Zernike, *Hurricane Katrina Slams into Gulf Coast; Dozens Are Dead*, N.Y. TIMES, Aug. 30, 2005, at A1, available at <http://www.nytimes.com/2005/08/30/national/30storm.html?pagewanted=all>.

⁶ See HOWARD C. KUNREUTHER & ERWANN O. MICHEL-KERJAN, AT WAR WITH THE WEATHER: MANAGING LARGE-SCALE RISK IN A NEW ERA OF CATASTROPHES 4 (2009) (explaining that “development in hazard-prone areas and increased value at risk” are key factors and climate change is “of growing concern”); Adam F. Scales, *A Nation of Policyholders: Governmental and Market Failure in Flood Insurance*, 26 MISS. C. L. REV. 3, 6 & n. 12 (2006) (describing how development has increased the cost of floods, though “global warming or cyclical climate changes may explain part of this increase”).

⁷ Since the original draft of this article was written, near-record setting water levels along the Mississippi River have exacted their toll, including the opening of spillways to flood purposefully rural areas in order to avoid catastrophic losses in larger metropolitan areas. See, e.g., Christine Hauser, *Flooding Takes Vast Economic Toll, And It's Hardly Done*, N.Y. TIMES, May 18, 2011, at A11; Campbell Robertson, *Louisiana Spillway Opened to Relieve Flooding*, N.Y. TIMES, May 15, 2011, <http://www.nytimes.com/2011/05/15/us/15spillway.html>; A.G. Sulzberger, *As Missouri River Rises, Control Efforts Take Shape*, N.Y. TIMES, June 3, 2011, at A14. See also CHRISTINE A. KLEIN & SANDRA B. ZELLMER, MISSISSIPPI RIVER STORIES: HOW THE ROAD TO UNNATURAL DISASTER IS PAVED WITH WELL-INTENDED LAWS (forthcoming 2011), for more on the history of flooding along the Mississippi River.

would harness the strengths of the federal taxing authority⁸ to provide basic relief for flood losses occurring at an individual's primary residence.⁹ Any plan for addressing flood loss must navigate hotly debated, competing views about government intervention, redistribution, private markets, environmental protection, and property rights. This Article argues that governmental intervention in flood loss relief is inevitable, at least in the foreseeable future,¹⁰ and that the focus of that intervention should be on the *ex ante* provision of a social safety net. The program proposed in this Article is also intended to provide additional levers for addressing the complexities of flood loss, including the reduction of negative environmental externalities,¹¹ and to provide the impetus needed for harmonizing existing tax provisions and grant programs.

Part II of this Article discusses the NFIP's program for personal property¹² and outlines problems associated with the program. Overall, the

⁸ See Scott E. Harrington, *Rethinking Disaster Policy After Hurricane Katrina*, in ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA 203, 217 (Ronald J. Daniels et al. eds., 2006) (briefly raising the possibility of a premium tax approach and stating that it is a "potentially superior approach").

⁹ The business and investment property flood losses will be addressed in a future Article.

¹⁰ See Robert H. Jerry, II & Steven E. Roberts, *Regulating the Business of Insurance: Federalism in an Age of Difficult Risk*, 41 WAKE FOREST L. REV. 835, 875 (2006) ("Although the flood insurance program has serious deficiencies, no one seriously suggests that management of this market should revert to the states."); Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 HARV. L. REV. 509, 536-50 (1986) (discussing market versus government solutions in the presence of market failure); Levmore & Logue, *supra* note 4; George L. Priest, *Government Insurances versus Market Insurance*, 28 GENEVA PAPERS ON RISK & INS. 71 (2003); Michael J. Trebilcock & Ronald J. Daniels, *Rationales and Instruments for Government Intervention in Natural Disasters*, in ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA 89 (Ronald J. Daniels et al. eds., 2006). See, e.g., Kenneth J. Arrow, *Uncertainty and the Welfare Economics of Medical Care*, 53 AM. ECON. REV. 941 (1963) for discussion of the more general question of when government intervention is appropriate.

¹¹ See Eric J. Johnson et al., *Framing, Probability Distortions, and Insurance Decisions*, in CHOICES, VALUES, AND FRAMES 224, 231-32 (Daniel Kahneman & Amos Tversky eds., 2000) (complete shift of risk to insurer "could lead the insured to be irresponsible because he or she bears no cost of a loss").

¹² The NFIP also authorizes business coverage. See 42 U.S.C. § 4012; *Commercial Coverage: Business Property Risk*, FLOODSMART.GOV, http://www.floodsmart.gov/floodsmart/pages/commercial_coverage/business_property_risk.jsp (last updated Aug. 25, 2011, 4:18 PM) (overview of currently

NFIP fails to provide an adequate safety net as numerous individuals continue to fail to purchase flood insurance.¹³ If the NFIP were to charge actuarially fair premiums,¹⁴ the resulting increases would likely lead to even lower participation in the program among those least economically able to self-insure.¹⁵ At the same time, some individuals file repetitive loss claims, causing a significant financial drain on the program and potentially exacerbating environmental costs.¹⁶ The budget woes of the NFIP are compounded by the outsourcing of flood insurance sales and claims adjustments to private insurance companies.¹⁷ These private insurance companies charge the NFIP a flat rate for these services without having to account for actual costs.¹⁸

The NFIP's problem areas are relatively easy to enumerate, but the path to crafting a better approach is more complex. Part III discusses some of the obstacles facing any plan designed to mitigate and compensate for flood loss. Flood losses are difficult to diversify; individuals have an incentive to purchase flood insurance only for their most at-risk property; and individuals may be motivated to take less care in their decisions with

available business coverage). Discussion of NFIP business coverage as well as business-related tax provisions is outside the scope of this Article.

¹³ See, e.g., Howard Kunreuther, *Has The Time Come for Comprehensive Natural Disaster Insurance*, in ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA 175, 175 (Ronald J. Daniels et al. eds., 2006) (For Louisiana parishes hit by Katrina, "the percentages of homeowners with flood insurance ranged from 57.7 percent . . . to 7.3 percent. . . . Only 40 percent of the residents in Orleans parish had flood insurance.").

¹⁴ See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-10-1063T, NATIONAL FLOOD INSURANCE PROGRAM: CONTINUED ACTIONS NEEDED TO ADDRESS FINANCIAL & OPERATIONAL ISSUE, at 5-6 (2010) (finding that NFIP "is, by design, not actuarially sound").

¹⁵ See *id.* at 3 (explaining that taking steps to "make premium rates more reflective of long-term flood risks . . . would raise rates and potentially reduce participation in NFIP.").

¹⁶ See *id.* at 1 ("Only 1 percent of policies . . . account for 25 to 30 percent of claims.").

¹⁷ Before the massive flooding of 2011, the NFIP was already deeply in debt, largely because of the catastrophic losses of the 2005 hurricane season. See *id.* ("As of August 2010, NFIP's debt to Treasury stood at \$18.8 billion."). Before the 2005 hurricane season, the program had generally balanced out. See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 110-11.

¹⁸ See Aviva Abramovsky, *Insurance and the Flood*, in LAW AND RECOVERY FROM DISASTER: HURRICANE KATRINA 83, 97 (Robin Paul Malloy ed., 2009); see also U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 8-9.

respect to flood costs because of the availability of coverage. These three difficulties — known respectively as correlation,¹⁹ adverse selection,²⁰ and moral hazard²¹ — represent classic concerns in the formation of insurance markets. Part III also briefly considers possible cognitive obstacles to the provision of flood loss relief.²² For example, because flood risks are difficult to conceptualize, individuals will have problems taking the steps necessary to engage in adequate preparation, and government officials charged with aiding community preparation will be subject to the same challenges.²³

¹⁹ See DAVID A. MOSS, WHEN ALL ELSE FAILS: GOVERNMENT AS THE ULTIMATE RISK MANAGER 262 (2002) (explaining that by 1928 “[h]aving learned that individual flood risks were often highly correlated . . . insurers had apparently decided that the prospect of catastrophic flooding rendered this particular risk uninsurable”); Michelle E. Boardman, *Known Unknowns: The Illusion of Terrorism Insurance*, 93 GEO. L.J. 783, 820 (2005) (“Natural disasters are highly correlated, and difficult to ‘uncorrelate’ because those who are not at high risk do not seek to transfer their risk.”); see also *infra* Part III.A for discussion regarding why even national, private insurance companies face correlation difficulties with respect to flood loss.

²⁰ See Tom Baker, *Containing the Promise of Insurance Adverse Selection and Risk Classification*, 9 CONN. INS. L.J. 371, 378 (2003) (arguing that “risk classification itself can create a kind of adverse selection” since insurers may “select risks in a manner that is *adverse* to the insurance pool”); Kaplow, *supra* note 10, at 543-44 (explaining that pricing to cover high-risk individuals will cause lower-risk individuals to drop out, which will cause insurance companies to increase rates again and so motivate even more lower-risk individuals to drop coverage, and so on until it is possible that “no insurance would be offered”).

²¹ See Tom Baker, *On the Genealogy of Moral Hazard*, 75 TEX. L. REV. 237, 239 (1996) (explaining that in economic literature the term “refers to the tendency for insurance against loss to reduce incentives to prevent or minimize the cost of loss.”); Kaplow, *supra* note 10, at 537 (with insurance “actors have less incentive to avoid” losses); Kunreuther, *supra* note 13, at 183 (“[D]isaster assistance is purported to create a type of Samaritan’s dilemma: providing assistance after a catastrophe reduces the economic incentives of potential victims to invest in protective measures prior to a disaster.”).

²² See *infra* Part III.B.

²³ See Johnson et al., *supra* note 11, at 225 (“A rational, risk-neutral consumer would purchase coverage at an actuarially fair price that is equivalent to the expected loss. . . . In practice, the story is apparently not that simple.”); Kaplow, *supra* note 10, at 548 (stating that the “strongest case for some government response to risk is presented by situations in which certain actors underestimate the likelihood of loss”).

Part IV argues that utilizing tax system components may provide a strong course for meeting the complexities of flood loss coverage and mitigation, though it also discusses the challenges that would face such an approach. Additionally, Part IV presents an outline of such a tax-system infused flood loss security program. The proposed program would be administered jointly by the Treasury (IRS) and Homeland Security (FEMA) and would mandate minimum coverage for all individuals as to the contents of their primary residences.²⁴ Coverage for a home's structure would also be mandatory but should be designed to limit repetitive loss claims. Rewards as well as penalties could be built into the system in order to better manage flood preparation and community participation. For example, the proposed flood security plan could charge rates that allow for tax refunds in the case of good results — e.g., no claim filed in a particular year.²⁵ Income tax refunds appear to be highly satisfying given the amount of over-withholding that occurs in the income tax system.²⁶

Part V explores the current patchwork of tax rules as they relate to post-disaster assistance, pre-disaster flood mitigation grant programs, and insurance payouts. Part V also recommends steps for harmonizing these rules with the proposed flood loss security program. Part VI is a brief conclusion.

II. THE NATIONAL FLOOD INSURANCE PROGRAM

The National Flood Insurance Program (NFIP)²⁷ is administered by the Federal Emergency Management Agency (FEMA),²⁸ which is a part of the Department of Homeland Security. The NFIP has roots dating back to the early 1950s²⁹ and the early legislation introduced structural components

²⁴ Mandates have long been recognized as a solution to the adverse selection problem. *See infra* Part III.A. If such a mandate is, however, politically unpalatable, coverage could be mandatory for high and moderate risk residences while opt-out coverage could be available for lower-risk residences. *See infra* Part IV.B.

²⁵ *See* Johnson et al., *supra* note 11, at 232-33, 238 (describing insureds' preference for rebates over deductibles).

²⁶ *See* Lee Anne Fennell, *Hyperopia in Public Finance*, in BEHAVIORAL PUBLIC FINANCE 141, 148-52 (Edward J. McCaffery & Joel Slemrod eds., 2006).

²⁷ 42 U.S.C. §§ 4011-31 (2006).

²⁸ *See* 42 U.S.C. § 4011(a).

²⁹ *See* HOWARD KUNREUTHER & DOUGLAS C. DACY, THE ECONOMICS OF NATURAL DISASTERS 259 (1969), for more on the history behind the NFIP; MOSS, *supra* note 19, at 262-63; Abramovsky, *supra* note 18, at 92; David A. Grossman,

that, while well intentioned, contribute to the weakness of the NFIP today. This Part provides an overview of the current state of the program.

A. COMMUNITY PARTICIPATION

Early flood insurance legislation attempted to motivate communities to take flood mitigation steps by tying the availability of insurance coverage to community adherence to floodplain management regulations.³⁰ Even today, individuals are not able to participate in the NFIP unless their communities agree to abide by various regulations intended to mitigate flood loss.³¹ As to communities who fail to participate, federal grants, disaster relief, and federal mortgage insurance are “unavailable for the acquisition or construction of structures located or to be located” in high-risk areas.³² Currently, over twenty thousand

Flood Insurance: Can a Feasible Program be Created?, 34 LAND ECON. 352 (1958).

³⁰ See 42 U.S.C. §§ 4022, 4102 (2006) (community participation requirements). The regulatory requirements are extensive. See 44 C.F.R. pts. 60, 64; FEMA, *Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials*, FEMA (Aug. 11, 2010), http://www.fema.gov/vplan/prevent/floodplainfm_sg.shtm; Abramovsky, *supra* note 18, at 92.

³¹ 42 U.S.C. § 4012(c) (2006); see Edward T. Pasterick, *The National Flood Insurance Program*, in PAYING THE PRICE: THE STATUS AND ROLE OF INSURANCE AGAINST NATURAL DISASTERS IN THE UNITED STATES 125, 131 (1998) (Howard Kunreuther & Richard J. Roth, Sr., eds.) (discussing responsibility of local community in “adopting and enforcing these floodplain management standards”). Relatively few individuals would be affected by the non-participation of the local community because “[m]ost flood-prone communities that have elected not to participate are communities whose areas of serious flood risk are either very small or have few if any structures.” *Id.* at 129; FEMA, NATIONAL FLOOD INSURANCE PROGRAM: MANDATORY PURCHASE OF FLOOD INSURANCE GUIDELINES 2 (2007), available at www.fema.gov/library/viewRecord.do?id=2954 (“If a community does not participate in the program, property owners in that jurisdiction are not able to purchase federally backed flood insurance.”). Individuals living in non-participating communities would have to rely on post-flood government assistance or on the virtually nonexistent private flood insurance market. Abramovsky, *supra* note 18, at 126 (“[P]rivate insurers do write limited amounts of flood coverage, usually for commercial insureds”).

³² See 42 U.S.C. § 4106 (2006); see also FEMA, *supra* note 31, at 2. A 1968 Act did contain a short-lived penalty at the individual level that had community participation implications: if the individual’s community participated and the individual failed to purchase flood insurance coverage after one year, then such

communities participate.³³ Since 1990 communities have also been able to elect to comply with stronger standards through the Community Rating System.³⁴ Participation in the Community Rating System program yields credits that have the effect of reducing flood insurance premiums throughout the community.³⁵ Currently, nearly twelve hundred communities participate in the Community Rating System program, which while representing only 5 percent of all NFIP communities includes approximately 67 percent of NFIP policyholders.³⁶ In spite of widespread community participation, individual residents will not necessarily have flood insurance because, as will be discussed more fully in the next section, purchase of coverage is largely optional.³⁷

Participation by a community in the NFIP does not, of course, ensure that a local community is actually compliant.³⁸ FEMA must determine whether local building codes and permitting processes on their face adhere to the federal guidelines and must also examine whether communities actually follow facially adequate ordinances.³⁹ Communities may further complicate FEMA's job by pushing back against guidelines

individuals were to be denied post-flood federal assistance. 42 U.S.C. § 4021 (repealed); *see also* Abramovsky, *supra* note 18, at 92-93.

³³ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 4.

³⁴ 42 U.S.C. § 4022(b); *see also* Pasterick, *supra* note 31, at 135-36 (describing system).

³⁵ *See* Pasterick, *supra* note 31, at 135. Credits are based on "estimated reduction in flood and erosion damage risks resulting from the measures adopted by the community under the program." 42 U.S.C. § 4022(b)(3).

³⁶ Email from William L. Trakimas, Director of Natural Hazards (Sept. 8, 2011) (on file with authors) ("Currently 1192 communities participate nationwide . . . receiv[ing] a discount which is about \$292M annually."). In 1998, roughly 900 communities participated, which similarly represented 5 percent of NFIP communities but included over 63 percent of NFIP policyholders. Pasterick, *supra* note 31, at 137.

³⁷ *See infra* Part II.B.

³⁸ *See, e.g.*, KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 17 (noting that "25 percent of the insured losses from Hurricane Andrew in 1992 could have been prevented through better building code compliance and enforcement"); *see also* Raymond J. Burby, *Hurricane Katrina and the Paradoxes of Government Disaster Policy: Bringing About Wise Governmental Decisions for Hazardous Areas*, 604 ANNALS AM. ACAD. OF POL. & SOC. SCI. 171, 178 (2006) (describing how many local governments fail to enforce the minimum building requirements need to participate in the NFIP).

³⁹ *See* Pasterick, *supra* note 31, at 131.

whose implementation they perceive to be too costly.⁴⁰ New floodplain management regulations often contain transition rules or grandfather provisions,⁴¹ possibly in order to minimize political fallout. The political dimensions of putting a community on probation or pulling NFIP eligibility⁴² may also constrain enforcement.⁴³

Even assuming full compliance with floodplain regulations, the regulations, in conjunction with other flood loss mitigation programs, may have unintended consequences. Individuals may be overly confident in the ability of federal, state, and local authorities to manage flood loss through artificial containment and diversion projects and thus increase the direct and externalized costs of floods. That is, development may increase in areas that have been rendered “safe” through community planning.⁴⁴ (Alternatively, development may occur first under the assumption that with

⁴⁰ See Peter G. Gosselin, *On Their Own in Battered New Orleans*, in ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA 15, 22-23 (Ronald J. Daniels et al., eds., 2006) (describing among New Orleans residents that regulation changes would make it difficult to maintain flood insurance eligibility); see also DENNIS C. MUELLER, PUBLIC CHOICE III 343-47, 473 (2003) (describing formation of interest groups and agency capture).

⁴¹ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 14.

⁴² See 42 U.S.C. § 4023 (2006) (disallowing flood insurance coverage for communities violating state and local land use law); 44 C.F.R. § 59.24 (2010) (suspension regulations); 44 C.F.R. § 61.16 (2010) (additional premium charged in communities on probation); 44 C.F.R. pt. 73 (2010) (violations of state and local zoning law); see also Pasterick, *supra* note 31, at 131 (describing probation and suspension process).

⁴³ See Pasterick, *supra* note 31, at 131 (“[T]here has never been a comprehensive assessment of the level of compliance nationwide or of the overall effect of program standards on local development patterns.”).

⁴⁴ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 263 (discussing how government actions may make residents feel safe when in fact they remain vulnerable); Burby, *supra* note 38, at 176 (federal policy in New Orleans contributed “directly to the devastation of Hurricane Katrina” by encouraging development in hazardous areas and diverting resources away from areas that could have benefitted from improvements); Klein & Zellmer, *supra* note 4, at 1518 (describing the “foolhardiness of . . . attempting to keep the water away from the people through artificial flood control”); Scales, *supra* note 6, at 6 (discussing how “[f]lood control projects merely buy time” but also attract “[r]esidential and commercial development . . . often resting on long-term assumptions about the suitability of the area for development”).

increased development, loss mitigation will be undertaken.⁴⁵) Individual homeowners and renters may then rely not only on visible governmental mitigation efforts but may be further reassured by the presence of developers. If, however, the safety measures fail (or fail to materialize) the flood costs will be even higher because of the increased development.⁴⁶ The failure of the levees in New Orleans is among the most vivid examples of the risk of relying on manmade structures to turn back nature.⁴⁷ Although individuals residing in New Orleans had the option to purchase flood insurance, the majority of residents did not do so and were not required to do so⁴⁸ (the same would almost certainly hold true in any U.S. community⁴⁹). Individuals may well not have understood that risk was still present in spite of (or because of) the levees.⁵⁰

⁴⁵ Finn E. Kydland & Edward C. Prescott, *Rules Rather Than Discretion: The Inconsistency of Optimal Plans*, 85 J. POLITICAL ECON. 473, 477 (1977) (“[T]he rational agent knows that, if he and others build houses there [in the flood plain], the government will take the necessary flood-control measures. Consequently, in the absence of a law prohibiting the construction of houses in the flood plain, houses are built there, and the army corps of engineers subsequently builds the dams and levees.”); see also KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 262 (describing Nobel Prize-winning work of Kydland and Prescott, including flood plain example showing “that a discretionary policy, which may be optimal given the current situation, may not necessarily result in a socially optimal policy in the longer run”).

⁴⁶ See generally Klein & Zellmer, *supra* note 4; Scales, *supra* note 6, at 13 (“[F]loodplain management (rather than floodplain abandonment) encouraged development and, thus, concentrated rather than dispersed economic risks of flooding.”).

⁴⁷ The 2011 flooding along the Mississippi river is also illustrative of this lesson. See Editorial, *A New Flood, Some Old Truths: The Mississippi Tells Us, Again, To Change The Way We Manage Water*, N.Y. TIMES, May 28, 2011, at A22 (“Years of mismanagement of the vast Mississippi River ecosystem—the relentless and often inadvisable construction of levees and navigation channels, the paving over of wetlands, the commercial development of flood plains . . . have made the damage worse than it might otherwise have been. . . . Nobody ever beats the river.”).

⁴⁸ See Jerry & Roberts, *supra* note 10, at 877 (“[T]he percentage of homes with flood insurance policies in coastal parishes of Louisiana affected by Hurricane Katrina ranged from 7% in St. James Parish to 57.7% in St. Bernard Parish, with only 40% of homes in Orleans Parish having this coverage.”); Scales, *supra* note 6, at 15 (“[F]ewer than one-in-ten residents along the Gulf Coast of Mississippi are believed to have held flood insurance prior to Katrina.”).

⁴⁹ See LLOYD DIXON ET AL., THE NATIONAL FLOOD INSURANCE PROGRAM’S MARKET PENETRATION RATE: ESTIMATES AND POLICY IMPLICATIONS xvi (2006)

While flood mitigation programs have unintended consequences, halting mitigation programs is likely to be even more problematic. First, mitigation does work⁵¹ albeit only up to a point — though often an unknown point at that. Second, outright prohibitions on development by the federal government are problematic,⁵² and once development has occurred, and if the potential disaster is big enough, the federal government will find it politically untenable to fail to provide any mitigation.⁵³ Even assuming developers understand the riskiness of their building projects, they may be able to shift the flood risk to the ultimate owners and tenants,⁵⁴ who are sure to elicit (and likely to deserve) a more sympathetic response than the original developers. Thus, continuance of flood mitigation programs, including community participation, appears to be an uneasy necessity, though steps could clearly be taken to use mitigation more judiciously and development prohibitions less sparingly.⁵⁵ As will be discussed in Part IV, even though this Article does not directly address the role of developers

(“Even though approximately one-third of NFIP policies are written outside SFHAs [high-risk areas], the market penetration rate outside SFHAs is only about 1 percent.”).

⁵⁰ See *infra* Part III.B (discussing possible reasons, including cognitive shortcuts and biases, for low participation in flood insurance).

⁵¹ See Pasterick, *supra* note 31, at 131-32 (discussing how flood plain regulations have, at least in the Midwest, “discourage[d] floodplain development through the increased costs in meeting floodplain management requirements and the cost of an annual flood insurance premium”); David Welky, *When the Levee Doesn’t Break*, N.Y. TIMES, May 11, 2011, at A25 (arguing that “the extent of the [2011 Mississippi flood] damage probably won’t come close to the losses of life and property seen in the historic flood of January 1937. . . .—proof that after nearly 75 years, the federal government has finally gained the upper hand on a river system once thought uncontrollable.”).

⁵² See Pasterick, *supra* note 31, at 131 (noting rejection by NFIP of federal override of local regulation because the NFIP “has consistently taken the position that federal land use regulation at the local level is illegal, and, in any case, would be unworkable”).

⁵³ See Kydland & Prescott, *supra* note 45, at 477 (theorizing that the “the rational agent knows that, if he and others build houses there [in the flood plain], the government will take the necessary flood-control measures”).

⁵⁴ Cf. Pasterick, *supra* note 31, at 131-32 (discussing report in Midwest suggesting that “[d]evelopers have the added incentive of wanting to avoid marketing flood-prone property.”).

⁵⁵ See *id.* at 154 (noting “vital connection between the availability of flood insurance and the local community enforcement of floodplain management provisions”).

and other commercial enterprises, integrating residential flood loss coverage with the tax system could provide an opportunity to craft additional levers for balancing social safety net concerns with constraints on unwise development.

B. INDIVIDUAL PARTICIPATION

Individuals are required to purchase flood insurance only in a limited set of circumstances. Regulated lending institutions,⁵⁶ government-sponsored enterprises for housing (e.g., Fannie Mae and Freddie Mac), and federal agency lenders⁵⁷ must require flood insurance as a condition to closing on loans secured by property in high-risk flood zones.⁵⁸ “High-risk” indicates that there is a 1% or greater chance of a flood in a particular year⁵⁹ — that is, the property lies within the one-hundred year flood plain.

⁵⁶ 42 U.S.C. § 4003(a)(10) (2006) (includes “any bank, savings and loan association, credit union, farm credit bank, Federal land bank association, production credit association, or similar institution subject to the supervision on a Federal entity for lending regulation”). The statute directs the federal entities for lending regulation to promulgate regulations applicable to these institutions. These federal entities have adopted such regulations. *See* 12 C.F.R. pt. 22 (2010) (by Office of the Comptroller of the Currency); 12 C.F.R. § 208.25 (2010) (Federal Reserve System); 12 C.F.R. pt. 339 (2010) (Federal Deposit Insurance Corporation); 12 C.F.R. pt. 572 (2010) (Office of Thrift Supervision); 12 C.F.R. § 614.4920 (2010) (Farm Credit Administration); 12 C.F.R. pt. 760 (2010) (National Credit Union Administration).

⁵⁷ 42 U.S.C. § 4003(a)(7) (2006) (defining these agencies as “Federal agenc[ies] that makes direct loans secured by improved real estate or a mobile home”). *See* FEMA, *supra* note 31, at 26 (entities include Federal Housing Administration, Small Business Administration, Department of Veterans Affairs, and the U.S. Department of Agriculture).

⁵⁸ 42 U.S.C. § 4012a(b) (2006) (lender mandate); 42 U.S.C. § 4104a (2006) (notice requirements). *See* FEMA, *supra* note 31, at 2-4 (the only lenders and services excluded are those “who are not federally regulated and that do not sell loans to . . . Fannie Mae . . . Freddie Mac,” or other government-sponsored entities.).

⁵⁹ FEMA literature often uses the term “special flood hazard area” but “High-risk flood areas” and “special flood hazard areas” are synonymous. *Compare* U.S. Gov’t Accountability Office, *supra* note 14, at 14 *with* FEMA, *supra* note 31, at GLS 9.

This is also called the 100-year flood plain. *See* 44 C.F.R. § 59.1 (2010) (defining “100-year flood” as “the flood having a one percent chance of being equaled or exceeded in any given year”); FEMA, *supra* note 31, at GLS 9. But

All mapped areas with lower than 1% chance per year of flooding are in low or moderate-risk zones;⁶⁰ yet such zones historically lead to about 25 percent of NFIP claims.⁶¹ Since relatively few individuals purchase insurance if they reside outside a high-risk zone, such policies constitute such a significant portion of NFIP claims suggests that the 1% benchmark is problematic.⁶²

The lender mandate does not apply to properties outside of high-risk flood zones. The requirement also does not apply to properties located in non-participating communities since individuals in those areas are not eligible to purchase flood insurance.⁶³ Under the most recent changes to the

such terminology can mislead individuals into thinking that a flood will only occur once in a hundred years and is downplayed (or eliminated) in public education information. *See Pasterick, supra* note 1, at 130 (“The term ‘100-year flood’ is problematic for the NFIP. It is a term of convenience intended to convey probability but has had the adverse effect of giving floodplain residents, who tend to interpret it in chronological terms, a false sense of security.”).

FEMA has attempted to help people understand the risk assessments by anchoring this to a more readily understood marker: the 30-year mortgage. Thus, its public education website explains that high-risk “equates to a 26% chance of flooding over the life of a 30-year mortgage.” Nat’l Flood Ins. Program, FLOODSMART.GOV, THE OFFICIAL SITE OF THE NFIP, (last visited Aug. 25, 2011, 4:17 PM), <http://www.floodsmart.gov/floodsmart/>.

⁶⁰ Nat’l Flood Ins. Program, FLOODSMART.GOV, THE OFFICIAL SITE OF THE NFIP, (last visited Aug. 25, 2011, 4:17 PM), <http://www.floodsmart.gov/floodsmart/>.

⁶¹ FEMA, *supra* note 31, at 5.

⁶² This estimate may be too low. *See Burby, supra* note 38, at 177 (stating that “most flood losses in the United States stem from less frequent flood events” and citing studies suggesting a range of 66% to 83% of losses arising from areas outside the one-hundred-year flood zone). The Association of State Floodplain Managers has recommended that a five-hundred-year flood plain be used as the better benchmark for levees. ASSOCIATION OF STATE FLOODPLAIN MANAGERS, NATIONAL FLOOD POLICY CHALLENGES: LEVEES: THE DOUBLE-EDGED SWORD 3-5 (2007), *available at* http://www.floods.org/PDF/ASFPM_Levee_Policy_Challenges_White_Paper.pdf. *See also* Burby, *supra* note 38, at 177 (discussing proposal by Association of State Floodplain Managers).

⁶³ FEMA, *supra* note 31, at 5. In the case of a non-participating community, “a lender is still required to inspect any flood maps to determine flood hazard risk and provide notice of such risk.” *Id.* at 2. *See* 42 U.S.C. 4106(b) (2006) (requiring regulations on notice). Prior to 1977, regulated lending was prohibited in communities that did not participate. The change was implemented by statute. Housing and Community Development Act of 1977, Pub. L. 95-128 § 703(a), 91 Stat. 1144. *See also* FEMA, *supra* note 31, app. at 1-3.

NFIP in 2004, lender-mandated insurance must remain in force over the life of the loan⁶⁴ and must be monitored by loan servicers for loans sold to Fannie Mae and Freddie Mac.⁶⁵ Various specific rules have been enacted to facilitated compliance.⁶⁶ For example, if the loan requires an escrow—for example, for real property taxes or homeowner’s insurance — flood insurance premiums are also required to be escrowed.⁶⁷

FEMA has no statutory authority to enforce this lender mandate,⁶⁸ instead, each agency with direct oversight over the covered lender is to enforce the requirement.⁶⁹ A 2006 study done by RAND estimated national compliance with the mandate at 75-80 percent, but with significant variation across regions.⁷⁰ Given the recent turmoil in the lending and housing market, including problems with administrative agency oversight and complicated securitization structures, it seems fair to wonder about the extent to which these lender flood insurance mandates have been working in recent years.⁷¹ For high-risk properties not covered by the lender

⁶⁴ FEMA, *supra* note 31, at 5.

⁶⁵ *Id.* at 25.

⁶⁶ *See generally id.* at 23-60.

⁶⁷ 42 U.S.C. § 4012a(d) (2006). *See* FEMA, *supra* note 31, at 39 (discussing requirement).

⁶⁸ FEMA, *supra* note 31, at vii. *See* 42 U.S.C. § 4012a (2006).

⁶⁹ *See supra* note 56 (citing regulatory provisions and listing these agencies); FEMA, *supra* note 31, at 59-60 (Civil penalties may be assessed. “As of November 30, 2006, a total of 119 banks had been assessed nearly \$1.3 million in penalties, for various violations of the 1994 Reform Act.” Regulators may also impose other sanctions including “unsatisfactory bank ratings, memoranda of understanding, and, ultimately, cease and desist orders.” Private individuals, including borrowers, have no cause of action against lenders who have failed to enforce the mandate.)

⁷⁰ DIXON ET AL., *supra* note 49. *See* Howard Kunreuther & Mark Pauly, *Rules Rather Than Discretion: Lessons from Hurricane Katrina*, 33 J. RISK UNCERTAINTY 101, 107 (2006) (discussing evidence that suggesting “that some banks, which were expected to enforce the requirements that individuals in high-hazard areas purchase flood coverage, looked the other way.”); Scales, *supra* note 6, at 14-15 (discussing RAND study and other scholarship on takeup rates). The failure of lenders independently to require flood insurance is a mystery, particularly given their insistence on general casualty insurance. *See also* Scales, *supra* note 6, at 17-19 (discussing possible theories for lender behavior with respect to flood insurance).

⁷¹ *See, e.g.*, Binyamin Appelbaum, *Without Loan Giants, 30-Year Mortgage May Fade Away*, N.Y. TIMES, Mar. 3, 2011, http://www.nytimes.com/2011/03/04/business/04housing.html?_r=1&scp=1&sq=Without%20Loan%20giants,%2030-year%20mortgage%20may%20fade%20away&st+cse (discussing

mandate, the same RAND study estimated approximately a 50% take-up rate.⁷²

In addition to the lender mandate, the NFIP has only one additional means of applying legal pressure on an individual's decision to purchase coverage. Under the current NFIP, individuals may receive government assistance after a disaster even if they were eligible for, but failed, to purchase flood insurance, but a condition of the assistance is that the individual purchase flood insurance in the future. Failure to purchase insurance then can be used to withhold assistance if flood loss help again becomes necessary.⁷³ Whether this penalty is actively enforced is another question,⁷⁴ particularly in the immediate aftermath of high-impact events.⁷⁵

The NFIP has no ability to deny coverage if individuals are eligible to purchase the insurance.⁷⁶ As a result of repetitive losses, the GAO

possible demise of Fannie Mae & Freddie Mac and resulting changes to the housing market).

⁷² DIXON ET AL., *supra* note 49, at xvi.

⁷³ 42 U.S.C. § 5154(b); *see also* FEMA, *supra* note 31, at 7 (discussing requirement); Pasterick, *supra* note 31, at 153 (discussing history of this requirement and noting it “has its greatest potential impact on grant recipients, who are generally in lower-income categories than those receiving loans and thus less likely to be able to afford insurance. Whether the threat of denial of future federal assistance will have the intended effect of promoting insurance purchase among this segment of the population remains to be seen.”).

⁷⁴ *See* Scales, *supra* note 6, at 13 (“[T]he NFIP’s enforcement mechanisms are limited and not credibly invoked.”).

⁷⁵ *See* Levmore & Logue, *supra* note 4, at 292-93 n.82 (predicting “that public sympathy and interest-group pressure would make enforcement of that restrictive very difficult”).

⁷⁶ U.S. GOV’T ACCOUNTABILITY OFFICE, *supra* note 14, at 1. *Contra* Scales, *supra* note 6, at 33-34 (stating the NFIP does however, rigidly deny claims filed more than 60 days after a loss, even though the difficulties involved in a flood make filing the Paperwork difficult – perhaps especially for less sophisticated individuals). *But see* 16 U.S.C. § 3503 (2006) (establishing these systems); 42 U.S.C. § 4028 (stating the NFIP is not available in certain zones designated as with the Coastal Barrier Resources System); Emergency Management and Assistance 44 C.F.R. §§ 71.1, 71.3 (2010) (implementing regulations); Pasterick, *supra* note 31, at 146-47 (discussing history of legislation); *id.* at 146 (stating the Legislation applies primarily to zones within barrier islands); *id.* at 146 (stating communities may have some areas within such zones and others outside, and “[c]onsistent enforcement . . . is difficult . . . [and] the NFIP must depend on the vigilance of insurance agents to distinguish which areas of a community are eligible for coverage and which are not.”) (alteration in the original); *id.* at 146-47 (“A review conducted in 1992 by the General Accounting [sic] Office (GAO) found not only

estimates one percent of policies “account for 25 to 30 percent of claims.”⁷⁷ The dollar amounts associated with repetitive loss claims are, of course, only part of the true cost of such claims since frequently such properties are built in environmentally fragile locations.⁷⁸

Although the NFIP covers a relatively low number of individuals, the 2005 hurricane season’s demands on the NFIP were staggering and overwhelmed the NFIP. FEMA had to invoke its authority to borrow funds from the U.S. Treasury and seek additional appropriations.⁷⁹ As of August 2010, FEMA’s debt stood at \$18.8 billion;⁸⁰ it remains unlikely that the program will be able to repay this amount.⁸¹ The billions in payouts made under the NFIP are still small, however, in comparison to the total cost to the government of the disaster.⁸²

C. COVERAGE LIMITS, FLOOD MAPS, AND RATES

The maximum coverage currently available under the NFIP is \$100,000 for personal property and \$250,000 for residential real estate.⁸³ The premium rate structure varies with coverage, deductible, and, most importantly, the risks associated with the property to be insured.⁸⁴ The highest sample premium (\$5,903) listed on FEMA’s website is for a coastal area, high-risk residence and contents insured for the full available coverage with a \$2,000 deductible.⁸⁵ Individuals may purchase coverage

that significant new development continued to occur in certain CBRS units after the law was enacted, but also that NFIP coverage was written on 9 percent of the residences in the units sampled.”)

⁷⁷ U.S. GOV’T ACCOUNTABILITY OFFICE, *supra* note 14, at 1.

⁷⁸ See Klein & Zellmer, *supra* note 4, at 1508-10 (discussing the “value of healthy wetlands”).

⁷⁹ 42 U.S.C. §§ 4016, 4017(b)(1), (b)(3), 4127; see Burby, *supra* note 38, at 177 (discussing past history of operating losses and use of this authority); Pasterick, *supra* note 31, at 138-39 (discussing the same).

⁸⁰ U.S. GOV’T ACCOUNTABILITY OFFICE, *supra* note 14, at 5, 14.

⁸¹ *Id.* at 5.

⁸² See Jerry & Roberts, *supra* note 10, at 876-77 (“[T]otal government expenditures could eventually exceed \$200 billion.”).

⁸³ 42 U.S.C. §§ 4013-4015 (statutory authorization for setting various coverage terms and rates); see also *Residential Coverage Policy Rates*, FLOODSMART.GOV (Jan. 1, 2011), http://www/floodsmart.gov/floodsmart/pages/residential_coverage/policy-rates.jsp.

⁸⁴ See Emergency Management and Assistance, 44 C.F.R. pt. 61 (2010) (coverage, rates & deductibles).

⁸⁵ See *Residential Coverage Policy Rates*, *supra* note 83.

only for residences and their contents.⁸⁶ Thus, cars are not covered,⁸⁷ but there is no limit to the number of residences for which an individual may purchase flood insurance.⁸⁸ Special restrictions do apply to basements and lower-level crawlspaces.⁸⁹ Further, “flood” under the NFIP generally does not cover subsidence⁹⁰ (which, incidentally, leaves a gap in coverage availability since private insurers also generally exclude subsidence⁹¹).

Although individuals under-purchase flood insurance, possibly because of perceptions that the rates are too high,⁹² in fact even the full risk rates charged are not actuarially sound.⁹³ FEMA is charged with maintaining flood risk maps,⁹⁴ but such mapping is difficult given the contingencies that must be modeled and the costs involved in generating accurate assessments. Maps cannot remain static since flood risks will change over time both through natural occurrences and manmade development. Many FEMA maps are badly in need of updating and also often fail to take into account important risks.⁹⁵

In addition to any scientific or budgetary difficulties surrounding the creation of accurate flood maps, after updates, if FEMA changes maps,

⁸⁶ See 44 C.F.R. pt. 61 App. A (2)-(3) (stating that renters insurance is available as well as condo insurance).

⁸⁷ *Residential Coverage: What's Covered*, FLOODSMART.GOV, http://www.floodsmart.gov/floodsmart/pages/residential_coverage/whats_covered.jsp (last visited Aug. 25, 2011).

⁸⁸ *Residential Coverage: Policy Rates*, *supra* note 83 (“Single-family dwellings that are primary residences and insured to the maximum amount of insurance available under the program or no less than 80% of the replacement cost at the time of may qualify for replacement cost claim settlement. All other buildings and contents will be adjusted based on their Actual Cash Value (depreciated cost).”).

⁸⁹ *Residential Coverage: What's Covered*, *supra* note 87.

⁹⁰ *Contra* 44 C.F.R. pt. 61 App. A(1) § II(A) (Coverage is, however, available for “subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood . . .”).

⁹¹ See *Scales*, *supra* note 6, at 35.

⁹² See *infra* Part III.B.

⁹³ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 5-6.

⁹⁴ 42 U.S.C. §§ 4101(a), (e)-(i) (2006) (requiring establishment and publication of information about flood risk zones); see also 44 C.F.R. § 64.3 (description of flood insurance maps); 44 C.F.R. pt. 65 (special hazard mapping).

⁹⁵ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 7; see also Pasterick, *supra* note 31, at 144-46 (describing problem of erosion in general).

FEMA will often be viewed as the proverbial bearer of bad news.⁹⁶ As discussed above, rate increases or more stringent floodplain management requirements may have political repercussions,⁹⁷ and FEMA has generally adopted the administrative practice of grandfathering in current policyholders to the prior rate.⁹⁸ In addition to administratively crafted grandfathering rules, subsidized rates are required by statute to apply to policyholders who own “structures that were built before floodplain management regulations were established.”⁹⁹ These structures date to the origination of the NFIP, and even forty-plus years later, nearly 25 percent of NFIP policies receive these subsidized rates.¹⁰⁰ These properties also “experience as much as five times more flood damage than compliant new structures that are charged full-risk rates.”¹⁰¹

D. OUTSOURCING AND THE NFIP

The federal government sets the flood insurance terms and bears all of the risks associated with the program, marketing, sales, yet claims adjustments are increasingly handled by private insurers through the “Write Your Own” (WYO) Program.¹⁰² Under the program, for example, a policyholder could buy flood insurance from Allstate although the actual product is only available through the NFIP.¹⁰³

Utilization of private insurance companies to participate in the flood insurance program may have been intended to help market the

⁹⁶ NFIP statute and regulations require consultation with local officials and the regulations provide various procedures for appealing flood elevation and other flood map determinations. 42 U.S.C. § 4107; 44 C.F.R. pt.66 (consultation with local officials); 44 C.F.R. pt. 67 (flood elevation determination appeals); 44 C.F.R. pt. 68 (administrative hearing procedures); 44 C.F.R. pt. 70 (procedures for map correction); 44 C.F.R. pt. 72 (procedures and fees for processing map changes).

⁹⁷ See *supra* Part II.A.

⁹⁸ See *supra* Part II.A.

⁹⁹ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 6; see 42 U.S.C. § 4015.

¹⁰⁰ *Id.* at 5-6; see also Pasterick, *supra* note 31, at 132-34 (describing subsidized rates applicable to pre-flood-insurance-rate-map structures); Scales, *supra* note 6, at 16 (“As of this writing, 38 years have passed, and approximately 28% [in 2006] of NFIP policies remain subsidized. This in fact reflects substantial progress, as the subsidization rate was originally 70%.”) (alteration in the original).

¹⁰¹ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 5-6.

¹⁰² 42 U.S.C. § 4081; 44 C.F.R. § 62.23; see Abramovsky, *supra* note 18, at 96 (describing WYO program); Scales, *supra* note 6, at 14 (describing the same).

¹⁰³ Abramovsky, *supra* note 18, at 96.

program and provide better information to individuals regarding their financial alternatives.¹⁰⁴ WYO policies have increased dramatically as a percentage of flood insurance purchases.¹⁰⁵ By September 2008, ninety WYO insurance companies administered almost ninety-seven percent of approximately 5.6 million policies in force.¹⁰⁶ By comparison, in 1986, forty-eight WYO companies handled just under half of all policies.¹⁰⁷ While WYO policies may be a high percentage of the total outstanding policies, it is not clear whether the WYO has indeed helped increase total participation since participation in the NFIP remains low.¹⁰⁸

In creating the WYO program, the federal government may also have been seeking to lower its administrative costs.¹⁰⁹ But if so, the program is flawed. The WYO companies are paid a flat rate and are not required to account for actual costs incurred.¹¹⁰ The U.S. Government Accountability Office (GAO) studied the difference between the fee received and actual costs for six WYO insurers from 2005 through 2007 and found “that the payments exceeded actual expenses by \$327.1 million, or 16.5 percent of total payments made.”¹¹¹ The GAO has also determined that WYO insurers “did not strategically market the product” in spite of a

¹⁰⁴ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 85 (explaining that WYO was supposed to be a win-win allowing the NFIP to benefit from marketing by private insurance); Scales, *supra* note 6, at 14 (“The WYO program seemed an ideal way to remedy the NFIP’s persistent failure to sell many flood policies.”).

¹⁰⁵ Abramovsky, *supra* note 18, at 97.

¹⁰⁶ GOVERNMENT ACCOUNTABILITY OFFICE, GAO-09-455, FLOOD INSURANCE: OPPORTUNITIES EXIST TO IMPROVE OVERSIGHT OF THE WYO PROGRAM 3 (2009) (Report to the Ranking Member, Committee on Banking, Housing, and Urban Affairs, U.S. Senate), available at <http://www.gao.gov/new.items/d09455.pdf>.

¹⁰⁷ *Id.* at 3; see also Abramovsky, *supra* note 18, at 97.

¹⁰⁸ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 85 (“Despite this potentially synergistic effort between the NFIP and private companies, take-up rates for flood insurance have historically been low.”); Scales, *supra* note 6, at 14-15 (discussing participation rates and stating that “the inception of the WYO program had a very modest impact on flood insurance participation”).

¹⁰⁹ See U.S. GOV’T ACCOUNTABILITY OFFICE, *supra* note 14, at 3-4.

¹¹⁰ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 83 (“More than thirty percent of each dollar paid for flood insurance coverage goes to private insurers Over the period of 1968 to 2005, these private insurers received over \$7.4 billion (excluding the loss adjustment expenses for which we do not have data) in fees.”); Abramovsky, *supra* note 18, at 97.

¹¹¹ U.S. GOV’T ACCOUNTABILITY OFFICE, *supra* note 14, at 9.

bonus structure that was added to the standard flat-rate compensation system.¹¹²

In addition to the problems that arise in having WYO insurers market both their own policies and government policies, WYO will also act as the adjusters for both their private policies and the government policies in the aftermath of a disaster.¹¹³ Thus, the same insurer will be deciding whether to categorize damage as flood damage (covered by the NFIP) or as wind damage (covered by private insurance).¹¹⁴ In the aftermath of Hurricane Katrina, press accounts reported that the WYO companies boosted flood claims in order to minimize wind damage payouts.¹¹⁵

III. NAVIGATING THE RAPIDS

Currently, there is no private market in basic flood insurance as the National Flood Insurance Program (NFIP) has preempted the field. Even if path dependence did not all but dictate continued government intervention, the development of a large market in unsubsidized, private flood insurance

¹¹² *Id.* (commenting that the bonus structure is not aligned with the NFIP goals of “increasing penetration in low-risk flood zones and among homeowners in all zones that do not have mortgages from federally regulated lenders”).

¹¹³ *See Scales, supra* note 6, at 33-34 (describing “disappointing” quality of help by adjusters in completing NFIP claims, which must be filed within sixty days of the loss).

¹¹⁴ *See* Gene Taylor, *Federal Insurance Reform after Katrina*, 77 *MISS. L.J.* 783, 786-87 (2008) (describing conflict and explaining that exacerbating the problem, at the instigation of the WYO companies, the NFIP implemented an expedited claims procedure after Katrina which allowed WYO companies to issue flood insurance checks “without apportioning the amount of wind and flood damage to structures with losses from both perils”). It also, however, became more difficult to obtain windstorm coverage in the aftermath of Katrina. *Id.* at 789-90. (Congressman Taylor did introduce legislation that would expand the NFIP to include windstorm.) *See also* KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 41-43 (describing the “wind-water controversy” and the Katrina-related lawsuits); Scales, *supra* note 6, at 24-29 (describing Katrina cases, including insurance companies’ interpretation of contract provisions yielding non-coverage for losses partially caused by flood and partially by wind).

¹¹⁵ *See id.* at 787-88 nn.14-15 (discussing press accounts in the Biloxi *Sun Herald* and *Times Picayune*); *see also* Scales, *supra* note 6, at 36-37 (describing an insurer’s “unusually attractive opportunity to recharacterize wind losses as flood losses as it is the very entity tasked with investigating flood claims for the government.”).

is in doubt.¹¹⁶ A private insurer would have to navigate multiple obstacles in setting a price that would be both actuarially sound and profitable.¹¹⁷ That price would almost certainly be viewed as too expensive by many individuals,¹¹⁸ including those who would be most in need of assistance following a flood.¹¹⁹ The first section of this Part reviews those pricing obstacles, including the extent to which universal coverage could alleviate those pressures. In addition, the section discusses the concern that universal coverage could increase moral hazard problems, including negative environmental externalities. The second section of this Part focuses on the consumer side of flood insurance and explores the puzzling reality that, even at subsidized rates, many individuals fail to plan for flood loss by purchasing insurance.

A. PROVIDER PERILS

Three well-known obstacles complicate the provision of flood insurance: correlation, adverse selection, and moral hazard. Universal

¹¹⁶ See MOSS, *supra* note 19, at 262 (describing failed private flood insurance experiments of the 1890s and 1920s); Jerry & Roberts, *supra* note 10, at 857 (arguing that “major disasters . . . require significant federal involvement for response and recovery”).

¹¹⁷ See Boardman, *supra* note 19, at 828 (“The primary problem for flood insurance is cost, not calculation.”); Scales, *supra* note 6, at 7 (explaining that flood insurance “suffers from unusual demand- and supply-side constraints that make it a relatively difficult market for insurers, and they have responded rationally by avoiding it”).

¹¹⁸ See *infra* Part III.B for a discussion of possible explanations rooted in cognitive psychology; see also Johnson et al., *supra* note 11, at 239 (explaining that flood loss risks are “underestimated systematically by homeowners in hazard-prone areas” and that residents will perceive “actuarially ‘fair’ coverage” as “overpriced, and will remain uninsured”).

¹¹⁹ See Debra Lyn Bassett, *Place, Disasters, and Disability*, in LAW AND RECOVERY FROM DISASTER: HURRICANE KATRINA 51, 64-69 (Robin Paul Malloy ed., 2009) (discussing rural poverty, including the “vulnerability of the rural disabled”); Klein & Zellmer, *supra* note 4, at 1473 (“Too often, those who suffer most are the poorest members of society.”); Levmore & Logue, *supra* note 4, at 317 (“Inner-city property owners, including businesses and homeowners, self-insure far more than their counterparts in affluent areas, in part because of availability problems.”); Kenneth B. Nunn, *Still Up on the Roof: Race, Victimology, and the Response to Hurricane Katrina*, in HURRICANE KATRINA: AMERICA’S UNNATURAL DISASTER 183, 184-87 (Jeremy I. Levitt & Matthew C. Whitaker, eds., 2009).

coverage should provide some relief as to the first and essentially sidestep the second. Moral hazard is more complicated, and expanded coverage would likely trigger concern that such coverage increases moral hazard problems, including environmental impacts.

1. Correlation

Flood losses are typically highly correlated.¹²⁰ That is, they generally occur simultaneously for a large swath of individuals. Thus, even if it is scientifically well established that a particular area suffers from a 1 in 100 chance of a flood in any particular year,¹²¹ if this year happens to be the year, all of the losses will occur at once. An insurance company may not yet have established sufficient reserves through receipt of premiums to cover the losses.¹²² Insurance companies operating within more limited geographic areas could face an even more concentrated correlation problem.¹²³

In order to deal with a correlation problem, a commercial insurance company would have to charge front-loaded premiums to create a large reserve in case the low probability event occurred early in the life of the

¹²⁰ See Jerry & Roberts, *supra* note 10, at 843 (explaining that flood risks are “difficult risks” because they are resistant to diversification and are highly correlated).

¹²¹ Complete statistical accuracy is, in fact, unlikely given the state of current flood maps. See *supra* Part II.C. Such ambiguity would likely further increase the premium. See Howard Kunreuther et al., *Insurer Ambiguity and Market Failure*, 7 J. RISK & UNCERTAINTY 71, 72 (2003) (describing survey data revealing that ambiguity in either probability of a loss or amount of loss results in “recommended premiums” that are “considerably higher”); Scales, *supra* note 6, at 8 (discussing ambiguity premium).

¹²² For-profit insurers will create insurance pools only if the contingencies are statistically predictable with respect to the pool as a whole but occur randomly with respect to any one contributor. The larger the pool of insureds, the more likely it is that the actuarial predictions will be sound and provide an adequate basis for calculating the premiums needed to cover the promised payouts and also yield a profit to the insurance company. See Jerry & Roberts, *supra* note 10, at 842-43 (describing insurance pools).

¹²³ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 65; Scales, *supra* note 6, 11 & n.30 (while cross-subsidization is possible, insurance companies oppose cross-subsidies whether between geographically distinct subsidiaries or between types of insurance (e.g., auto subsidizing casualty)); see Scales, *supra* note 6, at 11 (even national insurance companies generally operate through separate subsidiary companies organized along state lines or even smaller geographic regions).

risk pool. For example, if a commercial insurance company sought to create a pool for a flood plain subject to a 1 in 500 chance of a flood in any particular year, the premiums to establish the reserve would have to be high even during the early years of the contract in case the current year happened to be the year in which such a flood occurred.¹²⁴ Not only would individuals be unlikely to want to buy insurance requiring high up-front payments, they would also have such a low probability of receiving any payout during their lifetime that they would have a difficult time perceiving any benefit from the coverage.¹²⁵ Self-insurance would be the general choice.¹²⁶

Federal, universal coverage does not, of course, change the pattern of flood loss. It does, however, allow for greater diversification across geographic regions and access to non-program resources in particularly turbulent years. Even with a national program, flood losses can overtake capacity. This is essentially what happened to the NFIP during the 2005 hurricane season.¹²⁷ The NFIP met its obligations through its access to other resources — namely, its borrowing authority.¹²⁸

2. Adverse Selection

In addition to the need to price for correlation, an insurance company issuing a hypothetical flood loss policy would also have to price for a significant adverse selection problem. Adverse selection occurs when too many of the individuals who purchase coverage do so with certain or

¹²⁴ With thanks to David Cay Johnston for this example. *See Scales, supra* note 6, at 11 (explaining that correlation “induces greater variability in losses, leading to significantly higher premiums” if an insurance company is even willing to underwrite such a risk).

¹²⁵ *See infra* Part III.B, for a fuller discussion of consumer choices regarding flood preparation; Jerry & Roberts, *supra* note 10, at 845 (explaining that “having no claim” is often viewed as “purchasing a product with little value, notwithstanding that the person received security against loss”).

¹²⁶ Proposals to subsidize self-insurance have also been made. For example, Congress has proposed the creation of catastrophe savings devices — similar to health savings devices. *See Christine L. Agnew, Come Hell and High Water: Can the Tax Code Solve the Post-Katrina Insurance Crisis?*, 11 LEWIS & CLARK L. REV. 701, 738-43 (2007), for a critique of such an approach.

¹²⁷ *See supra* Part II.C.

¹²⁸ *See supra* note 79 and accompanying text.

near-certain knowledge that they will be filing an insurance claim.¹²⁹ For example, individuals will be more likely to purchase flood insurance if they have knowledge that the risk of flood loss is already at the doorstep (or roof, as the case may be).¹³⁰ Generally, the problem of adverse selection is one of information asymmetry.¹³¹ With respect to health and life insurance, this information asymmetry is fairly easy to conceptualize: the insurance company will not be privy to the private aches and pains of the insured and may under-price premiums as a result.¹³² In the case of floods, individuals would have particularized knowledge about the likelihood of flooding at a residence, and such knowledge would contribute to a classic adverse selection problem.

Adverse selection is a common reason advanced for the failure of a private flood insurance market to develop.¹³³ Universal or mandatory coverage is the classic solution to adverse selection.¹³⁴ If everyone is in the insurance pool, it removes the question of whether some are in the pool because they have inside information about personal risk. The information on flood risk developed through the NFIP, however, complicates the adverse selection picture. As discussed in Part II, part of the NFIP's mission is to assess flood risk and make those assessments available to the public. Thus, individuals can go to a FEMA website to look at flood risk maps.¹³⁵ Many of these maps are, as discussed in Part II, incomplete, difficult to decipher, or out of date, but, presumably, some will be influenced to purchase flood insurance as a result. Further, the lender

¹²⁹ See, e.g., Boardman, *supra* note 19, at 822 (“Adverse selection typically occurs when insurers cannot distinguish between higher and lower risk policyholders . . .”); see also Kaplow, *supra* note 10, at 543.

¹³⁰ A vivid example of such delayed response occurred during a flood in Chesterfield, Missouri, in 1993, when business property owners purchased flood insurance in response to a flood crest moving down the Missouri River. At the time, only a five-day waiting period was in place. See Klein & Zellmer, *supra* note 4, at 1493 (describing the event). Currently, a thirty-day waiting period applies. 42 U.S.C. § 4013(c) (2004); 44 C.F.R. § 61.11(c) (2010).

¹³¹ See Kaplow, *supra* note 10, at 543.

¹³² *Id.* at 545.

¹³³ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 135 (noting that private insurers argued that adverse selection required creation of the NFIP).

¹³⁴ See MOSS, *supra* note 19, at 50 (explaining that the ability of government to compel “broad participation” is “[p]erhaps the most widely recognized justification for public risk management”); Baker, *supra* note 20, at 380.

¹³⁵ Nat'l Flood Ins. Program, FLOODSMART.GOV, THE OFFICIAL SITE OF THE NFIP, <http://www.floodsmart.gov/floodsmart/> (last visited Aug. 25, 2011, 4:17 PM).

mandate applies only to high-risk property. Thus, the proportion of flood-prone properties among all the properties covered by the NFIP is likely high.¹³⁶ This result is not, however, readily ascribed to a classic adverse selection problem given that general flood risk information is primarily controlled and distributed by the government-insurer and is then used to enforce the lender mandate.¹³⁷

Private insurers would also have access to information about general flood risk and would, presumably, act in their own self-interest with two possible scenarios emerging. The first scenario assumes that demand is strongest among those with high-risk property and that as a result the insurance companies would have to charge higher premiums so as to account for high-risk property. Higher premiums could drive out lower-risk properties, necessitating premium increases, driving more lower-risk properties out — i.e., the replication of an adverse selection death spiral.¹³⁸ This cycle could prevent formation of a robust, private flood insurance option.¹³⁹ A second, arguably more plausible, possibility is that insurance companies would use their superior ability to assess risk to limit coverage only to those at lower risk of suffering damage in what has become known as a reverse information asymmetry problem.¹⁴⁰ As a result, higher-risk property would not be covered at all — a situation that would be incompatible with a goal of providing a stable flood loss safety net,

¹³⁶ See U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 14, at 5.

¹³⁷ See Michael Faure & Veronique Bruggerman, *Catastrophic Risks and First-party Insurance*, 15 CONN. INS. L.J. 1, 27 (2008) (under adverse selection information asymmetry “insurers must be unable to identify high-risk buyers”).

¹³⁸ See Kaplow, *supra* note 10, at 544; Scales, *supra* note 6, at 9 (suggesting that adverse selection “death spirals” occurring in the flood area is a possibility with “unique plausibility”). Cf. Faure & Bruggerman, *supra* note 137, at 26-27 (classic adverse selection “is not a serious problem” with respect to catastrophic losses); Peter Siegelman, *Adverse Selection in Insurance Markets: An Exaggerated Threat*, 113 YALE L.J. 1223 (2004) (refuting the long-held notion that adverse selection within insurance markets will inevitably lead to a collapse).

¹³⁹ Baker, *supra* note 20, at 378 (pointing out that this cycle illustrates that both insurer-side and insured-side adverse selection are at work).

¹⁴⁰ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 135 (describing that in the hurricane context, insurance companies may have the informational advantage “if insurance companies spend a lot of resources estimating the risk (which they do today)” and explaining that “[r]esearch . . . reveals that insurers might want to exploit this reverse information asymmetry, which results in low-risk individuals being optimally covered, while high-risk individuals are not”); see Baker, *supra* note 20, at 378.

though one that could lead to post-flood government intervention, at least as to dramatic flood events.¹⁴¹

3. Moral Hazard

Moral hazard is the term used for the notion that individuals will engage in cost-increasing behavior if they are able to shift some of the cost away from themselves.¹⁴² Since moral hazard is a potential side-effect of cost-shifting, moral hazard is a possible consequence of any opportunity for cost-shifting — whether insurance, post-disaster assistance, or even casualty loss tax deductions. While universal coverage helps solve the adverse selection problem, concerns about moral hazard could loom larger because of the increased opportunities for cost-shifting that would come with universal coverage.

An important assumption underlying the moral hazard concept is that an individual has a consistent cost tolerance with respect to a particular risk. If part of the cost has been shifted to another party, the benefitted individual will rationally engage in less careful behavior up until the point that the expected, unshifted costs reach that individual's tolerance threshold.¹⁴³ For example, a person with auto insurance would drive incrementally more recklessly than someone without insurance and, in theory, would set the level of additional recklessness so that any resulting damage would be adequately compensated by the policy and would not result in unanticipated, irreparable damage to person or property.¹⁴⁴

Insurers use various mechanisms to limit moral hazard, but the two most common monetary methods are co-pays and deductibles.¹⁴⁵ These

¹⁴¹ See *infra* Part III.B.

¹⁴² KENNETH BLACK, JR., & HAROLD D. SKIPPER, JR., *LIFE & HEALTH INSURANCE* 11 (13th ed. 2000).

¹⁴³ See Baker, *supra* note 21, at 270.

¹⁴⁴ See *id.* at 276-78 (explaining that an assumption underlying the economics of moral hazard is that “money compensates for loss” when in fact “money cannot restore the sense of security lost when a storm destroys a home . . . or, indeed, much of what is important in life”).

¹⁴⁵ See Boardman, *supra* note 19, at 841 (noting that “moral hazard is always tempered by the extent to which the policyholder remains on the risk, through deductibles, caps, and the uncertainty of a compliant insurer”); Johnson et al., *supra* note 11, at 232 (“The most common mechanism for controlling moral hazard is a deductible”); KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 99 (discussing NFIP deductibles and stating that “the majority of homeowners prefer a lower deductible”). The NFIP does use deductibles, but since the rates are not

devices are intended to shift just enough pain back to the individuals so that they are more reluctant to engage in the cost-increasing behavior. Even though co-pays and deductibles are usually quite small relative to the costs that are covered by the insurance policy, out-of-pocket costs are fixed, certain losses that individuals may be particularly prone to shun.¹⁴⁶ Indeed, setting co-pays too high may increase rather than decrease moral hazard by over-detering individuals from seeking benefits. For example, if an individual puts off medical care to avoid a co-payment, the cost of the later treatment may be much higher.¹⁴⁷

In addition to using the pain of out-of-pocket costs to control for moral hazard loss, insurers may also monitor the behavior of insured individuals and thereby require a particular level of care.¹⁴⁸ Direct observation of the day-to-day behavior of individuals can be costly, but for many types of coverage, insurance companies have devised methods for indirect monitoring, including reliance on monitoring devices (e.g., fire alarms) or third parties (e.g., doctors).¹⁴⁹ The NFIP requires community adherence to floodplain regulations to increase care and lower the costs of flood loss.¹⁵⁰ Premium rebates or adjustments could be used as monetary rewards for easily measured good behavior — e.g., an absence of claims on the policy.¹⁵¹

In the case of flood loss compensation for individuals, the primary moral hazard concerns arise with respect to how individuals store their personal possessions, how individuals construct and maintain their homes,

actuarially sound, these deductibles may not have the desired effect. The NFIP also limits payouts to the value of the damaged property instead of allowing for payment tied to replacement cost, unless the damage is to a primary residence and its contents. *See also supra* Part II.C.

¹⁴⁶ *See* RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 33-34 (2008) (discussing loss aversion). *See also infra* Part III.B (discussing how consumer cognitive perceptions affect flood loss coverage).

¹⁴⁷ ABHIJIT V. BANERJEE & ESTHER DUFLO, *POOR ECONOMICS: A RADICAL RETHINKING OF THE WAY TO FIGHT GLOBAL POVERTY* (2011).

¹⁴⁸ Baker, *supra* note 21, at 280-81.

¹⁴⁹ *Id.*

¹⁵⁰ *See supra* Part II.A.

¹⁵¹ *See* Johnson et al., *supra* note 11, at 232-33, 238; Baker, *supra* note 21, at 270 (discussing that for some types of moral hazard, observational monitoring is more critical — for example, if the insurance reduces “the incentive to minimize the cost of recovering from a loss,” e.g., the “malingering aspect of the disability insurance temptation problem”).

and where individuals choose to live. Coverage expansion would trigger concerns about exponentially increased moral hazard costs, particularly environmental costs associated with increased development. Expansion of social safety net coverage for individual homeowners and renters could, however, have less of an effect on moral hazard costs than may appear upon first consideration because the assumptions underlying moral hazard analysis are less likely to hold true as to social safety net coverage for primary residences.¹⁵²

In his work excavating the historical and theoretical landscape of moral hazard, Professor Tom Baker outlined several assumptions behind classic moral hazard analysis.¹⁵³ The realities of flood loss suggest that several of these assumptions do not hold true, particularly as to an individual's primary residence. Moral hazard analysis assumes that "money compensates for loss."¹⁵⁴ While loss of a vacation home may come close to being compensable by money, the loss of a primary home and its contents is far less likely to satisfy this condition.¹⁵⁵

Another assumption underlying moral hazard is that "people with insurance have control over themselves and their property."¹⁵⁶ Of course, individuals have some choice over where to live, but, for many individuals, such choices will be constrained by many factors, including financial and social. Further, in the case of flood loss, any particular individual is likely to be far removed from decisions involving flood plain regulation and

¹⁵² See Baker, *supra* note 21, at 240 ("By 'proving' that helping people has harmful consequences, the economics of moral hazard justify the abandonment of legal rules and social policies that try to help the less fortunate."); Kunreuther & Pauly, *supra* note 70, at 108 ("If consumers generally ignore both loss probabilities and potential government assistance in deciding whether or not to buy insurance and how much insurance to purchase, . . . [p]ublic intervention based on our concern for fellow citizens can be straightforward: provide as much assistance as our conscience dictates to fill in the observed gaps in coverage . . . If such choices represent outcomes that are incomplete or inefficient according to the 'selfish' expected utility model, it is irrelevant because people are not using this model of choice anyway."). *But see* Trebilcock & Daniels, *supra* note 10, at 104 (describing the "perverse incentive effects" of post-disaster relief as "severely exacerbating problems of adverse selection and moral hazard in locational decisions").

¹⁵³ Baker, *supra* note 21, at 276.

¹⁵⁴ *Id.*

¹⁵⁵ *See id.* at 276-78 ("[Money cannot restore the sense of security lost when a storm destroys a home . . . or, indeed, much of what is important in life."].

¹⁵⁶ *Id.* at 276.

development.¹⁵⁷ Expansion of flood insurance to all primary residences would potentially affect the care taken by residential developers and landlords,¹⁵⁸ but such effects could be handled directly rather than being used as a reason for denying social benefits to more vulnerable individuals.¹⁵⁹

Moral hazard analysis depends also on individuals being “rational loss minimizers.”¹⁶⁰ As will be discussed in greater detail in the next section, there is reason to believe that a great many individuals fail to act rationally with respect to flood loss. If individuals have difficulty understanding and planning for flood risk, they may also have trouble engaging in the calculated, care reducing behavior assumed by moral hazard analysis. Of course, some individuals will strategically engage in less careful behavior. For example, under the NFIP, the extent of repetitive loss, particularly for second homes,¹⁶¹ as well as the concentration of coverage in high-risk areas could suggest a moral hazard problem.¹⁶² But the concentration of policies in high-risk areas could also be attributable in part to the lender mandate¹⁶³ or to adverse selection.¹⁶⁴

The moral hazard effects of flood insurance expansion also depend on the extent to which post-disaster relief already stands in for universal coverage.¹⁶⁵ Post-disaster relief operates to shift risk and thus raises moral

¹⁵⁷ See *id.* at 279 (“If the people exposed to the insurance incentive are not in control of the behavior that matters, then reducing the insurance incentive will impose a cost on those people while providing little benefit . . .”).

¹⁵⁸ The problem of business flood loss coverage will be addressed in a subsequent article.

¹⁵⁹ See Baker, *supra* note 21, at 240 (“[C]onventional economic accounts of moral hazard exaggerate the incentive effects of real-world insurance and, at the same time, underestimate the social benefits of insurance.”).

¹⁶⁰ *Id.* at 276.

¹⁶¹ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 85 (The CBO “found that many subsidized properties in coastal areas (23 percent from their sample of 10,000 properties) were second homes, vacation homes, or rentals.”).

¹⁶² KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 93-94 (A study undertaken by Professors Kunreuther and Michel-Kerjan of the Florida market revealed that five counties in Florida accounted for two-thirds of the flood policies in Florida; these counties were coastal counties whereas the five counties with the lowest number of policies were located well inland.).

¹⁶³ See *supra* Part II.B.

¹⁶⁴ See *supra* Part III.A.2.

¹⁶⁵ See Pasterick, *supra* note 31, at 152 (“The prevailing public impression is that federal disaster assistance is generally equivalent to the financial protection provided by hazard insurance. In reality this is not the case.”).

hazard concerns similar to those of *ex ante* coverage.¹⁶⁶ Post-disaster relief for large flood events is virtually guaranteed,¹⁶⁷ and even for smaller scale events, various tax provisions operate to shift some of the risk.¹⁶⁸ As with flood insurance coverage, the moral hazard story for post-disaster assistance also depends, however, on assumptions that may not hold true for flood loss. For example, the patchwork nature¹⁶⁹ of available post-disaster relief may make being a “rational loss minimizer” even more difficult.¹⁷⁰

Given the history of flood loss in the United States, there seems little doubt that more care should be taken in land use and development.¹⁷¹ At the same time, however, it is less clear the extent to which classic moral hazard analysis satisfactorily explains the problem, particularly if the focus is on individual homeowners and renters. Even if flood loss protection does not fit neatly into a classic moral hazard frame, the problem of unwise, environmentally harmful development remains. The inability of individuals to plan carefully for flood loss suggests that steps for greater care, including not only mitigation but prohibitions, must be express and be backed by strong incentives or even mandates. Expansion of social safety net coverage could provide an opportunity to craft such incentives and to

¹⁶⁶ See Levmore & Logue, *supra* note 4, at 281 (“[E]xpectation of federal relief has almost certainly increased the willingness of some individuals and businesses to locate or remain in disaster prone areas.”).

¹⁶⁷ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 122 (“[T]he driving force in the provision of government assistance, is the occurrence of large-scale losses.”).

¹⁶⁸ See *infra* Part V.

¹⁶⁹ See *infra* Part III.B (discussion of problems associated with post-disaster relief).

¹⁷⁰ Baker, *supra* note 21, at 276; see also KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 122 (Empirical work on post-disaster relief suggests that “individuals or communities have not based their protective decisions in advance of a disaster by focusing on the expectation of government assistance.” Professors Kunreuther and Michel-Kerjan cite studies suggesting that “most homeowners in earthquake- and hurricane-prone areas did not expect to receive aid from the federal government following a disaster” and that “local governments that received disaster relief undertook more efforts to reduce losses from future disasters than those who did not.” Professors Kunreuther and Michel-Kerjan conclude “this behavior seems counterintuitive, and the reasons for it are not fully understood.”).

¹⁷¹ See generally Klein & Zellmer, *supra* note 4; KLEIN & ZELLMER, *supra* note 7.

enlist homeowners and renters in reducing harm caused by developers and other real property businesses, such as landlords.¹⁷²

B. DEMAND AND ITS DISCONTENTS

The central demand puzzle is why so many homeowners and renters fail to purchase or under-purchase flood insurance, even though it is a bargain. Examples of this puzzle can be gleaned from news accounts of recent flooding. In June 2011, the Souris River rose and caused massive flooding in Minot, North Dakota.¹⁷³ The river had previously seemed nonthreatening after numerous public works initiatives had reduced flood risk.¹⁷⁴ In 2000, the federal government had moved the flood risk assessment level outside the high risk category, which meant that lenders no longer had to enforce the mandate to purchase flood insurance.¹⁷⁵ Although residents remained eligible to participate in flood insurance and were counseled by federal officials to maintain their policies, a large number dropped coverage.¹⁷⁶ At the time of the flooding, an estimated one in ten had flood insurance.¹⁷⁷ In 2011, only 476 residents had flood insurance policies; just one year earlier, 959 residents had flood insurance.¹⁷⁸ The combination of public works projects, lowered risk assessment, removal of the mandate, and financial pressures inexorably led individuals to stop worrying about floods.¹⁷⁹ As one resident put it, “I didn’t have any concerns. . . . It was not going to happen to me. I was in complete denial.”¹⁸⁰

¹⁷² See MOSS, *supra* note 19, at 50-51 (“[G]overnment enjoys a considerable advantage over private insurers when it comes to monitoring and controlling moral hazard directly.”).

¹⁷³ A.G. Sulzberger, *They Dropped Their Flood Insurance, Then the ‘Mouse’ Roared*, N.Y. TIMES, June 24, 2011, at A13.

¹⁷⁴ *Id.* (“[T]he once flood-prone river—known locally as the Mouse, after its French name—had seemingly been tamed by public works projects that reshaped the channel, raised the banks and controlled the flow of water . . .”).

¹⁷⁵ *Id.*; see *supra* Part II.B (discussing lender mandate).

¹⁷⁶ See Sulzberger, *supra* note 171.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* (“[A]nother problem facing residents of Minot is a consequence not of failing to control the river but of decades of doing so successfully. . . . ‘Some citizens have been lulled into a false sense of security because we have had such good results,’ said . . . the City Council president.”).

¹⁸⁰ *Id.* (statement by a real estate agent married to a firefighter).

This response to the possibility of flood loss is not unusual. Even though the NFIP provides flood insurance at low rates,¹⁸¹ many individuals still do not purchase it.¹⁸² The study of financial preparedness, including the problem of underinsurance,¹⁸³ has increasingly become intertwined with cognitive considerations such as optimism bias, loss aversion, and time-inconsistent preferences.¹⁸⁴ This section briefly reviews some of the potential contributions of this research to the under-purchase of flood insurance.

¹⁸¹ See Johnson et al., *supra* note 11, at 225 (“A rational, risk-neutral consumer would purchase coverage at an actuarially fair price that is equivalent to the expected loss. . . . In practice, the story is apparently not that simple.”).

¹⁸² See Johnson et al., *supra* note 11, at 225 (noting that “coverage is underpurchased by consumers, even when it is heavily subsidized”); Kunreuther & Pauly, *supra* note 70, at 103 (“The NFIP . . . provides highly subsidized rates for existing homes so that any risk-averse individual who made the appropriate calculations of the expected benefits and costs of purchasing such insurance should have wanted coverage. In the Louisiana parishes affected by Katrina the percentage of homeowners with flood insurance ranged from 57.7 percent . . . to 7.3 percent. . . .”).

¹⁸³ Underinsurance is a problem for virtually all potentially financially devastating events — for example, death, disability, and casualty. See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 16 (noting that thirty-eight percent of “owner-occupied homes with severe wind damage” in the 2005 hurricanes did not have insurance against wind loss); Levmore & Logue, *supra* note 4, at 273-74 (discussing problem of underinsurance for life insurance after the attacks of 9/11); Francine J. Lipman, *Anatomy of a Disaster Under the Internal Revenue Code*, 6 FLA. TAX REV. 953, 972-73 (2005) (describing fire underinsurance in California).

¹⁸⁴ See, e.g., THALER & SUNSTEIN, *supra* note 146, at 101-56 (discussing cognitive glitches and financial decisions); Levmore & Logue, *supra* note 4, at 282-83 (stating that “simple underinsurance” may result from “myopia, overoptimism, bad planning, or passivity.”); Tom C.W. Lin, *A Behavioral Framework for Securities Risk*, 34 SEATTLE U. L. REV. 325, 336-40 (2011) (discussing the rational investor versus the real investor); Edward J. McCaffery & Joel Slemrod, *Toward an Agenda for Behavioral Public Finance*, in BEHAVIORAL PUBLIC FINANCE 3,13 (Edward J. McCaffery & Joel Slemrod, eds., 2006) (discussing application of “time-inconsistency models” to savings decisions); Robert J. Meyer, *Why We Under-Prepare for Hazards*, in ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA 153, 154-68 (Ronald J. Daniels et al., eds., 2006) (discussing inference bias, forecast bias, procrastination, status quo bias, and empathy gaps); Scales, *supra* note 6, at 9-10 (explaining individuals’ tendencies to respond differently to risks that they view as remote).

Individuals appear to have difficulty conceptualizing probabilities.¹⁸⁵ For low probability events that carry large costs, individuals often fail to take minimal, economically rational steps — purchasing flood insurance, for example. On the other hand, many individuals over-pay for insurance for events that have more salience — e.g., warranties for small electronics¹⁸⁶ or flight insurance following acts of or warnings about terrorism.¹⁸⁷ Using familiarity as a shortcut for understanding a given probability may work relatively well in a variety of situations¹⁸⁸ but is problematic for flood events.¹⁸⁹ Even individuals residing in a relatively hazardous area may never have personally experienced a flood event.¹⁹⁰

¹⁸⁵ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 121 (discussing studies suggesting that people cannot “distinguish between probabilities that ranged from 1 in 10,000 to 1 in 1 million” and that individuals also “did not respond to insurance premiums as a signal of risk”); Jerry & Roberts, *supra* note 10, at 845 (discussing lack of demand for coverage of difficult risks as relating to whether the individual has “past experience with it or know someone else who has endured it”); Johnson et al., *supra* note 11, at 225-26 (explaining that “consumers may have distorted perceptions of the size or probability of the risks they face.”). *See also supra* Part III.A.3 (discussing assumption of accurate risk assessment underlying moral hazard analysis).

¹⁸⁶ THALER & SUNSTEIN, *supra* note 144, at 78-80 (discussing extended warranties on small devices and concluding “the extended warranty is a product that simply should not exist” given various market assumptions).

¹⁸⁷ *See* Johnson et al., *supra* note 11, at 226-31 (discussing “distorted beliefs concerning the probability and size of some potential losses” following from vivid and dramatic news events, including terrorism). *See also* KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 122 (discussing study finding that “local governments that received disaster relief undertook more efforts to reduce losses from future disasters than those who did not”).

¹⁸⁸ THALER & SUNSTEIN, *supra* note 146, at 24-26 (discussing cluster of related mental shortcuts tied to familiarity, including the availability heuristic, accessibility and salience).

¹⁸⁹ *See* Kunreuther & Pauly, *supra* note 70, at 106-07 (discussing how “[r]ather than using the expected utility model, many residents in hazard prone areas appear to follow a sequential model of choice” and “[f]or these individuals only after the occurrence of a disaster does this event assume sufficient salience”). For example, the purchase of NFIP policies increased dramatically following the 2005 hurricane season. KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 87 (750,000 more policies at end of 2007 than in 2005).

¹⁹⁰ *See* Kunreuther & Pauly, *supra* note 70, at 105 (characterizing a “hazard-prone area” as one where annual probability of damage “is within the range of 1 in 50 to 1 in 500. So, while the financial losses should such an event occur can be

Individuals may also be overly optimistic when faced with probabilistic information.¹⁹¹ Thus, even assuming individuals spend the time needed to understand flood risk,¹⁹² such information may still not be enough to overcome an optimistic feeling that the event will not actually happen. As discussed in Part II and also alluded to in the anecdote beginning this section, public works projects may further contribute to a false sense of security.¹⁹³ Individuals who initially purchase a policy may later cancel because of difficulty in perceiving the benefits of a policy that has not produced a cash transfer to the insured.¹⁹⁴ Flood insurance coverage may seem superfluous to an individual who has paid for the coverage for many years but who has yet to file a claim.¹⁹⁵ Individuals already feeling budget constraints will be more prone to seeing the coverage as a luxury rather than necessity.¹⁹⁶ Structuring insurance covering low probability

significant, the great majority of people will not have observed an event close at hand recently.”).

¹⁹¹ See, e.g., THALER & SUNSTEIN, *supra* note 146, at 32-33 (discussing “[u]nrealistic optimism” with respect to statistical risks “to life and health”); Lin, *supra* note 184, at 340 (“Despite facts to the contrary, individuals generally have an overabundance of confidence in their own abilities and an overabundance of optimism in their futures.”).

¹⁹² As discussed *supra* even expert agencies have difficulty creating and maintaining accurate flood risk maps. See Kunreuther & Pauly, *supra* note 70, at 105 (“[M]any potential victims of disaster perceive the costs of getting information about the hazard and costs of protection to be so high relative to the expected benefits that they do not even consider purchasing insurance.”) (citation omitted).

¹⁹³ See generally *supra* Part II.A (discussing the unintended consequences public works projects may have). See also Sulzberger, *supra* note 173 (“Some residents said they had misinterpreted these revised flood estimates to mean that they were no longer at risk. Others said they had just used the lower odds as an opportunity to save some money.”).

¹⁹⁴ See Johnson et al., *supra* note 11, at 231-35 (discussing framing effects and the relative attractiveness of rebates over deductibles). See also THALER & SUNSTEIN, *supra* note 146, at 36-37 (discussing framing effects and “choice architects”).

¹⁹⁵ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 124 (“People often purchase flood insurance only after suffering damage in a flood, but many cancel their policies when several consecutive years pass with no flood.”); Kunreuther & Pauly, *supra* note 70, at 107 (stating that there is “empirical evidence that many homeowners who initially purchase insurance are likely to cancel policies if they have not made a claim over the course of the next few years”); Scales, *supra* note 6, at 31 n.108 (“[U]nrealized insurance risks still have substantial value.”).

¹⁹⁶ Kunreuther & Pauly, *supra* note 70, at 105-06 (“[R]eluctance to invest in protection voluntarily is compounded by budget constraints. For some

events so that it pays an annual rebate to individuals who have not filed a claim may help increase policy retention.¹⁹⁷

Even if individuals understand that buying insurance would be economically wise,¹⁹⁸ they may decide to wait until tomorrow to make the purchase given the pain of parting with money today.¹⁹⁹ Unfortunately, individuals tend to keep moving that “tomorrow” forward in time until it becomes too late.²⁰⁰ Possible contributors to the procrastination phenomenon include an aversion to parting with cash in exchange for uncertain benefits²⁰¹ and a bias toward maintaining one’s current position.²⁰²

homeowners with relatively low incomes, disaster insurance is considered a discretionary expense. . . . In contrast to the expected utility model where the demand for insurance depends on the premium relative to the expected loss, demand appears to depend only on the premium for a given amount of coverage.”)

¹⁹⁷ Johnson et al., *supra* note 11, at 233-35 (describing experiment suggesting that disability insurance structured to provide rebates would be more attractive than standard disability insurance). *See also* BANERJEE & DUFLO, *supra* note 145, at 62-65 (describing how making transfers of small amounts of food supplies increased participation in vaccination program — a program that required multiple treatments and would yield protection benefits that would occur in the future and be difficult to perceive).

¹⁹⁸ The difficulty individuals have in understanding probabilities and coverage benefits will reinforce the desire to procrastinate. *See* BANERJEE & DUFLO, *supra* note 147, at 154 (“[T]he [procrastination] problem is made even harder when the insurance is against a catastrophic event: The payout would take place . . . in a particularly unpleasant future that no one really wants to think about.”); Meyer, *supra* note 184, at 164 (“Decisions to invest in protection against low-probability events are particularly susceptible to procrastination . . .”).

¹⁹⁹ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 122 (explaining that “some homeowners with relatively low incomes” will perceive disaster insurance as a “discretionary expense that should be incurred only if residual funds are available after taking care of what individuals or families consider to be the necessities of life”).

²⁰⁰ BANERJEE & DUFLO, *supra* note 147, at 65 (“Our natural inclination is to postpone small costs, so that they are borne not by our today self but by our tomorrow self instead.”); *see also* Richard H. Thaler & Shlomo Benartzi, *Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving*, 112 J. POL. ECON. S164, S167-68 (2004) (discussing the concepts of self-control and procrastination).

²⁰¹ *See, e.g.*, THALER & SUNSTEIN, *supra* note 146, at 33-34 (describing loss aversion); Thaler & Benartzi, *supra* note 200, at S169-70 (describing loss aversion on savings behavior).

²⁰² THALER & SUNSTEIN, *supra* note 146, at 34-35 (discussing status quo bias).

Pre-commitment devices may solve some types of procrastination problems.²⁰³ The tax system already yields examples of such devices. Congress codified²⁰⁴ an administrative position²⁰⁵ through which employers may enroll employees in section 401(k) deferred compensation plan by default; employees who do not want to participate must then complete an opt-out procedure. Although employees may fairly easily free themselves from their bindings, inertia will likely keep most from doing so and will thereby reduce future regrets over poor planning.²⁰⁶ In addition to this example of a congressionally crafted technique, numerous individuals save through the tax system by selecting or sticking with tax withholding rates

²⁰³ See McCaffery & Slemrod, *supra* note 184, at 13 (describing advantages of “self-commitment devices that limit future choices, like Ulysses did when he bound himself to the mast as his ship passed the Sirens’ sweet song.”). The extent to which government should act paternalistically to remedy cognitive flaws is strongly debated. See, e.g., THALER & SUNSTEIN, *supra* note 146, at 4-11; see generally Richard A. Epstein, *Second-Order Rationality*, in BEHAVIORAL PUBLIC FINANCE 355 (Edward J. McCaffery & Joel Slemrod, eds., 2006); Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. 1620 (2006); Jeffrey J. Rachlinski, *The Uncertain Psychological Case for Paternalism*, 97 NW. U. L. REV. 1165 (2003); Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 U. CHI. L. REV. 1159 (2003).

²⁰⁴ Pension Protection Act of 2006, Pub. L. No. 109-280 § 902, 120 Stat. 780, 1033. See also Automatic Contribution Arrangements, 74 Fed. Reg. 8200, 8200-02 (Feb. 24, 2009); Notice 2009-65, 2009-39 I.R.B. 413 (Sept. 28, 2009) (sample plan amendments for adding § 401(k)(13) automatic enrollment features); see generally STAFF OF THE J. COMM. ON TAXATION, GENERAL EXPLANATION OF TAX LEGISLATION ENACTED IN THE 109TH 329 (Jan. 17, 2007).

²⁰⁵ Rev. Rul. 2000-8, 2000-1 C.B. 617, *amplifying & superseding* Rev. Rul. 98-30, 1998-1 C.B. 1273.

²⁰⁶ See THALER & SUNSTEIN, *supra* note 146, at 107-09; James J. Choi et al., *Saving for Retirement on the Path of Least Resistance*, in BEHAVIORAL PUBLIC FINANCE 304, 339 (Edward J. McCaffery & Joel Slemrod, eds., 2006) (discussing evidence that employees make savings decisions passively and arguing that “employers should choose their plan defaults carefully, since these defaults will strongly influence the retirement preparation of their employees”). See also STAFF OF THE J. COMM. ON TAXATION, PRESENT LAW AND ANALYSIS RELATING TO INDIVIDUAL RETIREMENT ARRANGEMENTS 51-52 (June 26, 2008). (“The theory is that to the extent that these employees are not saving for retirement due to inertia (simple failure to take initiative), that same failure to take initiative may prevent them from electing out of the contributions” and will thereby assist “employees who can and want to save for retirement.”).

that yield significant, lump sum refunds.²⁰⁷ Even though saving through withholding seems to make little economic sense because of the foregone interest, the technique helps individuals resist the temptation to spend the money elsewhere while providing an easy, virtually painless path to amassing a usefully large sum.²⁰⁸

In the case of disaster insurance, devices for dealing with lack of preparation may need to be stronger given the difficulties associated with processing flood loss probabilities.²⁰⁹ The costs of failure to take mitigation steps may make a disaster more costly,²¹⁰ yet the more costly the more likely it is that aftermath aid will be provided. As discussed in the previous section, adverse selection also presents a problem against which mandates provide significant protection. The adverse selection problem could be

²⁰⁷ Fennell, *supra* note 26, at 148 (“About three-fourths of U.S. taxpayers have more income tax than necessary withheld . . . or make excess estimated payments. . .”) (internal citation omitted).

²⁰⁸ STUART RUTHERFORD, *THE POOR AND THEIR MONEY* 1-7 (2009) (discussing need and ways poor amass “usefully large lump sums”). *See also* Fennell, *supra* note 26, at 148-52 (exploring explanations for over-withholding preference, including its use as a pre-commitment device). The allure of lump sums may inspire other techniques designed to combat under-saving. Recently, for example, some U.S. credit unions are attempting to correct savings myopia by adding a lottery hook. *See* Melissa Schettini Kearney et al., *Making Savers Winners: An Overview of Prize-linked Savings Products* 14-20 (Nat’l Bureau of Econ. Research, Working Paper No. 16433) (2010), *available at* www.nber.org/papers/w16433 (discussing U.S. market potential and current offerings); Anne Stuhldreher, *Credit Unions Launch a Savings Lottery, and Everyone Hits the Jackpot*, WASH. POST, Feb. 7, 2010, at B4 (discussing savings lotteries). Such lottery-linked accounts have been utilized internationally for years. *See* Mauro F. Guillén & Adrian E. Tschoegl, *Banking on Gambling: Banks and Lottery-Linked Deposit Accounts*, 21 J. FIN. SERVICES RES. 219, 225-29 (overview of history, practice, and methods used in various countries); *See generally* Kearney et al., *supra* note 208, at 7-14 (discussing use of programs used internationally).

²⁰⁹ Kunreuther & Pauly, *supra* note 70, at 103 (discussing evidence suggesting that people’s beliefs about flood loss cause them to “have no incentive to invest in protective measures voluntarily”).

²¹⁰ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 262-63 (discussing “natural disaster syndrome” as increased vulnerability caused by “cost-effective loss-reduction measures” and reviewing “extensive evidence that residents in hazard-prone areas do not undertake loss prevention measures voluntarily”).

exacerbated by cognitive hurdles if flood loss is salient only for those most at risk.²¹¹

Local, state, and federal officials attempting to plan for over-optimism and probability processing difficulty will themselves be subject to the same types of cognitive challenges.²¹² Prior to a flood, government actors may fail to take protective steps even though cost-benefit analysis strongly supports action.²¹³ Political pressures to limit spending and keep taxes low may further dampen efforts to take precautionary measures.²¹⁴ Yet, in the aftermath of a flood, especially a large-scale event, officials will

²¹¹ It is also possible, however, that the problem might be lessened if even individuals facing the highest risk fail to take action because of various cognitive hurdles. Further, if individuals only perceive flood loss as salient after an event occurs, adverse selection may be lower because another event in the near future may be less likely depending on community response. *See* KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 122 (discussing study finding “that local governments that received disaster relief undertook more efforts to reduce losses from future disasters than those who did not”).

²¹² *See* Meyer, *supra* note 184, at 173 (“[B]enevolent central planning” is limited in “that it has legitimacy only to the degree that benevolent central planning is free of the decision biases that it is meant to cure.”); Scales, *supra* note 6, at 12 (“Governments, like individuals, are subject to many of the cognitive biases that constrain the development of private catastrophe insurance.”).

²¹³ Burby, *supra* note 38, at 179 (providing three examples of how local government (in)action in New Orleans revealed a lack of concern about flooding hazards, including lobbying by the local government for levees built to resist a one-hundred-year flood rather than a two-hundred-year flood in order to reduce the local cost share); Kunreuther & Pauly, *supra* note 70, at 102 (“Public sector agencies may also behave in ways that are inconsistent with optimal social policy by not using the principles of benefit-cost analysis . . . as illustrated by the Corps of Engineers decision not to strengthen the New Orleans levees.”); Meyer, *supra* note 184, at 157 (discussing history of hurricanes in the greater New Orleans area and noting that “ironically, this success [with Hurricane Camille]—combined with the lack of storms in the years that followed—seemed to deflate rather than spur interest in completing the [flood-control] project.”); Nunn, *supra* note 119, at 186-90 (detailing information available to public officials regarding the vulnerability of New Orleans).

²¹⁴ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 263 (discussing how “given short-term reelection considerations, the representative is likely to vote for measures that allocate taxpayers’ money elsewhere that yield more political capital. . . . because they believe that their constituents are not worried about these events occurring”).

be required to do something²¹⁵ and may reap political rewards for their public acts of generosity.²¹⁶ Reliance on *ex post* relief may carry with it significant problems. Relief efforts will depend on the vividness of the event—and, with respect to government assistance, may also depend on the proximity of the event to an election.²¹⁷ If the event is sufficiently large scale, aid may be relatively plentiful.²¹⁸ On the other hand, even if a flood event is catastrophic in the life of a particular family, if the flood is an isolated occurrence, that family may have little access to outside sources of support.²¹⁹ Even in cases of large-scale disasters where aftermath aid is relatively plentiful, access to the aid may be difficult for individuals to obtain because the path may not be clear having been put together in a patchy, *ad hoc* fashion in a stressful context.²²⁰ Lower-income individuals may suffer in particular. For example, an important post-disaster program is the availability of low-interest loans from the Small Business Administration for damaged property, including personal residences and

²¹⁵ *Id.* at 262 (“The magnitude of the destruction following a catastrophe often leads public sector agencies to provide disaster relief to victims even if the government claimed it had no intention of doing so prior to the event.”). *See also*, Daniel Shaviro, *Beyond Public Choice and Public Interest: A Study of the Legislative Process as Illustrated by Tax Legislation in the 1980s*, 139 U. PA. L. REV. 1, 86-87 (1990) (discussing congressional “bias in favor of action over inaction”).

²¹⁶ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 263 (“The fact that politicians can benefit from their generous actions following a disaster raises basic questions as to the capacity of elected representatives at the local, state, and federal levels to induce people to adopt protection measures before the next disaster.”).

²¹⁷ *See* KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 123 (describing research showing that “disaster assistance is more prevalent in presidential election years, all other things being equal”); Kunreuther & Pauly, *supra* note 70, at 106 (“[T]he amount and terms of the disaster [relief] depend on random political influences including the proximity of the disaster to the date of the next national election.”).

²¹⁸ Kunreuther & Pauly, *supra* note 70, at 106 (“What is well understood is that large-scale losses from disasters are a driving force with respect to the actual provision of government relief (citation omitted) . . .”).

²¹⁹ *See* Ellen P. Aprill & Richard Schmalbeck, *Post-Disaster Tax Legislation: A Series of Unfortunate Events*, 56 DUKE L.J. 51, 61-62 (2006) (discussing horizontal inequity in comparing relief for large-scale disasters and that for disasters affecting fewer individuals).

²²⁰ *See* Kunreuther & Pauly, *supra* note 70, at 106 (“[T]he combination of low private insurance and haphazard public disaster relief may lead to inefficiency as well as high levels of government spending.”).

effects.²²¹ Low-income individuals are often ineligible for these loans because of the default risk.²²²

Costs may be higher with post-disaster assistance—in part because the cost of administering and obtaining the aid may be more costly because of lack of pre-planning and in part because the costs may be higher than if adequate pre-disaster mitigation steps had occurred.²²³ In the aftermath of a disaster, the government may overreact by enacting rules that are inconsistent with other policy goals — tax changes, for example, that have far larger effects than may have been intended.²²⁴ Of course, *ex ante* provisions are unlikely to bring the need for aftermath aid down to zero. Unanticipated problems may emerge and some coverage gaps may remain.

²²¹ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 19 (describing program).

²²² *Id.* at 19. See also BANERJEE & DUFLO, *supra* note 145, at 151-52 (discussing government intervention in international context and noting “[t]he government intervenes only in cases of large-scale disasters, not when a buffalo dies or someone is hit by a car. And even disaster relief is, in most cases, vastly insufficient by the time it gets to the poor.”).

²²³ KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 262 (noting that the “combination of underinvestment in protection prior to the event leading to large disaster losses, together with the general taxpayer financing some of the recovery, can be critiqued on both efficiency and equity grounds”).

²²⁴ See Danshera Cords, *Charitable Contributions for Disaster Relief: Rationalizing Tax Consequences and Victim Benefits*, 57 CATH. U. L. REV. 427, 434 (2008) (concluding that “Congress should avoid post-disaster temporary tax legislation as a means to aid disaster relief efforts”); Aprill & Schmalbeck, *supra* note 219, at 53-54 (discussing Congressional overreaction and the “legislative imperative” to act following a disaster and concluding that the results have “been disappointing, and largely inconsistent with sound tax policy”).

Professors Ellen Aprill and Richard Schmalbeck, for example, have recommended having Congress adopt joint resolutions declaring a disaster instead of delegating to the executive branch the responsibility of designating federally declared disasters because “Congress will likely always feel that it needs to act when disaster strikes.” Aprill & Schmalbeck, *supra* note 219, at 95. They have also recommended creation of a panel to identify categories of relief provisions—some of which would be available widely and other that should rarely be used. *Id.* at 97-99. Such “[g]uidelines . . . would establish presumptions, obligating a member of Congress who proposes to disregard them to offer compelling explanations of why it would be appropriate to do so.” *Id.*

In addition, government officials, charities, and individuals will likely still want to do something to show altruism and support.²²⁵

No simple solution exists to deal with the difficulties inherent in flood loss and floodplain management. The approach proposed in this Article is one that relies on having multiple pressure points for action and needed adjustment with respect to flood loss.

IV. NATIONAL FLOOD LOSS SECURITY PROGRAM

The previous two parts outlined some of the reasons supporting the case for continued government intervention in flood loss relief and for structuring such intervention to be widely available and focused on limiting *ad hoc*, post-disaster decisions. Much more could (and has) been written on these issues. This section will, however, take as a working assumption that the benefits of a broad, *ex ante* approach outweigh its costs and will turn to discussing the potential benefits of structuring a national flood loss security program using the powerful tools available through the tax system. This Part also outlines one possible structure for such an approach.²²⁶ Part V

²²⁵ Cf. Levmore & Logue, *supra* note 4, at 277 (predicting that “public and charitable relief will more likely be forthcoming if there is (or is perceived to be) less than full private insurance”).

²²⁶ The mechanisms proposed in this Article are aimed directly at individuals instead of being designed to have an effect on institutions potentially involved in managing flood risk — e.g., insurance companies and charitable organizations providing aftermath aid. Thus, for example, this Article does not include discussion of possible subsidies for insurance companies to aid in the creation of a commercial flood insurance market. See Agnew, *supra* note 124 (discussing proposed legislation aimed at providing tax relief to insurance companies for catastrophe reserves). Nor does it include discussion of some type of “supercharged subsidy for charitable gifts”. See Levmore & Logue, *supra* note 4, at 308-09 (discussing such a proposal in the context of terrorism insurance).

The money to fund flood loss coverage could also be raised through a consumption tax model. State sales taxes are examples of a consumption tax; excise taxes on alcohol and cigarettes are federal examples of consumption taxes. See JOEL SLEMROD AND JON BAKIJA, *TAXING OURSELVES: A CITIZEN’S GUIDE TO THE DEBATE OVER TAXES* 231-68 (4th ed. 2008) (discussing consumption taxes). The rate of a consumption tax would, however, be much more difficult, if not impossible, to tie to a particular individual’s flood risk. It would also be more difficult to adjust consumption tax rates to take into account an individual’s ability to pay. For example, imagine that a flood tax were imposed as a national sales tax; to adjust for flood risk and ability to pay, at each point of sale, a questionnaire regarding one’s income and location of principal residence would need to be

discusses how current tax law on disaster relief should be adjusted so as to harmonize with the creation of a broad flood loss security program.

A. LEVERS OF TAX SYSTEM POWER

Flood loss protection is highly complex and requires attention to both social safety net concerns and concerns regarding unsafe or unwise development and construction. Utilizing tax system components to implement flood loss protection could provide multiple avenues for addressing this complexity. Use of the tax system would facilitate implementation of mandates and universal coverage, thus ensuring a minimum level of coverage for all citizens. Universal coverage would also help to alleviate adverse selection problems and to resolve the difficulty individuals have in committing to flood loss prevention. Other tax system components — refunds and rate adjustments, for example — could be utilized to make the benefits of having coverage more salient and to incentivize individuals to engage in mitigation efforts. The tax system could also be structured so as to harmonize with and reinforce other flood-cost reduction programs, including relocation programs.

The strength of the withholding mechanism would facilitate the collection of premiums.²²⁷ Other tax return items — gross income, for example — could be readily utilized to adjust premiums so as to take into account an individual's ability-to-pay. As was discussed in Part II, premium collection is currently outsourced to private insurance businesses with highly problematic results. The IRS, in contrast, has a strong record of enforcement competence and general efficiency.²²⁸ Further, the IRS and

completed. While the process could be streamlined through technology — e.g., a smart card — the administrative and compliance problems of using a sales tax for such a purpose loom large.

A more realistic consumption tax approach would utilize a low-rate consumption tax to support a supplemental general catastrophe fund for dealing with unexpected costs. Such a fund could also provide a focal point for political involvement in the aftermath of the disaster. See Aprill & Schmalbeck, *supra* note 219, at 93.

²²⁷ SLEMROD & BAKIJA, *supra* note 226, at 181 (discussing how withholding technique is a “major enforcement tool”). *But see* Richard L. Doernberg, *The Case Against Withholding*, 61 TEX. L. REV. 595 (1982) (discussing history of withholding system and providing a critique of the system).

²²⁸ John T. Scholz, *Contractual Compliance and The Federal Income Tax System*, 13 WASH. U. J.L. & POL'Y 139, 162 (2003) (“Efficiency pressures are so embedded in the organizational culture of the IRS that even strong external

Treasury already have experience dealing with flood events as it must enforce several tax rules relating to natural disasters.²²⁹

Of course, bringing in the IRS and Treasury will also raise new concerns. Utilizing these governmental units to implement a social program could further dilute their mission, particularly revenue collection under the income tax system.²³⁰ The IRS and Treasury already play a significant role in other social programs, such as retirement planning and health care. In addition, the Internal Revenue Code contains numerous tax expenditures and other indirect social programs, such as the earned income tax credit. The detrimental effects of the addition of one more social program to be administered in part by the IRS and Treasury is hard to know in advance. Certainly, implementation of the proposed flood loss security program would require expansion of the IRS budget, something that is politically difficult even in less partisan times. On the other hand, if the goal is universal coverage through a federal program, it is difficult to envision a government agency or private organization better equipped to handle the collection of premiums.

The IRS and Treasury would not be the only administrative agencies tasked with overseeing the proposed program. Flood risk assessment and oversight of community regulations would still belong to the agency that currently handles those assessments — i.e., FEMA.²³¹ In addition, FEMA's role would need to expand to include claims adjustment, a function which is currently almost entirely outsourced to private insurance companies through the WYO program.²³² The proposed program's heavy reliance on administrative agencies raises concerns

pressures have limited ability to change them.”); John T. Scholz & B. Dan Wood, *Efficiency, Equity, and Politics: Democratic Controls Over the Tax Collector*, 43 AMER. J. POL. SCI. 1166, 1184-85 (1999) (finding that “efficiency consistently provides the dominant influence on audit allocation decisions”). Complaints about the IRS being *too* driven by collection may, however, arise as they have in the past. Scholz, *supra* at 164-65 (discussing efforts by Congress to discourage “unduly zealous enforcement”).

²²⁹ See *infra* Part V.

²³⁰ For general discussion of IRS mission and history, see Alan H. Plumley & C. Eugene Steuerle, *Ultimate Objectives for the IRS: Balancing Revenue and Service*, in THE CRISIS IN TAX ADMINISTRATION 311 (Henry J. Aaron & Joel Slemrod, eds., 2004).

²³¹ See *supra* Part II.C (discussing problems with current FEMA maps).

²³² See *supra* Part II.D.

regarding agency capture and other agency shortcomings.²³³ As discussed in Part II, a case can already be made based on the history of the NFIP that communities exert too much influence over the updating and enforcement of new flood maps, and FEMA's approach to Hurricane Katrina can be cited as a textbook example of regulatory failure.²³⁴ While an in-depth discussion of agency capture and other potential agency flaws is beyond the scope of this Article, the proposed system arguably should not be any more problematic than that under the current NFIP and may even be less susceptible to such pressures.

Moving to a mandatory, universally applicable system may make interest group formation more difficult.²³⁵ Under the NFIP, communities opt in to the program, and the availability of flood insurance to individuals depends on communities agreeing to participate in the NFIP. FEMA appears to have as an internal goal a focus on individual access and purchase of flood insurance.²³⁶ If that is the case, FEMA may be more inclined to agree to community demands in order to facilitate that mission since individual access is available only if the community qualifies as an NFIP participant.²³⁷ If flood insurance purchase is mandatory for individuals, access to coverage would not be held hostage by community demands. The rates charged to individuals under the system proposed in this Article would, however, be adjusted through community adherence to regulations. Thus, pressure from communities on agencies would continue to be a factor, but the issue of rate rather than access may be less likely to

²³³ See MUELLER, *supra* note 40, at 343-47 (discussing phenomenon of rent-seeking through regulation).

²³⁴ See *supra* Parts II.A and C. See also Russell S. Sobel & Pater T Leeson, *Government's Response to Hurricane Katrina: A Public Choice Analysis*, 127 PUBLIC CHOICE 55 (2006).

²³⁵ See MUELLER, *supra* note 40, at 475 ("One of the most counterintuitive predictions of Olson's theory is that small interest groups are much more effective at obtaining favors from government than large groups are. . . . In poor countries, where the agricultural sector is large and the group of middle-class urban dwellers is small, farmers receive small or even *negative* subsidies for their products . . . [but if] farmers make up a tiny fraction of the total workforce, they often receive giant subsidies.").

²³⁶ See *The Official Site of the National Flood Insurance Program*, FLOODSMART.GOV, www.floodsmart.gov.

²³⁷ See Robert M. Howard & David C. Nixon, *Local Control of the Bureaucracy: Federal Appeals Courts, Ideology, and the Internal Revenue Service*, 13 WASH. U. J.L. & POL'Y 233, 236 (2003) (discussing the "goal-seeking nature of bureaucracy").

induce capitulation to community pressures. (Of course, communities may themselves be under greater pressure from their residents as a mandate may mean that more individuals would take an interest in assuring community compliance so as to receive the best premium rates possible.)

The involvement of the IRS and Treasury may act as a counterweight to community pressure and provide monitoring of FEMA.²³⁸ Some scholarship suggests that the IRS and Treasury are less susceptible to capture than other agencies because of the diverse range of interests in the charge of these agencies.²³⁹ In addition, empirical research on IRS enforcement patterns suggests that the IRS is more influenced by national trends than by localized politics.²⁴⁰

²³⁸ See Rachel E. Barkow, *Insulating Agencies: Avoiding Capture Through Institutional Design*, 89 TEX. L. REV. 15, 49-58 (2010) (exploring how “shared responsibilities” among agencies “can either foster or frustrate” agency independence).

²³⁹ Scholz, *supra* note 228, at 158-59 (“Of all of the specialized enforcement agencies, the IRS is arguably the most sheltered from direct political influence at all levels.”); Edward A. Zelinsky, *James Madison and Public Choice at Gucci Gulch: A Procedural Defense of Tax Expenditures and Tax Institutions*, 102 YALE L.J. 1165, 1166-67 (1993) (“Tax institutions, because of their greater visibility and more competitive nature, are less susceptible to interest group capture and possess greater legitimacy under pluralist criteria than their direct expenditure equivalents.”).

²⁴⁰ Howard & Nixon, *supra* note 237, at 233 (“Examining cross-sectional time series data from 1960 until 1988, we found that the IRS shifts the number of audits it conducts of businesses versus individuals in response to the prevailing median ideology of the federal courts of appeals, and in response to the prevailing ideological framework of the President and Congress.”); Scholz & Wood, *supra* note 228, at 1185 (“Partisan responsiveness exerts a somewhat less consistent influence on audit allocations. State-level partisanship consistently shifts audit resources away from taxpayers with business income in Republican states, but the results are less supportive of the partisanship hypothesis for nonbusiness taxpayers. On the national level, both presidents and Congressional committees influence the tradeoff between equity and efficiency, with presidential influence being significant for more categories of taxpayers than committee influence.”); John T. Scholz & Dan Wood, *Controlling the IRS: Principals, Principles, and Public Administration*, 42 AM. J. POL. SCI. 141, 160 (1998) (“Consistent with past research on other agencies, the mix of IRS audits also responds to changes in the presidency as well as changes in the leadership and ideology of members of congressional oversight committees. On the other hand, the mix of corporate versus individual audits does not respond to state-level variations in partisanship of the state’s congressional delegation, governor, presidential vote, or legislature

Given the recent series of congressional showdowns over deficits, social programs, and taxes, enactment of such an expansion over the current NFIP would face its own hurdles. During the last several years, Congress has put off dealing with the shortcomings of the NFIP by enacting short-term extensions of the program.²⁴¹ Admittedly, the prospects of a more complete overhaul of the program are relatively dim given the current political climate. Of particular concern may be the mandatory aspect of the proposed expansion,²⁴² especially given the litigation surrounding the mandate contained in the health care legislation.²⁴³ Discussion of the constitutionality of the health care mandate is beyond the scope of this Article, but there is reason to think that the structure proposed in this Article is less susceptible to such arguments.

The federal government already has a well-established commercial interest in flood loss protection as evidenced by the NFIP, Army Corps of Engineers flood mitigation projects, and the provision of aftermath protection.²⁴⁴ The formation and presence of commercial special interest groups should also be much lower than was the case with health insurance given that private insurers have not underwritten flood insurance for decades, although removal of the WYO payments may cause some consternation.²⁴⁵ The collection of premiums would be somewhat similar to that utilized for social security, a program whose constitutionality has been

The picture suggests that earlier reforms have succeeded in insulating field offices from local influences.”).

²⁴¹ See *supra* Part I.

²⁴² See Kunreuther & Pauly, *supra* note 70, at 114 (discussing the prospects of flood insurance mandate and suggesting “Lower income people will have the increases cushioned (though not taken away entirely) by subsidies, but the middle class especially may object to being charged for insurance which they think they do not need and will never use. How to assemble at least a minimal winning coalition of citizens to make mandated coverage feasible is a crucial research topic.”).

²⁴³ See *Thomas More Law Center v. Obama*, 720 F. Supp. 2d 882 (E.D. Mich. 2010), *aff'd* 108 A.F.T.R.2d 2011-5007 (6th Cir. 2011); *Florida ex rel Bondi vs. Health & Human Services*, 107 A.F.T.R.2d 2011-724 (N.D. Fla. 2011), *aff'd in part, rev'd in part*, 2011 WL 3519178 (11th Cir. 2011).

²⁴⁴ See 42 U.S.C. § 4001-4002 (2006) (congressional findings regarding economic burdens caused by flood loss). For discussion of the commerce clause as it relates to the healthcare legislation, compare *Thomas More Law Center* 108 A.F.T.R. 2d 2011-5007 at 14-15, with *Florida ex rel Bondi*, 2011 WL 3519178 at *24-38.

²⁴⁵ See *supra* Part II.D (discussion of WYO program).

upheld.²⁴⁶ The premiums would be paid in substantial part as an exchange for direct coverage rather than being a penalty related to a decision to self-insure (which has been characterized by critics of the health care mandate as a tax on doing nothing rather than an income or excise tax).²⁴⁷ The vividness of recent flood events and the feelings of altruism triggered by such events may also ease the path to enactment.²⁴⁸ Finally, it may be possible to invest a portion of the collected revenues (in years of lower flooding costs) to spur development of private catastrophe coverage — for example, stimulation of the catastrophe bond market.²⁴⁹

²⁴⁶ See *Steward Machine Co. v. Davis*, 301 U.S. 548 (1937) (employer portion). For an overview of the current state of the social security system, see Patricia Dilley, *Through the Doughnut Hole: Reimagining the Social Security Contribution & Benefit Base Limit*, 62 ADMIN. LAW REV. 367 (2010).

Although the proposed plan uses the term “premium,” the payments could also be characterized as a form of income tax under an analysis applied to social security as well as to the “shared responsibility payment” of the health care legislation. See Brian Galle, *Conditional Taxation and the Constitutionality of Health Care Reform*, 120 YALE L.J. ONLINE 27 (2010) (responsibility payment is a constitutional income tax); Edward Kleinbard, *Constitutional Kreplach*, TAX NOTES 755, 761-62 (Aug. 16, 2010) (the healthcare penalty is a constitutional income tax and one tied to self-insurance). *But see* Steven J. Willis & Nakku Chung, *Constitutional Decapitation and Healthcare*, TAX NOTES 169 (July 12, 2010) (arguing that penalty is an unconstitutional, unapportioned direct tax — assuming it is a tax).

Individuals may feel less favorably towards taxes and penalties and more favorably toward rewards, even if the two structures are economically identical. Individuals also appear to prefer hidden taxes to obvious taxes. See George Lowenstein et al., *Statistical, Identifiable, and Iconic Victims*, in BEHAVIORAL PUBLIC FINANCE 32, 38-39 (Edward J. McCaffery & Joel Slemrod, eds. 2006) (discussing the appeal of hidden taxes). In the case of the health care legislation, using a term that avoided the word “tax” was viewed as disingenuous and backfired. Use of the term premium should be less problematic in the case of flood loss protection given that it is paid in exchange for coverage.

²⁴⁷ See Willis & Chung, *supra* note 246, at 185 (“Congress could require everyone to purchase flood insurance from the government and charge appropriately for it.”). See also Kleinbard, *supra* note 246, at 759 (explaining that “[T]he Supreme Court has rejected any invitation to distinguish between taxes designed to influence behavior and taxes designed to raise revenue.”).

²⁴⁸ See Kunreuther & Pauly, *supra* note 70, at 108 (“Concern for our fellow citizens as well as our own needs should disaster strike home makes us want our government to help out, and in a democracy the public sector responds.”).

²⁴⁹ With thanks to Yariv Brauner & Tom Lin for this suggestion. For discussion of catastrophe bonds and other alternative risk transfer instruments, see

While the costs and hurdles to enactment of universal flood loss will remain largely unknown until such a program is put into place, the costs to individuals and communities of continuing with the NFIP and the *ad hoc* post-disaster relief are relatively well understood. While this Article advocates a universal system, if such a system were politically impossible a scaled-back version of the system proposed herein could still be a significant improvement over the current approach to flood loss.

B. PROGRAM OUTLINE

Payment into the proposed flood loss security program would be mandatory for individuals,²⁵⁰ and premium collection would be handled as much as possible through withholding, with adjustments as necessary through an individual's annual income tax return. Calculating the withholding rate could be simplified by making various default assumptions, which could be then be adjusted through worksheets completed with the annual income tax return.²⁵¹ Preferably, the default withholding rates should be set so that is more likely that individual adjustments lead to a refund rather than to the requirement of additional

KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 174-90; *see also* Scales, *supra* note 6, at 46.

²⁵⁰ As discussed *supra* Part IV.B, for individuals at low risk, the tax could be made an opt-out program if universal coverage were too politically difficult to enact. *Supra* note 24. Using an opt-out regime rather than opt-in would allow for the strategic use of the status quo bias, as has been allowed for 401(k) plans. *See supra* Part III.B. Such opting out could come at the price of losing certain other tax benefits, such as the casualty loss deduction. *See infra* Part V.C.

²⁵¹ Complicated details relating to filing status—e.g., married filing jointly—would have to be worked out, and that level of detail is beyond the scope of this project. Working out those details may, however, be smoothed by similarities to other withholding programs. For example, the flood security tax system would share similarities with the current system for withholding regular income taxes and the requirement for estimated payments. *See* Doernberg, *supra* note 227, at 595 (discussing history of withholding system and providing a critique of the system). Self-employed individuals are also required to remit self-employment tax with their tax form each year. *See* Patricia Dilley, *Breaking the Glass Slipper: Reflections on the Self-Employment Tax*, 54 TAX LAW. 65, n.6 (2000). For a discussion of the conceptual flaws surrounding the self-employment tax, *see* Patricia Dilley, *Breaking the Glass Slipper: Reflections on the Self-Employment Tax*, 54 TAX LAW. 65 (2000).

payments.²⁵² The premium rate would depend on the flood risk loss, the amount of coverage purchased, and ability to pay.

The flood risk assessment would be tied to the location of the principal residence.²⁵³ Second homes would not be covered, which should help curb repetitive loss problems and is also in keeping with an approach focused on provision of a safety net.²⁵⁴ Thus, it will be critical to define principal residence carefully.²⁵⁵ The tax code already uses this term in other contexts,²⁵⁶ and the same basic approach as contained in those sections could be utilized. Thus, an individual's principal residence would depend on various factors, including place of employment, length of abode, and residence of family members. Ownership would not be required,²⁵⁷ though coverage would then, of course, be limited to possessions. Some individuals may have difficulty pointing to a principal residence — either

²⁵² See *supra* Part III.B (discussion of individual preferences for tax refunds).

²⁵³ A rate that varies with location raises the question whether the Uniformity Clause would present an obstacle to enactment of such a program. The Uniformity Clause is contained in Article I, section 8, which provides “The Congress shall have Power To lay and collect Taxes, Duties, Imposts and Excises . . . but all Duties, Imposts and Excises shall be uniform throughout the United States.” See Aprill & Schmalbeck, *supra* note 219, at 78-84 (discussing the uniformity clause); Lawrence Zelenak, *Are Rifle Shot Transition Rules and Other Ad Hoc Tax Legislation Constitutional?*, 44 TAX L. REV. 563, 588-601 (1989). This Article's proposals should pass muster under the *Ptasynski* case. *United States v. Ptasynski*, 462 U.S. 74 (1983). In that case, Congress imposed an excise tax on crude oil that varied according to three tiers and that also exempted “Alaskan oil,” which was defined in terms of a well's proximity to the Arctic Circle or Alaska-Aleutian Range and Trans-Alaska Pipeline. *Id.* at 77-78. The Court explained in dictum, “[h]ad Congress described this class of oil in nongeographic terms, there would be no question as to the Act's constitutionality.” *Id.* at 86. See Zelenak, *supra* at 591-94 (explaining significance of this dictum and arguing that Supreme Court is likely to apply it in future cases). The Court upheld the exemption even though it was framed in geographic terms because “Congress has exercised its considered judgment with respect to an enormously complex problem.” *Ptasynski*, 462 U.S. at 86.

²⁵⁴ As will be discussed in greater detail *infra*, coverage could also be designed so as to limit repetitive claims with respect to the same structure. See *infra* notes 277-79 and accompanying text.

²⁵⁵ A procedure for changing the primary residence would have to be put in place as well.

²⁵⁶ I.R.C. §§ 121, 123, 1033(h) (2006).

²⁵⁷ The regulations promulgated under Code section 123 have a similar provision. Treas. Reg. § 1.123-1(c) (as amended in 1980).

because they have two or more regular residences or because they have no residence at all. Regulations issued under an unrelated provision provide that taxpayers with more than one residence are generally treated as having their primary residence as the place where they spend the most time.²⁵⁸ In the case of flood coverage, in limited circumstances,²⁵⁹ it may make sense to allow taxpayers to designate a principal residence.²⁶⁰

Once the principal residence has been identified, the flood risk associated with the principal residence would have to be determined. This determination clearly presents an administrative burden, but it is one that is already present even if the current system takes a less visible approach through the WYO program²⁶¹ and the lender mandate.²⁶² Risk rate brackets would be created, and these brackets could be narrowly or loosely tailored. One possibility is to mimic the current approach under the NFIP and use broad designations. For example, three brackets — high risk, moderate risk, and low risk — could be used as an initial matter. The high-risk category would apply to homes in one- hundred year flood plains or greater risk, which corresponds to the current high-risk designation in the NFIP.²⁶³ The moderate risk category could apply to homes facing a five- hundred year flood plain risk or greater (but less than the one- hundred year flood risk).²⁶⁴ All other homes would be low risk.

As discussed in Part II, flood risk assessments have not been completed (or are badly in need of updating) for many communities. Individuals with principal residences in such areas would still need to be assigned to a risk category. Default assignment to the high-risk category could maximize the possibility that flood risk assessment would be completed since the individual would have an incentive to pursue completion of the assessment. It could also forestall complaints about being

²⁵⁸ Treas. Reg. § 1.121-1(b) (as amended in 2002).

²⁵⁹ For example, designation could be freely allowed for high-risk residences but subject to much greater scrutiny if the designation relates to a home in a lower-risk area.

²⁶⁰ It would be possible for each spouse in a marriage to have a separate principal residence if, for example, each spouse has a different home for purposes of the “away from home” requirement of section 162. *See* I.R.C. § 162 (2006). Care would be required to keep such an allowance from becoming a means to circumvent the principal residence requirement.

²⁶¹ *See supra* Part II.D.

²⁶² *See supra* Part I.B.

²⁶³ *See supra* note 59 (discussion of term).

²⁶⁴ *See supra* note 62 (describing recommendation for 500-year flood plain).

moved from moderate-risk to high-risk.²⁶⁵ At the same time, individuals may view an assignment to such a category would undoubtedly be viewed as punitive by many individuals; thus, it may be politically prudent to set the default for unmapped areas to moderate risk.

Use of risk rate brackets could function as an incentive for individuals to lower their risk rate by engaging in less risky behavior (or by influencing their communities to meet guidelines that would also move the flood plain risk). In theory, if individuals have a choice of moving to a high-risk or moderate-risk primary residence, all other things being equal, they should choose the moderate-risk home to lower the taxes. The brackets could be used in other ways to minimize costly behavior. For example, an individual who experiences a flood loss and receives a payment under the program could automatically be moved into a higher risk category until the individual shows proof of taking adequate mitigation²⁶⁶ or relocation to a less risky principal residence.

Rebates could be used to reward individuals who engage in hazard mitigation or have multiple years without a claim. As discussed in Part III, individuals appear to prefer to have taxes over-withheld so as to receive the lump-sum tax rebate payment,²⁶⁷ and individuals may also prefer insurance rebates (coupled with higher base insurance rates) to deductibles.²⁶⁸ Because flood loss is relatively unlikely even for individuals residing in high-risk zones,²⁶⁹ interim rewards through refunds may help ease the psychic difficulty of contributing to a system that in most years may be perceived as not providing a benefit.²⁷⁰ With a national, mandatory program, individuals may be more likely to understand the probability of flood loss because flood losses, if looked at using a national perspective, may appear more salient.²⁷¹

²⁶⁵ See *supra* Part II.C (discussing how FEMA has adopted a grandfathering approach in response to such complaints).

²⁶⁶ Of course, mitigation devices are themselves not without risk. See *supra* Part II.A. See also Klein & Zellmer, *supra* note 4, at 1486-89 (discussing the inadequacies of “engineered flood control”).

²⁶⁷ Fennell, *supra* note 26, at 148-52.

²⁶⁸ Johnson et al., *supra* note 11, at 232-33, 238.

²⁶⁹ See *supra* Part III.B.

²⁷⁰ See *supra* Part III.B.

²⁷¹ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 352 (“[W]hen one expands the lens to include a state or country or the global community, catastrophic risks have a much higher likelihood of occurring.”).

Community involvement in flood mitigation would remain a part of the proposal as mitigation does reduce flood losses (within limits).²⁷² Homes in nonparticipating communities could automatically be treated as being in a high-risk area, while communities that receive high mitigation ratings could trigger rate reductions for their residents. Thus, the Community Rating System, described in Part II, would remain an important feature of the flood loss landscape.

Risk would not be the only item to affecting rate, and adjustments would also be made for coverage and income. In order for the program to function as a social safety net, minimum coverage levels as well as maximum coverage levels would need to be set. The minimum coverage level should be tied to local cost of living measures. The maximum coverage limits under the current NFIP appear generally adequate.²⁷³ These limits are \$100,000 for personal property and \$250,000 for residential real estate.²⁷⁴ The coverage would apply per residence, so a married couple sharing the same principal residence would have the same coverage limits as a single individual residing alone in one principal residence. Above the minimum coverage level, individuals would be required to demonstrate actual loss rather than receiving the replacement value amount.²⁷⁵ A side effect of the proposed flood security plan may be a decrease in the aftermath relief provided by private sources and through special legislation.²⁷⁶ Thus, minimum coverage should include payments for temporary living expense grants.

²⁷² See *supra* Part II.A. See also Burby, *supra* note 38, at 182 (“The number of NFIP insurance claims per capita for compensation of flood damages and the per capita dollar amount of payments made to settle claims were *highest* in states that did not require responsible behavior—neither building code enforcement nor comprehensive plans—from their local governments. . .”).

²⁷³ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 83 (describing study of years 2000-2005 suggesting that “almost three-quarters were still below the \$250,000 maximum coverage limit. One reason for this large percentage is that many homes had property values below this limit.”).

²⁷⁴ See *supra* Part II.C. This coverage will not, of course, provide a full recovery for many residences. Individuals with residences worth in excess of the maximum coverage would be left to seek excess coverage in the private market, to the extent available. KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 41 (noting that in Katrina some homes covered by flood insurance still suffered large uninsured losses because of the \$250,000 NFIP cap and failure to obtain “excess coverage from private carriers”). Such a result is, however, consistent with the safety-net focus of the proposed program.

²⁷⁵ See *supra* note 75.

²⁷⁶ See Levmore & Logue, *supra* note 4.

One possibility for further tamping down repetitive loss would be to have structural coverage run with the property rather than with the individual²⁷⁷ and limit the recovery per property to a particular number of times, through a declining coverage regime, or through a combination of the two. For example, maximum structural coverage could be reduced in half to \$125,000 for a second occurrence, halved again for a third occurrence, with coverage disappearing entirely for a fourth occurrence.²⁷⁸ Such a system would add some further complication to the collection system, and notations would also need to be added to deeds so that purchasers would not be caught unawares. The threat of coverage removal would also have to be credible.²⁷⁹ Coupling coverage reductions with relocation grants may be advisable as may be providing some type of reset mechanism in the event of community changes.

The amount of tax owed would also be adjusted for income level — with “income” tied to gross income rather than to “wages”.²⁸⁰ Tax-exempt interest should be added back in for a more accurate snapshot of an individual’s ability to pay.²⁸¹

Because adjusting for income levels would further complicate the proposed withholding system, it may be advisable to have fairly broad categories and then create credits for the poorest individuals. For example, the withholding rate could remain unchanged from \$1 to \$250,000, from \$250,000 to \$999,999, and finally from \$1 million and up.²⁸² Lower income

²⁷⁷ With thanks to Marty McMahon for this suggestion. *See also* Scales, *supra* note 6, at 20 n. 70 (noting that “insurance does not ‘run with the land’” in discussing lender mandate since “mortgage obligations have a life of their own”).

²⁷⁸ *See* KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 264-65 (“In areas that have suffered multiple catastrophes—say, three or more—nature may be telling us something: that these locations are naturally much more likely to be damaged than others.”).

²⁷⁹ *See* Kydland & Prescott, *supra* note 45, at 477 (“But the rational agent knows that, if he and others build houses there, the government will take the necessary flood-control measures.”).

²⁸⁰ The definition of “wage” may be quite complex. I.R.C. § 3401 (2006).

²⁸¹ A similar rule applies to the taxation of Social Security benefits. I.R.C. § 86(b)(2)(B) (2006). *See* Goldin v. Baker, 809 F.2d 187, 188 (2d Cir. 1987) (upholding constitutionality of § 86(b)(2)(B)).

²⁸² By comparison, the rate brackets in the general income tax system are more compressed and the highest rate bracket begins at a fairly low level. *See* Martin J. McMahon, Jr., *The Matthew Effect and Federal Taxation*, 45 B.C. L. REV. 993 (2004) (discussing distribution of income tax system brackets).

individuals could then receive credits to further assist them in participating in the system.

Adjusting the premium for wealth rather than for gross income would arguably provide a more accurate picture of an individual's ability to pay the tax, particularly since the coverage would be for a wealth loss, but measuring wealth would be far more difficult than measuring income given that there is no annually assessed U.S. wealth tax.²⁸³ Coverage levels may, in any case, be a rough proxy for wealth. That is, wealthier individuals may be more likely to seek to cover the maximum amount of property damage, and the rate can be increased for larger coverage amounts. As will be discussed in the next Part, coverage limitations should be enforced directly but also indirectly through, for example, limitations on the casualty loss deduction.

V. CHANGES TO THE CODE

Various provisions of the Internal Revenue Code provide additional risk-shifting from individuals to the government (and then out to other citizens).²⁸⁴ This section outlines the current tax treatment of: non-insurance benefits received from government or private actors; insurance proceeds for property loss and for temporary assistance; and losses not reimbursed by insurance, government, or other private actors.²⁸⁵ As to each

²⁸³ For a discussion of wealth taxes, see Joseph M. Dodge, *What Federal Taxes Are Subject to the Rule of Apportionment under the Constitution?*, 11 U. PA. J. CONST. L. 839 (2009); David Shakow & Reed Shuldiner, *A Comprehensive Wealth Tax*, 53 TAX L. REV. 499 (2000).

²⁸⁴ See KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 19-20 (explaining that federal tax policy on catastrophe losses "affect the risk mitigation incentives of property owners and insurers' ability to finance catastrophe losses"); MOSS, *supra* note 19 (describing various ways governments intervene in regulating risk).

²⁸⁵ The discussion in the Article centers on those Code provisions aimed most directly at individuals and their personal property losses, but Congress has in the past enacted and may again enact other special relief rules in the event of a disaster, including provisions aimed at business losses. See generally, James Edward Maule, *Tax Incentives for Economically Distressed Areas*, in BNA TAX MANAGEMENT PORTFOLIO no.597 (2007). Congress may enact business-related provisions—e.g., enhanced expensing or net operating loss treatment. State and local governments' ability to issue bonds may be increased and restrictions on certain credits, such as the low income housing credit, may be lifted. See I.R.C. §§ 1400L-1400Q (2006). Further, charities and charitable deductions may receive favorable treatment. See I.R.C. §§ 1400L-1400Q. Penalties on retirement account withdrawals may be lifted and deadlines extended for various tax items. See I.R.C.

group, this section also discusses changes that may be recommended so as to harmonize these provisions with the proposed flood loss security program.²⁸⁶ Such harmonization is achieved through favorable tax treatment for benefits received under the proposed program and supporting mitigation grant programs while placing some limits the tax benefits to be obtained for non-program assistance and strongly limiting the deductibility of uncompensated flood losses.

A. NON-INSURANCE ASSISTANCE

In the immediate aftermath of a flood, government agencies, charitable organizations, commercial businesses and individuals frequently provide temporary aid to the victims. This aid is likely to include fresh water, meals, hygiene supplies, clothing, transportation, and shelter.²⁸⁷ From a traditional, economic approach to defining income, such items are arguably taxable increases to the recipients. Not surprisingly given the circumstances in which these transfers occur, the value of temporary aid for disaster victims is generally excluded from taxable income, though until about ten years ago, the path for exclusion depended in large part on Service rulings²⁸⁸ and was sometimes arguably inconsistent with the Internal Revenue Code.²⁸⁹

§§ 1400L-1400Q. *See also* Aprill & Schmalbeck, *supra* note 219 (providing overview of relief enacted in response to 2005 hurricane season and attacks of September 11, 2001); Lipman, *supra* note 183, at 976-1018 (describing Code sections aimed at disaster relief).

²⁸⁶ Even in the absence of enactment of the proposed expansion of flood insurance, these tax sections could be better aligned with the goals of the NFIP and other flood-related programs. *See* KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 20 (“[C]urrent tax policy with respect to uninsured disaster losses has received little attention to date, as it creates disincentives for efficient disaster risk management.”).

²⁸⁷ Disaster relief grants made to businesses are not addressed in this Article. For background on such grants, *see* Notice 2003-18, 2003-1 C.B. 699 (grants to businesses affected by World Trade Center attacks not excludable as gifts or as general welfare payments).

²⁸⁸ For example, under these older authorities, if temporary assistance came from government, it would be treated as a nontaxable, general welfare distribution. Rev. Rul. 98-19, 1998-1 C.B. 840; Rev. Rul. 76-144, 1976-1 C.B. 17,18. Not all governmental transfers are excluded from gross income. For example, unemployment is included because it is substitute for wages. I.R.C. § 85 (2006). *See also* Rev. Rul. 85-29 (Alaska dividend payments are income); J. MARTIN BURKE & MICHAEL K. FRIEL, *TAXATION OF INDIVIDUAL INCOME* (9th ed. 2010), at

225-26 (discussing general welfare rulings). In some cases, use of the general welfare exclusion was technically problematic. For example, in the aftermath of a fire caused by the National Park Service, the Service had difficulty determining whether relief payments that were also a settlement of any claims against the federal government could qualify under the general welfare exclusion and whether a distinction should be drawn between insured and uninsured individuals. *See infra* Part V.B.1 (discussing Code section 123 which provides a limited exclusion for payments under insurance contracts for temporary living expense assistance). The Chief Counsel's office recommended not taxing any of the payments even though it could not fully support this administrative position under then-current law. I.R.S. CCA 200114044; I.R.S. CCA 200114045. A limited exception was made for amounts "received for luxuries or for living expenses of an individual who has abandoned efforts to re-occupy a dwelling comparable to the one whose occupancy or use was denied by the fire." I.R.S. CCA 200114045.

Individuals would be able to exclude assistance from a charitable organization or another individual as gifts, so long as the transfer proceeded out of charitable impulses and without the imposition of quid pro quo conditions. *See* I.R.C. § 102(a) (2006); *Comm'r v. Duberstein*, 363 U.S. 278, 285 (1960).

²⁸⁹ In particular, a revenue ruling permitting employees to exclude disaster relief from employers was particularly problematic because it took the position that such transfers were not income because "[t]he objective of the corporation is to try to place the employees in the same economic position, or as near to it as possible, which they had before the casualty." Rev. Rul. 131, 1953-2 C.B. 112, 113 (1953), made obsolete by I.R.C. § 102(c) & I.R.C. § 139. The ruling did not, however, allow the employees to increase basis in damaged property. *Id.* at 113-14. The revenue ruling was issued prior to the Supreme Court's determination that income consisted of "undeniable accessions to wealth, clearly realized, and over which the taxpayers have complete dominion." *Comm'r v. Glenshaw Glass*, 348 U.S. 426, 431 (1955). But how casualty events should be treated even given an expansive definition of income remains a matter of debate. *See* Jeffrey H. Kahn, *Personal Deductions—A Tax "Ideal" or Just Another "Deal"?*, 2002 L. REV. M.S.U.-D.C.L. 1, 37-40 (2002) (arguing that casualty and theft loss deductions should not be treated as departures from economic income and should not be treated as tax expenditures by the Joint Committee on Taxation). *See also* Boris I. Bittker, *Income Tax Deductions, Credits, and Subsidies for Personal Expenditures*, 16 J.L. & ECON. 193, 198 (1973) (arguing that an insistence that there is only one way to view casualty losses in terms of an income definition is "sheer dogmatism").

More problematic for the validity of the ruling was the 1986 enactment of a rule prohibiting an exclusion from gross income for "any amount transferred by or for an employer to, or for the benefit of, an employee." I.R.C. § 102(c) (2006); Tax Reform Act of 1986, Pub. L. No. 99-514, 100 Stat. 2110 § 122(b) (1986). *See also* Rev. Rul. 2003-12, 2003-1 C.B. 283 ("[T]he payments made by the employer described in Rev. Rul. 131 do not qualify as gifts under § 102 and are not excluded from the employees' gross income under the general welfare exclusion.").

In the aftermath of September 11, 2001, Congress amended the Internal Revenue Code²⁹⁰ to codify partially the Service's administrative positions with respect to non-insurance disaster transfers without supplanting the exclusion for governmental general welfare transfers.²⁹¹ Currently, the Code provides an exclusion from gross income for a "qualified disaster relief payment"²⁹² (relief payment) and a "qualified disaster mitigation payment"²⁹³ (mitigation payment). Relief payments are tied to the immediate aftermath of a disaster while mitigation payments are grants to be used for improvements that will lessen the extent of future losses.²⁹⁴ With respect to either type of payment, the Code provides that if an excludible payment is received, the individual may not use the excluded funds to take a further deduction or credit.²⁹⁵ In other words, taxpayers may not obtain two tax benefits for the same dollars.

1. Qualified Disaster Relief Payments

In order to be excluded from income as a qualified disaster relief payment, the payment must be for "reasonable and necessary personal, family, living, or funeral expenses" or "reasonable and necessary expenses

Legislation enacted in the aftermath of September 11, 2001, clarifies that payments made in connection with certain types of disasters are not gross income, regardless of source of payment (other than insurance payments). I.R.C. § 139. *See also* Cords, *supra* note 224, at 442 (discussing difficulty of excluding payments from employer to victim-employee "because they did not easily fit within the definition of a gift").

²⁹⁰ Victims of Terrorism Tax Relief Act of 2001, Pub. L. No. 107-134 § 111, 115 Stat. 2427, 2432 (2001).

²⁹¹ Rev. Rul. 2003-12, 2003-1 C.B. 283 (explaining that § 139(b)(4) "codifies (but does not supplant) the administrative general welfare exclusion").

²⁹² I.R.C. § 139(b) (2006).

²⁹³ I.R.C. § 139(g).

²⁹⁴ *See* JOINT COMMITTEE ON TAXATION, GENERAL EXPLANATION OF TAX LEGISLATION ENACTED IN THE 109TH CONGRESS, JCS- 1-07, at 6 *Report* JCS-1-07 (explaining that mitigation payments are "grant[ed] to mitigate potential damage from future hazards" whereas relief payments ally to "certain amounts received by individuals as a result of a disaster that has occurred"); *see* 42 U.S.C. § 4011(b)(4)(listing mitigation programs and including properties covered by such programs in the NFIP); 44 C.F.R. Parts 78-80 (flood mitigation assistance & grants; property acquisition & relocation for open space).

²⁹⁵ I.R.C. § 139(h) ("[N]o deduction or credit shall be allowed . . . for, or by reason of, any expenditure to the extent of the amount excluded under [section 139] with respect to such expenditure.").

incurred for the repair or rehabilitation of a personal residence or repair or replacement of its contents.”²⁹⁶ FEMA temporary assistance grants would be excludible under this authority.²⁹⁷ A qualifying relief payment does not, however, include payments received under an insurance contract or compensation for costs that have already been covered by an insurance contract.²⁹⁸ Payments made under a flood insurance contract are, of course,

²⁹⁶ I.R.C. §§ 139(c)(1)-(2) (2006). In addition, non-governmental payment must be made in connection with a qualified disaster, which includes a disaster resulting from a “terroristic or military action” or a federally declared disaster. These items “terroristic or military action” are in turn defined in Code § 692(c)(2) and includes “any terroristic activity which a preponderance of the evidence indicates was directed against the United States or any of its allies” and “any military action involving the Armed Forces of the United States and resulting from violence or aggression against the United States or any of its allies (or threat thereof).” I.R.C. § 692(c)(2). Code section 692(c)(2) goes on to specify that “military action” does not include training exercises.” *Id.* Code section 139 also has provisions relating to common carrier disasters (e.g., airline crashes). *See* I.R.C. §§ 139(b)(3), 139(c)(3).

A federally declared disaster “means any disaster subsequently determined by the President of the United States to warrant assistance by the Federal Government under the Robert T. Stafford Disaster Relief and Emergency Assistance Act.” I.R.C. § 165(h)(3)(C). The definition of “federally declared disaster” is in a Code section whose primary effect (an increase in the standard deduction) only applies to disasters occurring before January 1, 2010. Nevertheless, the definition itself has not expired. In any case, prior to 2008, section 139 was tied instead to a “Presidentially declared disaster,” which had virtually the same meaning as the current “federally declared disaster.” Tax Extenders and Alternative Minimum Tax Relief Act of 2008, Pub. L. No. 110-343, 122 Stat. 3765, 3922 Division C, § 706(a)(2)(D)(iv) (2008). In order for a disaster to be considered presidentially declared, the disaster, “with respect to the area in which the property is located, resulted in a subsequent determination by the President that such area warrants assistance by the Federal Government under the Robert T. Stafford Disaster Relief and Emergency Assistance Act.” I.R.C. § 1033(h)(3) (2006).

Payments from government sources, whether federal, state, or local, are excluded if made “in connection with a qualified disaster in order to promote the general welfare.” IRC 139(b)(4). With respect to governmental payments, qualified disaster is defined more broadly to include “a disaster which is determined by an applicable Federal, State, or local authority . . . to warrant assistance from the Federal, State, or local government or agency or instrumentality thereof.” I.R.C. § 139(c)(4).

²⁹⁷ *See* Lipman, *supra* note 183, at 962-71.

²⁹⁸ Other than these restrictions related to insurance coverage, the statute does not require that non-governmental payments must be from a particular source. For

ultimately made by the federal government, but the statute does not contain an exception for flood insurance in its requirement that the provision only applies to payments “not otherwise compensated by insurance.” Since the NFIP is generally treated as insurance for other purposes,²⁹⁹ and since the Service has apparently not issued guidance on this issue,³⁰⁰ payouts under the NFIP should be handled under the tax provisions relating to insurance recoveries rather than under the exclusion for governmental disaster relief payments.

For flood losses that occur outside the context of a federally declared disaster, individuals would be able to exclude transfers from individuals, charitable organizations, and government by arguing that these transfers are gifts (if from individuals or charities) or are general welfare transfers (if from government).³⁰¹ Thus, the main difference between treatment of flood losses occurring in federally declared disasters and other flood losses is that transfers by employers and employer-operated foundations would be subject to much greater scrutiny and would most likely be taxable as a matter of positive law (whether the Service would

example, the Service has confirmed that transfers from employers to employees may be excluded from income by the employees, so long as the requirements of the Code are met. Rev. Rul. 2003-12, 2003-1 C.B. 283 (holding that even though employer transfers to employees do not qualify as gifts or as excludible general welfare, they may qualify for the section 139 exclusion if the other conditions are met). *See supra* note 158 (discussing the problem of employer temporary assistance payments).

²⁹⁹ *See supra* Part II.

³⁰⁰ In 2000, the National Park Service caused a fire that destroyed more than 200 residences in New Mexico. The Service’s Office of Chief Counsel issued informal letters advising the exclusion of the FEMA payments made both to provide relief for the disaster and to settle any claims an individual might have against the federal government for the disaster. I.R.S. CCA 200114044; CCA 200114045. In addition, the Office of Chief Counsel further advised that FEMA reimbursements for NFIP premiums were excludible to the extent the fire caused taxpayers to need to purchase flood insurance as a result of the fire. I.R.S. CCA 200114046. The Chief Counsel’s Office provided little analysis to support its “belie[f] that under the unique circumstances . . . the government’s reimbursements of flood insurance premiums need not be treated as gain.” I.R.S. CCA 200114046. In any case, none of the Chief Counsel Advice memoranda dealt with flood insurance contract payments made to compensate for flood loss, and the letters also pre-date Section 139’s exclusion for qualified relief payments.

³⁰¹ *See* Rev. Rul. 2003-12, 2003-1 C.B. 283 (discussing treatment of government, charitable, and employer transfers in context of presidentially declared disaster).

pursue such transfers at the individual flood victim level is a different matter).

The proposed flood loss security program with its mandate may decrease the extent to which individuals receive aftermath aid from other sources.³⁰² Post-disaster assistance seems unlikely, however, to dwindle altogether, and in the case of high-profile events is still likely to be significant. This Article proposes that the exclusion for post-disaster assistance should continue given the possibility of unexpected needs and the administrative difficulty of enforcing an inclusion at a time of crisis. The exclusion should, however, be made more generous so as to apply with respect to any flood loss without the need for a federally declared disaster.

The current exclusion is allowed only to the extent amounts are not already covered by insurance.³⁰³ As an enhancement to the social safety net aspects of the proposed program and for administrative convenience, this provision could be lifted to the extent of the minimum required coverage for personal property.³⁰⁴ For example, if the minimum required coverage for personal possessions were \$15,000, individuals could receive a matching amount from non-insurance sources income-tax free even if there is some coverage duplication. It would, however, also be advisable to put a cap on the amount that could be excluded if received from non-government sources, especially employers. This cap could be set to match the personal property coverage maximum and would be added to prevent the problem of disguised compensation but also to avoid the possible creation of a shadow, government-subsidized system for higher income individuals.³⁰⁵ Of course, transfers from family and friends that exceed such a maximum amount would still potentially be excluded from income under the general provision for gifts.³⁰⁶

³⁰² See Levmore & Logue, *supra* note 4, at 280 (speculating that if private insurance covers disaster losses “there is apt to be less sympathy and therefore a lower probability of public or charitable relief”).

³⁰³ See *supra* Part IV.A.1.

³⁰⁴ This assumes that the proposed program is mandatory at all risk levels. See *supra* Part IV.B. If the program is made opt-out for certain categories of risks, the exclusion for non-insurance assistance should be largely disallowed as to those who choose to opt-out. This disallowance could help discourage individuals from opting out. The general gift provision of Code section 102 would still be available.

³⁰⁵ To the extent high-end private flood insurance is (or becomes) available, payments under the contract would be governed by general provisions applicable to insurance reimbursements. See *infra* Part V.B.

³⁰⁶ I.R.C. § 102 (2006).

2. Qualified Disaster Mitigation Payments.

In addition to aftermath aid, Congress has instituted grant programs aimed at lessening future flood damage.³⁰⁷ For example, homeowners may apply for grants to elevate a home.³⁰⁸ In an informal memorandum, the Service's Office of the Chief Counsel advised that such payments were taxable because they were for the mitigation of future disasters and thus were not the type of relief payments excluded by either the Code or the administrative general welfare exclusion.³⁰⁹ Congress acted in 2005 to change this result and provided a retroactive exclusion for these types of payments.³¹⁰ In order to qualify for the statutory exclusion, however, the payments may not be for the sale of the property.³¹¹ If the grant is in substance the purchase of a property, then payments are not excluded and would instead generate gain or loss according to the difference between the payment and the individual's tax investment (i.e., the individual's adjusted basis) in her property.³¹² Taxpayers would be able to defer recognition of any resulting gain through purchase of qualifying replacement property,³¹³

³⁰⁷ See I.R.S. CCA 200431012, 2004 WL 1701305 (IRC CCA) (describing mitigation grants authorized by the Robert T. Stafford Disaster Relief and Emergency Assistance Act and The National Flood Insurance Act); JOINT COMMITTEE ON TAXATION, GENERAL EXPLANATION OF TAX LEGISLATION ENACTED IN THE 109TH CONGRESS, JCS- 1-07.

NFIP flood insurance contract payments would not be excluded as qualified disaster mitigation payments since the contract payments are reimbursements for losses that have already occurred and are not made to lessen future losses.

³⁰⁸ See *supra* note 292 (mitigation programs).

³⁰⁹ I.R.S. CCA 200431012 (advising that the mitigation payments were not excludable under Code sections 102, 139, or 1033 or through administrative practice regarding general welfare or government-created property rights).

³¹⁰ I.R.C. § 139(g)(3) (2006); Public Law 109-7, § 1(a)(1) (2005). Any hazard mitigation payment used with respect to property may not also increase the basis in that property. I.R.C. § 139(g)(3); Pub. L. No. 109-7, 119 Stat. 21 § 1(a)(1) (2005). Any hazard mitigation payment used with respect to property may not also increase the basis in that property.

³¹¹ I.R.C. § 139(g)(2).

³¹² I.R.C. § 1001.

³¹³ Code section 1033(k) provides that section 1033 is available for these types of sales even though these programs are voluntary. I.R.C. § 1033(k). See *infra* Part IV.B.2 (describing Code section 1033).

but any loss would apparently be nondeductible if the payment related to a residence or other personal-use property.³¹⁴

The exclusion for hazard mitigation payments should remain in place³¹⁵ in order to continue to encourage steps that lessen the costs of flood loss. Expansion of the benefits of such steps should also be explored. For example, relocation programs that are the equivalent of a sale could provide for a loss deduction, if any tax loss results.³¹⁶

³¹⁴ If the sale relates to a personal residence, the loss would be a nondeductible personal loss under the Code. Individuals may deduct casualty and theft losses even if the underlying asset is a personal-use asset, but any loss generated by the type of sale described in Code section 139(g) would not qualify. The programs described in Code section 139(g) are voluntary hazard mitigation programs, so there is no involuntary taking. *See* CCA 200431012; Joint Committee Report, JCA-1-07.

Code section 165(k) does allow taxpayers to take a casualty loss deduction if a taxpayer is ordered by a governmental entity to demolish or relocate a residence because it has been rendered unsafe as the result of a federally declared disaster and the order to demolish occurs not later than the 120th day after the federal disaster declaration. I.R.C. § 165(k) (2006). Section 165(k) would not apply with respect to the voluntary hazard mitigation programs currently offered under the Stafford Act and the Flood Insurance Act. In the absence of section 165(k), it is less clear whether a government action such as an ordered demolition of an unsafe building would qualify as a casualty event. *See, e.g.,* Powers v. Commissioner, 36 T.C. 1191 (1961) (no casualty loss deduction allowed for impounding of car by East Berlin authorities); Washington v. Comm’r, T.C. Memo 1990-386 (losses arising out of a court-ordered eviction were not casualty losses). *Compare* I.R.C. § 280B (disallowing deduction for demolition costs). Eminent domain actions by federal, state, or local government require, of course, payment of just compensation. *See* Stop the Beach Renourishment, Inc., v. Fl. Dept. Environment’l Protection, 130 S. Ct. 2592, 2601-02 (2010) (general discussion of Takings Clause of U.S. Constitution). Because of the compensation element, section 1033 rather than section 165 would almost certainly be the applicable provision. Section 1033 is discussed *infra* Part V.B.2.

³¹⁵ *See supra* Part IV.A.2.

³¹⁶ This could be accomplished either by treating the loss as a casualty loss or as an investment loss. If treated as a casualty loss, some of the current limitations on deductibility could be relaxed, as has been done in the past for certain types of casualty losses. *See infra* Part V.C. Because the sale would be of a personal residence, any loss would be nondeductible under current law, so legislation would also be required for such a loss to qualify as an investment loss. If treated as an investment loss, the loss would be capital and subject to various timing constraints on deductibility, which could also be relaxed. *See* I.R.C. §§ 1211(b), 1212(b) (limiting capital loss deduction to amount of capital gains plus \$3,000, with excess

Such tax enhancements should, however, require that the individual move to a low risk home and also require evidence that the home had a prior history of flooding. Such tax enhancements should, however, require that the individual move to a low risk home and also require evidence that the home had a prior history of flooding. A more generous tax treatment for sale-equivalent relocation may particularly be needed if coverage of structural components is structured to decrease and eventually disappear for repetitive loss to the same structure.³¹⁷ Hazard mitigation grants could also be used to support adjustments to the premium charged individuals. In addition to direct grant programs, tax credit programs could also be enacted to encourage home improvements that would decrease flood loss.³¹⁸

B. INSURANCE PROCEEDS

Current tax law divides casualty insurance payouts into two basic categories: payments for temporary living expenses and payments for property damage.

1. Temporary Assistance

A limited tax exclusion applies to insurance payments for temporary living expenses.³¹⁹ The Code exempts from tax insurance

carried forward). For individuals without capital gains, casualty loss treatment would provide the lower tax result because casualty losses yield an offset against ordinary income.

³¹⁷ See *supra* Part IV.B.

³¹⁸ Similar tax credit programs have been enacted with respect to energy efficient improvements. See, e.g., I.R.C. § 25D (2006). See also KUNREUTHER & MICHEL-KERJAN, *supra* note 6, at 264 (suggesting tax incentives as a way “to encourage residents to pursue mitigation measures is to provide tax incentives” and describing success of an earthquake loss mitigation program established by the city of Berkeley, California).

³¹⁹ I.R.C. § 123 (2006). In the absence of Code section 123, such temporary assistance transfers would be taxable. Treas. Reg. § 1.123-1(a)(5) (insurance payments for living expenses are includible in gross income except to the extent provided for in Code section 123). First, payments for temporary assistance made by an insurance company to an insured would never qualify as a tax-exempt gift since such temporary assistance would occur by operation of the insurance contract instead of out of charitable impulses. Second, since individuals have no deduction for personal consumption, a non-statutory exclusion of the insurance proceeds for such consumption would be problematic. I.R.C. § 262. At the same time, the

reimbursements for “living expenses incurred during such period for himself and members of his household resulting from the loss of use or occupancy” if the individual’s principal residence is damaged by casualty or if the individual is not able to enter his principal residence on government orders because of the threat of a casualty.³²⁰ “Principal residence” in this context “depends upon all the facts and circumstances in each case,” and includes also rented residences.³²¹ The exclusion applies only to living expenses and not to payments made for loss of income or for lost or damaged property.³²² A federally declared disaster is not a requirement, so this exclusion applies to any casualty event causing displacement from the principal residence. A taxpayer may exclude the insurance payment only to the extent the actual expenses incurred during the displacement exceed the normal expenses that would have been incurred but were avoided as a result of the casualty.³²³ As a result, the exclusion applies only to duplicative and increased living expenses.³²⁴

dividing line between insurance premiums and pre-payments for services is not always clear. For example, purchasers of AAA undoubtedly view roadside assistance as services for which they have already made payments. *Cf.* *Am. Auto. Ass’n v. United States*, 367 U.S. 687, 689 (1961); *Auto. Club of Mich. v. Comm’r*, 353 U.S. 180, 180 (1957) (membership dues included in income upon receipt). Discussion of the line between prepayment for services and insurance is beyond the scope of this Article.

³²⁰ I.R.C. § 123(a); Treas. Reg. § 1.123-1(a).

³²¹ Treas. Reg. § 1.123-1(c). Omitted from this definition of “principal residence” is a link to Code section 121, which provides an exclusion for gains realized on the sale of a principal residence. In any case, the principal residence definition in the section 123 regulations is consistent with, if not as nuanced as, that contained in the section 121 regulations. *See* Treas. Reg. § 1.121-1(b). *See supra* Part IV.B (discussing principal residence concept).

³²² Treas. Reg. § 1.123-1(a)(3).

³²³ Treas. Reg. § 1.123-1(b)(1). The regulations also require that payments must be traceable to reimbursement for living expenses under the insurance contract. Thus, if an insured receives a payment on account of lost rental income and uses it for duplicative living expenses, the payment will not be excluded under this provision. The regulations contain ratios for determining the extent to which an insurance reimbursement is for living expenses if there is blanket coverage rather than identifiable living expense coverage. Treas. Reg. § 1.123-1(a)(4).

³²⁴ For example, if a family spends \$800 per month normally on food cooked in the residence but is now forced to spend \$1,200 on restaurant meals but spends nothing on cooking food, only a maximum of \$400 could be excluded for increased food costs. All the living expenses are considered in the aggregate, so this \$400 increase might be offset by decreases elsewhere—for example, by a

This limitation is not lifted even if the triggering event is a federally declared disaster. In at least one instance, the Service's Office of Chief Counsel has, however, advised against implementing the limitation and instead advised field agents to apply a blanket exclusion for all living expense reimbursements other than those for "luxuries or for living expenses of an individual who has abandoned efforts to re-occupy a [comparable] dwelling."³²⁵ The Chief Counsel Advice memorandum may not be used as precedent and was given in response to a disaster triggered by the actions of the National Park Service.³²⁶ Still, the memorandum perhaps provides some indication of the relative zeal with which the Service will audit those claiming exclusions for insurance coverage of temporary living expenses — particularly if the displacement occurs in the context of a large-scale disaster.

Coverage under the NFIP does not currently cover temporary living expenses,³²⁷ but the proposed program would provide such coverage and the current exclusion would thereby become applicable. The limitation relating to the need for duplicative costs should be lifted with respect to flood program payments for the same reasons that non-insurance amounts should be excluded up to a certain point: to further safety net goals and to reduce administrative complexity.³²⁸ An exception for luxuries, as suggested in the Chief Counsel Advice described above, should not be necessary because the amount of coverage for temporary living expenses would be statutorily capped at an amount tied to meeting basic needs.

2. Property Loss Reimbursement

It may seem counterintuitive that a catastrophe could give rise to a tax liability, but such is the case if reimbursements for property exceed the taxpayer's investment in the property. For example, if an individual purchased a painting for \$100,000 many years ago and receives \$300,000

reduction in commuting costs. Treas. Reg. § 1.123-1(b)(4) Ex. 1. Professor Lipman has noted that even though these provisions are strict on their face "in practice they may have little application. Homeowner's insurance coverage generally only reimburses a homeowner for additional living expenses, which is defined consistently with the exclusion provision." Lipman, *supra* note 181, at 984-85.

³²⁵ I.R.S. TECH. ADV. MEM. 200114045 (Mar. 29, 2001).

³²⁶ *Id.*

³²⁷ See NAT'L FLOOD INS. PROGRAM, *National Flood Insurance Program Summary of Coverage*, http://www.floodsmart.gov/floodsmart/pages/residential_coverage/whats_covered.jsp.

³²⁸ See *supra* Part V.A.1.

in insurance proceeds for the painting, the individual would recognize \$200,000 of casualty gain. The Code permits taxpayers to elect to defer paying taxes on such casualty gains by purchasing replacement property.³²⁹ The replacement property must be “similar or related in service or use” to the original, destroyed property.³³⁰ The gain is deferred rather than completely excluded by treating the taxpayer as though his investment in the replacement property is carried over from the destroyed property.³³¹

As discussed above, property purchased as part of a hazard mitigation program is eligible for deferral of any gain on the sale.³³² A special rule also applies to principal residences that are “compulsorily or involuntarily converted as a result of a Presidentially declared disaster”³³³: taxpayers receive a full exclusion for insurance proceeds received for unscheduled property without the need to purchase replacement property.³³⁴ The extent to which household contents are treated as unscheduled property will depend on the particular insurance contract. In general, only assets of relatively high value (e.g., jewelry, artwork) will be separately scheduled, and all other household property will be treated as a single asset.³³⁵ The

³²⁹ I.R.C. § 1033 (2006).

³³⁰ I.R.C. §§ 1033(a)(1)-(2). *See* BORIS I. BITTKER ET AL., FEDERAL INCOME TAXATION OF INDIVIDUALS ¶ 30.03[3]-[5] (3d ed. & 2010 cumulative supplement) (discussing this requirement).

³³¹ I.R.C. § 1033(b).

³³² *See supra* Part V.A.2.

³³³ I.R.C. § 1033(h)(1) (2006). The definition for principal residence is tied to section 121 through a cross-reference, although a home may qualify even if rented rather than owned. I.R.C. § 1033(h)(4). *See supra* Part IV.B.

Section 121, which provides a generous exclusion for gain on the sale of a principal residence if various eligibility requirements are met, may also be available. I.R.C. § 121(d)(5) (amount realized on involuntary conversion of principal residence is reduced by amount of section 121 exclusion).

Because sales pursuant to a hazard mitigation program are not in response to a federally declared disaster but are instead aimed at lessening future losses, presumably Code section 1033(h)(1) does not apply to mitigation sales. A special rule expanding the scope of qualifying replacement property also applies to trade, business, or investment property converted as a result of a federally declared disaster. I.R.C. § 1033(h)(2).

³³⁴ I.R.C. § 1033(h)(1)(A)(i) (2006). *See also* Rev. Rul. 95-22, 1995-1 C.B. 145.

³³⁵ *See* Rev. Rul. 95-22 1995-1 C.B. 145(containing example situation in which general household furnishings were unscheduled while jewelry and sterling silverware were separately scheduled). The IRS Chief Counsel has advised in an informal memorandum that the exclusion will apply even to property not kept at

principal residence (if owned) and any separately scheduled contents are treated as a single asset for purposes of calculating gain and applying the deferral provision.³³⁶ In addition, the replacement property may be anything “which is similar or related in service or use to the residence so converted”— or its contents.³³⁷

Thus, for example, consider a taxpayer whose rented residence and its contents are destroyed in a federally declared disaster and who receives \$40,000 of insurance proceeds for unscheduled household items and \$10,000 for scheduled jewelry. All \$40,000 of the proceeds received for the unscheduled household items will be excluded from income even if no replacement property is purchased.³³⁸ If the taxpayer originally purchased the jewelry for \$8,000, the \$2,000 gain arising from the \$10,000 insurance payment can be deferred through purchase of \$10,000 of replacement property. The replacement property may be jewelry but it may also be any household-related item — e.g., linens, dishes, furniture.³³⁹

These provisions should be expanded to cover all flood-related reimbursement received under the proposed program. Coverage for personal possessions would be treated as payment for unscheduled property and thus any gain would be excluded from income. The exclusion for gain resulting from reimbursement for unscheduled property is not, however, as generous as it appears on its face. That is because it will be relatively rare for a taxpayer to have a gain for typical, unscheduled household furnishings, which generally go down in value after purchase. If insurance

the principal residence so long as the property was covered by the contract and was lost in the federally declared disaster (e.g., property in a car). I.R.S. TECH. ADV. MEM. 200114046 (Apr. 2, 2001).

³³⁶ I.R.C. § 1033(h)(1)(A)(ii)(I) (2006). Presumably the section 121 adjustment would apply to this aggregated asset, assuming the other qualifications of section 121 are met. I.R.C. § 121(d)(5). The adjustment reduces the amount realized from insurance by the amount excluded under section 121. Thus, for example, if \$700,000 is received under an insurance contract for a qualifying principal residence by a couple filing a joint return, section 1033 is applied as though only \$200,000 of insurance proceeds were received. I.R.C. § 121(a)-(b), (d)(5).

³³⁷ I.R.C. § 1033(h)(1)(A)(ii)(II). The time for purchasing the replacement property is also increased from two to four years. I.R.C. § 1033(h)(1)(B).

³³⁸ Rev. Rul. 95-22 1995-1 C.B. 145 (no gain recognized “upon the receipt of insurance proceeds for unscheduled contents destroyed in such a disaster, regardless of the use to which the taxpayer puts those proceeds”).

³³⁹ See Rev. Rul. 95-22 1995-1 C.B. 145 (“[A]ny type of replacement contents (whether separately scheduled or unscheduled)” qualifies as replacement property for separately scheduled contents).

proceeds are insufficient to reimburse a taxpayer for his investment in the property, the taxpayer will have a loss. For example, if a taxpayer purchased an asset for \$10,000 but receives only a \$6,000 insurance recovery, the taxpayer has \$4,000 tax loss. Whether such a loss is or should be deductible is considered below.

C. UNREIMBURSED LOSSES

Losses that arise from the disposition of personal-use assets are generally nondeductible.³⁴⁰ Taxpayers may, however, take a limited deduction if the loss is caused by a casualty event or theft and is not compensated for by insurance or through some other means.³⁴¹ The calculation of the casualty loss deduction is complex and requires a series of steps, each of which potentially serves to limit the size of a deduction.³⁴²

³⁴⁰ I.R.C. § 165(c)(3) (2006).

³⁴¹ Whether an event constitutes a casualty event or theft loss is itself a difficult issue to resolve. *See* BITTKER ET AL., *supra* note 330, at ¶¶ 24.02-.03; BURKE & FRIEL, *supra* note 288, at 530-33.

³⁴² First, the amount of the loss is limited to the lesser of the taxpayer's investment in the asset or the decline in value of the asset. Treas. Reg. § 1.165-7(b)(1). Thus, for example, if a taxpayer spent \$10,000 for an asset but the asset was worth only \$7,000 when it was destroyed in a flood, the amount of the potential casualty loss would be limited to \$7,000. Second, the loss is reduced by the extent to which an individual receives compensation for the loss (whether through insurance or otherwise). I.R.C. § 165(a) (2006); Treas. Reg. § 1.165-1(d). If the taxpayer received \$6,000 in insurance proceeds, his potential casualty loss deduction would be further reduced to \$1,000.

Third, the Code disallows the first \$100 of casualty loss stemming from a casualty event or theft. In the case of the example, the taxpayer's potential casualty loss deduction would be reduced to \$900. I.R.C. § 165(h)(1). This \$100 amount was temporarily raised to \$500 during 2009. Tax Extenders and Alternative Minimum Tax Relief Act of 2008, P.L. 110-343, Division C, § 706(c), 122 Stat. 3921-3923.

Fourth, the sustained casualty losses for the year are aggregated and applied first against the aggregate of any casualty gains for the year. I.R.C. § 165(h)(2)(A)(i). For example, if the taxpayer has a \$400 gain resulting from an unrelated theft, only \$500 would remain as the net casualty loss. If the taxpayer elects to defer the gain under section 1033, then the casualty gain is not included in this netting calculation.

Finally, once the net casualty loss amount is determined, casualty losses are only deductible to the extent they exceed 10% of a taxpayer's adjusted gross income. I.R.C. § 165(h)(2)(A)(ii). Thus, if a taxpayer has a \$500 potential casualty

For example, losses are only deductible to the extent they exceed ten percent of adjusted gross income; thus, only relatively large casualty losses are deductible as a practical matter. In addition, because the casualty loss deduction is an itemized deduction, the value of the deduction will increase with higher rate brackets and also will not be available to those who use the standard deduction rather than itemize.³⁴³ The ten-percent-of-adjusted-gross-income threshold may, however, still place the deduction out of reach for individuals with high taxable income. During 2008 and 2009,³⁴⁴ casualty losses caused by a federally declared disaster were less limited as to amount³⁴⁵ and could also be used without the need to itemize.³⁴⁶

The deduction for casualty losses should be significantly limited, if not eliminated, for flood losses.³⁴⁷ The deduction creates a shadow system

loss deduction, and the taxpayer's adjusted gross income is \$5,000 or more, no casualty loss deduction will be permitted.

Even if an amount of net casualty loss remained over the 10% floor, the taxpayer would only get the benefit of the deduction by electing to itemize his deductions rather than taking the standard deduction. I.R.C. § 63(b)-(c) (2006). In 2011, the standard deduction for a taxpayer filing as single will be \$5,800; for head of household, \$8,500; and for married filing joint, \$11,600.

³⁴³ For example, at the margin, a \$1,000 deduction is worth \$350 to someone in a 35% rate bracket but only \$200 to someone in a 20% bracket.

³⁴⁴ I.R.C. § 165(h)(3)(B)(i)(I); Tax Extenders and Alternative Minimum Tax Relief Act of 2008, P.L. 110-343, Division C, § 706122 Stat. 3921-3923. A similar measure was also in place in the immediate aftermath of Hurricane Katrina. Katrina Emergency Tax Relief Act of 2005, Pub.L. No. 109-73, § 402. *See* Aprill & Schmalbeck, *supra* note 219, at 59-60 (discussing temporary change to section 165 for 2005 hurricane season losses).

Legislative proposals have been made to extend or make permanent the standard deduction increase for net disaster losses. *See* H.R. 5273, 111th Cong. (2010); H.R. 4213, 111th Cong. (2010); and H.R. 4052, 111th Cong. (2009).

³⁴⁵ They were not limited by the ten-percent floor. I.R.C. § 165(h)(3)(A) (2006). Currently, a taxpayer who experiences casualty losses as the result of a federally declared disaster may elect to deduct the casualty losses on the tax return for the year preceding the disaster. I.R.C. § 165(i). *See also supra* note 314 (discussing § 165(k)). Personal casualty losses are not carried forward so if there is not enough income to soak up the casualty loss, any tax benefit to be obtained from the deduction would be lost. A taxpayer whose income fell as a result of the federally declared disaster could use the election to move the deduction to a year in which the taxpayer had income against which to offset the deduction.

³⁴⁶ The Code section did so by increasing the standard deduction. I.R.C. § 63(c)(2) (2006).

³⁴⁷ Sorting costs would need to be taken into account. *See* Levmore & Logue, *supra* note 4, at 321-22 (discussing sorting costs that would result from

of government reimbursement for flood loss, but one that offers patchy, difficult-to-understand coverage.³⁴⁸ Individuals may overestimate its benefits, which may in turn contribute to less care with respect to purchase decisions.³⁴⁹ For example, a relatively wealthy individual may purchase a \$400,000 beach house, purchase the maximum NFIP policy on the home, and assume that the remaining \$150,000 loss would be deductible should the home be destroyed in a flood. But if the individual's adjusted gross income were \$750,000, only approximately half of the \$150,000 loss would be deductible.³⁵⁰ As discussed in Part III, flood loss is difficult for individuals to conceptualize, so the effect of this shadow system may be relatively small. At the same time, individuals who itemize and who have the ability to purchase that second vacation home may be particularly tempted to believe that there is little personal downside to such a purchase given the combination of the NFIP and the casualty loss deduction.

Eliminating the casualty loss deduction for flood-related costs altogether would, however, likely be politically impractical. One possible compromise would be to allow the loss deduction but only for flood losses occurring at the principal residence and only for a limited dollar amount. The deduction should be accessible even those who do not itemize, and the ten-percent floor and other limitations should be lifted to provide greater certainty about the amount to be deducted. For example, the deduction could be limited to the loss in excess of the purchased coverage and up to an additional \$50,000 for personal property and \$125,000 for structural damage (these amounts are one-half the proposed coverage maximums). If, however, eligible coverage has been phased out for a structure because of repetitive claims, the loss deduction should be commensurately reduced. Elimination of the casualty loss deduction as to second homes and to a portion of the cost of more expensive homes would still be controversial,

government-sponsored crime insurance that did not cover terrorism). The same casualty may trigger flood loss, windstorm loss, or possibly even fire loss. In many cases, the presence of private insurance could simplify the inquiry. For example, the Code could treat private insurance recoveries as being for losses other than flood and assigning any residual loss as flood loss.

³⁴⁸ See Louis Kaplow, *The Income Tax as Insurance: The Casualty Loss and Medical Expense Deductions and The Exclusion of Medical Insurance Premiums*, 79 CAL. L.R. 1485 (1991). See also *supra* Part III.B (discussing difficulties individuals face in processing flood loss probability and calculating assistance).

³⁴⁹ See Kaplow, *supra* note 10.

³⁵⁰ Ten percent of \$750,000 is \$75,000. The deductible amount would be \$74,900 -- \$150,000 minus \$100 minus \$75,000.

but the program goals of providing a social safety net while limiting repetitive loss would be better served.

VI. CONCLUSION

Use of tax system components to implement social programs should not be lightly undertaken. In the case of flood loss mitigation, the government already plays a central function through both the NFIP and various tax provisions already in place. Moving flood loss coverage under the umbrella of the tax law could yield significant benefits, including increased program efficiencies and better tools for balancing competing land use goals. Most importantly, a national flood security system would be a means of providing the least fortunate with a safety net when (not if) the next unimaginable flood occurs.