

Analysis of How the Flood Insurance Reform Act of 2012 (H.R. 4348) May Affect State and Local Adaptation Efforts

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SUMMARY

*The Biggert-Waters Flood Insurance Reform Act of 2012 (“Reform Act”) was passed by Congress on June 29, 2012 as part of the surface transportation Conference Report (H.R. 4348) and was signed by President Obama on July 6, 2012.*¹ The Reform Act reauthorizes the National Flood Insurance Program (NFIP) until September 30, 2017 and includes several reforms that could assist state and local governments looking to implement policies to adapt to sea-level rise and other flood impacts from climate change. The NFIP was created by the National Flood Insurance Act of 1968 (NFIA) and is administered by the Federal Emergency Management Agency (FEMA).

Key provisions of the bill will:

- Increase the amount of flood insurance coverage for multi-family properties of 5 or more residences (previously limited to properties of 4 or less residences).
- Phase out subsidies for severe repetitive loss properties,² second homes, business properties, homes substantially damaged or improved (i.e., greater than a percentage of the market value of the home), and homes sold to new owners.
- Allow insurance premium rates increases of 20 percent annually (previously capped at 10 percent),⁴ allow for deductibles,⁵ and require that premiums be calculated based upon “average historical loss year,” including catastrophic loss years.⁶
- Require the creation of a Reserve Fund.⁷
- Require the development of a plan for repaying debt owed to the U.S. Treasury (FEMA had to borrow

¹ The Biggert-Water Flood Insurance Reform Act of 2012, Pub. L. No: 112-141. §§ 100215(d), 100216 (b) (H.R. 4348, 112th Cong., 2012), available at <http://www.gpo.gov/fdsys/pkg/BILLS-112hr4348enr/pdf/BILLS-112hr4348enr.pdf>[hereinafter “Reform Act” or “H.R. 4348”]. *Note: Not all subtitles and Sections of the Reform Act are included in this analysis, only those with provisions that could create, limit, or affect state and local adaptation efforts.*

² The Reform Act incorporates the definition of “severe repetitive loss properties” from a repealed section of the National Flood Insurance Act, 42 U.S.C. § 2102a, as properties that have “incurred flood-related damage (i) for which 4 or more separate claims payments have been made under flood insurance coverage under this title, with the amount of each claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or (ii) for which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the value of the insured structure.” H.R. 4348, Sec. 100205(h)(3).

³ *Id.* at Sec. 100205 (amending 42 U.S.C. 4012).

⁴ *Id.* (amending 42 U.S.C. § 4015(e)).

⁵ *Id.* at Sec. 100201(amending 42 U.S.C. § 1312).

⁶ H.R. 4348, Sec. 100211 (amending 42 U.S.C. § 4015).

⁷ *Id.* at Sec. 100212 (adding section 42 U.S.C. § 4017).

approximately \$21 billion as a result of claims after hurricanes in 2005).⁸

- Establish a Technical Mapping Advisory Council (TMAC) to provide recommendations to FEMA about how to consider the impacts of sea-level rise in flood insurance rate maps (FIRMs), among other things.
- Allow FEMA to update FIRMs to include “relevant information and data” on flood hazards caused by land-use changes,¹⁰ and “future changes in sea levels, precipitation, and intensity of hurricanes,” among other things,¹¹ and remove limitations on state and local financial contributions for updating FIRMs (previously capped at 50 percent).
- Amend the Mitigation Grant Assistance Program to allow FEMA to pay for 100 percent of eligible costs to fund the acquisition or relocation¹² of severe repetitive loss structures, even where they do not meet cost-effectiveness requirements.
- Extend flood insurance coverage at lower rates to communities that “have made adequate progress” in reconstructing or building a flood control structure that will protect the community from a 100-year flood.¹³
- Allow for private insurance, consistent with NFIP policies,¹⁴ to satisfy insurance requirements needed to obtain federally-backed mortgages.
- Require several studies for additional reforms and improvements to the NFIP—
- establishment of a Flood Protection Structure Accreditation Task Force to make recommendations on how to accredit the safety of flood control structures.¹⁵
- study on improving interagency and intergovernmental coordination on flood mapping and financing options for updating flood maps.¹⁶
- study of the solvency of the NFIP.
- study of pre-FIRM structures (defined below) and options for eliminating subsidies to these structures.¹⁷
- study on risks to residual risk areas and best practices for managing flood risks in these areas.¹⁸

⁸ *Id.* at Sec. 100213 (amending 42 U.S.C. § 4016).

⁹ *Id.* at Sec. 100215.

¹⁰ *Id.* at Sec. 100216.

¹¹ *Id.* at Sec. 100219 (amending 42 U.S.C. § 4101(f)(2)).

¹² *Id.* at Sec. 100225 (amending 42 U.S.C. § 4104c). The bill, presumably to remove redundancies, also eliminates the Grant Program for Repetitive Insurance Claim Properties (§ 4030) and the Pilot Program for Severe Repetitive Loss Properties (§ 4102a).

¹³ *Id.* at Sec. 100230.

¹⁴ *Id.* at Sec. 100239.

¹⁵ *Id.* at Sec. 100226.

¹⁶ *Id.* at Sec. 100221.

¹⁷ H.R. 4348, Sec. 10231(c).

¹⁸ *Id.* at Sec. 10231(e).

- study on using reinsurance to manage financial risks associated with flooding and options for privatizing the NFIP.¹⁹

Background: Summary of NFIP

The National Flood Insurance Program was created in 1968 to offer federally-subsidized flood insurance for property owners and to promote land-use controls in floodplains.²⁰ The program provides flood insurance coverage for 5.6 million American households and insures more than \$1 trillion in assets.²¹ The Federal Emergency Management Agency (FEMA) administers the NFIP, and its activities can be broken up into two general categories:²² (1) *mandatory* activities that trigger regulatory requirements in flood hazard areas, and (2) *advisory* activities where FEMA provides technical assistance²³ and support to its state and local partners to help them better manage their floodplains on a voluntary basis.

The *mandatory* program comprises the core of the NFIP and includes three components: (1) floodplain mapping, (2) insurance requirements, and (3) land-use controls. Although participation in the program is voluntary, once a community agrees to participate, mandatory requirements are triggered: the community must adopt and enforce minimum floodplain regulations, and property owners in areas designated as “special flood hazard areas” (SFHAs) must purchase flood insurance in order to receive federally-backed mortgages.²⁴

Floodplain mapping plays an integral role in the administration of the NFIP’s mandatory program. FEMA maps each community’s flood zones on Flood Insurance Rate Maps (FIRMs) using historical flood data. As a result of a political compromise when the program was first created, the mandatory requirements of the NFIP were limited to SHFAs, which were defined as those areas that are vulnerable to flooding during a “100-year base flood” (i.e., areas that have a one percent annual chance of flooding).²⁵ In SFHAs, participating communities must enact

¹⁹ *Id.* at Sec. 10232

²⁰ Federal Emergency Management Agency (FEMA), *The National Flood Insurance Program*, <http://www.fema.gov/about/programs/nfip/index.shtm> (last visited Apr. 15, 2012); FEDERAL EMERGENCY MANAGEMENT AGENCY 1 (FEMA), NATIONAL FLOOD INSURANCE PROGRAM: PROGRAM DESCRIPTION 2 (Aug. 2002), available at <http://www.fema.gov/library/viewRecord.do?id=1480> [hereinafter *NFIP DESCRIPTION*].

²¹ Dan Huber, Center for Climate and Energy Solutions, *Fixing a Broken Reforming the National Flood Insurance Program: Risks and Potential Reforms* 1 (June 2012), available at <http://www.c2es.org/blog/huber/reforming-national-flood-insurance-program>.

²² The NFIP was created by the National Flood Insurance Act of 1968. National Flood Insurance Act, 42 U.S.C. §§ 4001-129 (2012); see also *NFIP DESCRIPTION* at 1, note 20, *supra*.

²³ These dual objectives are never explicitly laid out in the statute but are reflected in the statements and purposes section of the National Flood Insurance Act (NFIA), codified at 42 U.S.C. § 4001(e) (2011), which not only contemplates mandated land-use restrictions but also the encouragement of voluntary activities by state and local governments to make appropriate land-use adjustments to constrict the development of land in flood-prone areas and minimize damage caused by flood losses.

²⁴ NFIP regulations set forth the minimum standard that communities must maintain within their communities, by way of local regulations, in order to become or remain eligible for federally-backed flood insurance. 42 U.S.C. § 4022(a)(1). See also 42 U.S.C. § 4003(a)(1); *NFIP DESCRIPTION*; *supra* note 20, at 2-3.

²⁵ The 100-year floodplain, also known as “special flood hazard areas” (SFHAs), is the area in which there is a one percent or greater chance of flooding in any given year based on historic flood data. This area is delineated as A-zones and V-zones on the FIRM. Federal Emergency Management Agency (FEMA), *Definitions of FEMA Flood Zone Designations*, MAP SERVICE CENTER, available at http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/base_flood_elevation.shtm (last visited Apr. 16, 2012) [hereinafter *Definitions of FEMA Flood Zone Designations*].

minimum land-use regulations requiring new or substantially improved structures to be elevated to at or above the base flood elevation (i.e., the elevation of floodwaters during the 100-year flood). And, property owners in these areas must purchase flood insurance in order to receive a federally-backed mortgage.

The NFIA also authorizes FEMA to administer several *advisory* programs to assist communities that want to enact more robust floodplain management practices, including advisory mapping and an incentive program called the Community Rating System (CRS). In its mapping program, besides delineating the one-percent annual chance (100-year) flood, FEMA also delineates the “500-year floodplain” on FIRMs (areas that have a 0.2 to one percent annual chance of flooding).²⁶ Additionally, for communities that request this service, FEMA will also depict “*future-conditions*” flood hazards.²⁷ The term future conditions is narrowly defined to include only flood hazards resulting from projected land-use changes and increased impervious coverage of the floodplain.²⁸ Both the 500-year floodplain and the future conditions floodplain are delineated for advisory purposes only—no land-use controls or insurance purchase requirements are triggered in these areas.²⁹ Communities may, however, use them for regulatory purposes if they choose to do so—but few have. The CRS is a subprogram of the NFIP that provides incentives to communities that employ more stringent floodplain regulations that exceed the minimum requirements of the NFIP.³⁰ Participating communities receive credits for activities that increase their local flood resilience, and property owners in these communities receive discounts on their insurance premiums.³¹

The NFIP remained financially sound for its first three decades of existence, and was successful in spurring enactment of local floodplain ordinances and compensating property owners for flood losses. However, the hurricane season of 2005 exposed huge structural deficiencies in the program. As a result of payments related to hurricanes Katrina, Rita, and Wilma, the program was forced to borrow \$21 billion from the U.S. treasury.³²

The program’s insolvency was blamed on four major flaws:

Subsidies: The NFIP does not charge risk-based premiums for all properties.³³ Properties that existed prior to the

²⁶ The 500-year floodplain covers areas that have between a 0.2 to 1 percent chance of flooding in any given year based upon historic flood data. This area is delineated as X-zones (shaded) on the FIRM. *Id.*

²⁷ Areas of future-conditions flood hazard are defined as “the land area that would be inundated by the 1-percent annual-chance (100-year) flood based on future-conditions hydrology.” Future-conditions hydrology is defined as “the flood discharges associated with projected land-use conditions based on a community’s zoning maps and/or comprehensive land-use plans and without consideration of projected future construction of flood detention structures or projected future hydraulic modifications within a stream or other waterway, such as bridge and culvert construction, fill, and excavation.” Future Conditions Rule, 66 Fed. Reg. 59166, 59170 (Nov. 27, 2001) (codified as 44 C.F.R. 59.1 & 44 CFR 64.3).

²⁸ Future Conditions Rule, 66 Fed. Reg. at 59170.

²⁹ Future Conditions Rule, 66 Fed. Reg. at 59166.

³⁰ Federal Emergency Management Agency (FEMA), *Community Rating System*, NATIONAL FLOOD INSURANCE PROGRAM, <http://www.fema.gov/business/nfip/crs.shtm> (last visited May 12, 2012) [hereinafter *CRS website*]. The NFIP only requires communities to impose regulations within the 100-year floodplain. There is no statutory requirement for a community to regulate development in either the 500-year floodplain or the future conditions flood hazard area. NFIP DESCRIPTION, *supra* note 20, at 5.

³¹ FEDERAL EMERGENCY MANAGEMENT AGENCY 1 (FEMA), NATIONAL FLOOD INSURANCE PROGRAM COMMUNITY RATING SYSTEM: COORDINATOR’S MANUAL, 400-1 to 720-2 (2007), available at <http://training.fema.gov/EMIWeb/CRS/> [hereinafter *CRS MANUAL*].

³² Huber, note 21 *supra*.

³³ Even properties charged what FEMA considers to be “full risk premiums,” are charged premiums that are lower than what private insurers would charge. Huber at 3, note 21, *supra*. Compare Jeffrey Czajkowski et al., *A Methodological Approach for Pricing Flood Insurance and Evaluating Loss Reduction Measures: Application to Texas* 5 (Jan. 2012), White Paper Center for Risk Management and Decision Processes, The Wharton School, University of Pennsylvania, available at http://opim.wharton.upenn.edu/risk/library/WhartonRiskCenter_TexasFloodInsurancePricingStudy.pdf. As

program's enactment were grandfathered ("pre-FIRM properties")³⁴ and receive subsidized rates on their flood insurance.³⁵ Prior to enactment of the Reform Act, these property owners were allowed to continue to pay subsidized rates even after their property was sold or was repetitively damaged and rebuilt.

Repetitive Loss Properties: The program did not address properties that made repetitive claims for flood damage, in many cases claims exceeded the value of the property ("repetitive loss structures" and "severe repetitive loss structures" (SRLs)). These properties could be continually rebuilt, and could be rebuilt in the same footprint.³⁶

Mapping: Although FEMA is in the process of updating FIRMs,³⁷ FIRMs in some communities are still out of date and have not been updated, in some cases, since the 1980's. Mapping practices also do not account for increased flood risks as a result climate change, sea-level rise, or even increased impervious coverage due to land-use changes. As a result, FIRMs may be inaccurate at predicting both the geographic extent of flooding and flood heights communities will face in the future.³⁸

Residual risk properties: The NFIP exempts from its mandatory requirements properties behind flood-control structures (such as levees and dams) designed to protect against a 100-year flood event (defined as "residual risk areas"). These property owners can purchase flood insurance, at highly discounted rates, though they are not required to do so. These properties, however, continue to suffer from "residual risk" because flood control structures often are overtopped or fail—as was demonstrated by the catastrophic failure of the levees protecting New Orleans during hurricane Katrina.

In the intervening seven years since the 2005 hurricanes, the program has been³⁹ the subject of continued debate but has been kept alive without significant reforms by several stopgap extensions. The Reform Act marks the first attempt by Congress to fix some of the critical deficiencies in the NFIP, and includes four major reforms:

of 2011, approximately, one-fourth of properties receive insurance subsidies in this manner. Erwann Michel-Kerjan and Howard Kunreuther, *Redesigning Flood Insurance* (Jul. 2011) Vo. 333 SCIENCE MAG, available at <http://www.sciencemag.org/content/333/6041/408.full.pdf>

³⁴ Thomas L. Hayes et al., FEMA, *National Flood Insurance Program Actuarial Rate Review In Support of the Recommended October 1, 2011 Rate and Rule Changes* at 3 (2011), available at <http://www.fema.gov/library/viewRecord.do?id=4853> [hereinafter "*Actuarial Rate Review 2011*"]. ("A Flood Insurance Rate Map, or FIRM, is an official map of a community on which FEMA has delineated both the Special Flood Hazard Areas and the risk premium zones that are applicable to the community. "Post-FIRM" pertains to a building for which construction or substantial improvement occurred after December 31, 1974, or on or after the effective date of an initial FIRM, whichever is later. "Pre-FIRM" pertains to a building for which construction or substantial improvement occurred on or before December 31, 1974, or before the effective date of an initial FIRM.")

³⁵ FEMA estimates that these properties pay approximately 40 to 45 percent of full-risk premiums. *Id.*

³⁶ Rawle O. King, *Flood Insurance: The Repetitive Loss Problem*, CRS Report for Congress, 1, 4 (June 30, 2005).

³⁷ Huber at 4, note 21 *supra*. See also FEMA, *Fact Sheet: Flood Map Modernization* (2012), available at <http://www.fema.gov/library/viewRecord.do?id=2242>. (Over the past several years FEMA has been updating maps pursuant to the map modernization effort. FEMA has delivered digital FIRMs that cover 90 percent of the Nation's population. Although some of the digital FIRMS did not include updated flood data, approximately 60 percent were based on either new or updated flood data, or have been validated as reflecting current conditions hydrology and hydraulics. Some of these FIRMs are still preliminary and in the process of finalization; in these communities mandatory requirements will not be triggered until the maps are finalized and adopted.)

³⁸ Huber at 4, note 21 *supra*.

³⁹ Unfortunately, these extensions have not been particularly effective or timely. In 2010 alone, the NFIP was allowed to lapse four times, for a total of 53 days during which policies could not be purchased or renewed. *Flood Insurance Program extended Until Dec. 16*, INSURANCE JOURNAL (Nov. 17 2011), available at <http://www.insurancejournal.com/news/national/2011/11/17/224558.htm>.

- (1) amendments to the coverage, rate, and premium structures,
- (2) requirement for a repayment plan and reserve fund,
- (3) updates to the mapping program, and
- (4) amendments to eligible mitigation activities.

The Reform Act also calls for several studies to address other areas for reform, including residual risk areas and privatizing the NFIP.

Although the Reform Act does not address all the structural problems of the NFIP, the reforms will help communities looking to adapt to climate change. The reforms will allow FEMA to map the potential risks communities face from rising seas and to price insurance in a manner that more accurately reflects the long-term risks to properties in highly vulnerable areas of the coast. The Reform Act, however, leaves several areas unaddressed: Residual risk areas will remain exempt from the NFIP's mandatory requirement, which could encourage further armoring of shorelines. And, FEMA can still only establish insurance rates based upon historic flood data, thus rates will not reflect the potential for increased flood losses from climate change.

Overview of Reform Act Provisions

Coverage, Rate, and Premium Restructuring

Coverage for Multifamily Properties and Condominium Owners (Sec. 100204, amending 42 U.S.C. § 4012 and Sec. 100214, amending 42 U.S.C. § 4019)

The Reform Act increases the amount of flood insurance coverage for multifamily properties with 5 or more residence to \$500,000, similar to the amount allowed for commercial properties.⁴⁰ Coverage was previously limited to \$250,000, similar to that amount of coverage for structures with 4 or less residences. The Reform Act also clarifies coverage for condominium owners. Prior to the Act, it was unclear whether owners' claims could be limited by coverage sold separately to homeowner's associations.

Subsidies (Sec. 100205, amending 42 U.S.C. 4104)

The Reform Act makes significant progress in phasing out insurance subsidies. Although pre-FIRM properties may maintain subsidies, the Reform Act eliminates subsidies for second homes, business properties, severe repetitive loss properties,⁴¹ properties incurring flood damages that equal or exceed the fair market value (FMV) of the property, and properties that are substantially damaged (greater than 50 percent of the FMV) or substantially improved (greater than 30 percent of the FMV). Subsidies also cannot be extended when homes are sold to new owners, properties that were not insured or had a lapse in coverage after the enactment of the Reform Act, and insured owners of SRL or repetitive loss structures that refuse mitigation assistance after their structure is destroyed in a disaster. Where subsidies are phased out because of damage to the property, the annual premium increase is limited to 25 percent until premium levels are harmonized with those for other unsubsidized properties.

Premiums (Sec. 100205, 100207 and 100211, amending 42 U.S.C § 4015)

The Reform Act also gives FEMA more flexibility to increase premium rates.⁴² FEMA can now increase premiums by up to 20 percent annually; increases were previously capped at 10 percent. In conjunction with updating

⁴⁰ Defined as properties containing 5 or more residences (i.e. apartment buildings, etc.) Coverage for these properties is equivalent to that offered for commercial properties H.R. 4348, Sec. 100204.

⁴¹ For single-family properties, those with four or more claims for \$5000 or more totalling \$20,000 or more in payments. For multi-family (five or more families), the Act leaves discretion to the director of FEMA to adopt regulations establishing a definition. H.R. 4348, Sec. 100205(h)(2).

⁴² H.R. 4348, Sec. 100205(h)(2) (amending 42 U.S.C. § 4015(e)).

FIRMs, the Reform Act requires FEMA to adjust the risk premium rates to “accurately reflect the current risk of flood”⁴³ to properties. Resulting rate increases must be phased in over a five year period at a rate of 20 percent per year. For areas that are newly designated as SFHAs, FEMA is also directed to phase in the chargeable risk premium at a 20 percent rate over a 5-year period. In calculating premium rates, FEMA is now explicitly directed to ensure that rates are “adequate, on the basis of accepted actuarial principles to cover the average historical loss year obligations incurred by the [NFIP],” including catastrophic loss years.

Deductibles (Sec. 100210, amending 42 U.S.C. 4019)

The Reform Act also now allows for minimum deductibles. Pre-FIRM properties (grandfathered properties that were built before the NFIP was established) must pay \$1,000 for a claim that is less than \$100,000, and \$2,000 if the damage is greater than \$100,000. The deductibles for post-FIRM properties are \$1,000 and \$1,250 respectively.

Private Insurance (Sec. 100239, amending 42 U.S.C. § 4012a(b))

The Reform Act allows for private insurance to meet the requirements for coverage for purposes of securing a federally-backed mortgage, so long as the private insurance policy extends the same level of coverage as an NFIP policy.

Repayment Plan and Reserve Fund

Reserve Fund (Sec. 100212, adding 42 U.S.C. § 4017)

The Reform Act requires the FEMA to create a Reserve Fund for the repayment of expected future obligations. The Reserve Fund must cover, at a minimum, one percent of the total claim exposure of the program, or the FEMA Administrator can set a higher percentage at his or her discretion. In the event the NFIP needs to borrow more money to meet its financial obligations, the Reform Act also requires the Administrator to formulate a payment schedule to be shared with Treasury and relevant Congressional committees, and to be supplemented biannually by payment progress reports.

Repayment Plan (Sec. 100213, amending 42 U.S.C. 4016)

Six months after enactment of the Reform Act, FEMA is directed to submit a plan to repay the approximately \$17 billion it stills owes to the U.S. Treasury as a result of the 2005 hurricane season.⁴⁴ The Repayment Plan must be submitted to the Secretary of the Treasury and the Congressional committees of jurisdiction. The plan must set forth options for repayment within 10 years, and the Administrator must submit progress reports on repayment every 6 months.

Mapping Program

Technical Mapping Advisory Council (Sec. 100214, amending 42 U.S.C. 4019)

The Reform Act reestablishes the Technical⁴⁵ Mapping Advisory Council to make recommendations to FEMA about how to update and improve FIRMs. The TMAC is charged with providing recommendations to FEMA about how to “improve in a cost-effective manner the accuracy, general quality, ease of use, and distribution and dissemination of flood insurance rate maps and risk data...”

Other duties of the TMAC include recommending “procedures for delegating mapping activities to State and local mapping partners,” and “methods for improving interagency and intergovernmental coordination on flood

⁴³ *Id.* at Sec. 100207 (amending 42 U.S.C. § 4015).

⁴⁴ Hayes, *Actuarial Rate Review 2011* at 3, note 34 *supra*.

⁴⁵ H.R. 4348, Sec. 100215(d).

mapping and flood risk determination.”

Specifically, at subparagraph (d), TMAC is charged with providing recommendations to FEMA within one year on “future conditions risk assessment and modeling.” Subparagraph (d) provides:

- The Council shall consult with scientists and technical experts, other Federal agencies, States, and local communities to—
- (A) develop recommendations on how to—
- (i) ensure that flood insurance rate maps incorporate *the best available climate science* to assess flood risks; and
 - (ii) ensure that [FEMA] uses the best available methodology to consider the impact of—
 - (I) the *risk in sea level*; and
 - (II) future development on flood risks.

National Flood Mapping Program (Sec. 100216)

The Reform Act also directs FEMA to update flood maps, and includes three separate directives. Subparagraph (b), entitled “*In General*,” directs FEMA to update FIRMs to include:

- (i) all populated areas and areas of possible population growth located within the 100-year floodplain;
- (ii) all populated areas and areas of possible population growth located within the 500-year floodplain;
- (iii) areas of residual risk, including areas that are protected by levees, dams, and other flood control structures; and
- (iv) the level of protection provided by flood control structures.

In updating maps, FEMA is directed to use “the most accurate topography and elevation data available.” And, FEMA must begin to develop flood maps on a “watershed basis” to “provide the most technically effective and efficient studies and hydrologic and hydraulic modeling; and to eliminate, to the maximum extent possible, discrepancies in base flood elevation determinations between adjacent political subdivisions.”

The Reform Act also directs FEMA to include certain “*Other Inclusions*” when updating FIRMs, specifically: “any relevant information... relating to the best available science regarding future changes in sea⁴⁷ levels, precipitation, and intensity of hurricanes.”⁴⁶ Also listed other inclusions⁴⁸ are: coastal inundation, stream flow, and relevant information on land subsidence and coastal erosion.

The final version of the mapping amendments in the Reform Act stripped out explicit reference to “climate change,” however this minor technical edit is likely of little import.⁴⁹ Because the Act directs FEMA to consider the “best available science regarding *future* changes in sea levels,” FEMA should be entitled to consider the

⁴⁶ H.R. 4348, Sec. 100216.

⁴⁷ Including inundation maps from the Army Corps of Engineers (Corps), and data of the National Oceanic and Atmospheric Administration (NOAA) relating to storm surge and modeling.

⁴⁸ “Other Inclusions,” include the following:

- (A) any relevant information on coastal inundation from (i) an applicable inundation map of the Corps of Engineers; and (ii) data of [NOAA] relating to storm surge modeling;
- (B) any relevant information on stream flows, watershed characteristics and topography that is useful in the identification of flood hazard areas, as determined by the Administrator; [and]
- (C) any relevant information on land subsidence, coastal erosion areas, changing lake levels, and other flood-related hazards.

⁴⁹ Evan Lehmann, ‘*Global warming*’ disappears from flood legislation, CLIMATE WIRE E&E REPORTER (Jul. 3, 2012), available by subscription at <http://www.eenews.net/climatewire/2012/07/03/archive/2?terms=flood+insurance>.

overwhelming volume of scientific studies that project increases in sea levels due to global warming—despite omission of explicit reference to climate change in the bill.

What is less clear is how FEMA will implement this new mapping authority—as part of its advisory or mandatory program. Although the mapping provisions of the statute are unclear, in the author’s opinion it is unlikely that the mapping provisions relating to “*Other Inclusions*” were intended to affect the NFIP’s mandatory program. Under the Reform Act, SFHAs may still only be established based upon consideration of the “average historical loss year,” so it does not appear that Congress intended to extend any mandatory requirements to areas that may become vulnerable to flooding as a result of climate change.⁵⁰ Congress also made no attempt to redefine FEMA’s long-standing definition of SFHAs.⁵¹ FEMA defines SFHA by reference to the 100-year flood standard, which is historic looking,⁵² and was adopted as the base flood as the result of a political compromise when the NFIP was first established. Furthermore, at the end of the mapping amendment (Sec. 100216), Congress seems to give FEMA complete discretion to update FIRMs.⁵³ This is just one opinion about the import of the Reform Act; ultimately, FEMA’s interpretation about how to implement these new mapping provisions will be authoritative.

Aside from the ambiguities in the statute, FEMA may be swayed to interpret these provisions conservatively given the technical challenges and expense of incorporating consideration of sea-level rise into the NFIP’s mandatory program. FEMA has experienced significant political resistance in communities where new FIRMs were updated under the map modernization process. In some communities, new FIRMs reflecting updated flood, elevation and topography data have extended the SFHAs inland. This has resulted in the extension of mandatory floodplain regulation and insurance purchase requirements to previously unregulated parts of the community, causing intense political pushback.⁵⁴ Additionally, it may be technically difficult to cost-effectively map how sea-level rise may affect storm surge and to actuarially price insurance based upon these considerations. Finally, funding is another huge challenge. FEMA is already struggling to keep up with the map modernization process. Although the Reform Act authorizes the appropriation of \$400 million to FEMA to implement mapping updates, it is unlikely that Congress will appropriate that level of funding. Current budget proposals request a fraction of that amount for its mapping program, \$89.4 million.⁵⁵ The Reform Act does, however, remove the limitation on

⁵⁰ See H.R. 4348, Sec. 100211 (amending 42 U.S.C. 4015).

⁵¹ The Reform Act, in several places, attempts to clarify ambiguities in the statute by inserting reference to the term SFHA. For example, the Act amended Section 4104 of the NFIA—the provisions relating to appeals of map changes—to include reference to SFHA. The new language of Section 4104 provides that:

the sole ground to appeal shall be the possession of knowledge or information indicating that (1) the elevations being proposed by the Administrator with respect to an identified area having special flood hazards [SFHA] are scientifically or technically incorrect, or (2) the designations of an identified [SFHA] is scientifically or technically incorrect.

Id. at Sec. 100217 (amending 42 U.S.C. § 4104(b)).

⁵² *Id.* at Sec. 100211.

⁵³ H.R. 4348, Sec. 100216. “Upon the adoption by the Administrator of any recommendation by the [TMAC] for reviewing, updating or maintaining [FIRMs] in accordance with this section, a community that believes that its flood insurance rate maps in effect prior to adoption would be affected by the adoption of such recommendations may submit a request for an update of its rate maps, which may be considered at the Administrator’s sole discretion.” There also does not seem to be any opening for a cause of action to force FEMA to incorporate sea-level rise into the mandatory parts of the NFIP, given that communities and landowners can only appeal FEMA’s elevation determinations with respect to SFHAs. See discussion Sec. 100217’s amendments to “scope of appeals” at 42 U.S.C. § 4104, at note 51, *supra*

⁵⁴ See, e.g. Doree Shafrir, *Subhampton*, NEW YORK MAGAZINE (Sep. 20, 2009.), available at <http://nymag.com/news/intelligencer/59262/>

⁵⁵ FEMA, *Department of Homeland Security Federal Emergency Management Agency Flood Hazard Mapping and Risk Analysis Fiscal Year 2013 Congressional Justification* (Feb 13, 2012), available at http://www.fema.gov/pdf/about/budget/11g_fema_flood_hazard_mapping_risk_analysis_dhs_fy13_cj.pdf.

state and local contributions to update FIRMs (previously capped at 50 percent).⁵⁶ Willing states and local communities can now contribute 100 percent of the funding needed to update their FIRMs.

Reforms to the Mitigation Grant Program

Mitigation Assistance Program (Sec. 100225, amending 42 U.S.C. 4104(c))

The Reform Act includes key changes to the Mitigation Grant Assistance Program (42 U.S.C. § 4104(c)), specifically to address repetitive claims properties, which have come to make up a disproportionately large amount of payments made under the NFIP (totaling 38 percent of all claims by recent calculations). The Reform Act targets funding to redress severe repetitive loss (SRL) structures.⁵⁷ The amendments establish new reimbursement rates for mitigation activities designed to prioritize mitigation of SRL and repetitive loss structures. For SRL structures, FEMA will pay 100 percent of costs *or* the expected savings to the NFIP for mitigation activities. Funding for mitigation activities related to SRL structures no longer must meet a cost-effectiveness requirement;⁵⁸ funds can be directed to acquire or relocate SRL structures where these activities “will eliminate future payments from the National Flood Insurance Fund.” FEMA will pay up to 90 percent of eligible costs for mitigation activities for repetitive loss structures⁵⁹ and 75 percent of eligible costs for all other mitigation activities (these activities, however, are still subject to a cost-effectiveness calculus). The Reform Act also changes the list of eligible mitigation activities: grants can now be used to elevate, relocate or floodproof *equipment* that services a structure, and to develop or update a mitigation plan (up to \$50,000). Funds, however, may no longer be used for beach nourishment activities. Also, presumably to remove redundancies, the amendments eliminate the Grant Program for Repetitive Insurance Claim Properties (42 U.S.C. § 4030) and the Pilot Program for Severe Repetitive Loss Properties (42 U.S.C. § 4102a).

Areas of Residual Risk

Areas of Residual Risk (Sec. 100206)

Provisions to require property owners in residual risk areas to purchase insurance were also stripped out of the final version of the Reform Act. Instead, the Reform Act directs FEMA to study the issue. “Residual risk areas” are areas that are “behind a levee or near a dam or other flood control structure; and that would be subject to flooding in the base flood if not for the protective structure (i.e., in “an unimpeded 100-year floodplain”).⁶⁰ Because these provisions were removed, local communities will not be required to implement minimum land-use regulations in these areas; and property owners in these areas (and areas where the community has made

⁵⁶ H.R. 4348, Sec. 100219 (amending 42 U.S.C. 4101(f)(2)).

⁵⁷ See definition of severe repetitive loss structures at note 2, *supra*.

⁵⁸ For a discussion of cost-effectiveness calculus see FEMA, *Cost-effectiveness for Insured Repetitive Loss Properties* (Aug. 2010), available at <http://www.fema.gov/government/grant/resources/bcarlalt.shtm>

⁵⁹ Defined as “a structure covered by a contract for flood insurance that (A) has incurred flood-related damage on 2 occasions, in which the cost of repair, on the average, equaled or exceeded 25 percent of the value of the structure at the time of each such flood event; and (B) at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.” 42 U.S.C. § 4121(a)(7).

⁶⁰ Defined as an “area, which if no levee, dam or other flood control structure were present would be subject to inundation” from the base flood (100-year flood).

“adequate progress” in reconstructing or improving a flood control structure)⁶¹ may purchase insurance at reduced rates, but are not required to do so.

Original language in the bill would have extended the mandatory land-use controls and insurance purchase requirements to areas of residual risk, with lower premium rates. As with many of the reforms that did make it into final Act, the residual risk provisions were intended to expand the total NFIP risk pool, which would have lowered average premiums and also provided some coverage for the risk to these areas posed by a catastrophic failure of flood control systems. Despite this reasoning, the residual risk provisions faced strong opposition and were removed in order to garner the necessary support to pass the bill.⁶²

By continuing to exclude residual risk areas from the mandatory requirements, the federal government will continue to be exposed to catastrophic losses in some areas in the event that flood control structures fail (such as the losses that occurred in New Orleans after Katrina).⁶³ The continued exclusion will likely work to undermine efforts to stem continued development in flood-prone areas, as communities with enough financial wherewithal may build flood control structures to avoid the mandatory requirements of the NFIP. Protected communities are also more likely to cluster development behind flood control structures, exposing more individuals to severe personal and financial harm in the event of a catastrophic failure. Additionally, these exclusions continue to provide incentives for communities to build hard flood control structures that can have adverse environmental impacts.

Studies

The Reform Act also requires a number of studies to be conducted either by FEMA and various other federal agencies:

Interagency coordination study (Sec. 10221)

FEMA is directed to contract with the National Academy of Public Administration to conduct a study on how to improve interagency coordination on flood mapping, including budgetary and funding coordination. Reports to appropriate committees within the House and Senate are due within 180 days of enactment.

Report on Improving the NFIP (Sec. 10231)

The Comptroller General of the Government Accountability Office (GAO) is directed to conduct a study on the number of flood insurance policies currently insuring residential and commercial structures up to the maximum rate, the rate of losses the NFIP would have sustained if all insurers had adopted the rate during the 2004/2005 disasters, the availability of private insurance exceeding the NFIP’s maximum coverage, and potential effects that changing federal insurance limits would have on the availability of private insurance. Reports to appropriate committees within the House and Senate are due within one year of enactment.

⁶¹ Sec. 100230 extends below market rates to communities that have “made adequate progress on the reconstruction or improvement of a flood protection system.” “Adequate progress” is shown when 100 percent of the costs of the project are authorized, 60 percent of the project cost has been secured or appropriated, 50 percent of the system has been assessed as being without deficiencies (cross-referenced to definition at 44 C.F.R. 65.10), or the reconstruction or improvement project schedule does not exceed 5 years.” To see coverage of residual risk areas that was removed from the final bill see S.B. 1940, 112th Cong., Sec. 107 (2011-2012), available at <http://thomas.loc.gov/cgi-bin/query/F?c112:l:/temp/~c112qustrPZ:e16146>.

⁶² See Erik Wasson, *Senators fuming over flood insurance compromise in highway bill*, THE HILL (Jun 28, 2012), <http://thehill.com/blogs/on-the-money/budget/235425-flood-insurance-compromise-left-out-of-highway-bill>

⁶³ See Patricia Grossi and Robert Muir-Wood, *Flood Risk in New Orleans Implications for Future Management and Insurability, Risk Management Solutions* (2006), available at http://www.rms.com/Publications/NO_FloodRisk.pdf.

GAO Study on Pre-FIRM Structures (Sec. 10231)

The Comptroller General of the General Accounting Office (GAO) is directed to conduct a study on the composition, number, and value of remaining pre-FIRM structures receiving subsidized insurance premiums. The study is to assess the income level of pre-FIRM owners, the number of times they have been sold since the NFIP's enactment, total losses incurred to pre-FIRM structures, and total costs of foregone premiums. These figures are to be used to calculate the annual cost of subsidies and losses incurred as compared to non-subsidized structures. The GAO is also directed to study options for eliminating subsidies to such structures. Reports to appropriate committees within the House and Senate are due within one year of enactment.

Study and Report on Graduated Risk (Sec. 10231)

The FEMA Administrator is directed to contract with the National Academy of Sciences to study graduated risk behind levees and associated land development, insurance, and risk communication. The study is to include review and ranking of best practices for estimating losses in levee-protected areas and identify areas where best practices may be applied more broadly. It is also to research various insurance options, identifying options with the best value; evaluate methods to reduce costs through creative arrangements, and to recommend approaches for communicating flood risks to community members. Reports to appropriate committees within the House and Senate are due within one year of enactment.

FEMA and GAO Reports on Privatization (Sec. 10232)

The FEMA Administrator and Comptroller General are each directed to conduct separate studies assessing options, methods, and strategies for privatizing the NFIP. Reports to appropriate committees within the House and Senate are due within eighteen months of enactment.

GAO Study on Business Interruption and Additional Living Expenses Coverage (Sec. 10233)

The GAO is directed to conduct a study on the market availability of private insurance coverage for living expenses and business interruption. This study is to determine the feasibility of offering similar coverage under the NFIP and the estimated cost to consumers, potential effect on NFIP participation, and potential fiscal impact on the NFIP. Reports to appropriate committees within the House and Senate are due within one year of enactment.

Report on Inclusion of Building Codes in Floodplain Management Criteria (Sec 100235)

The Administrator is directed to study the impact, effectiveness, and feasibility of amending the NFIP to include building codes as part of floodplain management criteria developed under NFIP (42. U.S.C. § 4102). The study is to consider the financial, regulatory, and economic impact of the measure; enforcement requirements; effectiveness in encouraging superior construction methods; premium incentives; and potential impacts in various types of communities. Reports to appropriate committees within the House and Senate are due within six months of enactment.

Study of Participation and Affordability for Certain Policyholders (Sec. 100236)

The FEMA Administrator is directed to study methods to encourage participation in the NFIP. This study will examine methods for educating consumers about the NFIP, making premium aid available through targeted assistance, as well as the budgetary implications of these methods. To this end, the Administrator is to contract with the National Academy of Sciences to conduct a cost-benefit comparison between full risk-based premiums with means-tested assistance and the current system of calculating premiums. Reports to appropriate committees within the House and Senate are due within 270 days of enactment.

FIO Study on Risks, Hazards, and Insurance (Sec 100247)

The Director of the Federal Insurance Office is directed to assess the current state of the U.S. natural catastrophe insurance market, considering, *inter alia*, insurance availability, ability to mitigate risk, market approaches, financial condition of markets in high-risk regions, and the role of Federal and State governments in incentivizing risk mitigation markets. Reports to appropriate committees within the House and Senate are due within one year of enactment.

*** Note: This document presents analysis by the author; it does not represent Georgetown University or any state, local, or federal agency. ***