

# **Affordability of National Flood Insurance Program Premiums Reports 1 and 2**

## **Committee on the Affordability of National Flood Insurance Program Premiums**

Water Science and Technology Board  
Board on Mathematical Sciences and Their Applications  
Committee on National Statistics

FACI Meeting  
May 26, 2016

# Study Origins: Congressionally Mandated

## Biggert-Waters 2012

- **Section 100236. Study of participation and affordability for certain policyholders**
- (a) FEMA study
- (b) NAS economic analysis

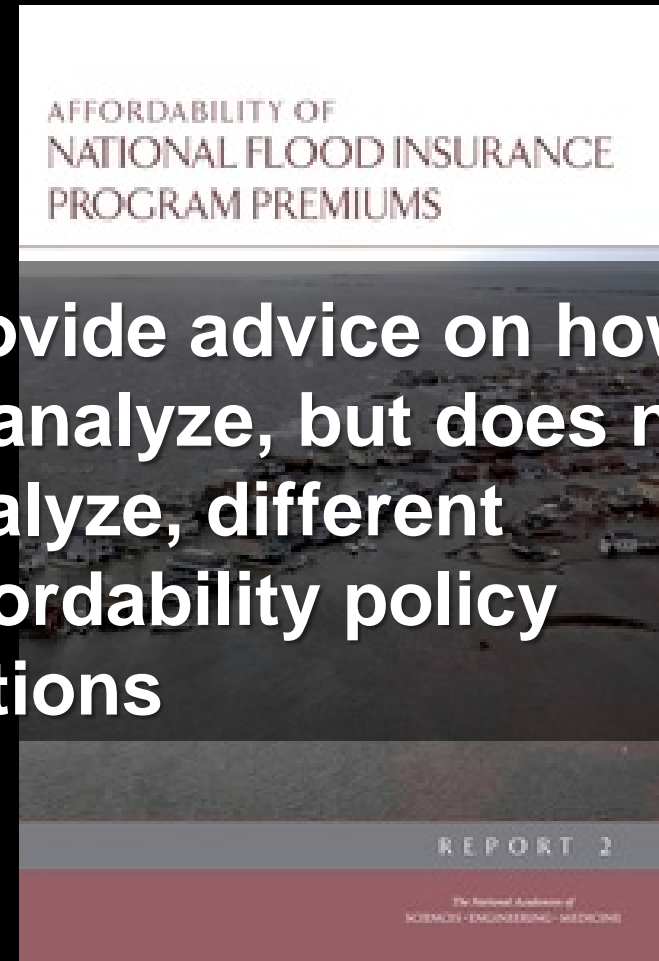
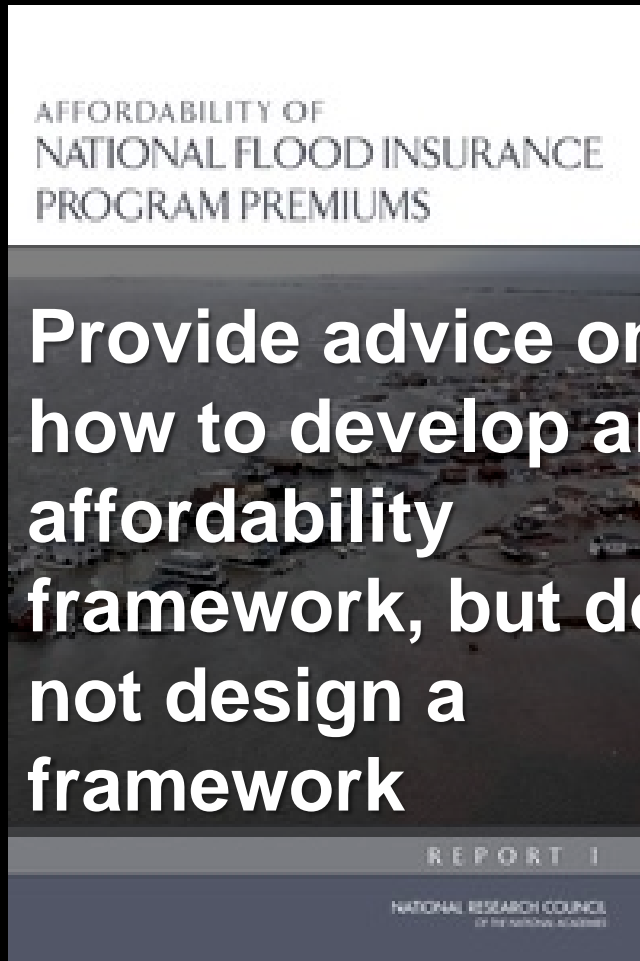
## Homeowner Flood Insurance Affordability Act 2014 (HFIAA 2014)

- **Section 16. Affordability study and report**
- (b) Timing
- (c) Funding



Source: FEMA News Photo

# Report 1 and 2 Task Statement



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# Two Report Series

## Report 1

Released in March 2015

AFFORDABILITY OF  
NATIONAL FLOOD INSURANCE  
PROGRAM PREMIUMS

2. History of the NFIP
3. Pricing and practices
4. Demand for flood insurance
5. Location of Affordability Challenges
6. Framework for Assistance Program Design
7. Policy options for:
  - targeted assistance like loans and vouchers
  - making premiums less expensive for all policyholders

## Report 2

Released in December 2015

AFFORDABILITY OF  
NATIONAL FLOOD INSURANCE  
PROGRAM PREMIUMS

2. Policy evaluation
3. Data for analysis of policy options
4. Analytical next steps and further thoughts

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# Basic Overview of NFIP

- About 5.1 million policies nationwide representing \$1.25 trillion in coverage.
- Almost 40% of all policies are in Florida and 60% are located are in Florida, Texas, and Louisiana.
- Estimates suggest take-up rates in SFHA may average 50% with high regional variation. Take-up outside SFHA is much lower.
- More than 1 million policyholders—about 19%—are paying pre-FIRM rates.
- The number of grandfathered policies are unknown.

# Multiple Objectives of NFIP

## Report 1, Chapter 2



- Objectives are not always compatible, and at times may conflict with one another
- BW 2012 increased the emphasis on setting NFIP rates that reflected flood risk, and charging premiums to cover claims & expenses

# Pricing, Policies, Premiums

## Report 1, Chapter 3

- NFIP has historically tried to achieve multiple objectives through pricing. Program is also subject to constraints that a private company would not be (e.g. cannot refuse coverage).
- Affordability has been an implicit part of pricing:
  - Pre-FIRM discounts
  - Grandfathering

### Changes in policy pricing in BW 2012 and HFIAA:

- BW 2012 sought to charge all properties NFIP risk-based rates (i.e., phasing out of pre-FIRM subsidies and elimination of grandfathering)
- HFIAA 2014 slowed phase-in of full risk rates and reinstated grandfathering.



# **The Insurance Purchase Decision**

## **Report 1, Chapter 4**

- **Household decisions to purchase insurance can be evaluated through different models of choice. No single model will fully explain household behavior.**
- **Premium prices may affect take up rates; however, the strength of that effect is limited. The effect that available disaster aid has on that decision is uncertain. Lower premiums alone may not significantly increase take up rates.**
- **Studies show that individuals may employ intuitive thinking (vs. systematic consideration of cost vs. future claims) when choosing to forego insurance.**

# Nature of Intuitive Thinking

- **Exhibit systematic biases**
  - (e.g. estimate likelihood of an event by its salience)
- **Use simplified decision rules**
  - (e.g. likelihood of disaster is below my threshold level of concern)
- **Myopic behavior**
  - (e.g. desire for immediate returns on insurance)
- **View insurance as an investment not a protective measure.**

# Impact of Intuitive Thinking on Insurance Decisions

- **Individuals voluntarily purchase insurance after a disaster rather than prior to the event and cancel their policy several years later if they have not suffered losses**
- **Do not invest in protective measures because of myopic thinking**
- **Flood related damage is not high on their list of concerns**
- **Affordability issues exacerbate the situation**
- **Difficult to convince individuals that the best return on investing in protection is NO RETURN AT ALL**

# Defining Affordability

Report 1, Chapters 6 and 7

- There are no objective definitions of affordability
- The choice of definition can be informed by research and experience in administering means-tested programs
- There are many ways to measure the cost burden of flood insurance on property owners and renters
- Policymakers will have to determine how to assess whether premiums are cost burdensome.

# Possible Affordability Assistance Programs

Report 1, Chapters 6 and 7

## Assistance to cost burdened policyholders

- Prioritizing existing mitigation grants
- Providing loans based on targeting criteria
- Providing vouchers based on targeting criteria.

## Across-the-board initiatives

- Expanding the range of mitigation measures that can reduce premiums
- Encouraging higher deductibles
- Expanding the role of insurance agents in educating policyholders
- Relying on Treasury to help pay claims in catastrophic loss years.

## Design Decisions

## Policy Options

Who will receive assistance

- Cost burdened
- Loss of pre-FIRM subsidy/grandfathering
- Requirement to purchase flood insurance

What assistance will be provided

- Premium payment assistance
- Mitigation cost assistance
- Both

How will assistance be provided

- Vouchers
- Mitigation loans and grants
- Tax credits and deductions

How much assistance will be provided

- Formula for calculating amounts
- Setting minimum and maximum amounts
- Duration of assistance

Who will pay for assistance

- Allocate between taxpayers and policy holders who do not receive assistance

How will assistance be administered

- Specify the entities responsible for eligibility and assistance award determinations

**Affordability Assistance**

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# Findings related to Report 1

## Report 2, Chapter 4

### NFIP Pricing

- **Grandfathering** will perpetuate cross-subsidies.
- **NFIP Risk-Based Premiums:** Implementing BW 2012 will not result in NFIP risk-based premiums for properties outside SFHA.

### The Insurance Purchase Decision

- **Promoting Takeup:** Aid may need to be extended to property owners who are not required to purchase flood insurance.
- **Information Dissemination:** Informing policyholders of the NFIP risk-based rate may help provide accurate information on flood risk.



# An Approach to Policy Evaluation

Report 2, Chapter 2

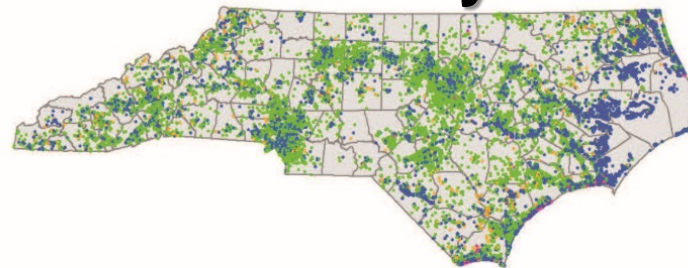
## Content

Elements of a  
planning  
process

Model  
development  
for evaluating  
options

Microsimulation  
modelling

## Pilot Analysis



### National Flood Insurance Program Premiums in North Carolina

Case Study on Data Availability, Modeling and Analysis  
Supporting Premium and Affordability Discussions

Prepared by:

**North Carolina Floodplain Mapping Program**  
North Carolina Emergency Management



November 2015

Report available at:

<http://dels.nas.edu/resources/static-assets/wstb/miscellaneous/wstb-cp.pdf>

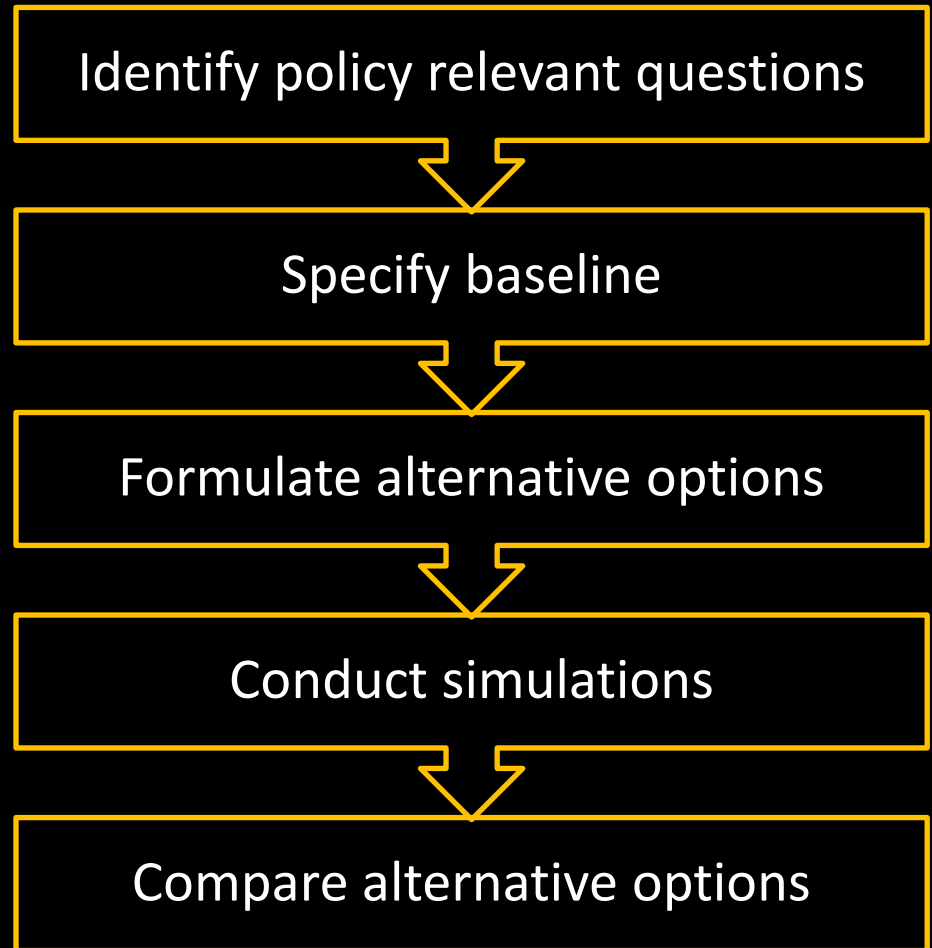
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# Microsimulation

## Report 2, Chapter 2

### What's in a name?

- “Micro” – Micro data on decision making units
- “Simulation” – Policy changes are simulated, not implemented



# Microsimulation

## Advantages

- At the right level
- Provides framework
- Analytically flexible
- Developmentally flexible

## Challenges

- Complexity
- Time and Resources

# Biggest Challenge for Policy Evaluation



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# Data for Analyses of Policy Options

## Report 2, Chapter 3

### The NFIP Policy Holder

- Location of property
- Coverage
- Current premium
- First floor elevation
- Socioeconomic characteristics
- Response to price
- Grandfathered?

### Property without Insurance

- Location of property
- First floor elevation
- Socioeconomic characteristics
- Potential premium
- Response to price

### Flood Insurance Risk

- Probability of flooding
- Base flood elevation
- Stage damage curves

### Filling data gaps

- Census/American Community Survey
- Federal Agency Admin. Records
- Tax assessment records
- LiDAR
- Proxy variables
- Sample survey

# Near-Term Analyses for Affordability Policy Options

Report 2, Chapter 4

Some questions can be answered in a qualitative way.

Some options might be initially removed as candidates.

Some analyses can be completed with available data.

Additional analyses can be completed with limited investments in obtaining new data.

# Bottom Line—Both Reports

## Report 1

- Policymakers will have to determine how to define affordability and assess whether premiums are cost burdensome.
- Providing targeted assistance requires policy judgements involving tradeoffs.

## Report 2

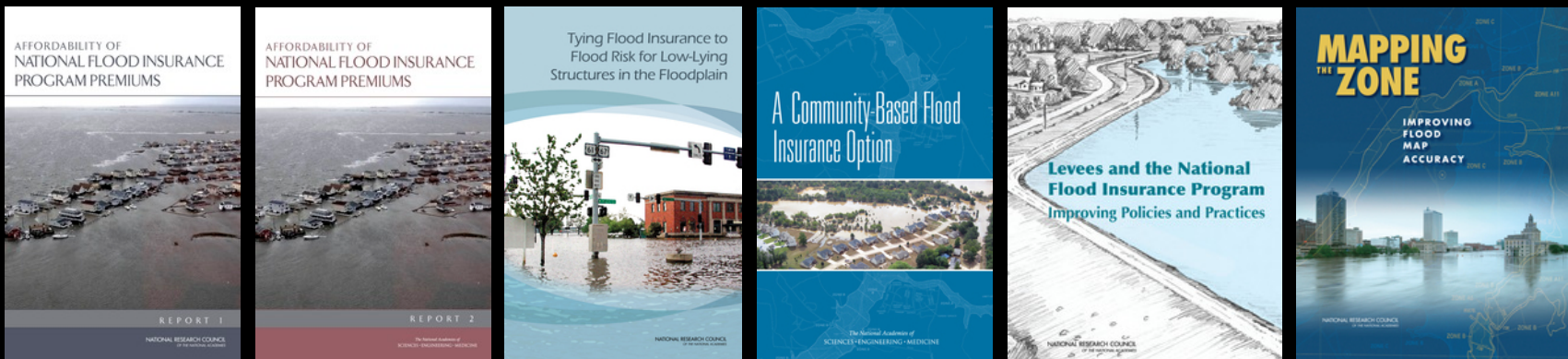
- FEMA's capacity to evaluate policy options, including but not limited to affordability, is currently limited.
- But, analytical capacity can be advanced substantially through time.



# Thank you

For free download of the committee's report and others, please visit National Academies Press

<http://www.nap.edu/>



For further information, please contact the Water Science and Technology Board  
<http://dels.nas.edu/wstb>