



FEMA



Risk Rating 2.0

Casualty Actuarial Society

November 10 - 13, 2019

Historically, FEMA has not collected enough premiums to cover expected losses. We must fix that.



Floods have the greatest economic and social impact on the U.S.



Our stakeholders (including GAO, industry, and Congress) have been urging us to improve our risk rating methodology.



We must transform the NFIP into a sustainable program.



FEMA is focused on building a culture of preparedness by closing the insurance gap and increasing mitigation activity.



Risk Rating 2.0 aims to deliver several key benefits:



Provide rates that are easier to understand for agents and policyholders.



Simplify and standardize the quoting process across the country.



Create an individualized picture of a property's risk.

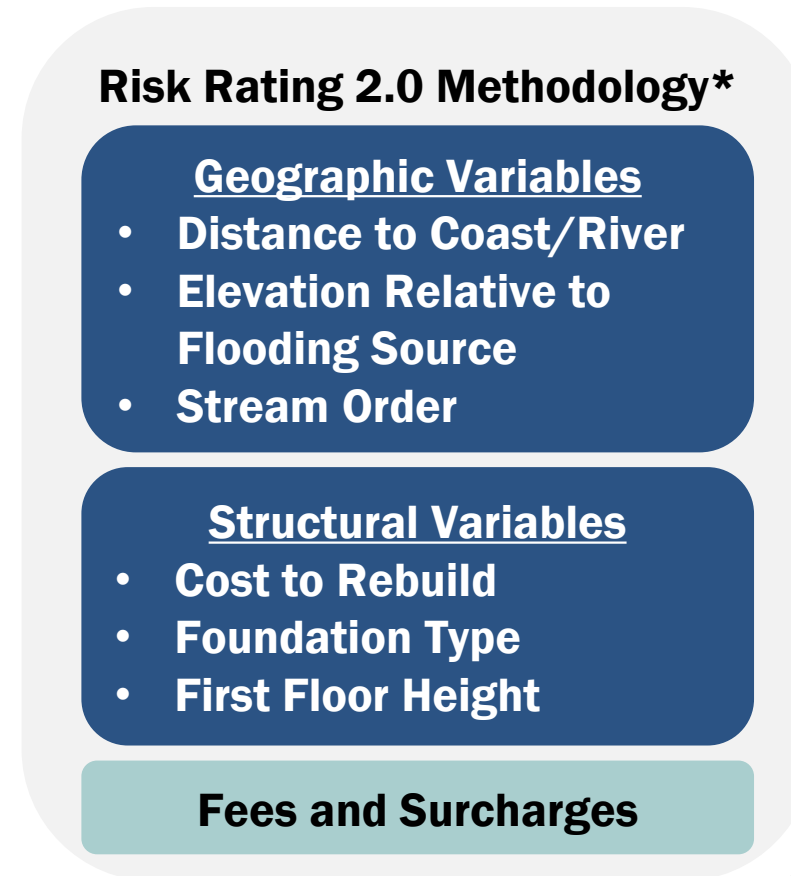
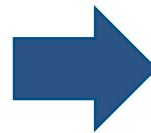
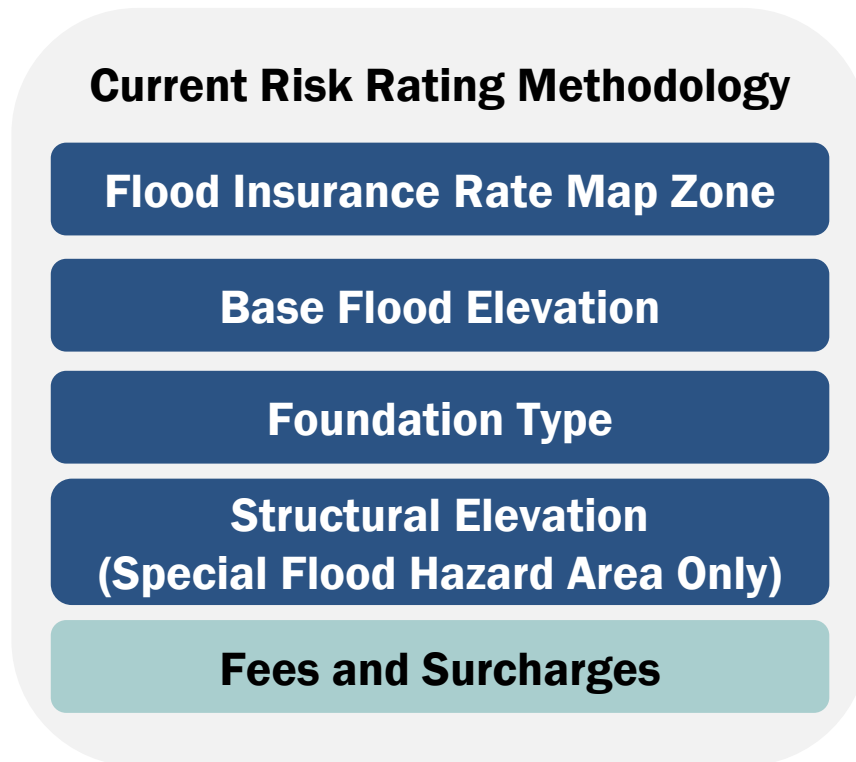


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Current vs. Risk Rating 2.0 Methodology

Risk Rating 2.0 premiums will more accurately reflect flood risk by considering a broader range of variables, including:

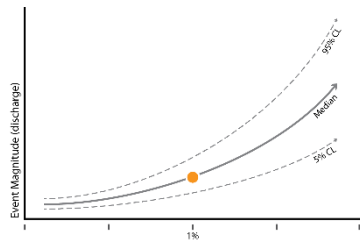


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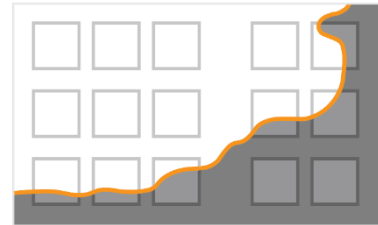


*Additional variables are not shown here

Current Approach



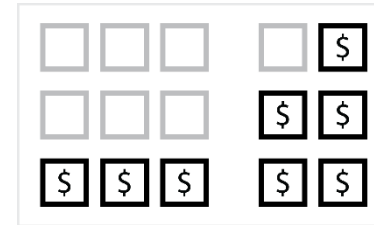
Hydrologically estimated 100-year storm event



Hydraulically modeled 100-year floodplain



Designated flood hazard areas



NFIP rates

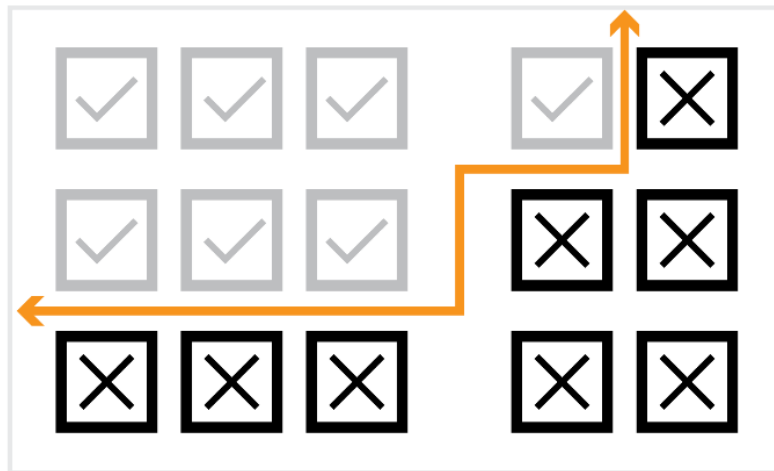


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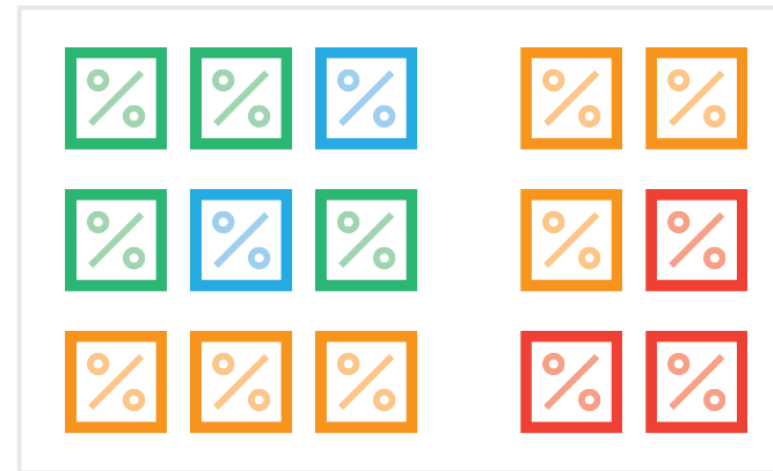
Working Outside the Zones

Deterministic



- Structures designated as either inside or outside of special flood hazard areas.

Probabilistic

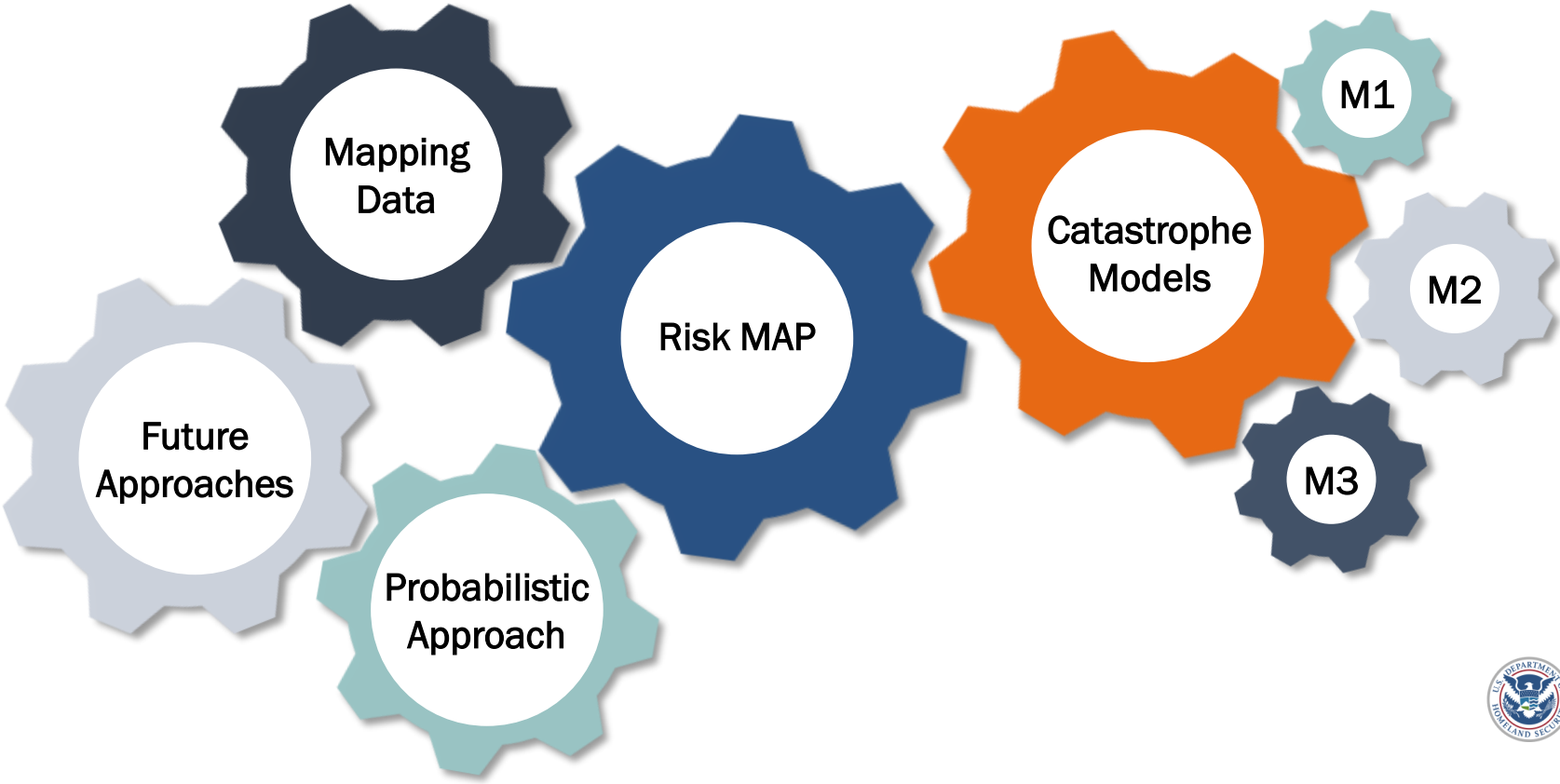


- Structures assigned specific annualized probabilities of being impacted by flood.

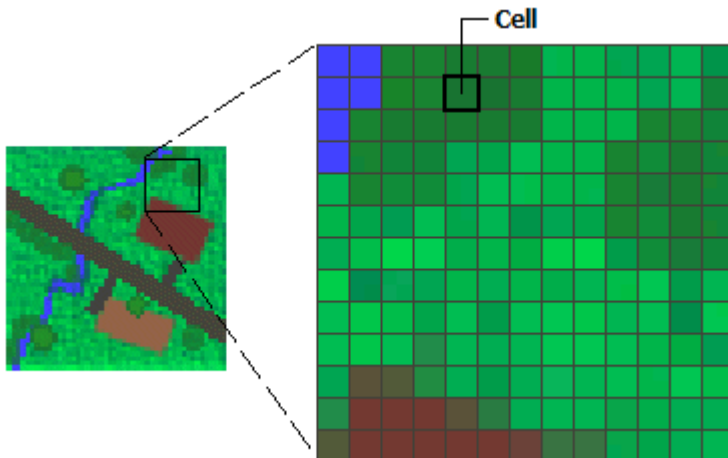


Risk Rating 2.0 Modeling Approach

The NFIP is modernizing the rating plan by leveraging multiple sources of private-sector catastrophe models and FEMA mapping data



Catastrophe Models



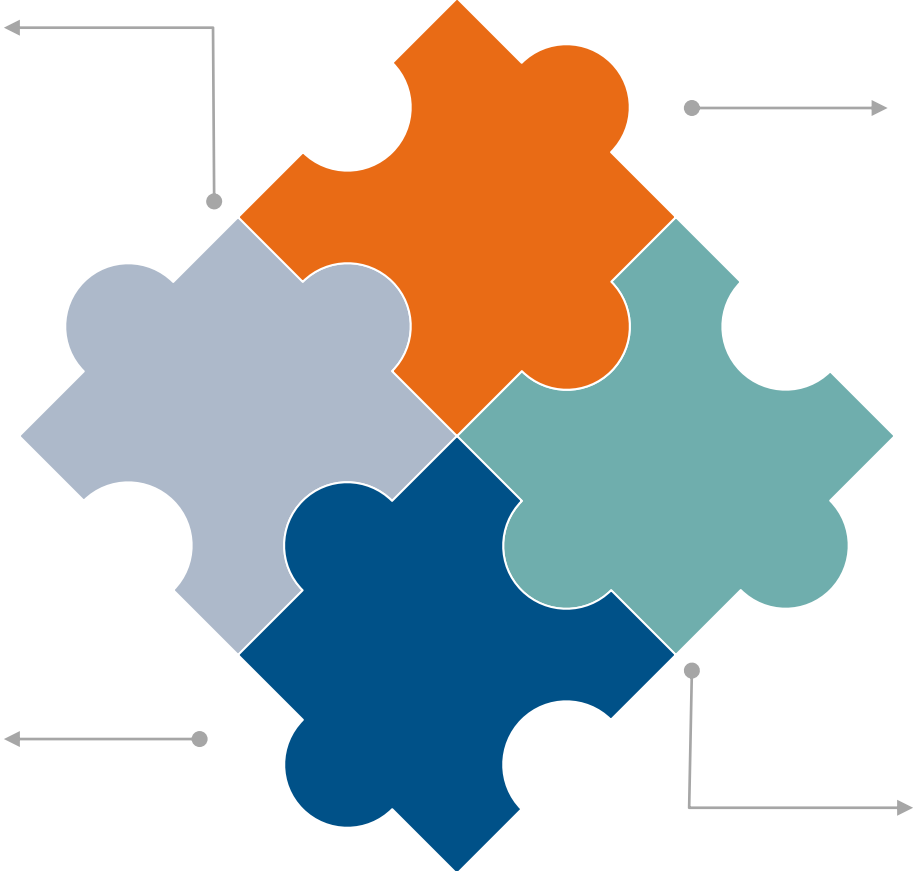
- Catastrophe Models are valuable to estimate a future loss potential
- Industry is evolving as more data becomes available to refine models
- Actuarial techniques



Mapping Data Integration

Connects

Connects the disparate sources of flood data to form a cohesive risk picture



Provides

Provides a source of flood catastrophe modeling that closely matches historic FEMA methods

Implements

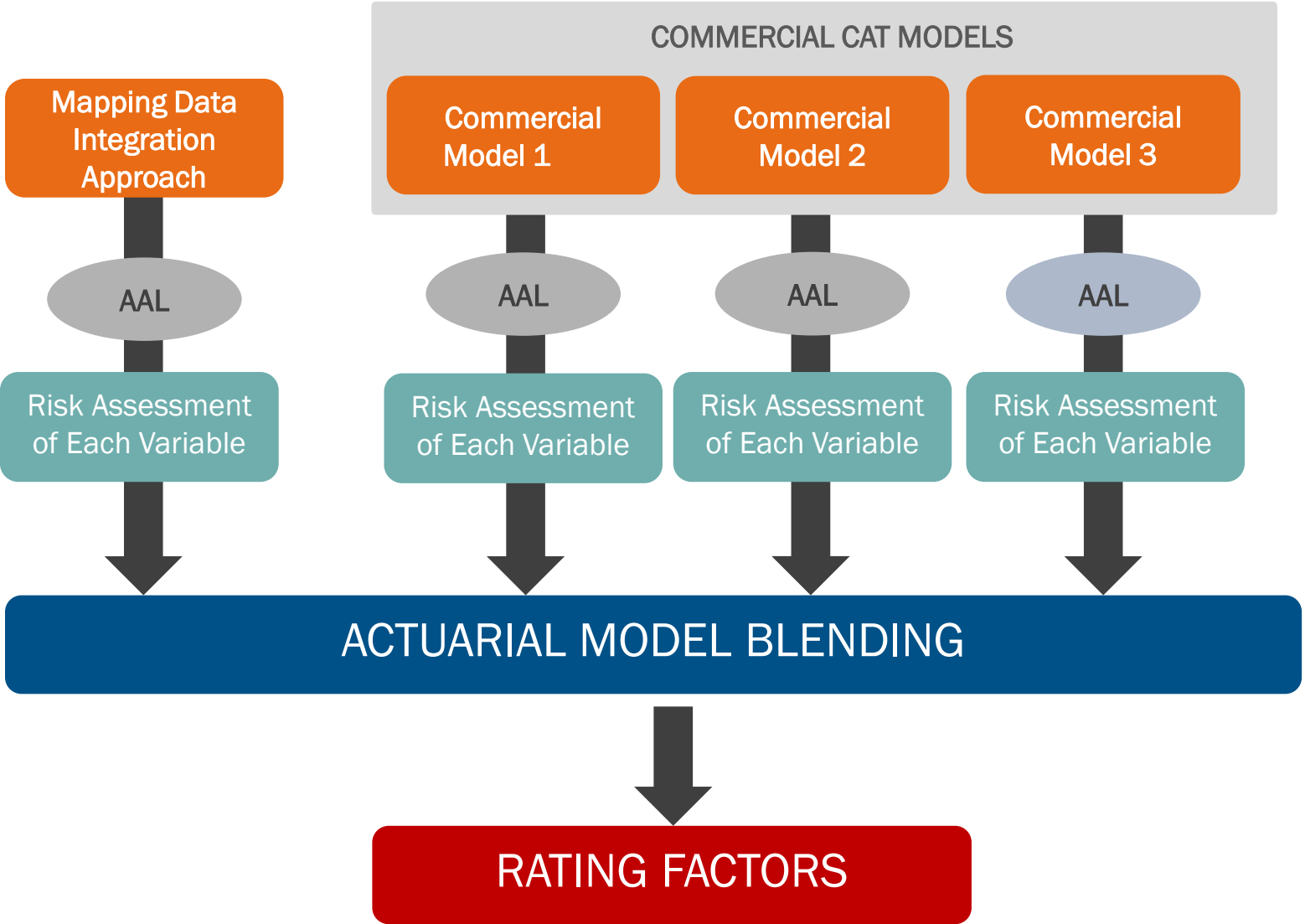
Implements sound and traceable logic to fill data gaps

Utilizes

Utilizes FEMA depth-damage curves derived from NFIP paid claims experience



How Are the Models Being Used?

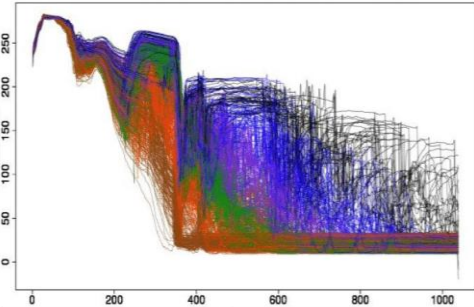


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Probabilistic Flood Risk Analysis

1



Conduct probabilistic analysis using simulations and validate with NFIP historical data

2



Compare results with commercial catastrophe models

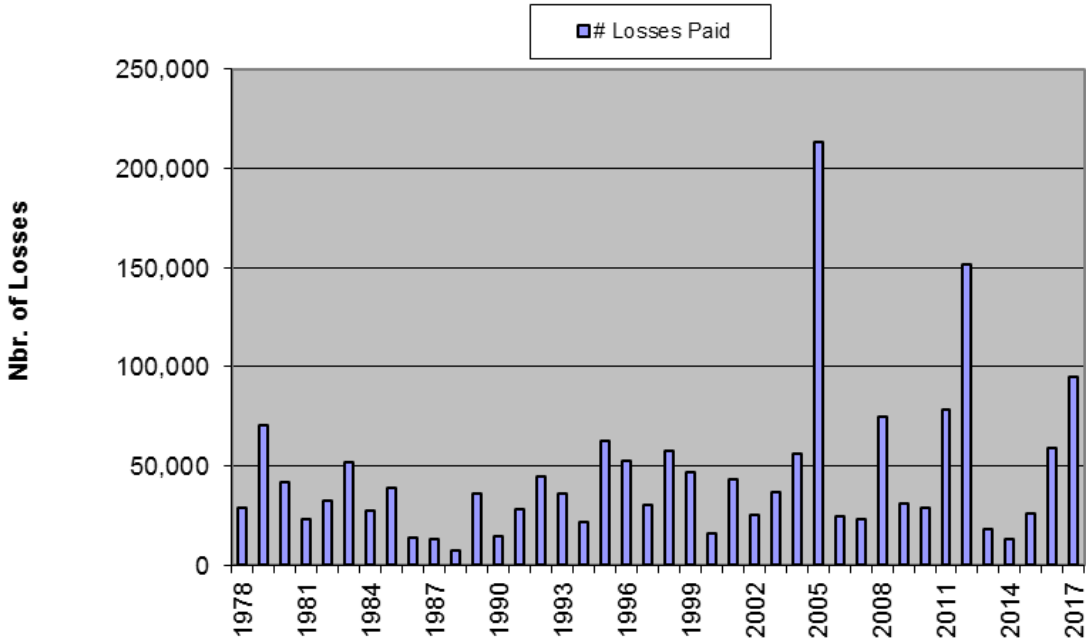
3



Generate AALs for certain geographies; focused on leveed areas and complex flooding hazards



Using FEMA's Historical Experience



Challenges

Not representative of the future

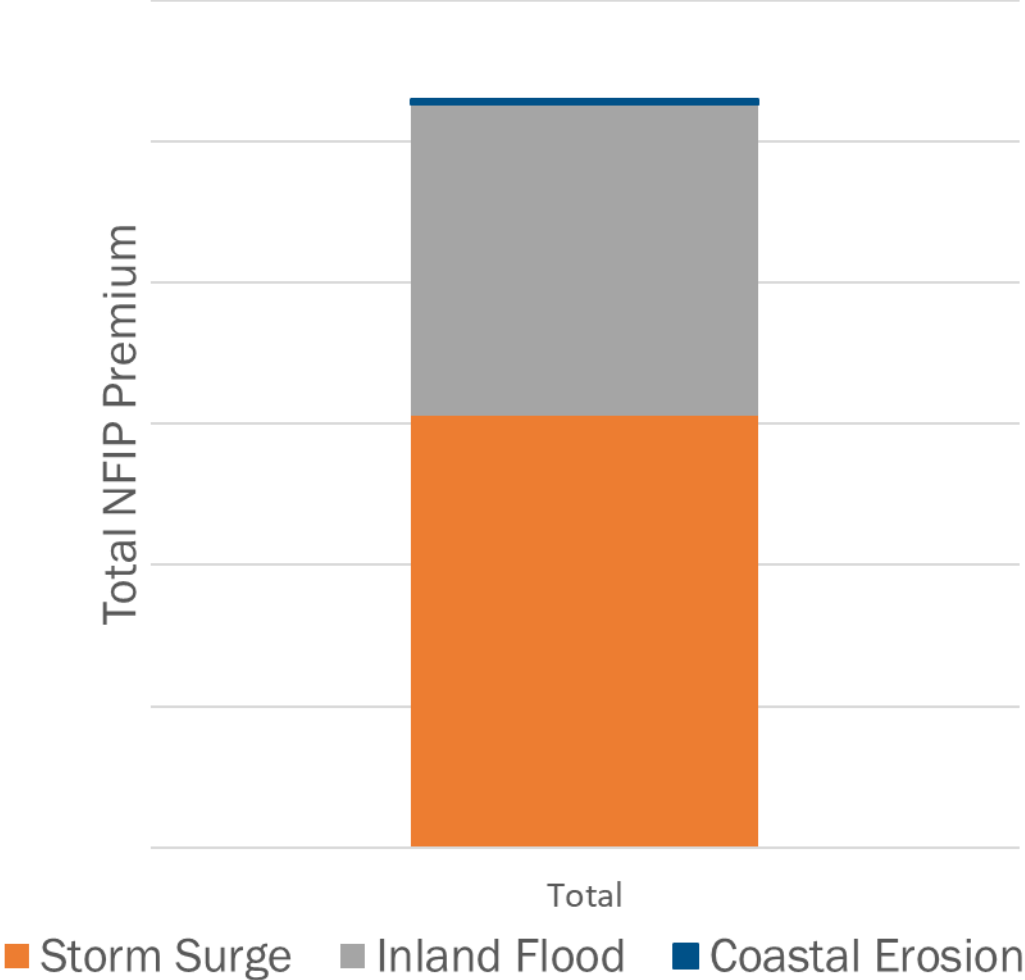
Highly variable

Changing physical conditions

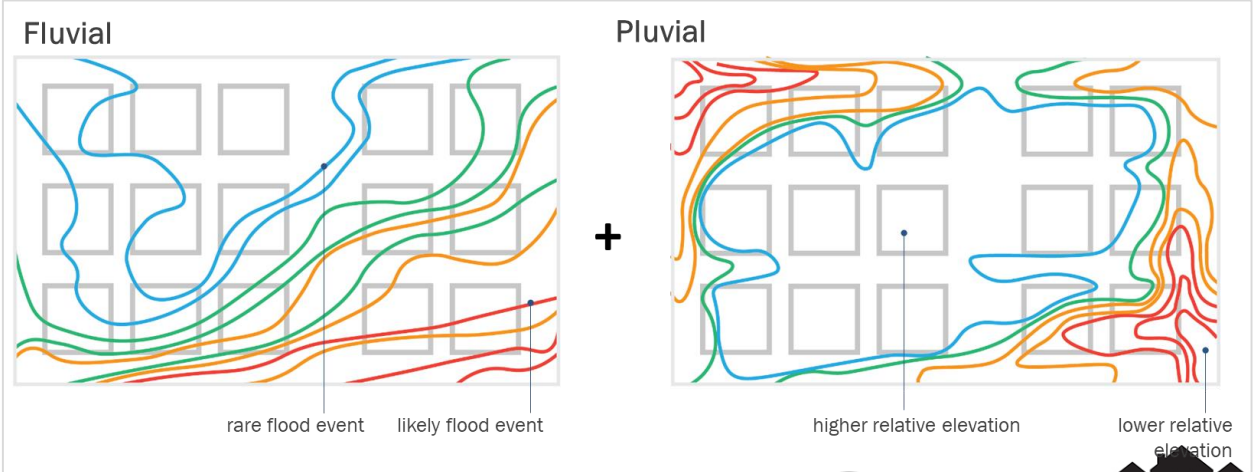


RR 2.0 Includes Multiple Flooding Sub-Perils

RR 2.0 Premium by Sub-Peril*



- Coastal erosion will be applied outside V zone
- Differentiates between inland and coastal risk
- Accounts for pluvial flood risk



Communicating Local Flood Risk

Example - Mexico Beach Flood Maps and Hurricane Michael Damage

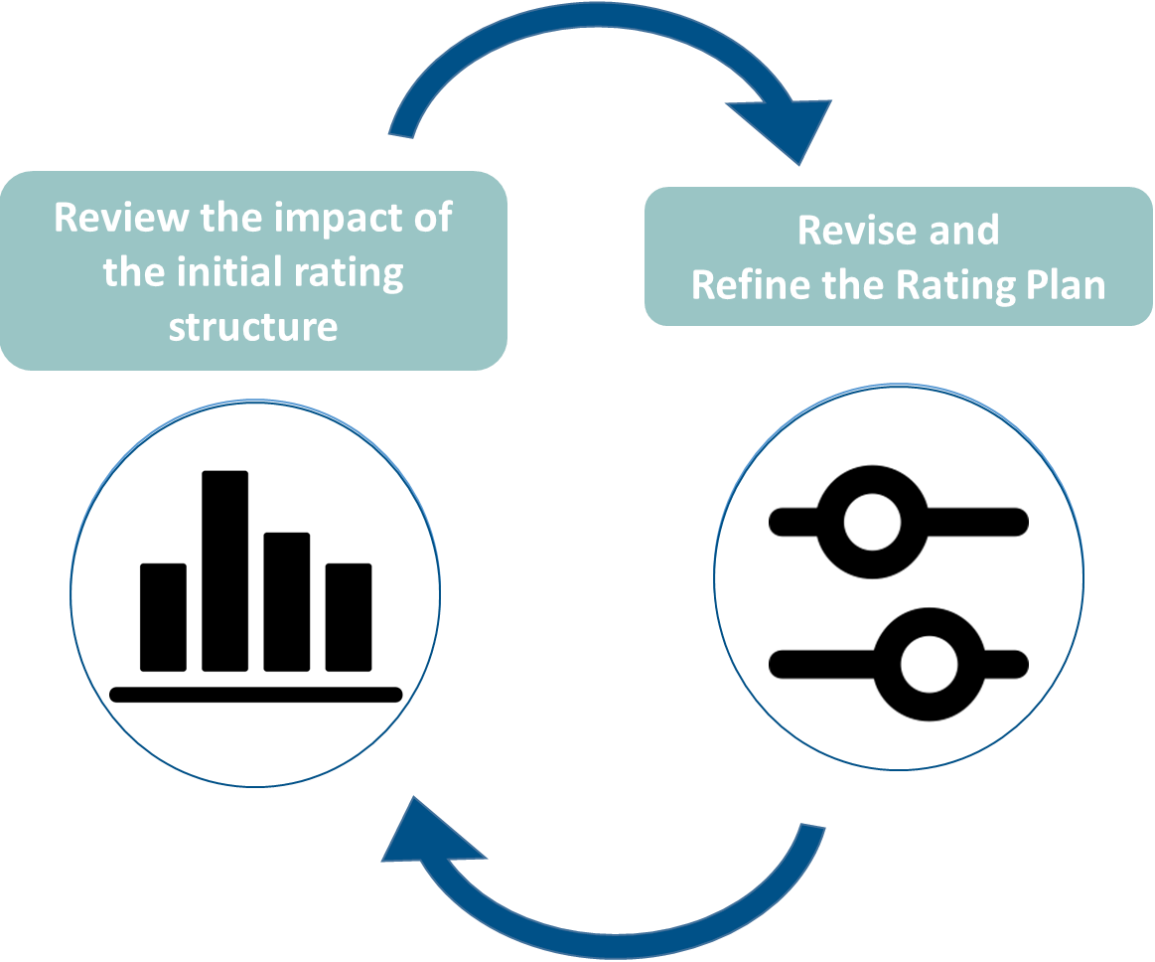


BEFORE

AFTER



Next Steps to Finalizing Rates



Technical Mapping Advisory Council

<https://www.fema.gov/technical-mapping-advisory-council>



Navigation

Search

Languages

Flood Hazard Mapping

View and Obtain Flood Maps

> Change my Flood Zone Designation

> Risk MAP

> Flood Mapping Products

> Status of Map Change Requests

> Forms and Documents

> Frequently Asked Questions

> Guidelines and Standards for Flood Risk Analysis and Mapping

> What's New

> Software

> Tutorials and Training

> Technical Mapping Advisory Council

 Technical Mapping Advisory Council Subcommittee

> Living with Levees

> Numerical Models Meeting the Minimum Requirements

> User Groups

Coordinated Needs Management Strategy

> Natural Hazards Risk Assessment Program

Technical Mapping Advisory Council

The Technical Mapping Advisory Council (TMAC) is a federal advisory committee established to review and make recommendations to FEMA on matters related to the national flood mapping program authorized under the *Bigger-Waters Flood Insurance Reform Act of 2012*. This page is intended for TMAC members and other parties interested in learning more about the purpose and activities of the TMAC.

The national flood mapping program provides flood maps to inform communities about the local flood risk and help set minimum floodplain standards so communities may build safely and resiliently. The Flood Insurance Rate Maps (FIRMs) established under the program help determine the cost of National Flood Insurance Program flood insurance which helps property owners financially protect themselves against flooding.

The TMAC will review the national flood mapping activities authorized under the law and prepare recommendations to the FEMA Administrator. The TMAC will also produce a report on the impacts of climate sciences and future conditions and how they may be incorporated into the mapping program. The TMAC is comprised of representatives from federal, state, local and private sector organizations as mandated in The *Bigger Waters Reform Act of 2012* and governed by the *Federal Advisory Committee Act (FACA)* requirements.

For more information on the TMAC's establishment, charge, membership or meetings, please visit:

- [Overview Fact Sheet](#)
- [Frequently Asked Questions Fact Sheet](#)
- [Charter](#)
- [Bylaws](#)
- [Legislation](#)
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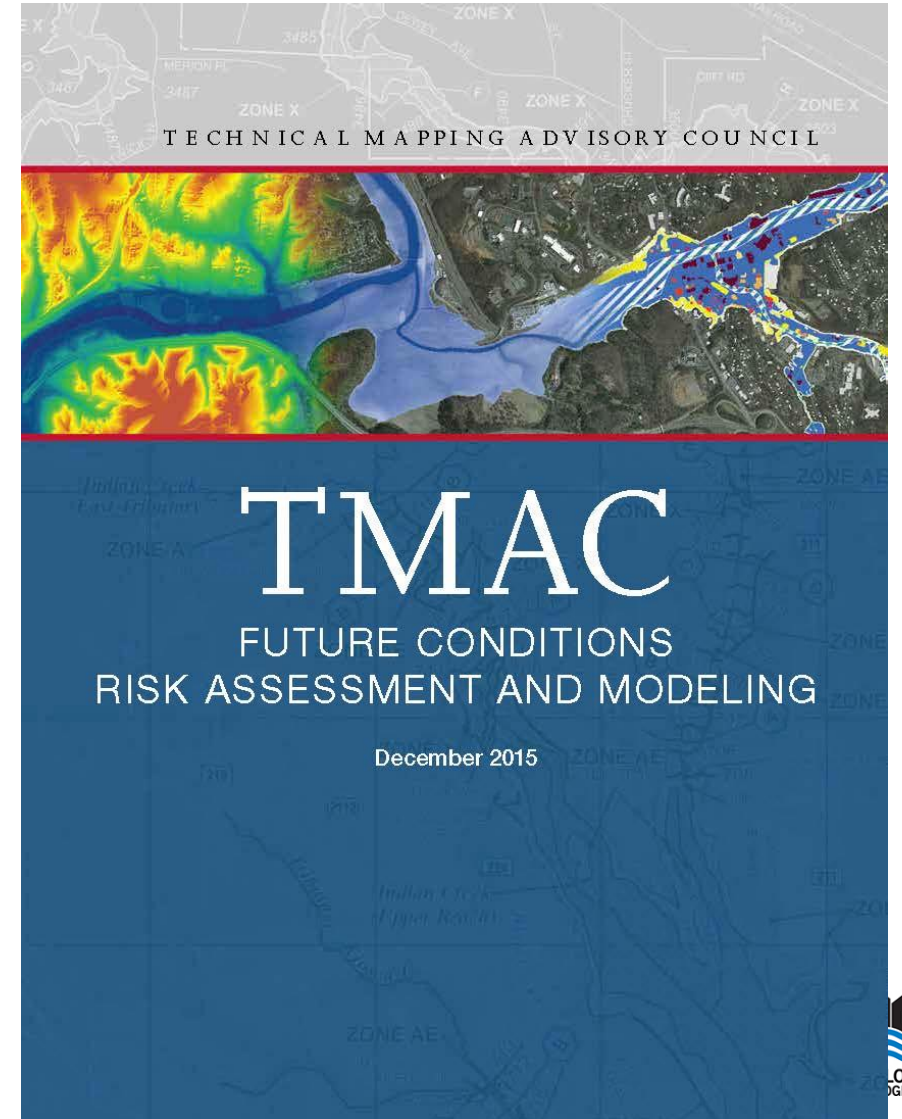
> [TMAC Reports And Recommendations](#)

> [FEMA Administrator Reports To Congress](#)

Last Updated: 07/19/2019 - 11:00

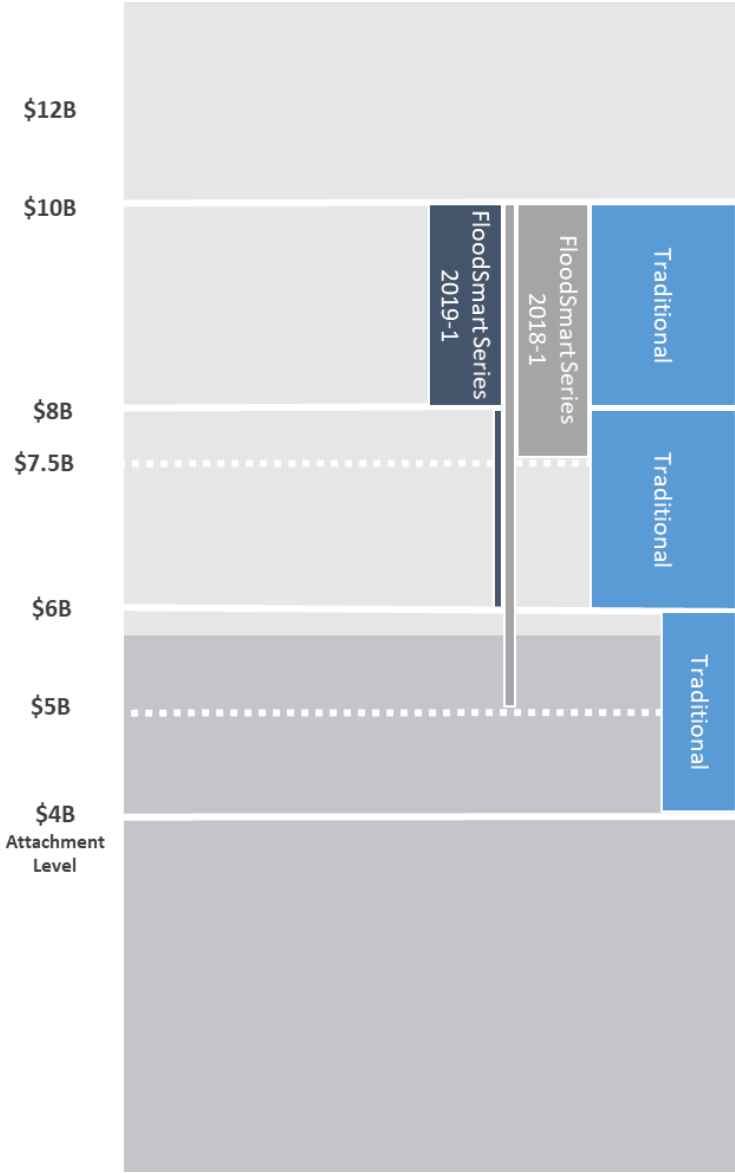
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2019 Reinsurance Program Structure

- \$1.32B in Traditional
- \$300M FloodSmart 2019-1
- \$500M FloodSmart 2018-1



- Borrowing Authority from U.S Treasury: \$9.9B
- NFIP Ability to Pay Claims
NFIF: \$4.8B
RF: \$1.3B
- 1/1/19 Placement
2B xs 8B: 26.60%
2B xs 6B: 25.61%
2B xs 4B: 13.98%
- FloodSmart Series 2018-1
Class A: 13%
Class B: 3.5%
- FloodSmart Series 2019-1
Class A: 12.5%
Class B: 2.5%

*NFIP Ability to Pay Claims as of 9/30/2019



Flood Experience

Event	Event Details			
	Event Month	Number of Paid Losses	Losses Paid	Average Paid Loss
Hurricane Katrina	Aug 2005	166,792	\$16,257,852,174	\$97,474
Hurricane Harvey	Aug 2017	76,364	\$8,958,743,006	\$117,316
Superstorm Sandy	Oct 2012	132,500	\$8,826,097,813	\$66,612
Hurricane Ike	Sep 2008	46,704	\$2,702,649,795	\$57,868
Louisiana Severe Storms And Flooding **	Aug 2016	26,983	\$2,476,980,181	\$91,798
Hurricane Ivan ⁺	Sep 2004	28,154	\$1,607,512,533	\$57,097
Hurricane Irene	Aug 2011	44,322	\$1,346,591,077	\$30,382
Tropical Storm Allison	Jun 2001	30,671	\$1,105,003,344	\$36,028
Hurricane Irma	Sep 2017	21,993	\$1,068,728,809	\$48,594

2019 activity:

- Hurricane Barry (July 2019) had \$30,613,364 Losses Paid and 788 Paid Losses as of September 11, 2019
- Hurricane Dorian (August 2019) and Tropical Storm Imelda (September 2019) are too immature and the loss data too sparse at this time to allow us to make a meaningful placement of the event



Risk Rating 2.0 is Fairer

A new rating methodology that will result in more equitable premiums for policyholders.



Individuals will no longer pay more than their fair share in premiums based on the value of their homes.



A better understanding of risk enables state and local governments to help communities and individuals take action and mitigate.



RR 2.0 is using the latest data and technology to provide an individualized picture of a property's risk.



Risk Rating 2.0 Incorporates Replacement Cost Value

- Replacement cost is an important piece of information used to rate homeowners' insurance policies but is not currently used as a rating variable for all NFIP flood policies.
- New rates will use replacement cost data to estimate the cost to rebuild the home.
- By reflecting the cost to rebuild, the new rating plan will also aim to deliver fairer rates for owners of lower-value homes.



A More Resilient Nation



FEMA is doing its part to promote insurance and mitigation options for individuals and communities to address resiliency.



Now we need our partners, states, communities, and individuals to take action to address their flood risk.



Mitigating flood risk is a shared responsibility.



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Questions



To stay up-to-date with Risk Rating 2.0, and for the latest details, please visit www.fema.gov/nfiptransformation.



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Thank You

