Working together to close the Louisiana Flood Protection Gap
The insurance industry has an opportunity to capitalize on a growing risk pool with more confidence than ever before.

Turning risk into an opportunity

2 USD billion
Premium amount Louisiana households are underinsured by in an average year.

65%
Percentage of Louisiana homeowners who do not have a flood policy.
What is driving insurer confidence?

YOUR unique needs & appetite

OUR flood expertise

ACCESS a growing market together

=
Technological Advancements

Three key elements

- Better understanding of physics of flooding
- High resolution maps
- Fully probabilistic inland and storm surge models
Technological Advancements

High resolution maps

FEMA

Swiss Re Inland Flood
Technological Advancements

High resolution maps

FEMA

Swiss Re Pluvial Flood
Technological Advancements

High resolution maps

FEMA

Swiss Re Storm Surge
Technological Advancements

High resolution maps

FEMA

Swiss Re Combined
Four-box modeling approach

- **What can happen?**
  - Hazard

- **Where are the properties?**
  - Exposure

- **How do properties react?**
  - Vulnerability

- **What is covered?**
  - Indemnity
US storm surge modeling

Swiss Re Tropical Cyclone Track Set
- Historical track record
- Probabilistic track set
- Forward speed
- Radius of max winds
- Storm history
- Pressure
- Near term frequency
- Climatology

NOAA Slosh Model
- Bathymetry
- Flood Protection
- Mean surge height
- Basin
- Topography

Flood depth

Climatology
- Pressure
- Mean surge height
- Basin
- Topography

Probabilistic track set
- Forward speed
- Radius of max winds
- Storm history
- Pressure
- Near term frequency
- Climatology

Land fall angle
- Pressure
- Mean surge height
- Basin
- Topography

Historical track record
- Pressure
- Mean surge height
- Basin
- Topography

NOAA Slosh Model
- Bathymetry
- Flood Protection
- Mean surge height
- Basin
- Topography

Flood depth
- Bathymetry
- Flood Protection
- Mean surge height
- Basin
- Topography
Inland flood modeling

Input data
- Climate data (i.e. precipitation)
- Surface data (i.e. Land use)
- Surface data (i.e. elevation)

Modeling
- Observed
- Simulated

Flood events – extent and depth of water

Swiss Re Patented Flood Zones
The probability a location floods is a function of the vertical and horizontal distance from a river, and the catchment area.

Water depth to damage

Damage (% TIV)

Water depth
How do companies evaluate entering the flood market?

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Evaluating options

- Is there an opportunity?
- Is there consumer demand?
- Do I have confidence in the product?
- Is the product acceptable to regulators?
- Do I have the IT capabilities to implement?
Take Up Rate
LA private flood market potential

- Potential LA private flood market direct written premium: $2.4 billion
  - Assumes 25% Loss Ratio, and 100% flood-insurance take-up
  - Not everyone will buy, and some will buy cheaper premiums if multiple options are presented (including NFIP)
  - Similar to HO market, $2.1 billion. No other state has flood market potential this large relative to its HO market.
  - NFIP premium ~$295 million (effective policies in 2021)
Not all X zones are created equally
Take-up rate of NFIP policies in Non-SFHA census tracts

- Louisiana has a high rate of voluntary flood insurance purchase in more areas than other states.
- Statewide, less than 20% of single-family homes purchase an NFIP policy in Louisiana.
Take up rate modeling case study

- Developed model primarily with NFIP data supplemented with carrier data.
- Lift chart is predicting private flood bind rates.
- Lowest quantile expected premium per quote = $33.
- Highest quantile expected premium per quote = $852.
Take up rate drivers differ coastal/non-coastal

- **Coastal Non-SFHA**
  - Geography – elevation, distance to coast
  - Financial means – median income of area, percent of home ownership

- **Non-Coastal Non-SFHA**
  - Previous events – paid losses, occurrences
  - Risk
  - Geography – distance to river, relative elevation
The model provides location estimates of take-up rate

Aggregated NFIP take-up rates

Predicted private carrier take-up rates
The model is a tool to increase take-up.

- Successful flood program needs accurate rates AND customers.
- Use cases of take-up rate modeling:
  - Market potential
  - Product viability / testing and pro forma development
  - Deploying marketing resources
  - Customer Targeting

- Louisiana recently passed a law that decreases the hurdles for admitted market private flood. Act 77, effective January 1, 2022.
Working together to close the Louisiana Flood Protection Gap
Any questions?
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