COMMUNITY-BASED CATASTROPHE INSURANCE

One Method for Closing the Disaster Protection Gap

October 6, 2021

NAIC
1. Marsh McLennan – Who We Are
   • The Protection Gap
   • Defined
   • Impacting Trends

2. The Three Pillars of Resilience

3. Community Based Catastrophe Insurance
   • What Is It
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   • Examples

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MarshMcLennan – Our Scale and Scope

We are four companies — Marsh, Guy Carpenter, Mercer, and Oliver Wyman — with one purpose: helping our clients meet the challenges of our time.

• Annual revenue of $17 Billion
• Clients in more than 130 countries
• Listed On The New York Stock Exchange (NYSE: MMC)
• 76,000 colleagues globally

With roots dating back to 1871, Marsh McLennan is the world's leading professional services firm in the areas of risk, strategy and people.
Protection Gap Defined

Protection Gap = Total Economic Loss − Insured Loss

- The insurance industry exists to narrow “Protection Gaps”.
- They are global in nature and cut across a wide range of issues

$1.2T Uninsured liability (75%) per Swiss Re

$6T Uninsured liability est per Geneva Assoc

$70T short-fall in retirement savings per Mercer

Closing Protection Gaps often equated to Disaster Resilience

- Linked to Climate Change and Environmental Social Governance

$250-300B economic cost annually per Swiss Re

Insured $:
- NA-EU 50%
- Emerging Asia 10%
- Africa 1%

By Peril Gaps:
- Storm 40-80%
- Flood 80-95%
- EQ 90+%
Three Disruptive Trends Impacting Resilience

Increasing **Weather Volatility From Climate Change**
- Increased frequency and severity of events

Growing **Insurance Gap**
- Political desire and social need to protect the vulnerable

Unrelenting Strain on Spending
- Overreliance on debt and taxes for funding

**Customers**
- Federal, state and local agencies
- Residual natcat facilities
- Community organizations
- Pools

**Needs**
- Close protection gap
- Improve resilience to climate change
- Enhance community and societal resilience
- Upgrade financial and economic protection against disaster risk

**GC Solutions**
- State of the art analytics to help identify and manage your exposure
- Parametric solutions
  - QuakeCube
  - Traditional cat bonds
- Catastrophe modeling for wildfire, flood and earthquake
“Three Pillars” of Disaster Resilience

Disaster Resilience

1
Preparedness

2
Mitigation

3
Insurance
### Preparedness – Governments and Businesses

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<th>Governments:</th>
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**Governments:**
FEMA provides $2+ billion/year in preparedness grants to State and local governments

**Businesses:**
Business Continuity Planning
## Why Mitigate?

### Natural Hazard Mitigation Saves

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FEMA Hazard Mitigation Funding

Pre-disaster

- Building Resilient Infrastructure and Communities (BRIC)
- $500 million FY20
- $1 billion FY21

Post-disaster

- Hazard Mitigation Grant Program (HMGP)
- Historic average of $1 billion/year
- $3.46 billion one time investment in August 2021
Catastrophic Events Have Lingering Financial Impacts With Many Unable To Repair and Rebuild After a Disaster

- Often unaffordable
- Sometimes unavailable
- Poor understanding of risk exposure
- Limited understanding of disaster insurance
- Biases in decision-making

Protection gaps present economic and social challenges and opportunities for innovation

12.7% Properties with earthquake insurance in New Madrid Region of Missouri

10% Homeowners in California with earthquake insurance

30% Average take-up rates for flood insurance inside 100-year floodplain in USA
The Big Picture: Protection Gap Is Expanding Due To Rising Costs of Catastrophes and Decreasing Effectiveness of Funding Mechanisms

The Protection Gap is expanding space between economic losses and related funds available.

Reduced Funds
Current funding or mechanisms to cover costs of events or long-term liabilities are insufficient with growing strains on public sector as payer of last resort

Rising Costs
Costs of sudden large-scale risk events such as natural catastrophes; or costs of long-term environmental trends are growing
Community Based Catastrophe Insurance (CBCI) Is an Innovative Mechanism To Increase Insurance Coverage and Enhance Resilience

“Insurance arranged by a local governmental or quasi-governmental body to cover a group of designated properties or individuals within the community’s jurisdiction.”
Methods For Communities To Reduce Fiscal Risk From Catastrophes

CBCI Is an Innovative Mechanism To Increase Insurance Coverage and Enhance Resilience

Mechanisms to reduce the natural catastrophe protection gap

- **Total Economic Loss**
  - Climate-Driven Increase
  - Total Economic Loss

- **Physical Resilience / Preparedness Reduce Economic Loss**

- **(Un)Insured Loss**
  - Uninsured Losses Suffered by Individuals, Businesses and Public Entities
  - Insurance Coverage Reduces Uninsured Loss

- **The Protection Gap**
  - Total Contingent Catastrophe Liability for Public Sector

  - **Enhance insurance market**
  - **Enhance physical resilience and preparedness**

  - **Reduce hazard frequency/severity by mitigating climate change**

- **Point of Impact for CBCI**
  - Risk Transfer
  - Contingent Credit
  - Reserves

- **Self-finance**

- **Uninsured Losses Suffered by Individuals, Businesses and Public Entities**

- **Total Economic Loss**

- **(Un)Insured Loss**

- **The Protection Gap**

- **Risk Transfer**

- **Contingent Credit**

- **Reserves**

- **Short-term risk financing**

- **Long-term risk financing**
Defining a Community For CBCI

Community Can Be Broadly Defined

- Any public entity, special purpose district or public agency could qualify as a community for purposes of CBCI and characteristics include:
  - Joint responsibility over or ability to enforce risk reduction activities
  - Entities with an existing financial relationship with community members

- Examples of potential CBCI sponsors include:
  - Special-purpose district
  - Neighborhood association
  - Business improvement district
  - Geologic Hazard Abatement District (GHAD)
  - Tribal organizations
Five-part Framework for CBCI Implementation

Five Work Streams To Determine Most Effective Option

1. Define the need
2. Determine authority to act
3. Engage stakeholders
4. Analyze risk
5. Transfer risk
The Spectrum of CBCI Solutions

CBCI can play many roles in the dynamic ecosystem of existing public and private catastrophe insurance mechanisms. Below are four broad institutional structures with different roles and responsibilities for the community and other partners:

- **Facilitator**: Low degree of community control, resources, and expertise required.
- **Group Policy**: Moderate degree of community control, resources, and expertise required.
- **Aggregator**: High degree of community control, resources, and expertise required.
- **Community Captive**: Very high degree of community control, resources, and expertise required.

Degree of community control, resources, and expertise required increases with each model.
Facilitator Model
Community Helps To Establish a Beneficial Arrangement With an Insurer for Community Members

Insurer(s) ➔ Community Institution ➔ Community members ➔ Premiums ➔ Community Institution ➔ Claims ➔ Insurer(s)
Group Policy Model
Community Arranges a Group Policy on Behalf of Its Members
Aggregator Model
Community Buys Bulk Parametric Catastrophe Insurance
Aggregator Model
Community Buys Bulk Parametric Catastrophe Insurance
Potential Benefits of CBCI

Incentives for Community-level and Individual Risk Reduction

- Mitigation alignment
- Risk reduction activity
- Improved decision-making
- Enhanced risk communication capability

Provide Affordable and Available Coverage

- Reduces premium costs
- Increases insurance availability
- Potential for delivery of targeted assistance

Enhance Financial Resilience

- Reduces liabilities
- Enhances credit risk profile
- Speeds recovery
- Supports post-disaster economic revitalization
Community Based Catastrophe Insurance

Consideration of Pilot Project

CBCI is a disaster insurance program arranged by a local government, a quasi-governmental body – such as a special-purpose district – or a community group covering individual properties within the community.

- Enhance the financial resilience of communities
- Provide affordable and reliably available disaster insurance
- Create incentives for community-level and individual risk reduction
- Sustain insurance uptake in the face of loss volatility

An integrated risk management program – centered in risk communication, reduction, transfer and analytics – is key to the CBCI program success.
NYC faces coastal flooding from storms and tides, as well as inland flooding from rainfall and, to a lesser extent, riverine flooding (e.g. Sandy, Ida). The frequency of flooding events is projected to increase.

The New York City Mayor’s Office of Resilience sought a public-private partnership / CBCI pilot project for flood. Guy Carpenter was a part of the project team, led by Wharton Risk Center, who submitted a grant proposal in early May and have recently been notified of its success. The project timeline will commence in October 2021 and span 12 to 18 months.

The goal of the project is to increase the financial resilience of lower to middle income households in NYC to escalating flood risk through inclusive insurance programs. The Center for NYC Neighborhoods (“Community”) will buy a parametric risk transfer policy to fund the emergency disaster relief grant program.

This will be a first of its kind parametric risk transfer transaction that will help provide a clear roadmap toward engaging private capital to improve recovery outcomes for cities and communities across the U.S. This transaction will prove that reinsurers can play a vital role in backing inclusive insurance programs that level the recovery “playing field” for low income, disaster affected survivors.
We are leaders in risk, strategy and people. One company, with four global businesses, united by a shared purpose to make a difference in the moments that matter.

Marsh GuyCarpenter Mercer OliverWyman
Guy Carpenter has an extensive relationships with senior executives and underwriters across the global (re)insurance market.

There are a number of S&P AA-reinsurers that are ready to engage in exploring and structuring a solution to improve community resilience.

Our broker team will work with your team in identifying the most appropriate framework and risk financing solution to bring to market that meets your objective.
Access the Marsh McLennan & Wharton Concept Paper on CBCI here:

Please contact us if you wish to discuss further or have any questions:

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Catastrophic events have lingering financial impacts with many unable to repair and rebuild after a disaster.

- Often unaffordable
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Protection gaps present economic and social challenges and opportunities for innovation.

$281T
Of global debt at an all time high

$3.6T
Estimated total uninsured losses since 1980

70%
Of Natural Disaster Losses go uninsured each year
Five-part Framework for Implementation

Steps Are Not Necessarily Sequential, and It May Be Necessary To Go Back and Forth Among Them

1. Define the Need
   - Determine which groups could benefit
   - Consider motivations for CBCI
   - Identify residents’ needs and key risk exposures

2. Determine Authority to Act
   - Consider what entities have an interest
   - Who has regulatory authority to implement
   - Consider what policy reforms or institutional changes are necessary

3. Engage Stakeholders
   - Engage community early
   - Communicate and educate community about risk and mitigation options

4. Analyze Risk
   - Capture data and modeling to design appropriate risk transfer structures and risk reduction mechanisms
   - Understand the risk
   - Set premiums

5. Transfer Risk
   - Consider capital providers
   - Determine premium payment options
   - Map options for disbursing claims payment