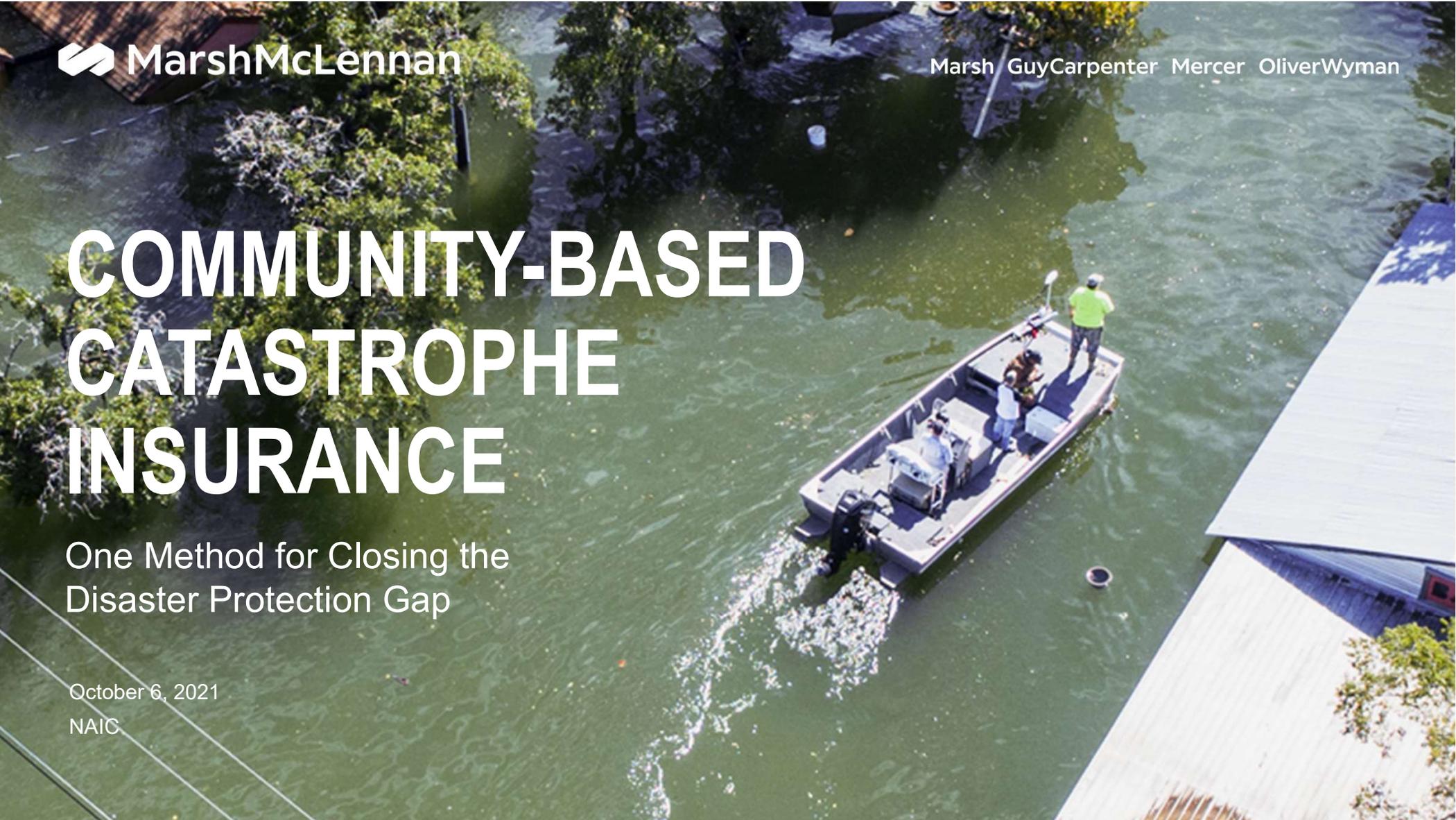


COMMUNITY-BASED CATASTROPHE INSURANCE

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
 - How Can It Help
 - Examples
4. Q&A

Agenda

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

 **GuyCarpenter**

Health, wealth and
career consulting and
solutions

 **Marsh**

Strategy, economic,
and brand
consulting

 **Mercer**

Insurance broking
and risk
management
solutions

 **OliverWyman**

Reinsurance and
capital strategies

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



Nat-Cat

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



Cyber

\$6T Uninsured liability est
per Geneva Assoc



Pensions

\$70T short-fall in retirement
savings per Mercer

Closing Protection Gaps often equated to Disaster Resilience

- Linked to Climate Change and Environmental Social Governance



Disasters

\$250-300B economic cost
annually per Swiss Re

Insured \$:



By Peril Gaps:



Three Disruptive Trends Impacting Resilience



Increasing Weather Volatility From Climate Change

Increased frequency and severity of events

Customers

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



Growing Insurance Gap

Political desire **and social need** to protect the vulnerable

Needs

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



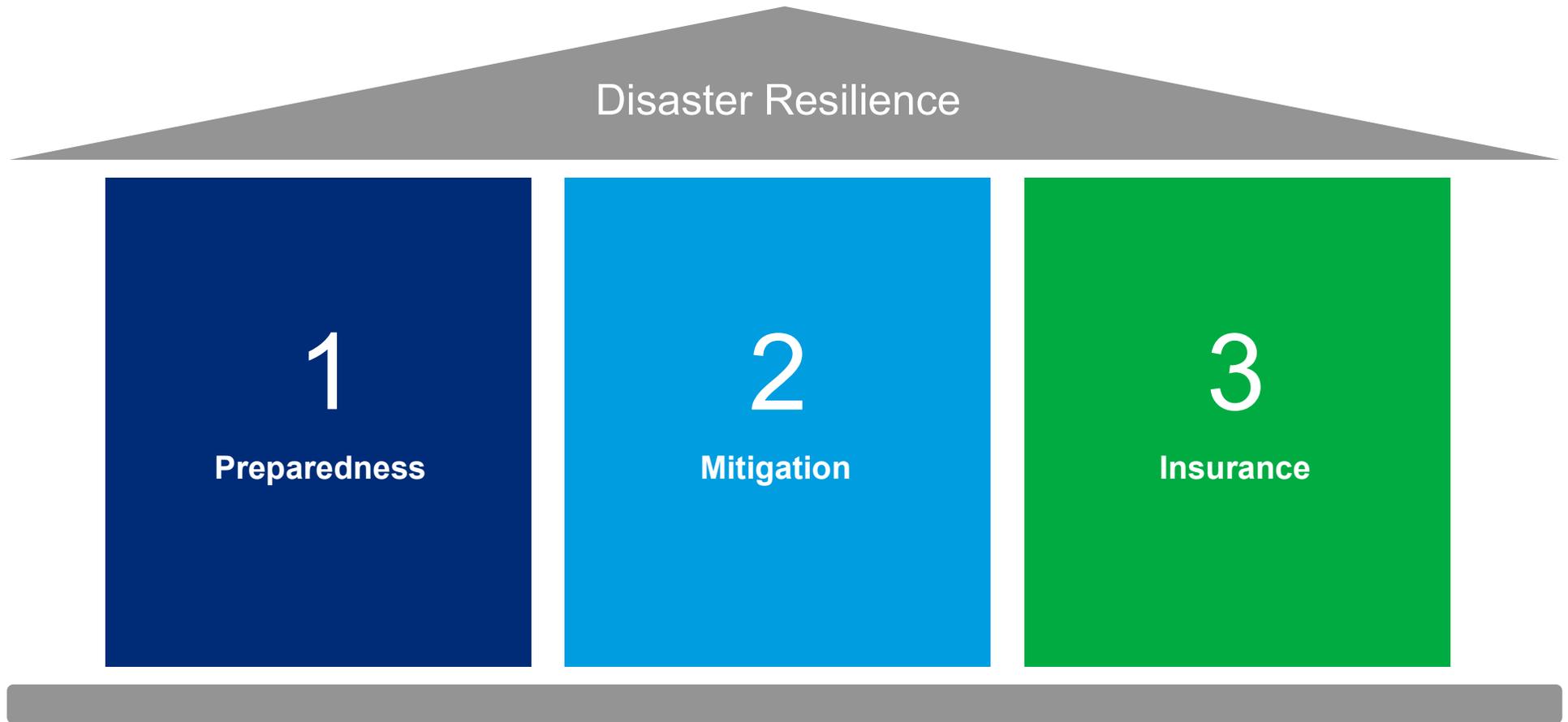
Unrelenting Strain on Spending

Overreliance on debt and taxes for funding

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



Preparedness – Governments and Businesses

1 Risk assessment

2 Planning

3 Training

4 Equipment

5 Exercises



Governments:

FEMA provides \$2+ billion/year in preparedness grants to State and local governments



Businesses:

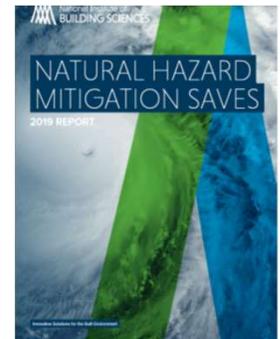
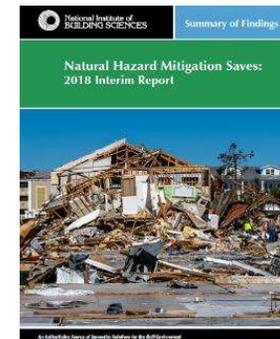
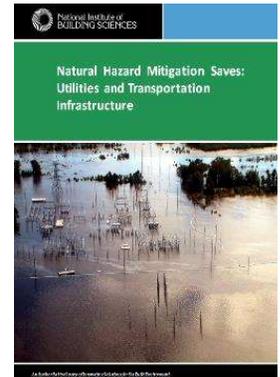
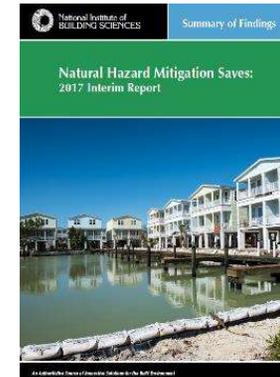
Business Continuity Planning

Why Mitigate?

Natural Hazard Mitigation Saves

	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
 National Institute of BUILDING SCIENCES™					
Overall Benefit-Cost Ratio	11:1	4:1	4:1	4:1	6:1
Cost (\$ billion)	\$1/year	\$4/year	\$520	\$0.6	\$27
Benefit (\$ billion)	\$13/year	\$16/year	\$2200	\$2.5	\$160
 Riverine Flood	6:1	5:1	6:1	8:1	7:1
 Hurricane Surge	not applicable	7:1	not applicable	not applicable	not applicable
 Wind	10:1	5:1	6:1	7:1	5:1
 Earthquake	12:1	4:1	13:1	3:1	3:1
 Wildland-Urban Interface Fire	not applicable	4:1	2:1	not applicable	3:1

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FEMA Hazard Mitigation Funding



Pre-disaster

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



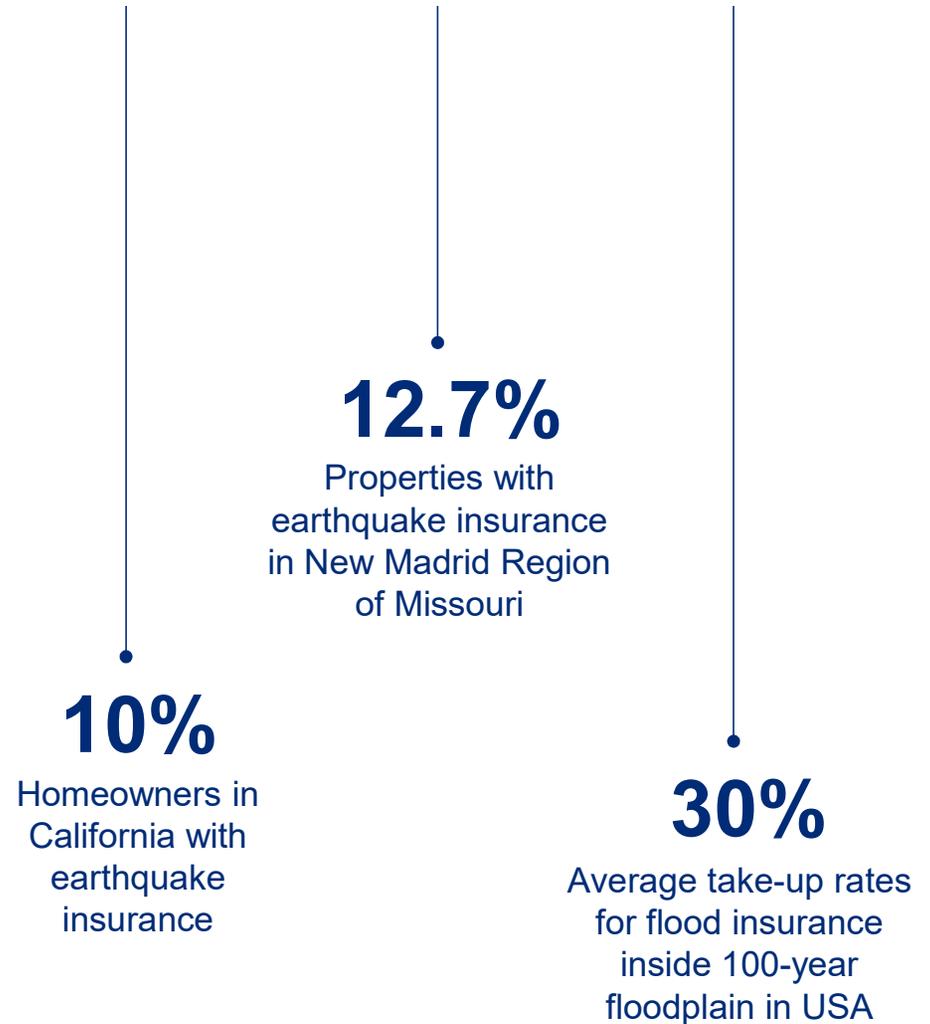
Post-disaster

- 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



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



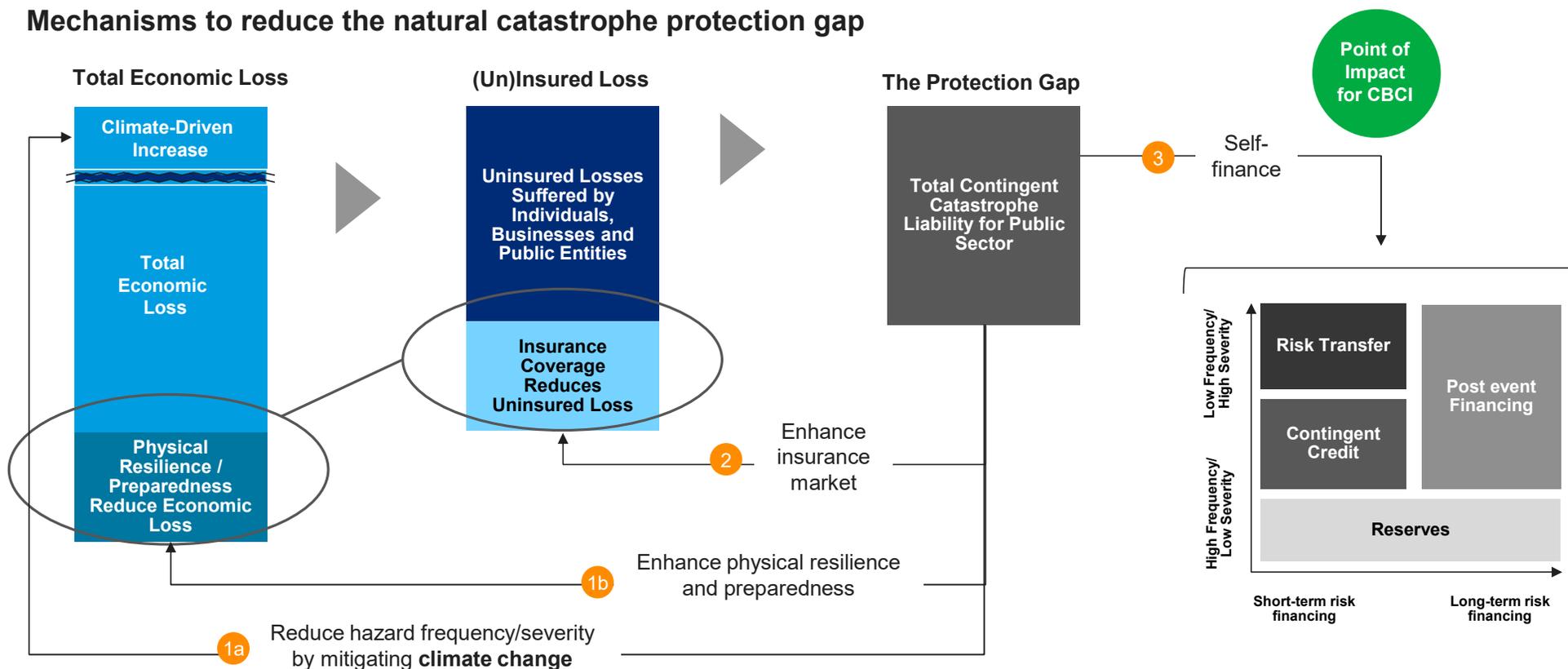
Insurance arranged by a local governmental or quasi-governmental body to cover a group of designated properties or individuals within the community's jurisdiction.



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



Defining a Community For CBCI

Community Can Be Broadly Defined

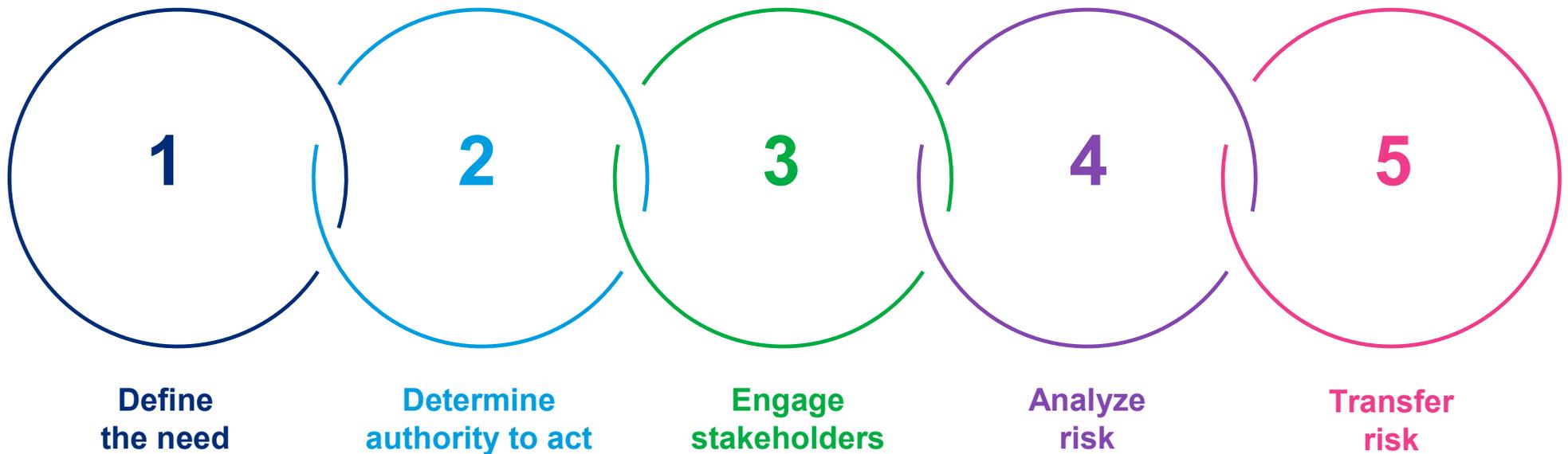


- Any public entity, special purpose district or public agency could qualify as a community for purposes of CBCI and characteristics include:
 - Joint responsibility over or ability to enforce risk reduction activities
 - Entities with an existing financial relationship with community members

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

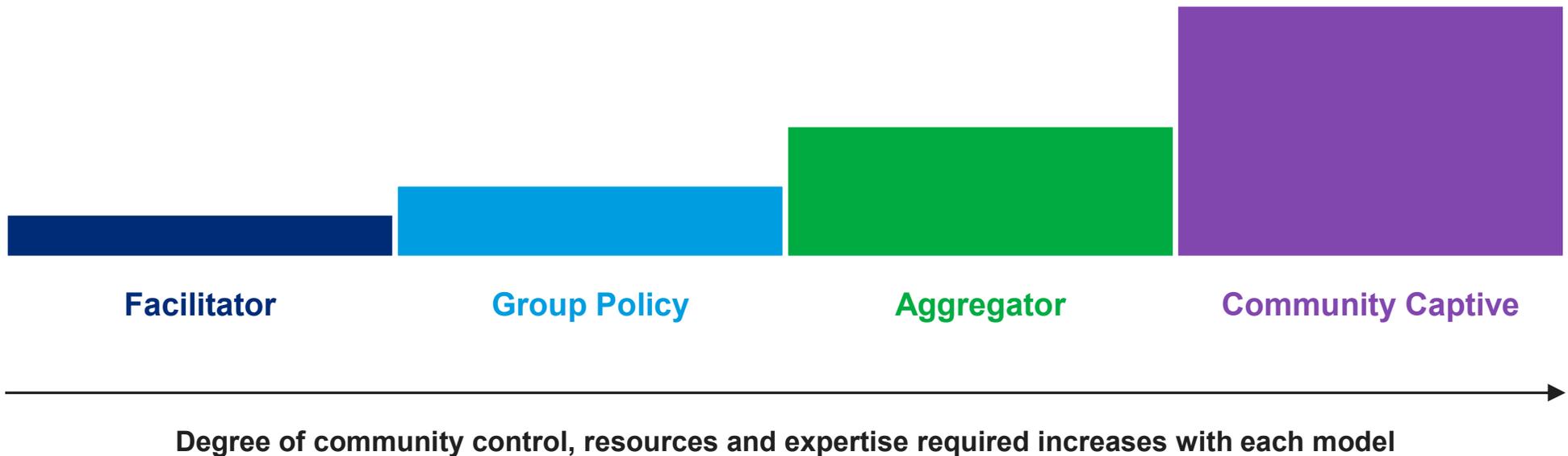
Five-part Framework for CBCI Implementation

Five Work Streams To Determine Most Effective Option



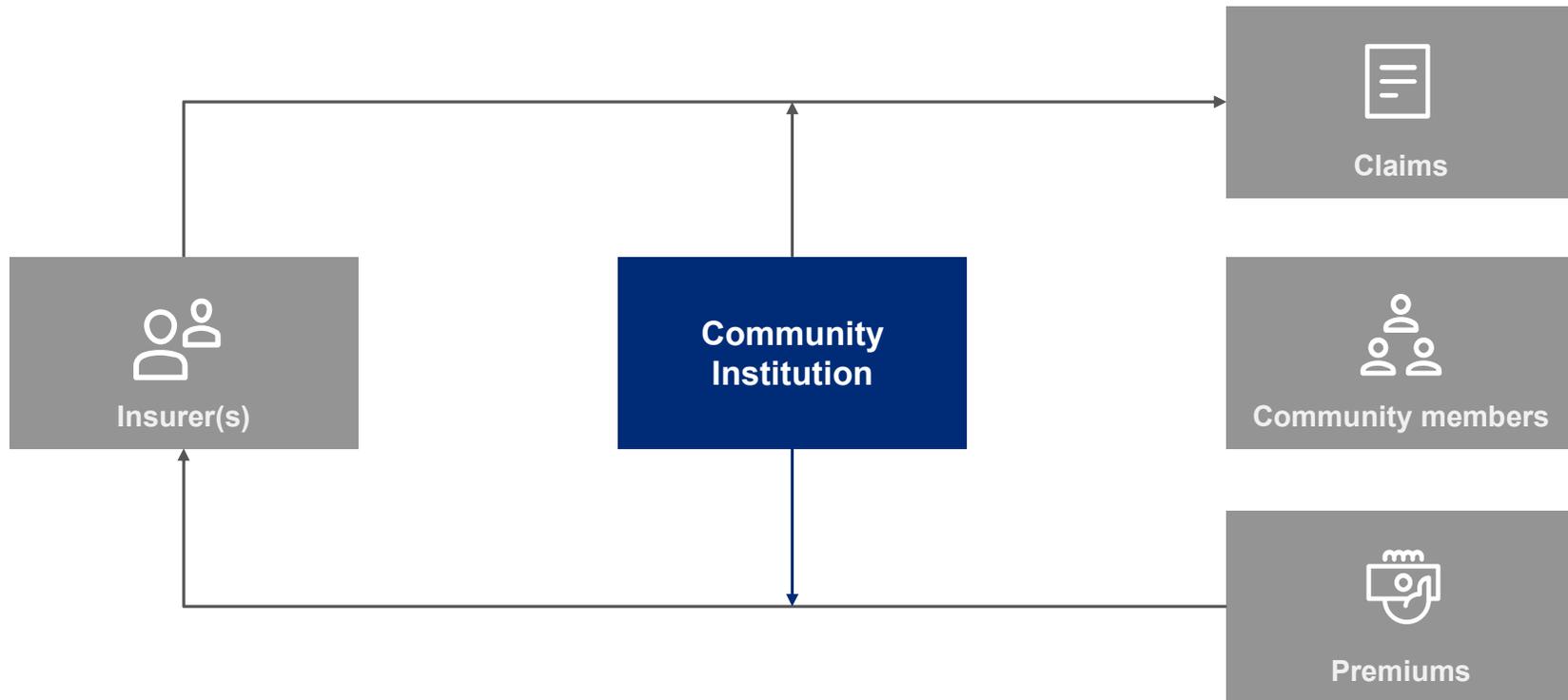
The Spectrum of CBCI Solutions

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:



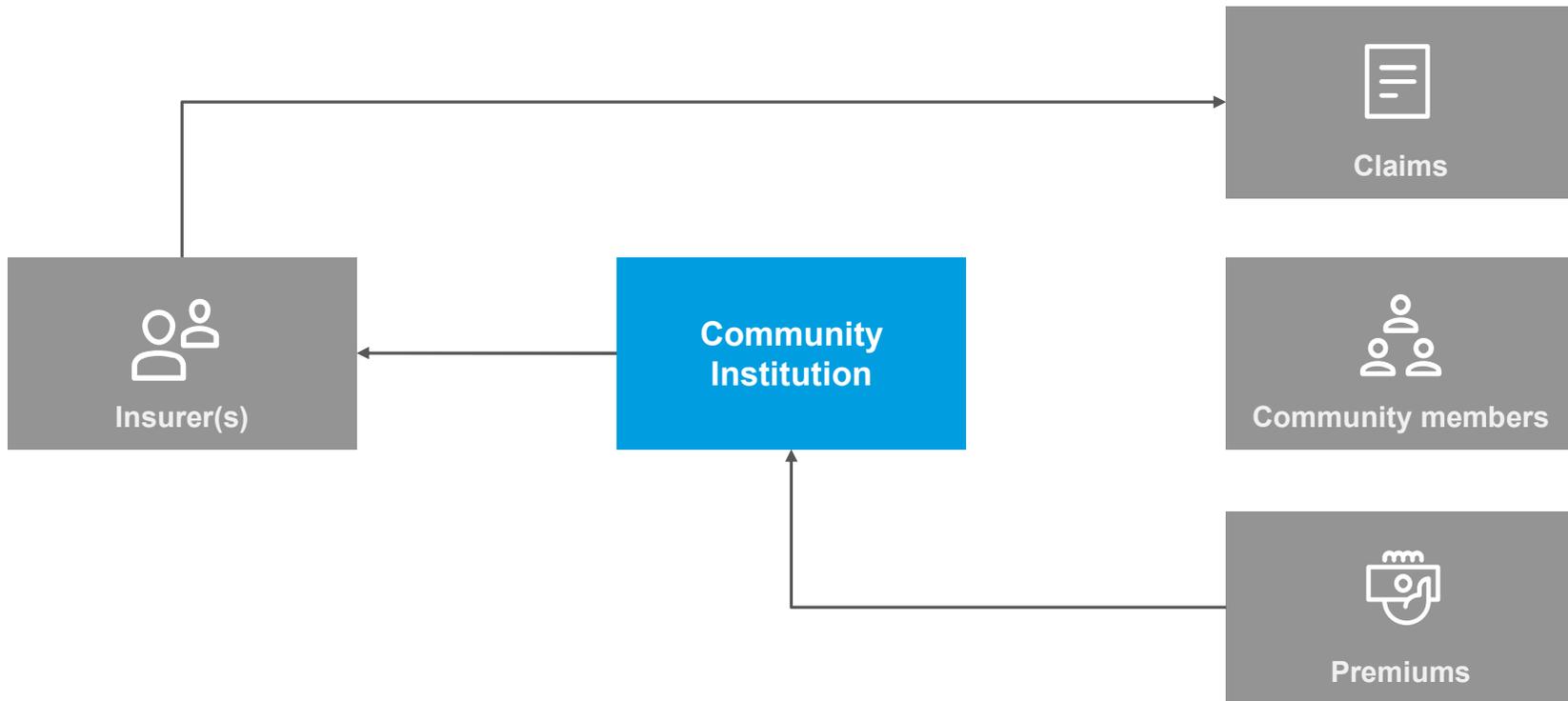
Facilitator Model

Community Helps To Establish a Beneficial Arrangement With an Insurer for Community Members



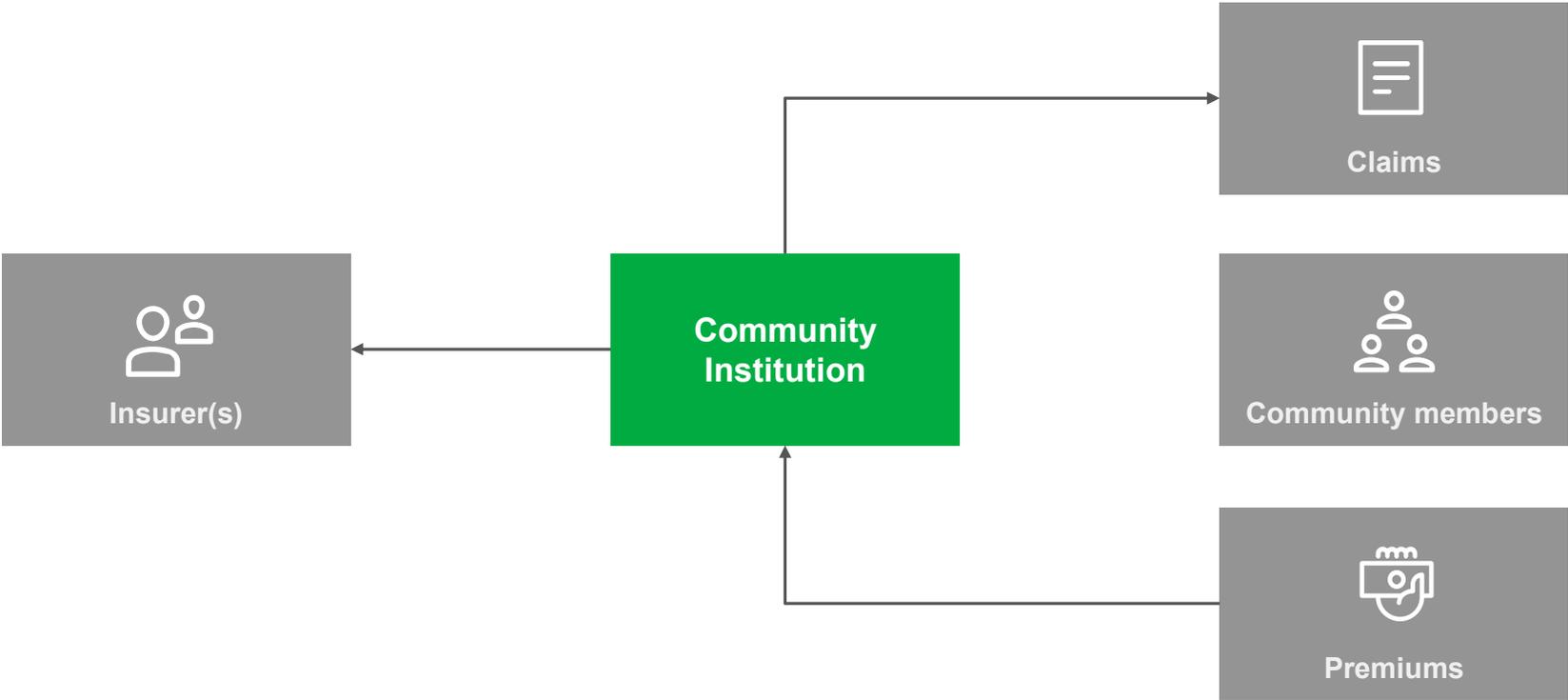
Group Policy Model

Community Arranges a Group Policy on Behalf of Its Members



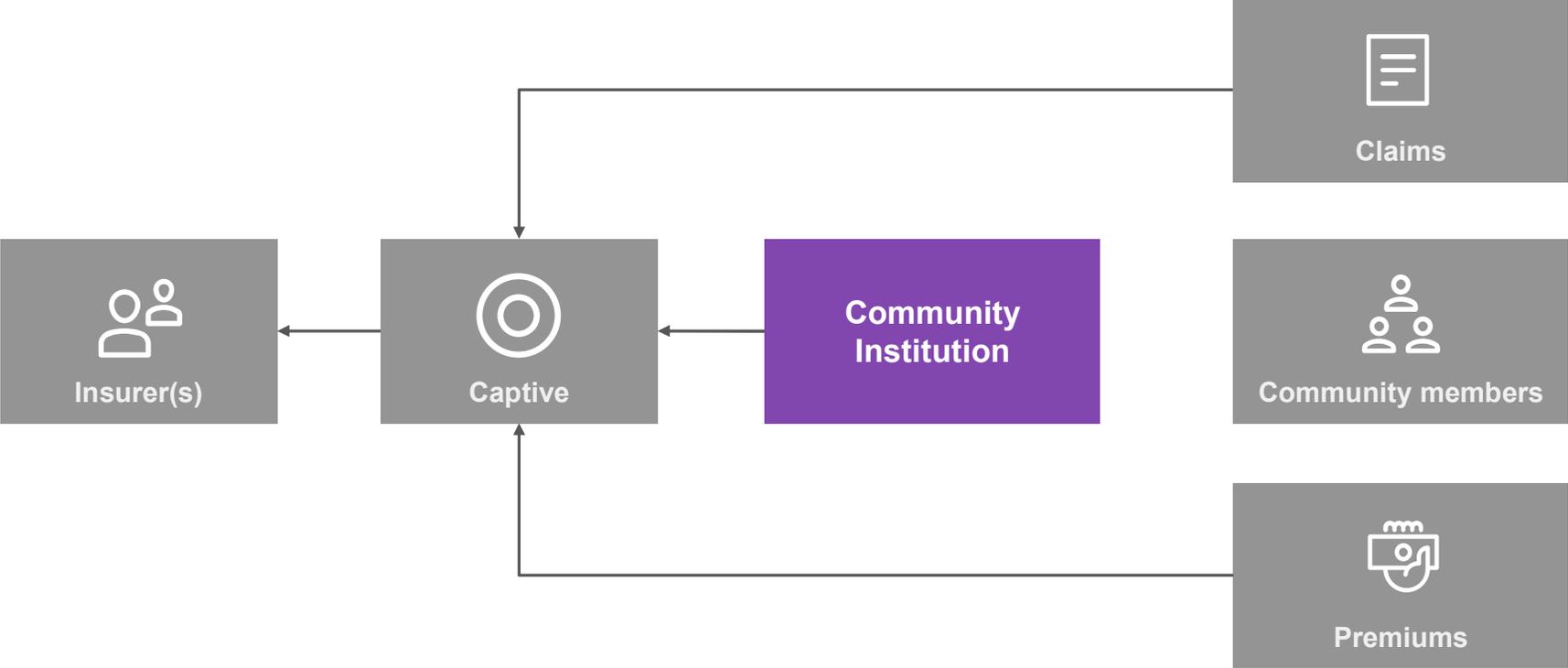
Aggregator Model

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 Pilot Project



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

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Potential Framework

Models	Description	Community roles
<p>Facilitator</p>	<p>The community helps to establish a beneficial arrangement with an insurer for community members. Community members contract directly with the insurer.</p>	<p>Member education; data provision; engage and educate members; administer means-testing program (if any); adopt regulations to encourage or compel purchase; and negotiate discounts for community resilience enhancements.</p>
<p>Group policy</p>	<p>The community arranges a group policy on behalf of its members (e.g., similar to an employee benefit arrangement). Community may facilitate premium payment, but the community members maintain a relationship with the insurer for claims management.</p>	<p>Same as facilitator model; plus management of enrollment/distribution negotiations of premium; and facilitation of payment.</p>
<p>Aggregator</p>	<p>The community buys bulk parametric catastrophe insurance and makes community members aware of this community benefit, charges for it, such as via taxes, and ensures claims are distributed to members after qualifying events.</p>	<p>Obtain adequate coverage to meet community member recovery needs; ensure premium charge and claims payment mechanisms are in place; and raise awareness of benefit amongst community members.</p>
<p>Community captive</p>	<p>The community establishes its own risk-bearing entity (e.g., a captive) and uses it to administer policies for members.</p>	<p>Same as group model plus capitalize and govern risk bearing entity; finance portion of risk; purchase reinsurance; manage claims payments; and set insurance policy terms and conditions¹.</p>

Degree of community control, resources and expertise required: Low High

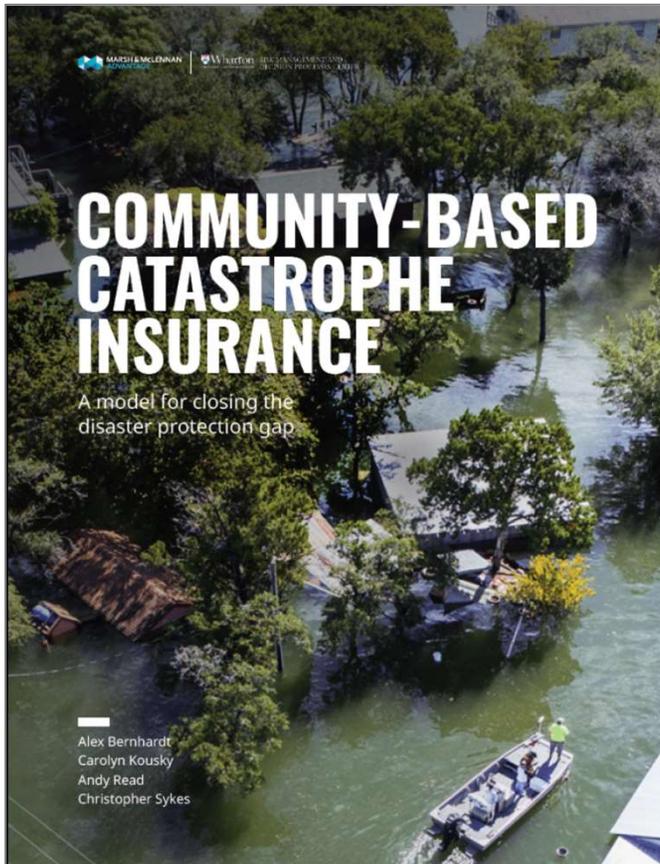
(Re)insurer capacity

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.

Asset Library



Access the Marsh McLennan & Wharton Concept Paper on CBCI [here](#):

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

Andy Read

- Vice President Public Sector Practice, Guy Carpenter
andy.read@guycarp.com

Daniel Kaniewski

- Managing Director, Marsh McLennan Advantage
daniel.kaniewski@mmc.com

Christopher Sykes

- Managing Director, Guy Carpenter
christopher.skyes@guycarpenter.com

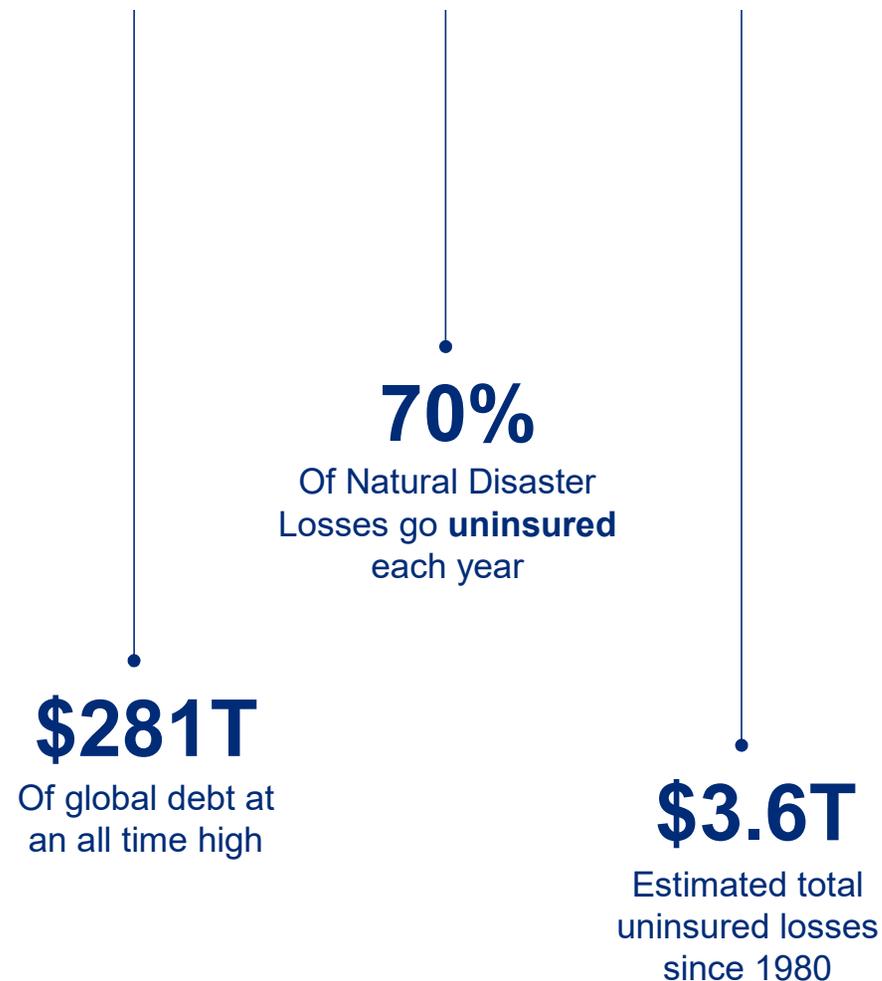
Jake Clark

- Managing Director, Guy Carpenter
jonathan.clark@guycarp.com

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

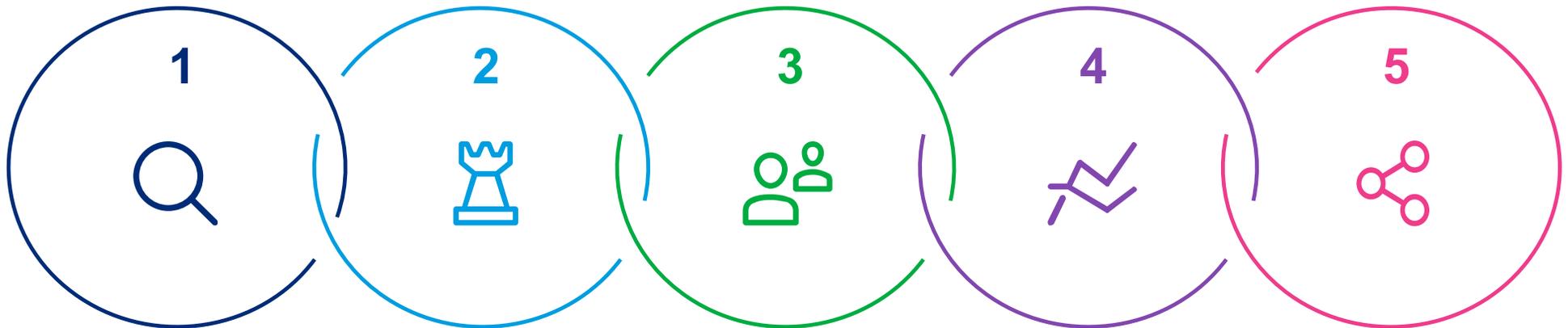
-  Often unaffordable
-  Sometimes unavailable
-  Poor understanding of risk exposure
-  Limited understanding of disaster insurance
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Protection gaps present economic and social challenges and opportunities for innovation



Five-part Framework for Implementation

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



Define the Need

- Determine which groups could benefit
- Consider motivations for CBCI
- Identify residents' needs and key risk exposures

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

Engage Stakeholders

- Engage community early
- Communicate and educate community about risk and mitigation options

Analyze Risk

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

Transfer Risk

- Consider capital providers
- Determine premium payment options
- Map options for disbursing claims payment