Incentivizing Resilience: Moving from Ideas to Impact

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One year ago....

- October ‘15 - White Paper Publication
- January ‘16 - MMC/CFIRE Symposium
Resilience Today

Capacity and appetite is waning for continued funding of disaster recovery—particularly in the face of increased frequency and severity of disaster events.

Figure 1: Billion Dollar+ Extreme Weather Events in Frequency and Losses from 1980-2014 (Earthquake Losses Included)
Resilience Today

• Numerous studies, adoption of codes and standards and other activities are underway

• however...
  – poor penetration of hazard mitigation into the private sector
  – limited funding for federal and state pre- and post-disaster mitigation compared to post-disaster recovery funding despite demonstrated success
Does Pre-Disaster Mitigation work?

- 2005 MMC study:
  - “money spent on reducing the risk of natural hazards is a sound investment. On average, a dollar spent by FEMA on hazard mitigation provides the nation about $4 in future benefits.”

- Ongoing follow-on study:
  - Completion of the first phase of this effort is anticipated in September of 2017

Details from Keith in a few minutes
What can we do that we are not already doing?
..a new approach

The most cost-effective manner to achieve resilience is through a holistic and integrated set of public, private and hybrid incentivization programs:

Mortgages – insurance – finance - tax incentives and credits - grants
MMC and CFIRE white paper:

**Developing Pre-Disaster Resilience Based on Public and Private Incentivization**

- Catalogue of existing programs that stakeholders can evaluate, and then modify or expand to develop incentives.
- Specifics need to be tailored to account for hazard, risk, locality, business size, and the value of resilience strategies.

One size cannot fit all
Implementing Incentivization

• Calls for input, consensus, leadership and action from a broad spectrum of stakeholders.

• Discussions need to occur at sufficiently high levels in the public and private sectors to ensure enactment.

• Participants should include:
  – Offerers of incentives, such as insurance and finance-related companies, lenders and foundations
  – forward-thinking communities and federal and state government agencies
  – State legislatures and the U.S. Congress
  – Decision makers, including utilities, homeowners and businesses
Implementing Incentivization

- Participating stakeholders need sufficient confidence that using incentives to achieve resilience will justify investments, underwriting and loan and grant programs.
- Decision makers want the certainty that they can offset the cost of implementing mitigation strategies.
- All stakeholders should experience expanded benefits and co-benefits of resilience, including reduced losses and operational continuity.
- Once incentives are adopted and standardized by leading private-sector stakeholders, the rest of the private sector should begin to follow.

The private sector will not undertake resilience investments just because it is sensible, but because it is economically prudent.
Potential Incentives

What will encourage stakeholders to take action?
Insurance

• Benefits:
  – Resilient buildings reduce the loss risks associated with property insurance issuance.
  – reduce the payouts for business interruption insurance (which frequently exceed amounts expended by insurers in compensation for property damage)

• Potential incentives:
  – promote the adoption of enhance codes and mitigation standards for resilience (such as the Insurance Institute for Business and Home Safety (IBHS)’s FORTIFIED programs for residential and commercial buildings)
  – offer premium discounts to property owners who use the standards
Lenders

• Benefits:
  – Resilient properties enhance long term security

• Potential Incentives:
  – Enhanced appraised values allow a borrower to leverage more mortgage financing for a given loan-to-value ratio.
  – for a specific loan amount, a more-resilient building will be better collateralized—that is, have a lower loan-to-value ratio.
  – bonds backed by resilient properties would carry higher ratings, thus minimizing interest expense to the issuer.
Resilient properties...

– should increase the likelihood of securing debt financing.

– especially in areas prone to natural disaster— are likely to be more valuable than a less-resilient comparable property

• enhanced sale prospects

• For commercial properties, better leasing performance
Construction and Permanent Financing
Potential Incentives

• Companies in disaster prone regions would experience improved bond ratings, all other factors remaining equal, by adopting comprehensive resilience strategies.

• Similarly, industrial revenue bonds linked to the construction of resilient facilities in areas prone to natural disasters could realize enhanced ratings, other factors being equal.
Communities

• Benefits:
  – Resilient communities decrease supply interruptions and are more attractive for living and doing business

• Potential Incentives:
  – Property tax reductions
  – Accelerated local permitting and inspection procedures for resilient properties
  – Zoning benefits, e.g. density bonuses
  – More-favorable developer agreements for the construction of resilient properties
  – Revolving loan programs
Utilities

• Benefits:
  – Resilient utilities are more reliable and require less reconstruction

• Potential Incentives:
  – Reduced insurance premiums to support the avoidance of interruption losses;
  – Enhanced bond ratings for projects that incorporate resilience strategies

_Could be supported by a public utility commission policy that allows a small but immediate increase in rates to pay for system resilience enhancements_
Mitigation Measures

Incentivization serves as a strategy to realize resilience goals.

However...

the identification and implementation of effective mitigation measures is paramount.

The specific cost-benefit ratio of these and other measures will be identified in the forthcoming revision and expansion of the *Mitigation Saves* report.
# Mitigation Measure Examples

<table>
<thead>
<tr>
<th>Category</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Flood - Elevate (Mh) / Wind - Shutters (Hh) / Earthquake - Brace cripple walls (Hh) / Wildfire - require sprinklers in high-rise buildings (Lh)</td>
</tr>
<tr>
<td>Commercial</td>
<td>Remove buildings (Hh) / Wind - roof-wall straps (Mh) / Earthquake - Secure MEP equipment (Hh)</td>
</tr>
<tr>
<td>Industrial</td>
<td>Wind - roof-deck attachments (Mh) / Earthquake -</td>
</tr>
<tr>
<td>Utilities and Transportation Lifelines</td>
<td>Elevate high-voltage transformers (Lm) / Wind - Underground transmission and distribution lines (Mh) / Earthquake - Accelerate pipe replacement (Hh)</td>
</tr>
<tr>
<td>Government</td>
<td>Like commercial</td>
</tr>
</tbody>
</table>

Terms in parentheses (Xy) refer to recent expenditures (X: H = high, M = medium, L = low) and likely benefit-cost ratio (y: h = high, m = medium, l = low)
Layered Incentives Strategies

<table>
<thead>
<tr>
<th>Finance Source</th>
<th>Payback Source</th>
<th>Offsets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortgage Refinance</td>
<td>Homeowner Premium</td>
<td>Insurance Premium discount</td>
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<tr>
<td></td>
<td></td>
<td>Mortgage Reduced deductible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tax Incentive State tax deduction</td>
</tr>
</tbody>
</table>
Recommendations
Recommendations

• Authorize existing grant programs, loan guarantee programs and other financial programs to include funding of mitigation projects and exploration of the use of incentives.

*Potential programs - SBA, Fannie Mae, Freddie Mac, DOT, HUD, EDA, VA, USDA, HHS.*

• All construction projects supported by federal dollars should meet or exceed the latest building codes. Require states and localities to comply with (and enforce) current building codes and assess the use of incentives for high performance requirements.

*Look to NFIP Community Rating System for examples of potential strategies.*
Recommendations

• In evaluating the health of the banking system and individual banks, include an examination of how institutions are assessing the hazard risk of the collateral for the loans they underwrite, and how to incorporate these risks into their loan programs.

• Establish an interagency group to facilitate development of collaborative approaches to incentivizing resilience (including potential development of a common set of prerequisites for applying for federal programs).
Recommendations

• Clarify the need for federal agencies to actively engage in the codes and standards development process, alongside industry stakeholders, to assure the consideration of federal priorities and the incorporation of federally supported research findings.

• Fund federal agency mitigation programs at a level commensurate with the future exposure avoided.

• Encourage federal, state and local agencies to share their resilience strategies (to the extent practical) with the private sector to both demonstrate what is possible and to build private-sector demand and capacity. Include the anticipated life-cycle costs where appropriate.
Incentives Benefits

• Resilient infrastructure and buildings in our communities
• Increased loan security for lending institutions and enhanced financing opportunities for borrowers and investors in buildings and infrastructure.
• Heightened stability in the insurance and reinsurance industries.
• Increased construction activity and jobs associated with achieving resilience.
• Enhanced community abilities to attract and retain quality developers and businesses.
• Reduction in the amount of damaged and contaminated materials and contents after a disaster event
Creation of a Resilience Economy

An economy based on the consumer-oriented goal of resilience

(similar to the engine created for renewable energy)
Resilience Economy Components


• **Resilience Planning** including code and zoning adoption and regulatory modifications.

• **Resilience Incentivization** – insurance, mortgage, and financial organizations; communities, utilities, and government.
Resilience Economy Components

- **Resilience Implementation** – communities, states, public-private partnerships, developers, contractors and foundations/non-profits.


- **Resilience Communication** – peer-to-peer, developers, real estate agencies.
What’s happened in 2016?
Since last January...

- May ‘16 – House Subcommittee hearing
- August ‘16 – White House Summit
- September ‘16 – Addendum
- September ‘16 – House Transportation Committee Staff Briefing
- November ‘16 – Follow-up White House Summit
Where are we headed in 2017?

- Incentivization
- Mitigation Saves
Questions

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