Community-Based Flood Insurance: Impacts on the Flood Hazard Management Cycle
Outline

• What is Community-Based Flood Insurance (CBFI) ?
• History and background of CBFI
• Key considerations for implementation in communities
  – Hazard identification
  – Hazard mitigation
  – Floodplain management
  – Flood insurance
  – Disaster recovery
• Insurer Perspective
What is a community?
Community-Based Flood Insurance (CBFI)

- A governmental or quasi-governmental entity pays a premium to insure some or all of the following:
  - Individual homes and businesses
  - Community infrastructure
  - Community continuity of services
  - Community equipment
  - Independent entities within the community (colleges)
- The entity has the flexibility to lower their insurance cost through:
  - Active mitigation efforts
  - Higher deductibles
  - Combining with other entities to form a larger risk pool
Community-Based Flood Insurance (CBFI)

• The cost of the community-wide insurance is distributed by one of these means:
  – Property taxes to individuals and businesses
  – Sales taxes or other broad-based taxes
  – A stormwater user fee, or other utility fee (water / sewer)
• The distribution of individual cost to total cost could be determined by
  – Individual contribution to overall community risk
  – Impervious area
  – Consideration of household income to median community income
• Specific structural premiums
  – May or may not be less than could obtained individually
Community-Based Flood Insurance (CBFI)

- CBFI blends well with other common programs
  - **Community Rating System (CRS):** Provides a specific model for credits for pro-active communities
  - **Stormwater utilities:** SWUs attempt to solve flooding problems that cause damage that could be covered by community-based insurance
  - **Water and sewer utilities:** Often include community wide charges in their bill because they cover the entire community and there is a clear service that can be disconnected for non-payment, bringing compliance faster than tax sales
  - **Watershed and levee districts:** Often have taxing authority, and are often designed to address specific (and possibly covered) flood risks
“A Conceptual Approach to Floodplain Management in 2050”

- Early discussion of CBFI
- Paid for through property taxes
  - Tax deductible for individual citizens
- Covering all infrastructure in community, especially municipally-owned
- Serviced at the local level, by local insurance agents for claims and joining the pool
- Attempts to cover damage to structures, public assistance-type payments, and community-assistance payments for infrastructure rebuilds
FEMA NFIP Reform: Phase III Report
August 2011

Covered in Section 3.5 Community Based Insurance

Assumes:
- Continuation of NFIP agreement to provide insurance in exchange for minimum FPM standards
- FEMA continues to create and issue FIRMs and perform structure-based assessments
- Single community-wide premium for all structures in community
- Communities would allocate premium to individual structures by their level of risk
- CRS communities assumed the most likely to opt for this plan

## National Flood Determination Association Policy Paper


<table>
<thead>
<tr>
<th>Model</th>
<th>Who identifies risk</th>
<th>Who offers insurance</th>
<th>Who provides guidance on managing risk</th>
<th>Individual structure level risk determination</th>
<th>Features</th>
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</thead>
<tbody>
<tr>
<td>Municipal-level</td>
<td>Federal govt</td>
<td>Federal govt</td>
<td>Federal govt</td>
<td>Yes</td>
<td>Federal govt identifies loss caps per state. To be eligible for disaster aid, must stay below cap</td>
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<tr>
<td>Cap and trade</td>
<td>Federal govt</td>
<td>Federal govt</td>
<td>States</td>
<td>Maybe</td>
<td>Federal govt identifies loss caps per state. To be eligible for disaster aid, must stay below cap</td>
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<tr>
<td>Watershed-based</td>
<td>TBD</td>
<td>TBD</td>
<td>Yes</td>
<td>All communities in watershed share insurance costs</td>
<td></td>
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<tr>
<td>State-based model</td>
<td>State</td>
<td>TBD</td>
<td>Federal govt</td>
<td>TBD</td>
<td>Federal govt sets minimum benefits standards</td>
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</table>
• Development of innovative approaches such as CBFI
• Community, levee district, or watershed district as policy holder
• Discusses equity in rate increases since the community controls development, and should thus incur increases for unwise behavior
• Policies stay with the community for the long-term, so that the policy is not dropped
Homeowner Flood Insurance Affordability Act of 2014
HFIAA 14  (Signed Into Law March 21, 2014)


- Section 23 requires FEMA to produce a report on:
  - The best manner to incorporate voluntary community-based
    flood insurance policies into the National Flood Insurance
    Program; and
  - A strategy to implement voluntary community-based flood
    insurance policies that would encourage communities to
    undertake flood mitigation activities, including the construction,
    reconstruction, or improvement of levees, dams, or other flood
    control structures
Deloitte Center for Financial Services (2014): The potential for flood insurance privatization in the U.S.


• Discusses a model for community-based flood insurance along the lines of group health insurance
• Individuals still purchase coverage, but enjoy lower rate due to group pooling
• Local governments have strong incentive to undertake mitigation to lower rates
Key considerations for implementation in communities

• Hazard identification
• Hazard mitigation
• Floodplain management
• Flood insurance
• Disaster recovery
Hazard identification

- Hazard ID must match the risks insured
  - Riverine, Coastal, Alluvial, Overland / Pluvial, Sewer backup
- Completeness of data is important to assess all risks
- Consistency of data is important to preserve actuarial basis
- Data could be provided by government or private industry
  - Issues of data availability and common analysis basis
- The more data on the individual structures insured, the better
  - Would need some minimal levels of data to develop predicted losses for insurance costing
Hazard mitigation

• If private insurer, there would tend to be a bias towards mitigation efforts that show current policy improvements (high probability events)
  – Insurer cannot assume they will hold the policy in future years
• If government insurer (NFIP) would be possible to take longer term view of mitigation
• Need to fully quantify mitigation effects on predicted losses for community
  – Requires detailed data
  – May be more complex to estimate for some types of mitigation
    • Open space, for example
Floodplain management

• Good floodplain management is essential to best pricing for CBFI
  – Analogous to a clean driving record for auto insurance
  – Shows responsibility and trends
• Could be exclusions in the policy for FPM practices
  – Violations of ordinance
  – Exceptions to ordinance
  – Grandfathered structures
• Could be material benefits for levels of professionalism in FPM
  – Such as CFM or PE certified
Flood Insurance

• CBFI could cover full range of community:
  – Individual homes and businesses
    • Individual homes likely to be most risky and least engineered
    • Individual businesses may be better engineered and offer some compensation for individual homes
  – Community infrastructure
    • Hard infrastructure likely to be highly engineered to withstand large events, up to 100-yr or 500-yr.
      – Could provide some offset for individual homes
    • Soft infrastructure (like parks)
      – Damage highly dependent on type of flood
      – Cleanup is a major component
Flood Insurance

- CBFI could cover full range of community
  - Community continuity of services
    - Insure money in place to buy new police cars, for example
    - Or to repair fire department buildings
    - Or to pay overtime for staff
  - Community equipment
    - Standards for storage of equipment critical
    - Timing of flood critical
    - Flash flood = probable loss of equipment
    - Slow flood = equipment moved to higher ground
  - Independent entities within the community (colleges)
    - Will function much like individual homes and businesses
    - May have backup insurance from other sources
    - Or, could partially self-insure using state budget
Disaster Recovery

• Claims and adjustment much like current private insurance
  – Some entities better than others at rapid payment of claims
• Questions of source of damage
  – Flood versus wind, for example
• Question: Are we insuring to build back in kind or build to modern code?
  – Increased cost of compliance included?
  – Could be a major benefit to community to include full ICC
    • Build back speed
    • Future insurance rates
• Pay claims to individuals, businesses, municipality?
Thought Experiments

- Community includes levee district
  - Insurer would probably require regular maintenance and proof of same
  - Partial credit for levees for that provide some protection could be accommodated
  - How to accommodate levees across multiple communities?

- Dealing with climate change
  - Long-term: Difficult to handle with private insurer
  - Short-term: Measureable, could be priced in
    - Example: Intense rainfall increases

- Length of policy
  - What is optimum?
    - Probably not less than 3-5 years
Insurer Key Issues

• Fully understand the total risk
  – Data sets not available for all types of possible covered risks
• Avoid geographic grouping to manage catastrophic risks
  – Limit to number of communities in given basin
• Manage distribution of type of risk
  – Riverine, coastal, alluvial, mudflow, etc
• Equitably credit behavior likely to reduce losses
  – During the term of the policy
• How to deal with behaviors that will reduce risk outside the term of the policy?
• State-level restrictions on business
  – Entry and exit criteria for market
• Customer service
  – Claims
Questions ?

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