FROM PACE TO PARB-
CONNECTICUT’S
INNOVATIVE AND PROACTIVE
PROPERTY ASSESSED RESILIENT BUILDING FINANCING
TO IMPROVE NFIP AFFORDABILITY
June 5, 2014 NFIP Affordability Session

By Wayne Cobleigh, CPSM GZA GeoEnvironmental, Inc. and

Howard Kunreuther, UPENN, Wharton Risk Management and Decision Processes Center
3 QUESTIONS THAT CAN CHANGE YOUR LIFE

Innovators often go through these three questions, repeating the cycle many times before getting a brilliant answer.

- amorebeautifulquestion.com – rightquestion.org

**Why?** Let’s confront a problem and a present reality.

**What if?** Envision what might be. What if we borrow an idea or try some combination of X and Y?

**How?** Turn speculation into reality. How can we get this done? What are the first steps?

**If my idea isn’t working, how can I figure out what’s wrong and fix it?**
FLOODING AND CLIMATE CHANGE ECONOMICS IN CONNECTICUT IN 2013 - “CREATIVITY IS A RENEWABLE RESOURCE.” - BIZ STONE GRAPHIC ARTIST & FOUNDER OF TWITTER
CONFRONTING NFIP AFFORDABILITY

Problems
- NFIP $24 Billion in losses as of July 2013
  - Historically Homeowners get discounts below risk-based rates
  - Policy holders underestimate their flood risk and insurance need and benefits
- Biggert-Waters Flood Insurance Reform Act
  - 438,000 policies will have rates “surge” by Oct 2014
  - 5% fee for Catastrophic Reserve Fund
  - Headlines and Wavering Legislators in 2013-2014

Proposed Solutions
- Means tested Vouchers Coupled with Mitigation Loans for flood loss reduction measures – Wharton Risk Management and Decision Processes Center
- CT Property Assessed Resilient Building (PARB)
### 2013 NFIP Annual Premiums for a post-FIRM, One- to Four-Family Residence Purchasing $250,000 Coverage

<table>
<thead>
<tr>
<th>Zone</th>
<th>3 feet below BFE</th>
<th>1 foot below BFE</th>
<th>At BFE</th>
<th>1 foot above BFE</th>
<th>4 feet above BFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A zone</td>
<td>Not rated</td>
<td>$2,199–$4,483</td>
<td>$778–$1,315</td>
<td>$429–$616</td>
<td>$296</td>
</tr>
<tr>
<td>V zone</td>
<td>$13,950–$23,150</td>
<td>$8,950–$15,925</td>
<td>$6,750–$12,050</td>
<td>$4,675–$8,725</td>
<td>$2,050–$4,150</td>
</tr>
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</table>

“How might the NFIP provide insurance to residents who may require special treatment, such as low-income homeowners residing in flood-prone areas, because they cannot afford the higher risk-based premiums?”
CONGRESS RE-ACTS

• Homeowners Flood Insurance Affordability Act of 2014 signed March 21, 2014
  • Caps on NFIP rate increases
  • Eventual phasing in of risk-based rate increases

Perfect Synthetic Storm hits Washington DC (from Atmospheric Models)
WHY PROPERTY ASSESSED FINANCING?
In 2012 Connecticut created a viable market in Connecticut for renewable energy and energy efficiency projects.

Connecticut Clean Energy Fund becomes the Connecticut Energy and Finance Investment Authority (CEFIA)

- Expanded authority, expanded ability to loan and grant funds, a green bank to raise finance
- **What if we** borrow their highly successful Commercial Property Assessed Clean Energy (C-PACE) Fund to set up a Property Assessed Resilient Building PARB finance?
- Create a no upfront cash finance mechanism for homeowners and businesses to build resiliency to a flood and wind resistant building code with technical underwriting to verify a benefit to cost ratio creating a public benefit assessment
- **What if** in addition to lowering our electric bills and carbon footprint we are lowering NFIP insurance bills and disaster recovery costs?

Even with HFIAA annual rate caps and delays in rate increases, we still need to insure and ensure the long-term viability of neighborhoods prone to coastal and riverine flooding.
Green Bank Attributes of PACE for PARB Consideration

Access to PRIVATE financing of mitigation measures with senior lien for qualified upgrades and repaid via a benefit assessment on the owner’s property tax

Requires legislative consent of municipality and existing mortgage lender

Requires the savings from upgrades to payback over loan period enforced by legal and technical underwriting
Encouraging Investment in Flood and Wind Loss Reduction Measures

Risk-based premiums based on updated FEMA flood maps

- Home improvement mitigation loans tied to property
- Premium reductions for undertaking mitigation measures

Addressing NFIP Affordability Issue

- Means-tested vouchers for those currently in flood-prone areas
- Covers insurance premium and home improvement loan
- Condition for a voucher: You must mitigate
- Required flood insurance and PARB loans tied to the property, not the homeowner
**Two Families Residing in Ocean County NJ**

**Family 1** is in the A Zone and pays $4,000 for flood insurance.

**Family 2** is in the V Zone and pays $18,550 for flood insurance.

- Both homes are **3 feet below** Base Flood Elevation (BFE)
- Each family has an annual income of $50,000 per year

Cost of elevating home to **1 foot above BFE**:

- Family 1: $25,000  20-Year 3% Loan  (Annual Payment $1,680)
- Family 2: $55,000  20-Year 3% Loan  (Annual Payment $3,660)

Means-tested voucher covers insurance and mitigation annual costs above $2,500

( i.e., above 5% of annual income, actual voucher threshold to be determined)
Cost to the Federal Government and the Two Families

V Zone Property

A Zone Property

Cost in Thousands of Dollars

- Insurance Voucher
- Insurance/Loan Voucher, Years 0-20
- Insurance/Loan Voucher, Years 20+

Cost to Federal Government

Cost to Homeowner
Estimates of Program Costs for Ocean County Tracts that Experienced Storm Surge

<table>
<thead>
<tr>
<th>Cost of Program in Millions of Dollars</th>
<th>Insurance Voucher</th>
<th>Insurance/Mitigation Loan Voucher, Years 0-20</th>
<th>Insurance/Mitigation Loan Voucher, Years 20+</th>
</tr>
</thead>
<tbody>
<tr>
<td>--------------------------------------</td>
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<td>---------------------------------------------</td>
</tr>
<tr>
<td>160 million</td>
<td>140</td>
<td>60</td>
<td>20</td>
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Regular Think Tank Meetings and Communications with a Growing and Diverse Group of Stakeholders Simply from Asking **What if?**

1. Macky McCleary, Deputy Commissioner, CT DEEP (Our Host)
2. Wayne Cobleigh, CPSM GZA GeoEnvironmental
3. Howard Kunreuther, UPENN Wharton Risk Management and Decision Processes Center
4. Daniel Stapleton, PE GZA GeoEnvironmental
5. Genevieve Sherman, CT Energy Finance Investment Authority (CEFIA), C-PACE Program Mgr.
6. George Bradner, CT Insurance Department, Property & Casualty, CT Long-Term Recovery
7. Mike Lettieri, CT Dept. Economic & Community Development, CT Long-Term Recovery
8. Brian Thompson – CT DEEP Coastal Programs, Office of Long Island Sound
9. David Blatt, CT DEEP Coastal Programs
10. Bob Kaliszewski- CT DEEP Director of Planning and Program Development
11. Carla Feroni – CT DEEP State Hazard Mitigation Officer/ Hazard Mitigation Assistance Grants
12. John Thomson- CT Insurance Department, Captive Insurance
13. Carolyn Kousky, Resources for the Future
14. Scott Choquette, CFM Dewberry, New Haven, CT
15. Mat Mampara, CFM Dewberry, Fairfax, VA
17. Katherine Greig –NYC Office of Mayor, Long-Term Planning & Sustainability, Insurance/NFIP
18. Sarah M. Lavery, Policy Director CDBG-DR, The Governor’s Office of Storm Recovery NY Rising Recovery Programs

Plans fail for lack of counsel, but with many advisors they succeed.
Engineering Flood Mitigation Design Standards Exist

What about Wind Mitigation Design for Homes?

Design Guidance and Building Codes
PARB FOR ENGINEERING FLOOD MITIGATION
DESIGN FOR CRITICAL INFRASTRUCTURE

Temporary Mitigation Measures
- FLEX equipment for power industry
- Rapidly deployable, stored on-site

Permanent Measures
- Barriers
- Gates
- Dune / Beach Replenishment
- Green Infrastructure

What’s Next?
- Pilot Project in Connecticut for PARB is next step.

Any Why, How or What if Questions?
References