The Challenge of Communicating Flood Risk

2006 National Flood Conference
National Flood Insurance Program

May 9, 2006

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Presentation Outline

• The Media & Flood Insurance
• Flood Facts Review
• The Flood Insurance Purchase Decision
• Summary of I.I.I. Actions to Promote Flood Awareness, Preparedness & Flood Insurance

QUESTIONS
• What Should Have Been Done to Communicate Flood Risk Pre-Katrina?
• What Should be Done to Communicate Risk & Reduce Loss Going Forward?

• APPENDIX 1: Key Flood Program Statistics
• APPENDIX 2: Key Hurricane Statistics
The Media & Flood Insurance

Better Late than Never
Hurricane Katrina caused $44 billion in flood and storm surge damage, most of it uninsured, 88.1% of it in Louisiana.

*Value of property damage by flood and storm surge whether or not insured.
# Media Coverage of Flood Insurance, 2000-2006E*

<table>
<thead>
<tr>
<th>State</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006E</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA</td>
<td>76</td>
<td>111</td>
<td>108</td>
<td>124</td>
<td>122</td>
<td>479</td>
<td>1,518</td>
</tr>
<tr>
<td>MS</td>
<td>20</td>
<td>20</td>
<td>26</td>
<td>55</td>
<td>45</td>
<td>349</td>
<td>804</td>
</tr>
<tr>
<td>FL</td>
<td>215</td>
<td>227</td>
<td>161</td>
<td>231</td>
<td>463</td>
<td>655</td>
<td>456</td>
</tr>
<tr>
<td>NY</td>
<td>64</td>
<td>38</td>
<td>34</td>
<td>36</td>
<td>65</td>
<td>146</td>
<td>171</td>
</tr>
<tr>
<td>US*</td>
<td>1,961</td>
<td>1,882</td>
<td>1,919</td>
<td>2,177</td>
<td>2,994</td>
<td>4,647</td>
<td>5,772</td>
</tr>
<tr>
<td>US-All Print Media**</td>
<td>2,761</td>
<td>2,714</td>
<td>3,128</td>
<td>3,368</td>
<td>6,377</td>
<td>10,526</td>
<td>13,242</td>
</tr>
</tbody>
</table>

*Newspaper coverage as of May 8, 2006. 2006 is III estimate.

**Includes newspapers, magazines, wire services, etc.

Source: Insurance Information Institute analysis based on Nexis search.
US newspaper coverage of flood insurance rose an estimated 165% between 2003 and 2006 and rose 293% across all print media.

*Newspaper coverage as of May 8, 2006. 2006 is III estimate. **Includes newspapers, magazines, wire services, etc.  Source: Insurance Information Institute analysis based on Nexis search.
Media coverage of flood insurance in Louisiana rose an estimated 1,144% between 2003 and 2006 and 1,362% in Mississippi. Coverage rose 165% for the US overall.

*Newspaper coverage as of May 8, 2006. 2006 is III estimate. Source: Insurance Information Institute analysis based on Nexis search.
Media coverage of flood insurance in Florida rose an estimated 184% between 2003 and 2005 but may fall by 30% in 2006.

*Newspaper coverage as of May 8, 2006.  2006 is III estimate.  
Source: Insurance Information Institute analysis based on Nexis search.
Media Coverage of Flood Insurance in New York State, 2000-2006E*

Media coverage of flood insurance in New York State rose an estimated 175% between 2003 and 2006

*Newspaper coverage as of May 8, 2006. 2006 is III estimate.
Source: Insurance Information Institute analysis based on Nexis search.
California Hazards: % People Stating Prepared/Very Prepared

The Flood Insurance Purchase & Retention Decision

Flood Insurance is a Tough Sell
NFIP policy count is up 6%
Exposure is up 15.0%

Flood insurance retention rates are a problem. Program lapse rate is too high. Customer acquisition is expensive.

NFIP Flood Policy
Penetration Rates, by Region

While nearly half of people outside SFHAs purchase flood coverage, only 1% outside SFHAs do.

*Special Flood Hazard Areas.
Flood Insurance Penetration Rates: Top 25 Counties/Parishes in US*

*As of 12/31/05.
Source: New Orleans Times-Picayune, 3/19/06, from NFIP and US Census Bureau data.
Flood Insurance Penetration Rates: Counties/Parishes Ranked 26-50*

People along the eastern seaboard have not gotten the message

Mid-Atlantic/Northeast Counties are underrepresented

*As of 12/31/05.  
Source: New Orleans Times-Picayune, 3/19/06, from NFIP and US Census Bureau data.
Flood Insurance Penetration Rates: 
Counties/Parishes Ranked 51-75*

<table>
<thead>
<tr>
<th>County/Parish</th>
<th>Penetration Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAMERON/TX</td>
<td>21.6%</td>
</tr>
<tr>
<td>FORT BEND/TX</td>
<td>20.9%</td>
</tr>
<tr>
<td>SANTA ROSA/MS</td>
<td>20.1%</td>
</tr>
<tr>
<td>HARRISON/MS</td>
<td>19.1%</td>
</tr>
<tr>
<td>JACKSON/MS</td>
<td>18.3%</td>
</tr>
<tr>
<td>NORFOLK CITY/VA</td>
<td>18.3%</td>
</tr>
<tr>
<td>HILLSBOROUGH/FL</td>
<td>17.8%</td>
</tr>
<tr>
<td>LAFAYETTE/LA</td>
<td>17.8%</td>
</tr>
<tr>
<td>EAST BATON ROUGE/LA</td>
<td>17.7%</td>
</tr>
<tr>
<td>VIRGINIA BEACH</td>
<td>17.5%</td>
</tr>
<tr>
<td>ESCAMBIA/FL</td>
<td>16.7%</td>
</tr>
<tr>
<td>HONOLULU/HI</td>
<td>16.3%</td>
</tr>
<tr>
<td>SACRAMENTO/CA</td>
<td>16.3%</td>
</tr>
<tr>
<td>CALCASIEU/LA</td>
<td>15.8%</td>
</tr>
<tr>
<td>MONTGOMERY/TX</td>
<td>15.6%</td>
</tr>
<tr>
<td>CITRUS/FL</td>
<td>15.4%</td>
</tr>
<tr>
<td>MERCED/CA</td>
<td>14.5%</td>
</tr>
<tr>
<td>CHESAPEAKE, OSCEOLA/FL</td>
<td>14.0%</td>
</tr>
<tr>
<td>HUDSON/NJ</td>
<td>13.3%</td>
</tr>
<tr>
<td>DUVAL/FL</td>
<td>12.9%</td>
</tr>
<tr>
<td>BARNSTABLE/MA</td>
<td>12.6%</td>
</tr>
<tr>
<td>MARIN/CA</td>
<td>11.7%</td>
</tr>
<tr>
<td>TULARE/CA</td>
<td>11.6%</td>
</tr>
<tr>
<td>MONMOUTH/NJ</td>
<td>11.3%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.2%</td>
</tr>
<tr>
<td></td>
<td>9.3%</td>
</tr>
<tr>
<td></td>
<td>9.1%</td>
</tr>
<tr>
<td></td>
<td>8.5%</td>
</tr>
</tbody>
</table>

*As of 12/31/05.
Source: New Orleans Times-Picayune, 3/19/06, from NFIP and US Census Bureau data.

MS coastal counties rank abysmally low
Barnstable is only county in all of New England among Top 75
Proportion of Homes Buying Flood Insurance by No. of Homes in SFHA*

Communities with few SFHAs are the most likely to not buy flood insurance

*Special Flood Hazard Areas.
Factors Influencing NFIP Flood Penetration Rates

- Price
- Change in Price
- Number of Homes in a Community’s Special Flood Hazard Area (SFHA)
  - Mandatory purchase requirements less vigorously enforced in communities with fewer structures in SFHAs
  - Questions about enthusiasm in selling or knowledge of agents regarding program
- Coastal Flooding Potential
  - Penetration rate much higher for coastal communities subject to flooding versus those that are not (63% vs. 35%)
- Mandatory Purchase Requirement

Reasons Why People Buy Flood Insurance

- Mortgage Lender Requirement, 27%
- House Near Body of Water, 24%
- Not Near Water, But Don't Want to Take Chances, 29%
- Agent/Broker Recommendation, 20%

Risk aversion and compulsion are the two most important direct factors influencing the purchase decision. Educational attainment & income are also factors.

Source: Poll of 700 conducted by Opinion Research Corporation by Chubb Group of Insurance Companies, summarized in March 2006 press release “Katrina Doesn’t Motivate Many Homeowners to Protect Their Investment.”
Additional Factors Influencing NFIP Flood Penetration Rates

- Education/Income of Homeowner
- Tendency to Decline Most Optional Coverages
  - Only 13% of CA homeowners buy earthquake insurance
- Lack of Understanding of Actual Risk
  - Most people do not understand the meaning or implications of 1-in-100 year flood risk
  - Most people have never looked at a flood map
- Coverage Limits (e.g., $250K cap)
- Expectation of Post-Event Aid
  - Potentially a more important factor for future events
- Litigation Suggesting that Flood is Covered Under Standard Homeowners Insurance Policies
  - MS Attorney General Hood, Attorney Richard Scruggs, etc.

Source: Insurance Information Institute
Selling any type of voluntary catastrophe insurance is tough. The vast majority of California homeowners forego earthquake coverage & play Russian Roulette with their most valuable asset.

*Includes CEA policies beginning in 1996.
Source: California Department of Insurance; Insurance Information Institute.
I.I.I. Actions to Promote Flood Risk Awareness & Preparedness
Refer people/media to NFIP resources. Echo message that everyone is at risk.
I.I.I. Initiatives on Flood Insurance

- Thousands of Media Interviews
  - Stressing importance of purchasing flood
  - Providing media with key information
- Video News Release (VNR) on Flood Insurance
  - Pre-packaged segment for new broadcasts (needs update)
- VNR on Hurricane Preparedness
- VNR on Disaster Preparedness
- Presentations to Agents, Insurer Groups & Others
  - Potentially a more important factor for future events
  - Testimony before regulatory/legislative bodies
- Home Inventory Software (FREE!!)
  - Download at www.knowyourstuff.org
- Northeast Insurance Summit: July 19, 2006 in NYC
Know Your Stuff Home Inventory Software

Welcome to KnowYourStuff.org, where you can download the I.I.I.'s new home inventory software for free! This software makes creating a home inventory fun and easy. Once you have completed your inventory, it is easy to keep your information up to date.

Click the download button on the top of your screen to receive your free software. You will also find lists of items in typical rooms to help guide you through the inventory process.
What Should & Could be Done?

Lessons from the Past
What Should Have Been Done
Pre-Katrina: Carrots or Sticks?

- Levees should have been strengthened or land use policies revised decades ago
- Offer incentives to mitigate many years ago
  - Levees and homes/businesses
  - Would have been cost effective
- Update of flood maps
- Actuarially sound rates—Send Market Signal on Risk
  - Stop subsidizing coastal development; burdening taxpayers
- Reduce lapse rates: Keep the customers you have!
- Experience: Stepped-up marketing is of limited value
- Expand Mandatory Purchase Requirement???
- Require written affirmation if flood is declined with waiver of rights to federal and state aid???
What Can be Done?

Pick the Low Hanging Fruit First

- Target communities with small numbers of structures in Special Flood Hazard Areas (SFHAs)
- Target inland communities vs. coastal: More Potential
- Increase coverage carried by coastal dwellers
- Increase compliance with mandatory purchase requirement
- Expand Mandatory Purchase Requirement???
  - Expand mandate beyond 1-in-100 year flood plain??
  - Make coverage mandatory irrespective of mortgage status??

APPENDIX 1

Flood Facts

Key Flood Program Statistics
Nearly 5 million property owners per year buy NFIP policies

The NFIP insured property with a total value of $870.2 billion as of Feb. 2006

*As of December 2005.
Sources: FEMA, National Flood Insurance Program (NFIP)
NFIP: Total Policies in Force by Calendar Year, 1978-Feb. 2006

Nearly 5 million property owners per year buy NFIP policies

*As of December 2005
Source: FEMA, National Flood Insurance Program (NFIP)
The NFIP now collects more than $2.2 billion annually in premiums.
The NFIP insured property with a total value of $870.2 billion as of Feb. 2006
NFIP: Policies in Force By Coverage Type (As of July 31, 2005)

Building Coverage Only, 39.7%

Contents Coverage Only, 1.5%

Both Bldg. & Cont. Cvg, 58.7%

<table>
<thead>
<tr>
<th>Coverage Type</th>
<th>Policies in Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Coverage Only</td>
<td>1,845,481</td>
</tr>
<tr>
<td>Contents Coverage Only</td>
<td>72,008</td>
</tr>
<tr>
<td>Both Bldg &amp; Cont Cvg</td>
<td>2,729,267</td>
</tr>
<tr>
<td>All Policies</td>
<td>4,646,756</td>
</tr>
</tbody>
</table>

Source: FEMA, National Flood Insurance Program (NFIP)
NFIP: Policies in Force By Occupancy Type (As of July 31, 2005)

<table>
<thead>
<tr>
<th>Occupancy Type</th>
<th>Policies in Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Home</td>
<td>3,184,010</td>
</tr>
<tr>
<td>2 to 4 Family Unit</td>
<td>158,124</td>
</tr>
<tr>
<td>Condominiums</td>
<td>951,240</td>
</tr>
<tr>
<td>Other Residential</td>
<td>138,583</td>
</tr>
<tr>
<td>Non-Residential</td>
<td>214,799</td>
</tr>
<tr>
<td>Unknown Occupancy</td>
<td>--</td>
</tr>
<tr>
<td><strong>All Policies</strong></td>
<td><strong>4,646,756</strong></td>
</tr>
</tbody>
</table>

Source: FEMA, National Flood Insurance Program (NFIP)
NFIP: No. of Losses Paid by Calendar Year 1978-2004

Source: FEMA, National Flood Insurance Program (NFIP)
The NFIP will pay an estimated $10 billion in flood claims in 2005, indicating a need for a taxpayer-financed bailout of at least $7.5 billion.

Source: FEMA, National Flood Insurance Program (NFIP)
Average Premium Preferred Risk Policy*
For Buildings with Basement Under NFIP


*Under the NFIP a low-cost Preferred Risk Policy is available to homeowners located in low- to moderate-risk areas.
Sources: FEMA, National Flood Insurance Program (NFIP)
Average Premium Preferred Risk Policy*  
For Buildings without Basement  
Under NFIP

Average Premium


*Under the NFIP a low-cost Preferred Risk Policy is available to homeowners located in low- to moderate-risk areas.  
Sources: FEMA, National Flood Insurance Program (NFIP)
Louisiana and Alabama rank 3rd and 10th respectively in terms of total claims payments. Mississippi ranks 11th.
Louisiana and Mississippi rank 1st and 4th respectively in terms of total claims payments (up from 3rd and 11th pre-Katrina). Florida ranks 2nd and Texas 3rd.

Source: FEMA, National Flood Insurance Program (NFIP)
2005 was by far the worst year ever for insured catastrophe losses in the US, but the worst has yet to come.

*Excludes $4B-$6b offshore energy losses from Hurricanes Katrina & Rita.

Note: 2001 figure includes $20.3B for 9/11 losses reported through 12/31/01. Includes only business and personal property claims, business interruption and auto claims. Non-prop/BI losses = $12.2B.

Source: Property Claims Service/ISO; Insurance Information Institute
Global Number of Catastrophic Events, 1970–2005

The number of natural and man-made catastrophes has been increasing on a global scale for 20 years.

Record 248 man-made CATs & record 149 natural CATs in 2005

Insured Property Catastrophe Losses as % Net Premiums Earned, 1983–2005E

US CAT losses were a record 13.8% of net premiums earned in 2005 and were 4.2 times the 1984-2004 average of 3.3%

*Insurance Information Institute figure of 13.8% for 2005 based estimated 2005 DPE of $417.7B and insured CAT losses of $57.7B.

2005 Was a Busy, Destructive, Deadly & Expensive Hurricane Season

All 21 names were used for the first time ever, so Greek letters were used for the final 6 storms: Alpha through Zeta.

2005 set a new record for the number of hurricanes & tropical storms at 27, breaking the old record set in 1933.

**Number of Major (Category 3, 4, 5) Hurricanes Striking the US by Decade**

1930s – mid-1960s:
**Period of Intense Tropical Cyclone Activity**

- 1930s: 8
- 1940s: 8
- 1950s: 9
- 1960s: 6

Mid-1990s – 2030s?
**New Period of Intense Tropical Cyclone Activity**

- 1990s: 6
- 2000s: 10

*Figure for 2000s is extrapolated based on data for 2000-2005 (6 major storms: Charley, Ivan, Jeanne (2004) & Katrina, Rita, Wilma (2005)).*

Source: Tillinghast from National Hurricane Center; [http://www.nhc.noaa.gov/pastint.shtml](http://www.nhc.noaa.gov/pastint.shtml)

**Tropical cyclone activity in the mid-1990s entered the active phase of the “multi-decadal signal” that could last into the 2030s**

**Already as many major storms in 2000-2005 as in all of the 1990s**

Seven of the 10 most expensive hurricanes in US history occurred in the 14 months from Aug. 2004 – Oct. 2005:
Katrina, Rita, Wilma, Charley, Ivan, Frances & Jeanne

Sources: ISO/PCS; Insurance Information Institute.
*Property and business interruption losses only. Excludes offshore energy & marine losses.

Source: ISO/PCS as of February 8, 2006 for Dennis, Rita, Katrina and March 27, 2006 for Wilma; Insurance Information...
Inflation-Adjusted U.S. Insured Catastrophe Losses By Cause of Loss, 1985-2004¹

- **Terrorism**: 9.7% (34.6%)
- **All Tropical Cyclones**: 9.7% (34.6%)
- **Winter Storms**: 9.7%
- **Earthquakes**: 8.4%
- **Fire**: 2.9%
- **Utility Disruption**: 0.1%
- **Civil Disorders**: 0.5%
- **Water Damage**: 0.2%
- **Wind/Hail/Flood**: 3.4%

Source: Insurance Information Institute estimates based on ISO data.

1 Catastrophes are all events causing direct insured losses to property of $25 million or more in 2004 dollars. Catastrophe threshold changed from $5 million to $25 million beginning in 1997. Adjusted for inflation by the III.

2 Excludes snow.

3 Includes hurricanes and tropical storms.

4 Includes other geologic events such as volcanic eruptions and other earth movement.

5 Does not include flood damage covered by the federally administered National Flood Insurance Program.

6 Includes wildland fires.

Insured disaster losses totaled $221.3 billion from 1984-2004 (in 2004 dollars). After 2005 season, tropical cyclones will account for about 45% of the total.
The 2006 Hurricane Season:

*Preview to Disaster?*
<table>
<thead>
<tr>
<th>Category</th>
<th>Average*</th>
<th>2005</th>
<th>2006F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Named Storms</td>
<td>9.6</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>Named Storm Days</td>
<td>49.1</td>
<td>115.5</td>
<td>85</td>
</tr>
<tr>
<td>Hurricanes</td>
<td>5.9</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Hurricane Days</td>
<td>24.5</td>
<td>47.5</td>
<td>45</td>
</tr>
<tr>
<td>Intense Hurricanes</td>
<td>2.3</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Intense Hurricane Days</td>
<td>13</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Net Tropical Cyclone Activity</td>
<td>100%</td>
<td>275%</td>
<td>195%</td>
</tr>
</tbody>
</table>

*Average over the period 1950-2000.
Source: Dr. William Gray, Colorado State University, April 4, 2006.
### Probability of Major Hurricane Landfall (CAT 3, 4, 5) in 2006

<table>
<thead>
<tr>
<th>Region</th>
<th>Average*</th>
<th>2006F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire US Coast</td>
<td>52%</td>
<td>81%</td>
</tr>
<tr>
<td>US East Coast Including Florida Peninsula</td>
<td>31%</td>
<td>64%</td>
</tr>
<tr>
<td>Gulf Coast from FL Panhandle to Brownsville, TX</td>
<td>30%</td>
<td>47%</td>
</tr>
</tbody>
</table>

**ALSO...** Above-Average Major Hurricane Landfall Risk in Caribbean for 2006

*Average over past century.
Source: Dr. William Gray, Colorado State University, April 4, 2006.
Hurricanes Katrina, Rita & Wilma:

Their Place in History
Hurricane Katrina Insured Loss Distribution by State ($ Millions)*

Louisiana, $24,275, 63.7%

Mississippi, $12,105, 31.8%

Florida, $543.0, 1.4%

Alabama, $1,102, 2.9%

Georgia, $27.0, 0.1%

Tennessee, $59.0, 0.2%

Total Insured Losses = $38.111 Billion

Louisiana accounted for 64% of the insured losses paid and 56% of the claims filed

As of February 8, 2006
Source: PCS division of ISO.
Hurricane Katrina Loss
Distribution by Line ($ Billions)*

Commercial Property & BI,
$18,278.0 , 48%

Vehicle, $2,139.0 , 6%

Homeowners, $17,694.0 , 46%

Total insured losses are estimated at $38.1 billion from 1.7518 million claims. Excludes $2-$3B in offshore energy losses

*As of February 8, 2006
Source: PCS division of ISO.
Hurricane Katrina Claim Count Distribution by State*

- Louisiana, 975,000, 55.7%
- Mississippi, 515,000, 29.4%
- Alabama, 124,000, 7.1%
- Tennessee, 15,000, 0.9%
- Georgia, 7,800, 0.4%
- Florida, 115,000, 6.6%

Total # Claims = 1,751,800

Louisiana accounted for 64% of insured losses paid and 56% of claims filed

*As of February 8, 2006
Source: PCS division of ISO.
Hurricane Rita Loss Distribution, by Line ($ Millions)*

- **Homeowners**: $2,944.0, 59%
- **Commercial Property & BI**: $1,846.2, 37%
- **Vehicles**: $186.0, 4%

Total insured losses are estimated at $5.0 billion (excl. offshore energy of $2-$3B) from 381,000 claims.

*As of February 8, 2006
Source: PCS division of ISO.
Hurricane Rita Claim Count
Distribution by State*

Total # Claims = 381,000

Louisiana accounted for 48.6% of the insured losses, Texas 44.4%.
Excludes offshore energy losses of $2-3B

*As of February 8, 2006
Source: PCS division of ISO.
Hurricane Wilma Loss Distribution by Line ($ Millions)*

Homeowners, $6,600, 71%
Commercial Property & BI, $2,000, 21%
Vehicle, $750, 8%

Total insured losses are estimated at $9.35 billion from 1.025 million claims

*As of March 27, 2006. All losses are in FL. Source: PCS division of ISO.
Hurricane Wilma Claim Count
Distribution by Line ($ Millions)*

Homeowners, 680,000, 66%

Commercial Property & BI, 80,000, 8%

Vehicle, 265,000, 26%

Total insured losses are estimated at $9.35 billion from 1.025 million claims

*As of March 27, 2006. All losses are in FL.
Source: PCS division of ISO.
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