



# Managing Terrorism Risk – With or Without TRIA

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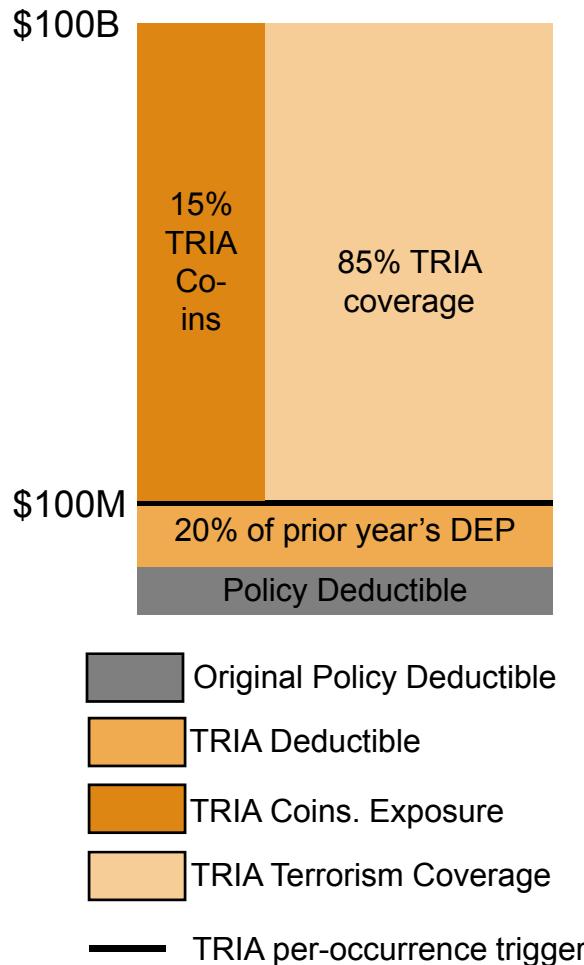
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(retrieved 6 November 2016)

# Agenda

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- Section 1**      **Current Status of TRIA & Market Conditions**
- Section 2**      Terrorism Modeling
- Section 3**      Impact Forecasting: Terrorism Explorer
- Section 4**      Impact Forecasting: US Probabilistic
- Section 5**      Impact Forecasting: Benefits
- Section 6**      Rating Agency Perspective

# What is TRIA?



- Since 2002 the Terrorism Risk Insurance Act (TRIA) has stabilized the private terrorism insurance market by providing a federal backstop
- The program currently provides 85% of applicable recoveries from the U.S. government, from the deductible (20% prior year DEP from covered LOBs) up to \$100B. This version of the bill is set to expire on December 31, 2014.
- The House and Senate relevant Committees have each passed draft bills for extension of the federal backstop at January 1, 2015

## Senate Proposal

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- On April 10<sup>th</sup> the U.S. Senate Banking Committee unanimously passed a bill (S.2244) that would extend TRIA for seven years
  - The bipartisan bill includes two changes from the current version:
    - Insurer co-participation increases from 15% to 20%
      - ◆ Co-participation increases 1% per year for 5 years until = 20%
      - ◆ After deductible (20% prior year DEP from covered LOBs), companies are responsible for 20% of losses until losses reach \$100 billion
    - The Insurance Marketplace Aggregate Retention would increase to \$37.5 billion from \$27.5 billion
      - ◆ If insurers' aggregate uncompensated terrorism loss exceeds \$37.5 billion, the Federal Government will not recoup payments made to insurers
- On July 17<sup>th</sup>, the full Senate passed S.2244 by a vote of 93-4

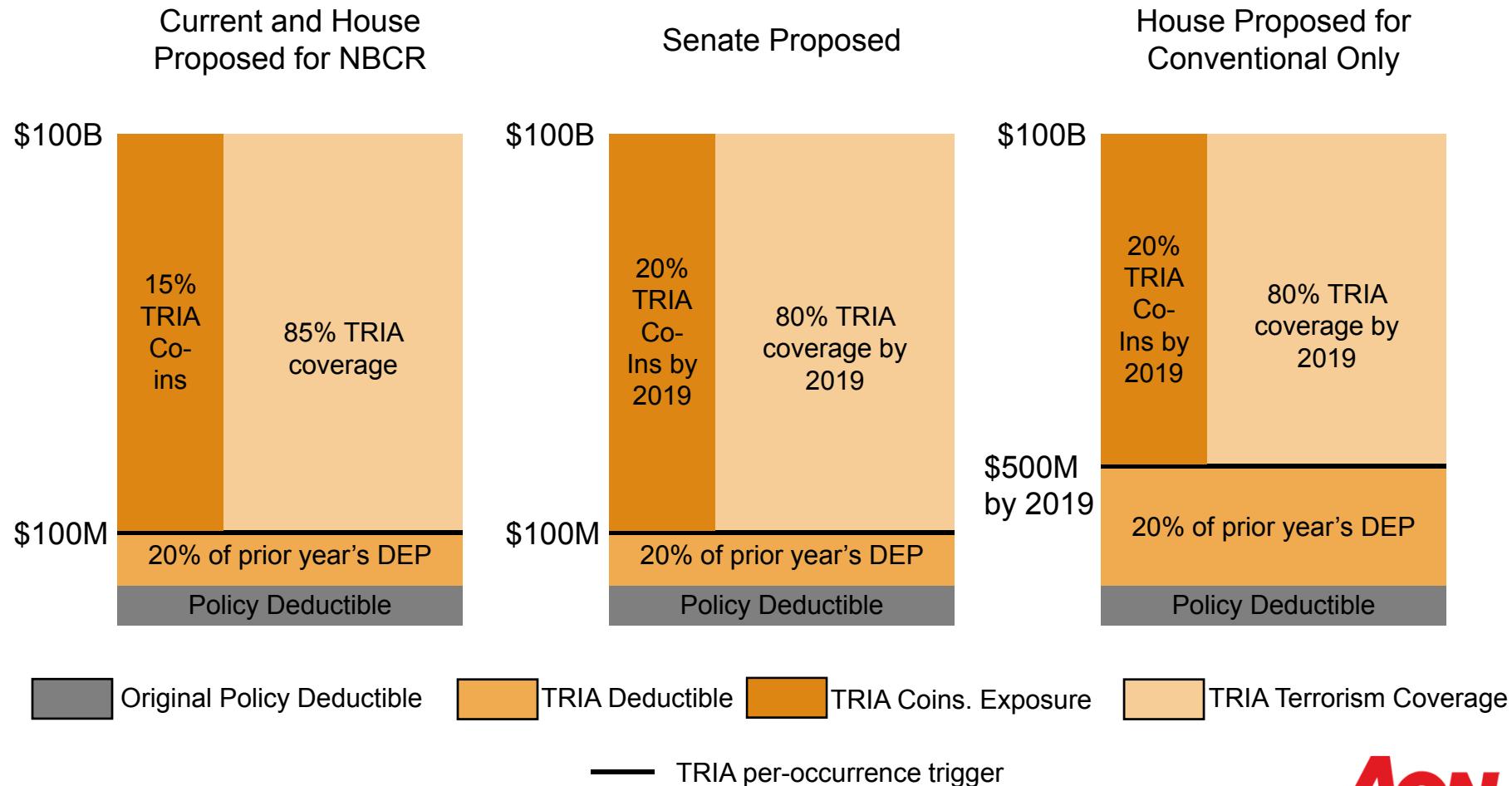
## House of Representatives Proposal

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- On June 20<sup>th</sup> the House Finance Services Committee (HFSC) passed a 5 year TRIA extension
  - The House bill establishes a differential treatment for NBCR losses:
    - The Program would remain unchanged as regards NBCR losses
  - Proposed changes to conventional terrorism losses:
    - Increase in the per occurrence Program trigger of \$100m per year from current \$100m to \$500m over a five year period
    - Increase in insurer co-participation of 1% per year for 5 years to 20% ultimately, similar to the Senate bill
  - Opt out provision: Allows “small insurers” to opt out of the make available mandate for terrorism cover. “Small” is not defined and is left up to state regulators to define in their respective states
  - New reporting requirements: All insurers need to file a report detailing terrorism premium collected, exposure location information, take-up rates, and private terrorism reinsurance cover purchased to the Treasury in 2016
- The House is divided on need for federal backstop with conservative members objecting to renewal; HFSC draft bill actually represents improvement from earlier position
- HFSC leadership trying to get a vote before August as well. Chairman Hensarling wants vote without amendment but, given split in the House, timing less certain

# Comparison of Programs

## TRIA Extension Comparison



## Next Steps on TRIA Renewal

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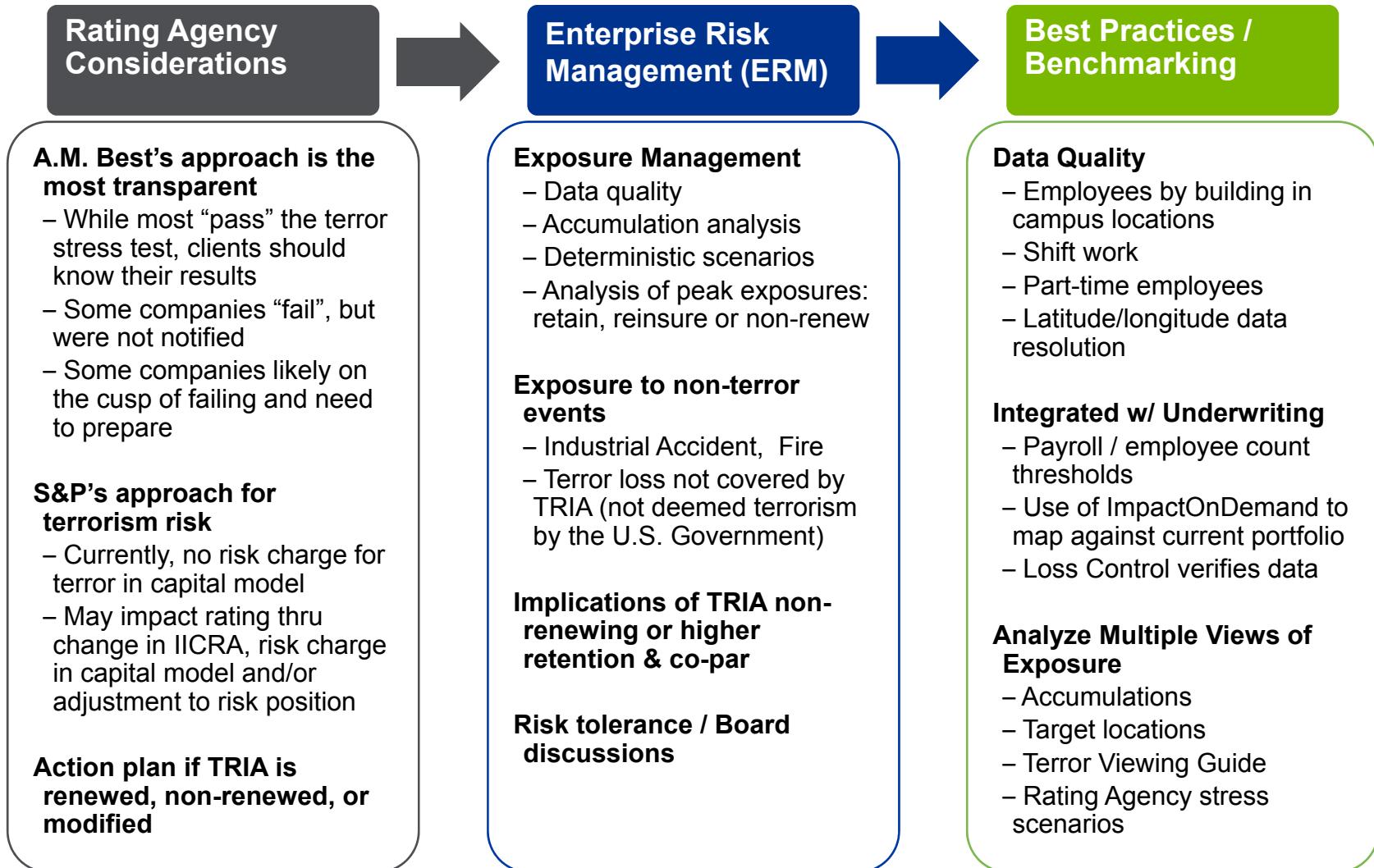
- Next steps are:
  - Deliberation of the bills in the respective chambers
  - Prospects for passage of either the Senate or House versions in the House are less clear and compromise discussions could drag into Q4 2014
  - Once compromise is reached, legislation is sent to the President
- On July 8<sup>th</sup> industry groups sent separate letters to U.S. House and Senate leaders urging the lawmakers to reauthorize the program before expiration;
  - Property Casualty Insurers Association of America, National Association of Mutual Insurance Companies, U.S. Chamber of Commerce, and the Commercial Real Estate Financial Council were among the groups that voiced their concern
  - Since 2012, Aon has worked, through testimony and meetings on Capitol Hill, to help shape the extension legislation in a format beneficial to clients
  - The main hurdle still to be addressed is the increase in program trigger which could be harmful to small and mid-sized clients.

# Terrorism Reinsurance Market Conditions

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- The effort to expand coverage in 2014 Property Catastrophe and Workers' Compensation Catastrophe covers to commercial terrorism met with a high level of success
  - **Property**
    - ◆ Many regional buyers of Property Cat achieved commercial terrorism coverage for little or no additional premium
    - ◆ Some buyers of larger, nationwide Programs also enhanced terrorism coverage, be it with one limit of terrorism or with coverage in some layers of the program
    - ◆ A limited number of stand-alone terrorism covers, including option covers for 2015 capacity, done in 2014; capacity remains plentiful for cover ex-NBCR at mid- to low-single digit ROLs
  - **Workers' Compensation**
    - ◆ Terrorism coverage via traditional layers is available for little or no additional premium
    - ◆ Combined treaty/facultative highly customized reinsurance program for selected coverage
    - ◆ Risk transfer designed to cover policies driving largest accumulations (SRQ or other)
    - ◆ Reinsurance capacity secured for 2015 on the basis of beneficial “option” terms
- The effort to secure expanded terrorism cover in Property and Workers' Compensation covers continues through mid-year 2014 renewals and has been met with success

# Terrorism Management Considerations



# Agenda

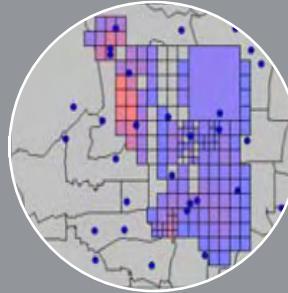
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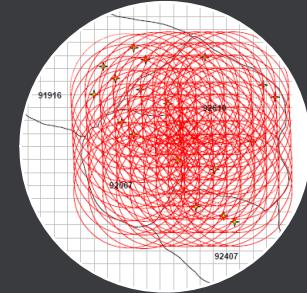
# Varying Analysis Types and Views on Terrorism Risk



Probabilistic



Terrorism Viewing  
Guide

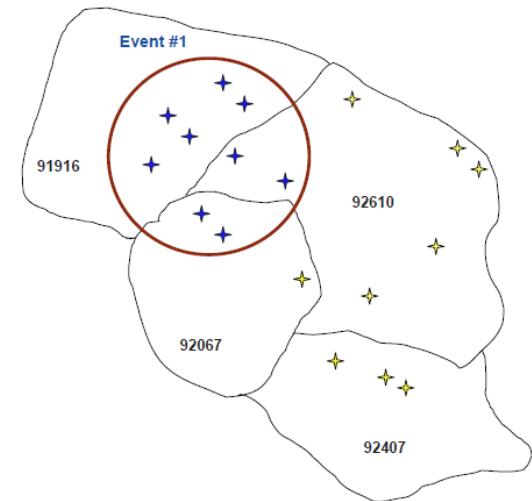
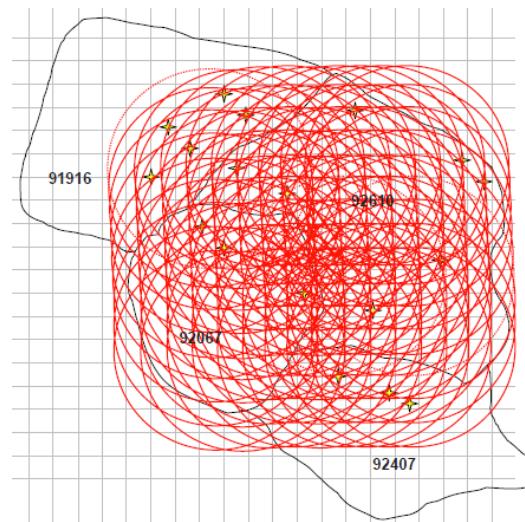


Spider Analysis  
Deterministic – SRQ



## Spider Analysis – Simple 100% Damage Circle

- Defined radius is divided by 4 to create grid cell
- Using the center of each grid cell a circle with radius is placed
- The circle with the greatest concentration is chosen by the model
- Circles that overlap the circle with the highest loss are eliminated
- The model searches for the circle with the next greatest concentration

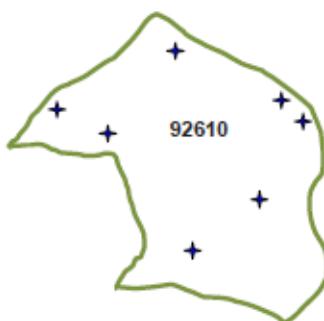


# Spider Analysis – Simple 100% Damage Circle

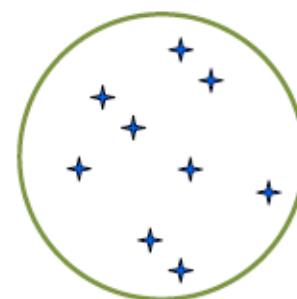
## Types of Areas

### BASIC

#### Geographic



#### Circular

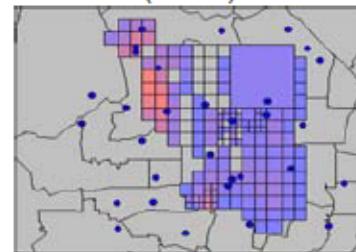


### ADVANCED

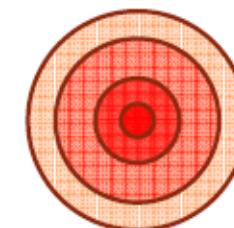
#### Building Level



#### Variable Resolution Grid (VRG)



#### Simple Footprint



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# Terrorism Viewing Guide

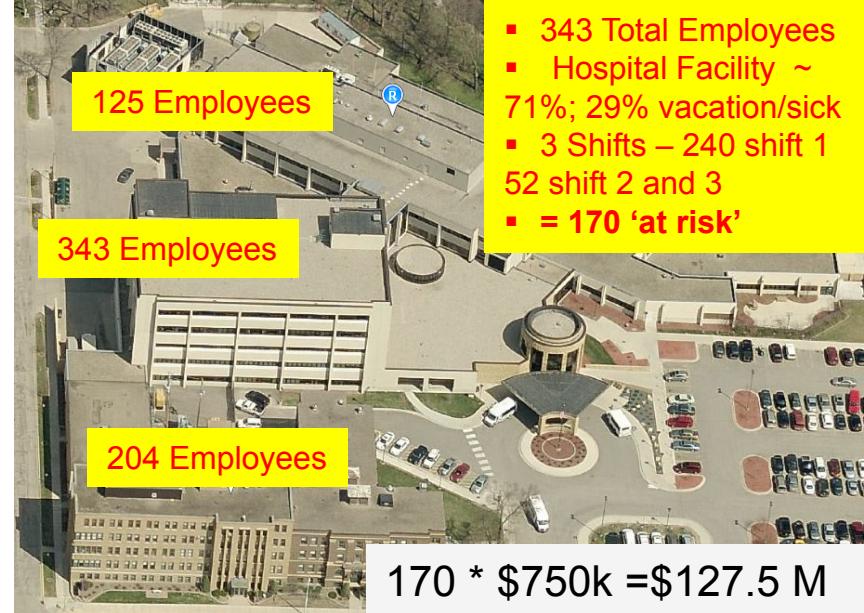
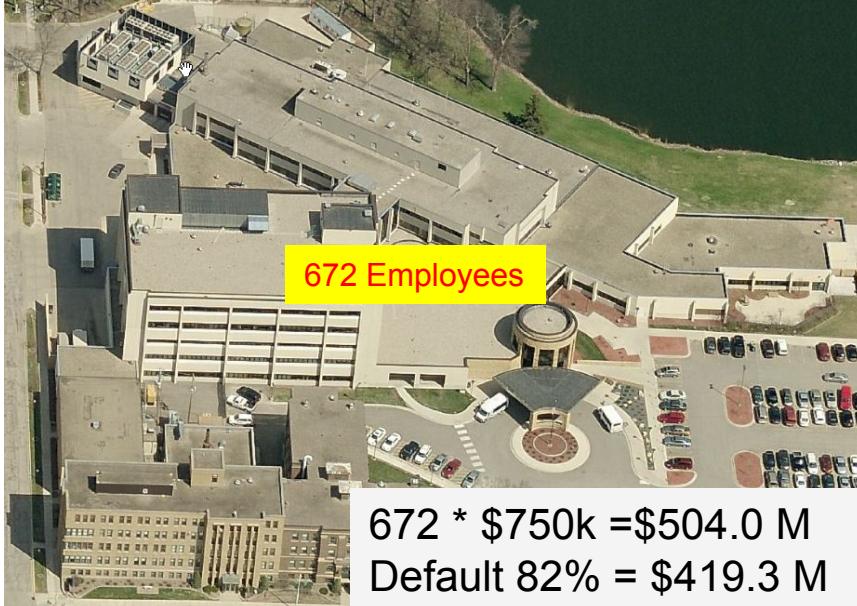
Terrorism Viewing Guide - Sample Output				
City and Risk Tier	Target	Gross Loss	Net of Reins	Net of Reins & TRIA
New York Tier 1	Empire State Building	58,492,567	8,492,567	8,492,567
Houston Tier 2 - CBD (17)	Reliant Stadium	6,371,600	5,000,000	5,000,000
Albuquerque Tier 3 - CBD (18)	Compass Bank	22,898,217	5,000,000	5,000,000

SRQ Sample Output				
SRQ Tier	Location	Gross Loss	Net of Reins	Net of Reins & TRIA
New York - Tier 1	52 West 33rd St.	69,366,924	19,366,924	19,366,924
Houston Tier 2	7541 Cayuga St	87,882,135	37,882,135	27,304,564
Albuquerque Tier 3	400 Marquette Ave NW	242,056,741	192,056,741	50,430,755

There is often a significant difference in losses when comparing events at known targets vs events at top accumulations.

# Reducing the Uncertainty in Terrorism Modeling: Example 1

Data validation is a critical component of the analysis



- Reported Information
  - 672 employees at single location
  - Unknown characteristics
- Data Enhancements
  - Split into multiple structures
  - Applied shift differential
  - Applied occupancy factor based on type of structure (medical)
  - Recalculated 'at risk' employees

# Market Best Practices

## External Overview

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- **Comprehensive understanding of accumulations**
  - Terrorism is a localised threat so awareness of clustering is key
  - Avoiding over-exaggeration in radius set to aggregate risks
  - Identification of areas of overexposure that may be outside the traditional hotspots
- **Understanding of the importance of data quality**
  - Key to final calculations
  - Small changes in data quality can have a material impact on risk
  - Anything above zipcode level compromises the analysis
- **Use of probabilistic modelling to fully comprehension of the risk**
  - Changes in tactics and group structure
  - Clustering of targets and high risk areas
  - Changes over time and how this has an impact on risk
- **Sensible purchasing policies**
  - Sensible restrictions on CBRN cover
  - Avoidance of decontamination or contingency
  - Caution when looking at “cyber-terrorism”

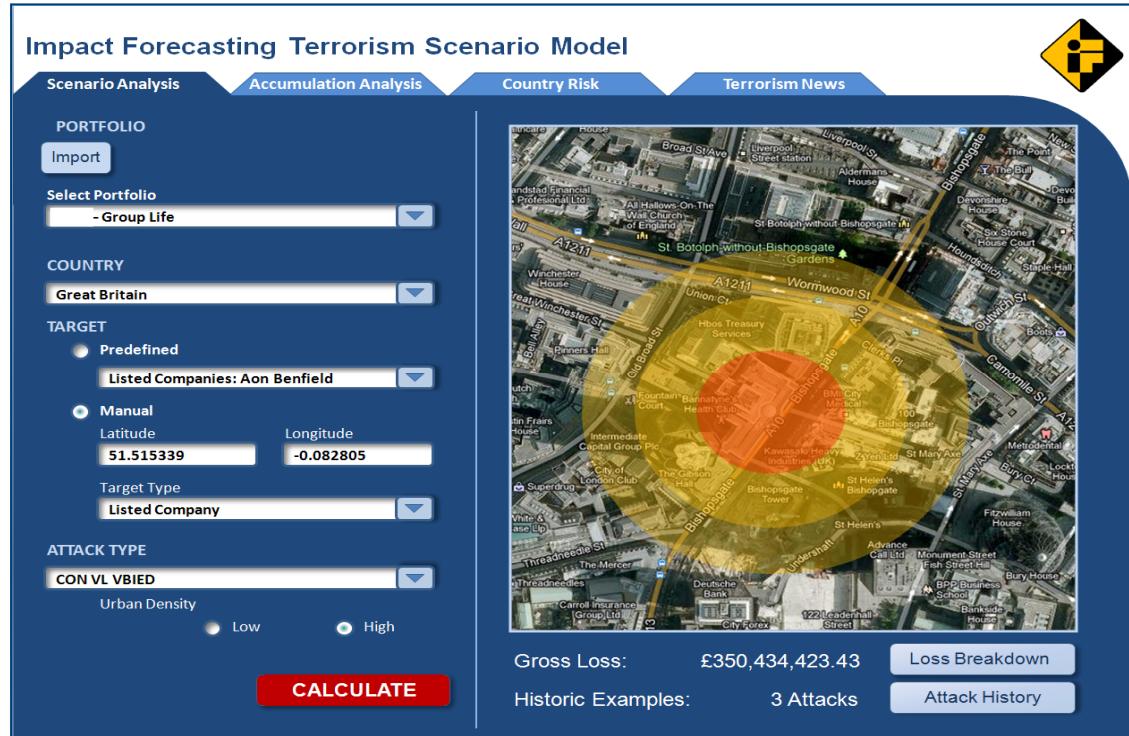
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# Impact Forecasting - Scenario Modelling

- Currently clients have limited scenario modelling capabilities to test “as if” scenarios against their portfolio
- This is an area where we have the expertise to create a simple platform to allow clients to achieve this



## Quick loss calculation component

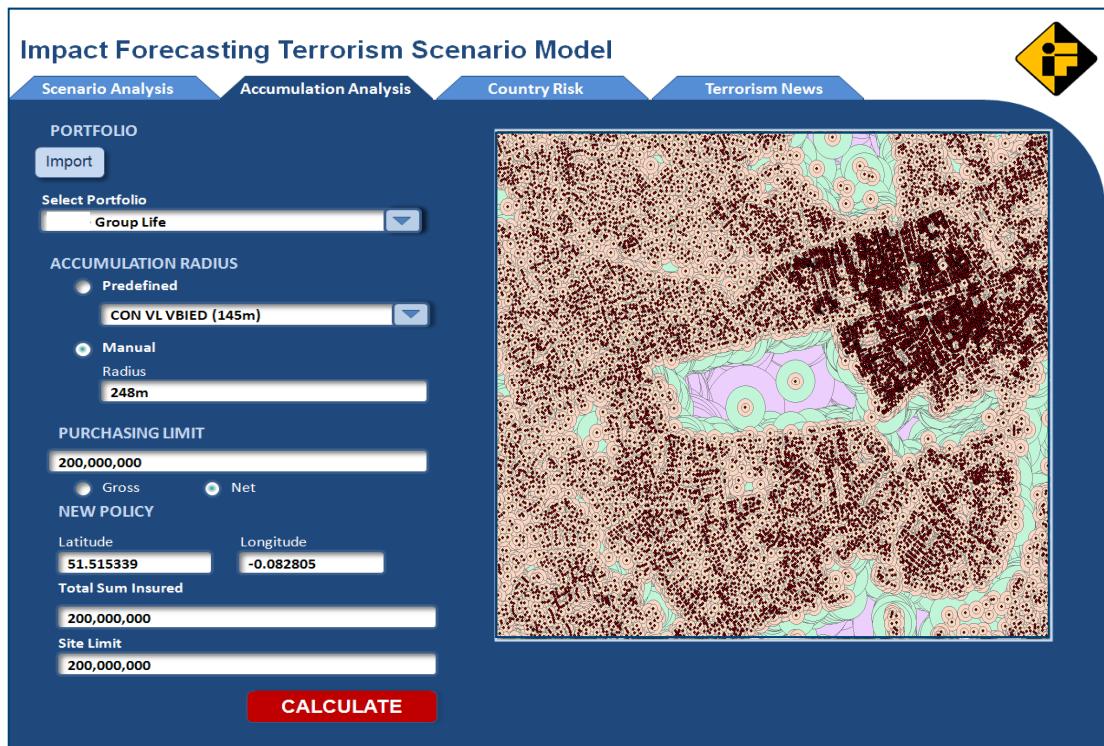
- Allows clients to test a variety of scenarios extremely quickly and visualise the extent
- Can be based on predefined targets or a simple lat/long entry
- Useful for underwriters, regulators and clients for pricing and satisfying Lloyds RDS commitments

## Contextualisation based on historical data

- Platform will provide a gross loss plus more detailed breakdown for each site
- Each simulation will be placed in historical context based on our own synthesized datasets to ascertain the likelihood of the event

# Impact Forecasting - Accumulation Analysis

- Terrorism is a highly localised threat with intense losses in a relatively small area
- As a result it is vital that clients fully understand their accumulations in the most refined means possible



## More refined analysis of accumulations

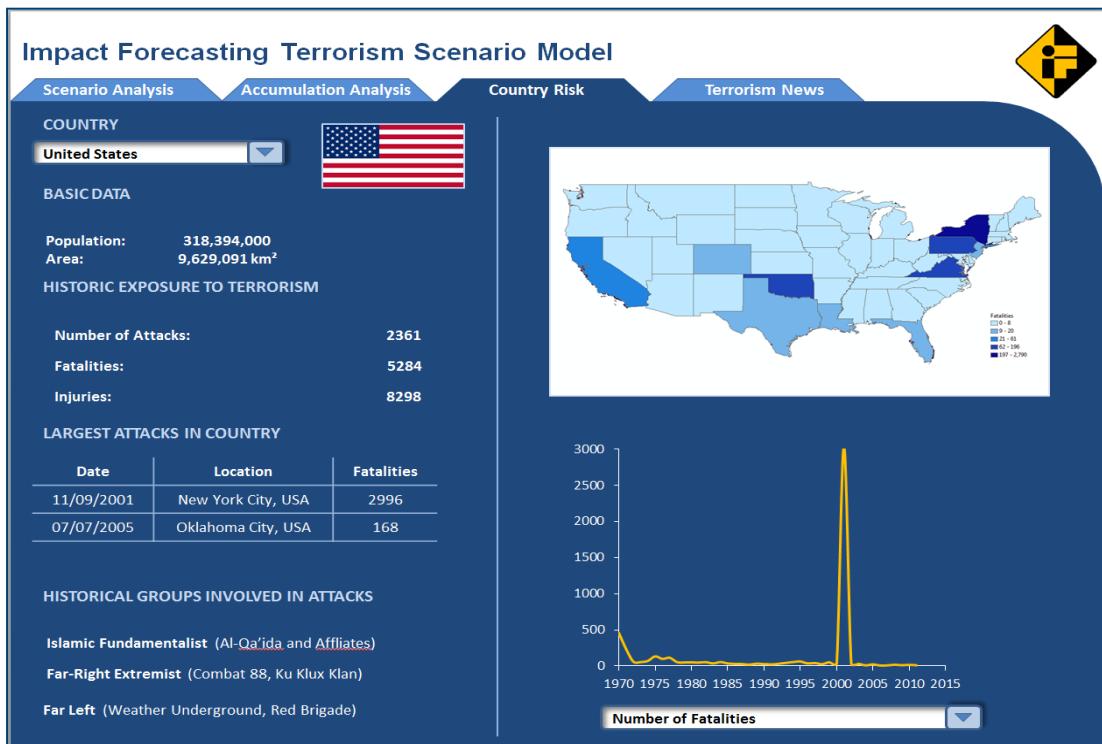
- Ability to provide analysis of 100% loss at a given radius and more refined analysis
- Additional analysis based on IF damage curves provides a more refined understanding of accumulations and will allow clients to build their capacity
- Global scope for analysis for international books

## Detailed output and flexibility

- Ability to provide analysis to highlight exposure over a particular purchasing limit and highlight largest accumulations
- Provide the ability to add new schemes to see the effect this has on existing accumulations

# Impact Forecasting - Historical Analysis

- Within the market we find that people largely over- or underestimate the threat from terrorism
- This component will provide an encyclopaedia of information on each country to document the terror threat



## Identify the key groups and vulnerable areas

- Highlights the key groups involved in each country and their raison d'être
- Identifies which regions have been targeted more frequently or severely to highlight the variations that exist in each country

## Analysis to show the change in threat over time

- Documents the scale of terrorism over a 40 year period
- Highlights the severity over time allowing clients to identify changes in terrorist activity

# Impact Forecasting - Real-time Terrorism Analysis

- Following an event it is extremely difficult for insurers to follow all the developments in a succinct manner
- This tool will aggregate all terrorism related news on a live basis to provide up to date analysis of the threat

Impact Forecasting Terrorism Scenario Model

Scenario Analysis   Accumulation Analysis   Country Risk   Terrorism News

COUNTRY  
United States

Articles published more than 4 hours ago  
Suicide bomber kills 4 in northwest Pakistan  
news-yahoo Monday, April 29, 2013 7:44:00 AM CEST | info [other]  
PESHAWAR, Pakistan (AP) — Pakistani authorities say a suicide bomber targeting policemen has killed four people in the main northwestern city of Peshawar....

Articles published more than 6 hours ago  
CCTV surveillance in the US: On the rise?  
bbc-news Monday, April 29, 2013 4:39:00 AM CEST | info [other]  
The Boston Marathon bombings suspects were quickly identified after investigators picked them out on CCTV footage. Does that mean Americans need to depend more on CCTV? Before they were Tamerlan and Dzhokhar Tsarnaev, they were Black Hat and White Hat - two young faces in baseball caps, identified.....

How social media can breed terror  
cnn Monday, April 29, 2013 3:28:00 AM CEST | info [other]  
The days of would-be terrorists needing to travel to far-off camps to make contacts and learn how to build bombs is rapidly receding. Social media forums like Twitter and Facebook provide a ready made Rolodex of sources -- dig further online, mine those contacts further, gain admission to private.....

French pilot who saved city from Nazis honoured  
YorkshirePost Monday, April 29, 2013 2:19:00 AM CEST | info [other]  
Forty Luftwaffe bombers flew to Britain on Wednesday April 29, 1942, with their sights firmly set on the historic city of York. For over 90 minutes, the German bombers attacked the historic city, setting it ablaze. York's own blitz, known as the Baedeker Raids, saw over 95 civilians killed, around a.....

CCTV surveillance in the US: On the rise?  
bbc Monday, April 29, 2013 1:36:00 AM CEST | info [other]  
The Boston Marathon bombings suspects were quickly identified after investigators picked them out on CCTV footage. Does that mean Americans need to depend more on CCTV? Before they were Tamerlan and Dzhokhar Tsarnaev, they were Black Hat and White Hat - two young faces in baseball caps, identified.....

click to see older articles

## Rapidly updating news on terrorism threat

- Data stream from EMM (European Union) on terrorism related news.
- Updated every 10 minutes to provide extremely relevant information
- Country specific analysis available

## Access to a variety of sources and expertise

- Platform is based on an aggregation of major news platforms and providers
- Clients will be able to access sources directly from the IF platform which would make it their primary source for terrorism news

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# Impact Forecasting - Hazard Component

- Compared to other “natural” perils, detailed geographical location is critical for modelling terrorism risk
- Our models encapsulate this and highlight the variation that can occur in the losses

## Is point representation of the target good enough?

- The image shows the maximum distance of damage
- This masks a significant variation in losses that could occur vary depending on the location of the initial blast
- Without this models are underestimating the potential loses

Point representation of the potential target

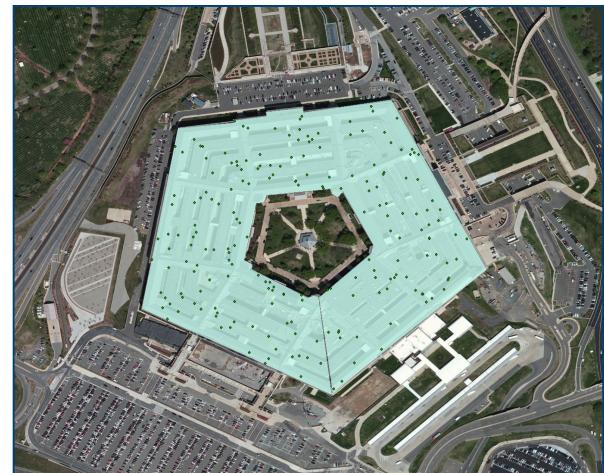


## Example: building : Pentagon

## The solution is polygon with multiple attack points

- We use a polygon system and simulate blasts on over 200 sites for each target
- This helps to display the target uncertainty that is inherent within each site
- From this we can simulate over 4,000 attacks for each target within the model

Polygon representation of the potential target



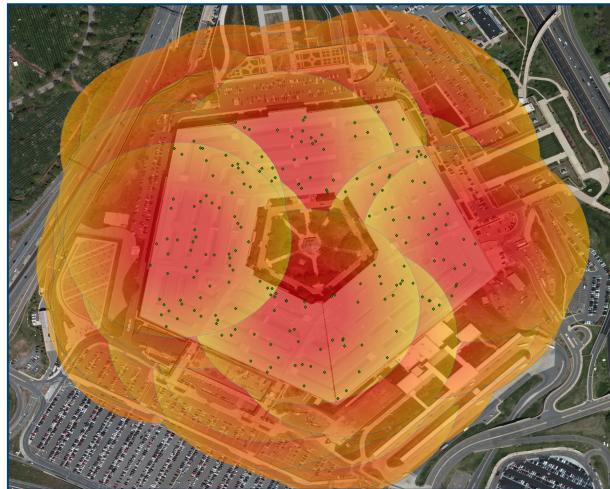
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## Multiple point simulation of the potential target

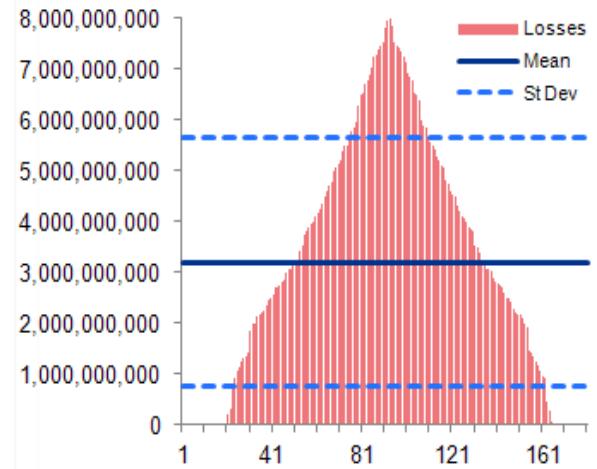


## Example: building : Pentagon

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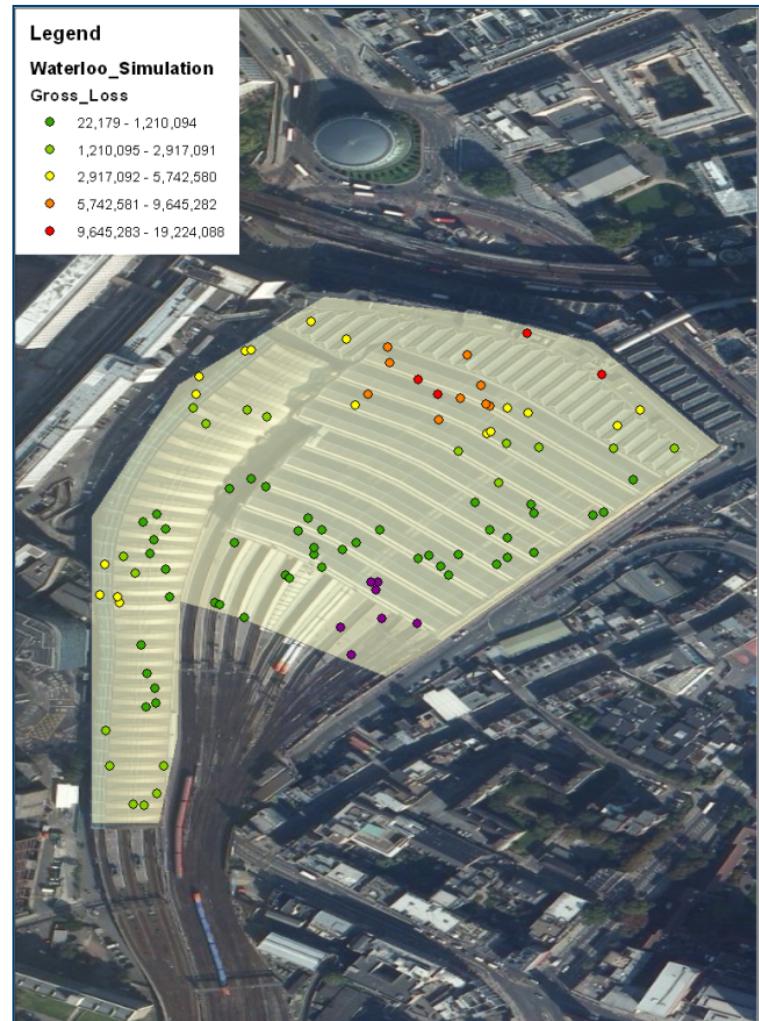
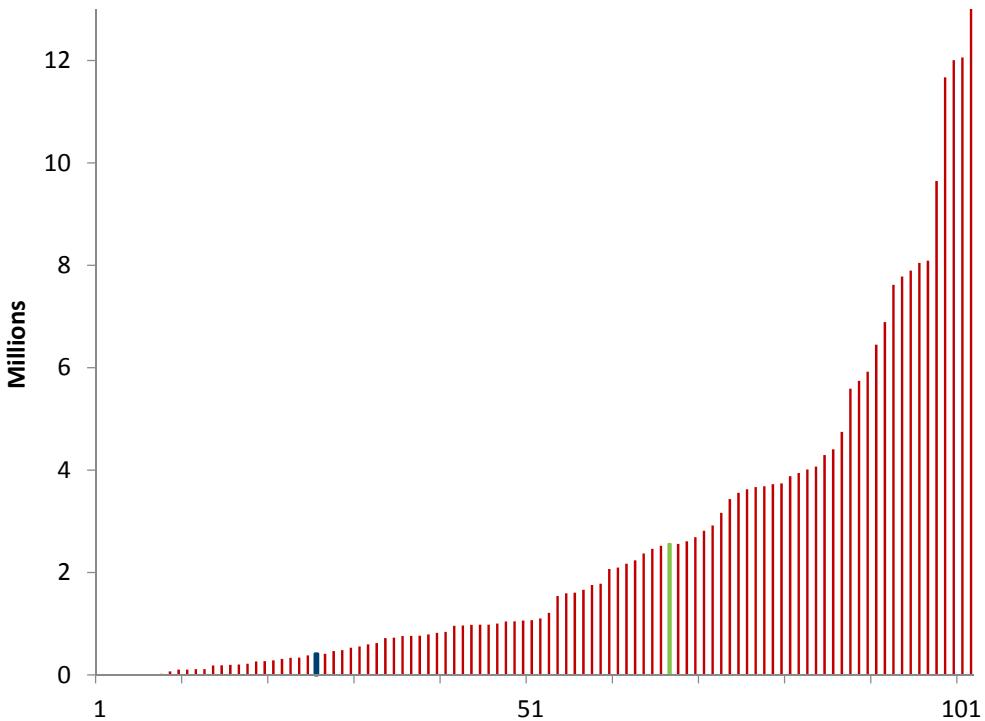
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## Example loss distribution for specific attack



# Impact Forecasting - Waterloo Simulation

- The example attached shows the losses stemming from an VBIED (Car Bomb) against Waterloo train station on a synthesised client portfolio
- Using the centroid produces a loss of **408,547** which grossly underestimates the potential damage that could accrue. This example produced a mean loss of **2,557,746**.



# Impact Forecasting - Target Hardening

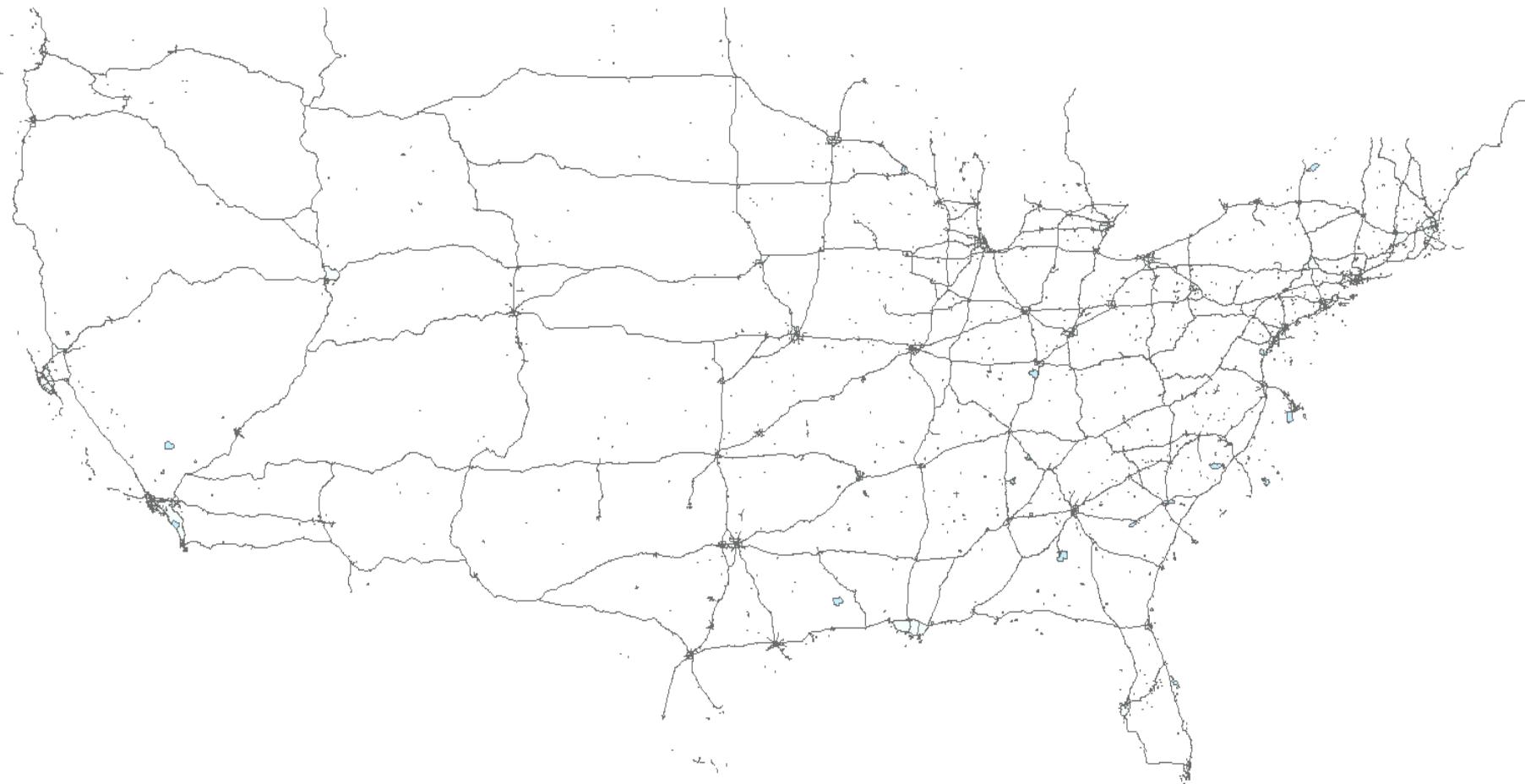
- We can also encapsulate the effect of target hardening on target locations
- **Each target will have different degrees of penetration capacity for terrorist organisations and this will effect their decision making process**
- This includes:
  - Limited access to the interior of a target location
  - Weapon choice (difference between a car bomb and a suicide vest)
  - Imposition of police cordons around high impact sites
  - Maximisation of damage

Threat Description Improvised Explosive Device (IED)	Explosives Capacity <sup>1</sup> (TNT Equivalent)	Building Evacuation Distance <sup>2</sup>	Outdoor Evacuation Distance <sup>3</sup>
 Pipe Bomb	5 LBS	70 FT	1200 FT
 Suicide Bomber	20 LBS	110 FT	1700 FT
 Briefcase/Suitcase	50 LBS	150 FT	1850 FT
 Car	500 LBS	320 FT	1500 FT
 SUV/Van	1,000 LBS	400 FT	2400 FT
 Small Moving Van/ Delivery Truck	4,000 LBS	640 FT	3800 FT
 Moving Van/ Water Truck	10,000 LBS	860 FT	5100 FT
 Semi-Trailer	60,000 LBS	1570 FT	9300 FT



## Impact Forecasting – Example US Database

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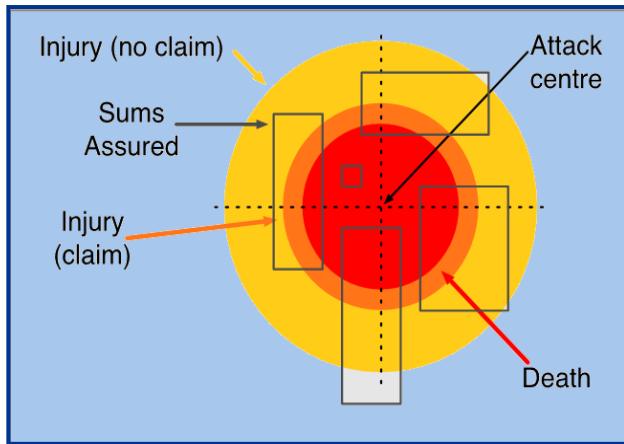
# Impact Forecasting - Vulnerability Component

- Damage functions are at the heart of the vulnerability component.
- IF calculates losses for different lines of business using the distance from the epicentre of the attack.

## Losses are calculated using damage functions

- Damage functions for Property, Business Interruption, Life and Accident and Health lines
- Covers primary, secondary and tertiary losses from terrorist attacks

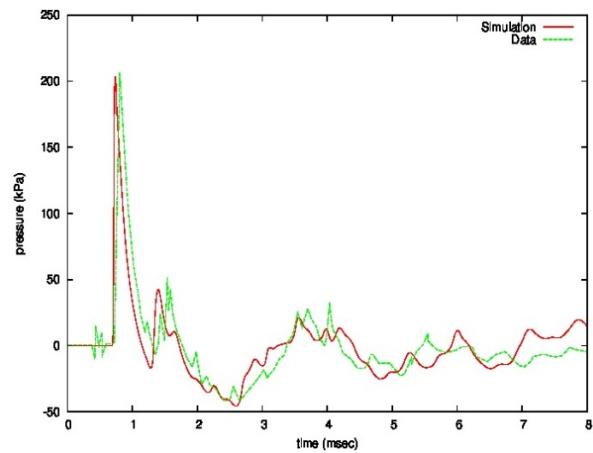
Different loss levels based on distance from the blast origin



## Sources

- MFD International, blast modelling and explosive orientation experts and Cranfield University
- Framework set out by the UK (MoD) and US (FEMA, DHS) government guidelines of attack scenarios

Simulated vs. observed pressure observations during a blast (Cranfield university)



# Impact Forecasting – Attack Type Covered

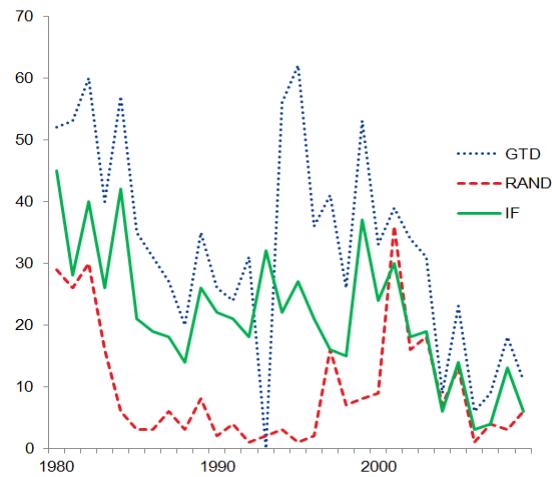
Attack Types	
Nuclear 10 Kiloton	Chem/Bio Large, Inhalational, Enclosed, Low Lethality
Nuclear 2 Kiloton	Chem/Bio Large, Ingestional, High Lethality
Conventional Aircraft	Chem/Bio Large, Ingestional, Low Lethality
Conventional Projected Explosives	Chem/Bio Large, Inhalational, Open, High Lethality
Conventional Active Shooter	Chem/Bio Large, Inhalational, Open, Low Lethality
Conventional VL VBIED	Chem/Bio Large Infectious
Conventional L VBIED	Radiological Small/Sub-Optimal
Conventional VBIED	Radiological Large Respirable
Conventional Handheld	Radiological Large Non-Respirable
Chem/Bio Small/Sub-Optimal	Radiological Exposure Device
Chem/Bio Large, Inhalational, Enclosed, High Lethality	

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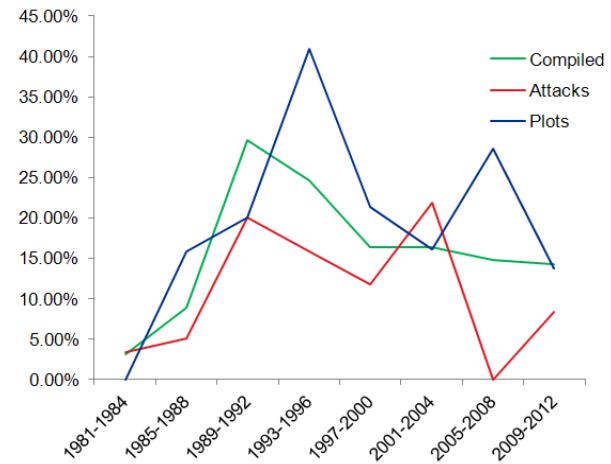
# Impact Forecasting - Probabilistic Component

- In order to contextualise the losses it is important to identify the likelihood of each attack
- Based on historical data, plot analysis and local expert input we are able to project the risk of terrorist attacks

Synthesised IF Database of US Terrorist Attacks



Percentage of attacks against government buildings in US



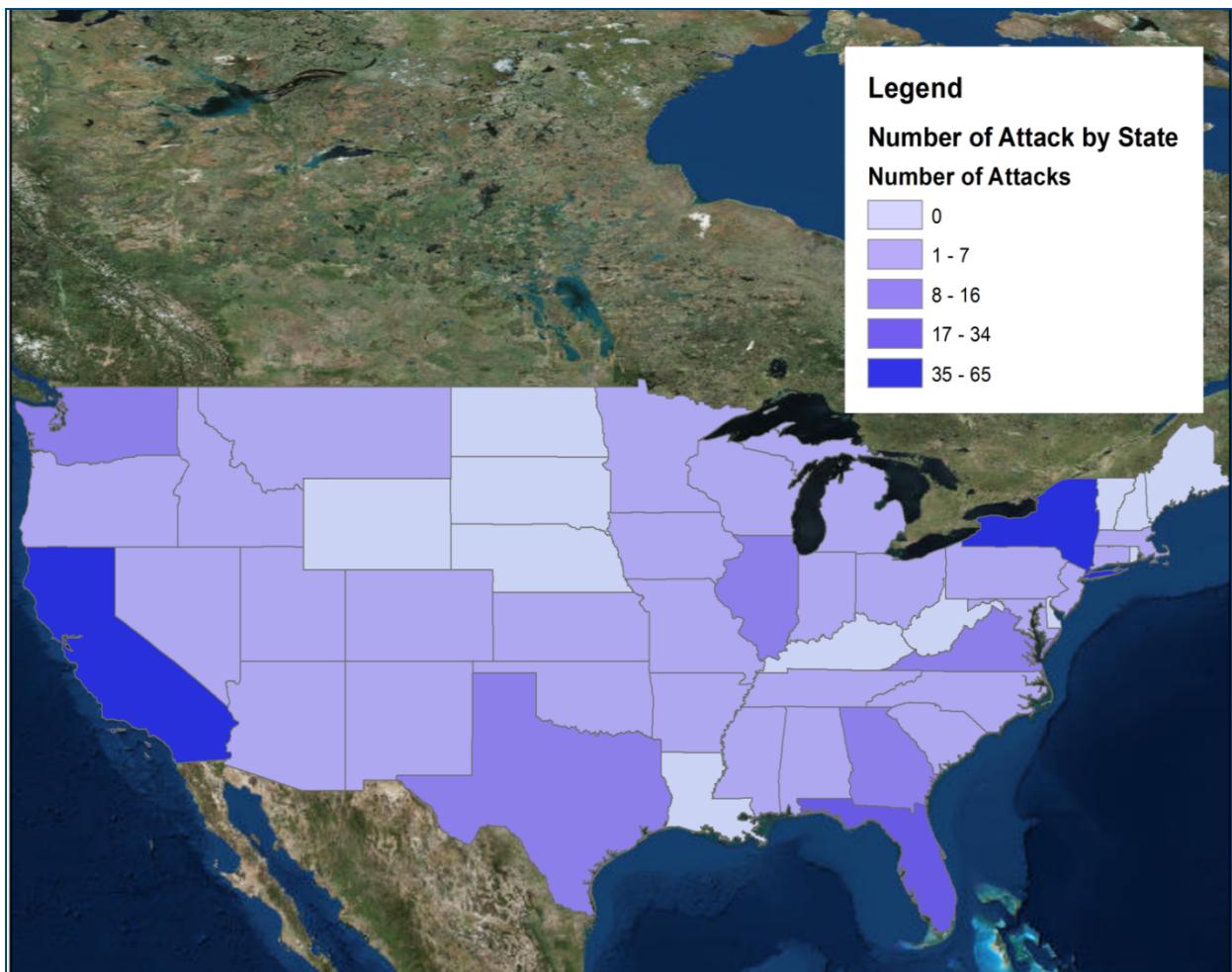
Truncated illustrative target and attacks type probability matrix

		Conventional (explosives, vehicle-borne devices)	Non-conventional (nuclear)	Non-conventional (CBR)
		97.0%	1.0%	2.0%
Financial	3.0%	2.9%	0.0%	0.1%
Embassies	5.0%	4.9%	0.1%	0.1%
Government	17.0%	16.5%	0.2%	0.3%
Military	9.0%	8.7%	0.1%	0.2%
Place of worship	1.0%	1.0%	0.0%	0.0%
All other targets	65.0%	63.1%	0.7%	1.3%

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# Impact Forecasting - Regional Variations

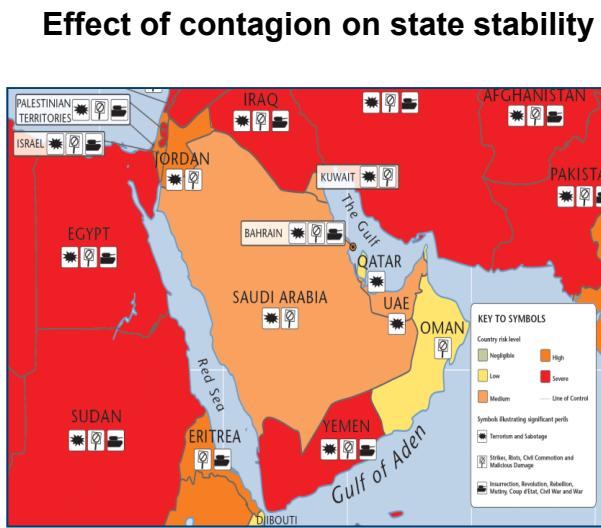
- Threat from terrorism is not evenly dispersed in the United States
- Some states (California, DC, New York and Florida) are at higher risk
- As a result our model weights the emphasis placed on each target by state location



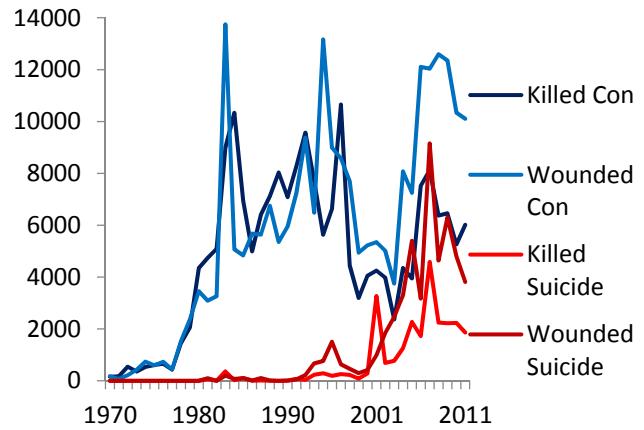
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# Impact Forecasting - International Probabilistic Component

- Probabilistic development cannot be isolated to domestic concerns but must also take into consideration international developments
- Large, successful attacks have a key influence on tactics internationally

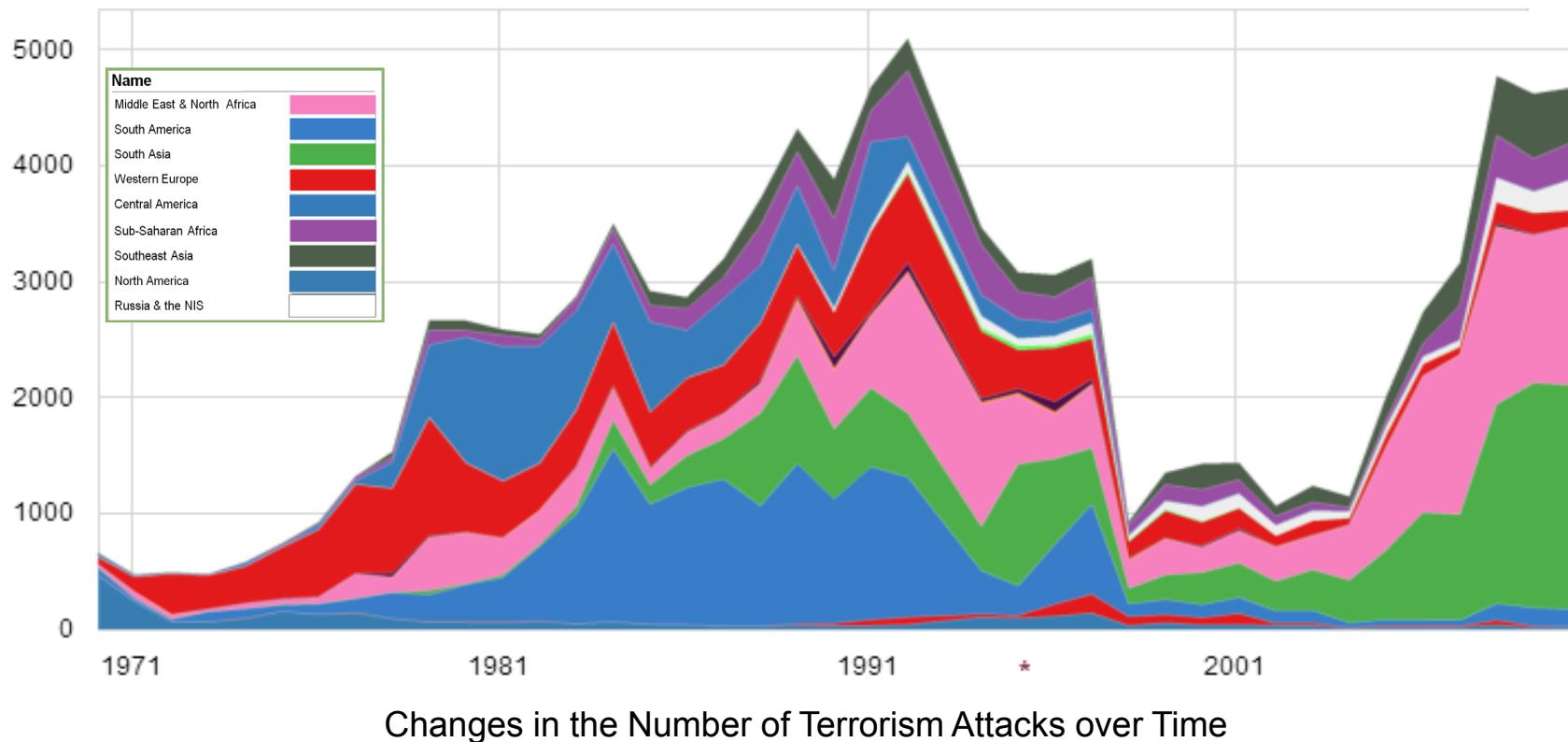


**Development of Suicide bombing as a tactic globally**



# Impact Forecasting – The Importance of Flexibility

- Models are updated annually and are flexible to changes to the threat
- This is vital as the threat from terrorism changes significantly over time
- Without an awareness of this dynamic then modelling becomes redundant

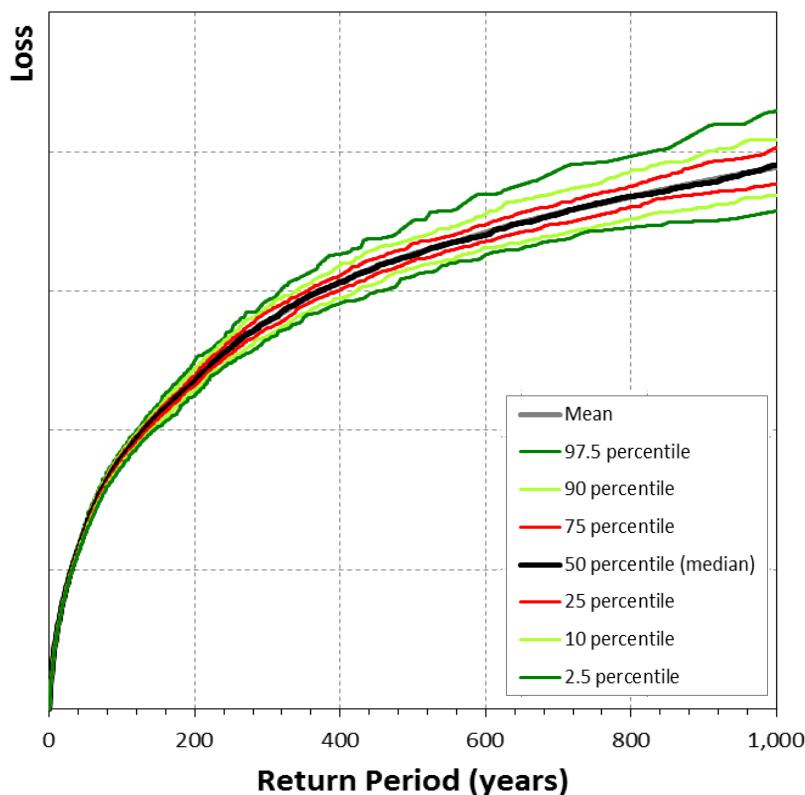


# Aon Risk Solutions – Aon Terrorism Tracker

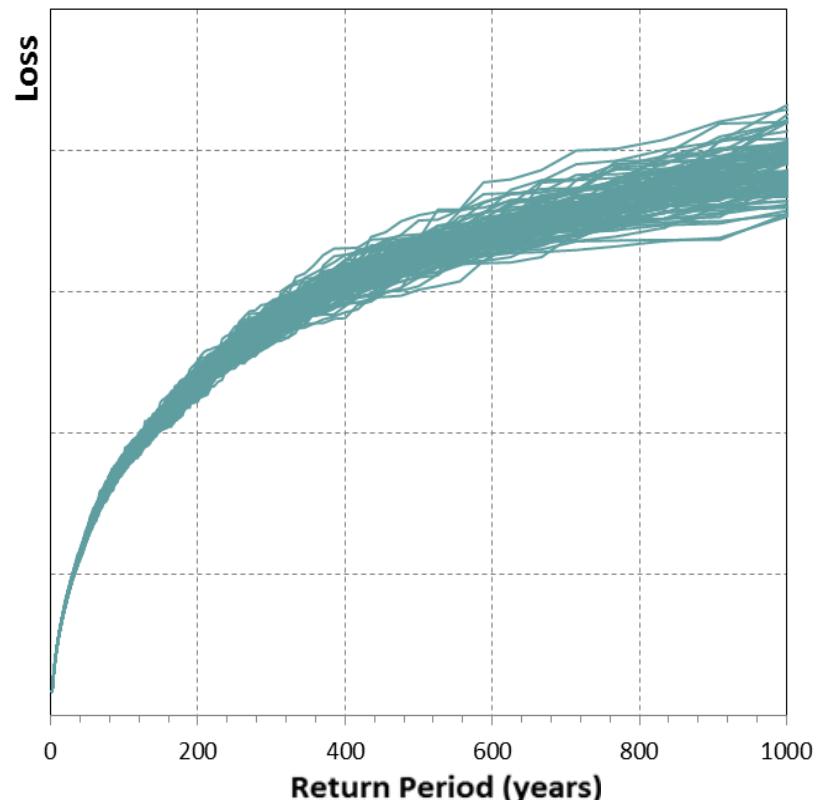
- Live feed of terrorism incidents globally allows us to keep our models fresh and up to date.
- Only live feed available to the insurance market. Tracks the intensity, targets and groups involved with each attack



# Impact Forecasting – Illustration of PML Output



PML Curve identifying key percentiles at Postcode level



Each sample run through the model individually to create a PML

# Agenda

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- Section 1** Current Status of TRIA & Market Conditions
- Section 2** Terrorism Modeling
- Section 3** Impact Forecasting: Terrorism Explorer
- Section 4** Impact Forecasting: US Probabilistic
- Section 5** **Impact Forecasting: Benefits**
- Section 6** Rating Agency Perspective

## Impact Forecasting - Improving Market Decisions

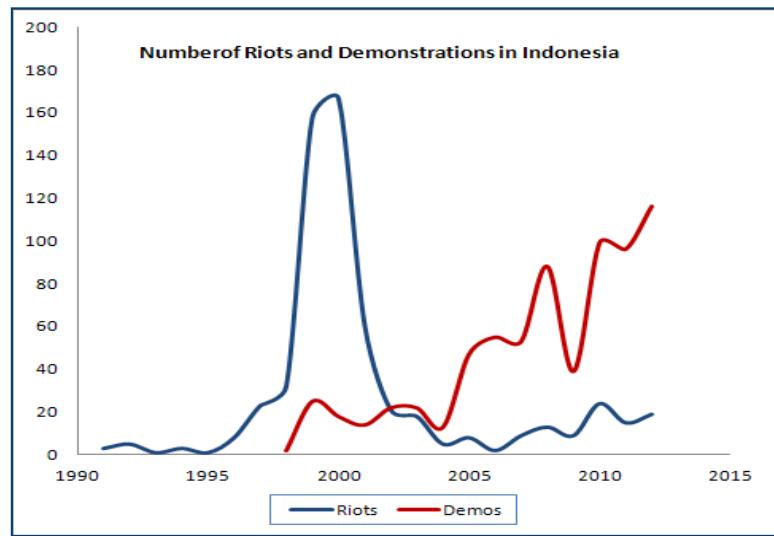
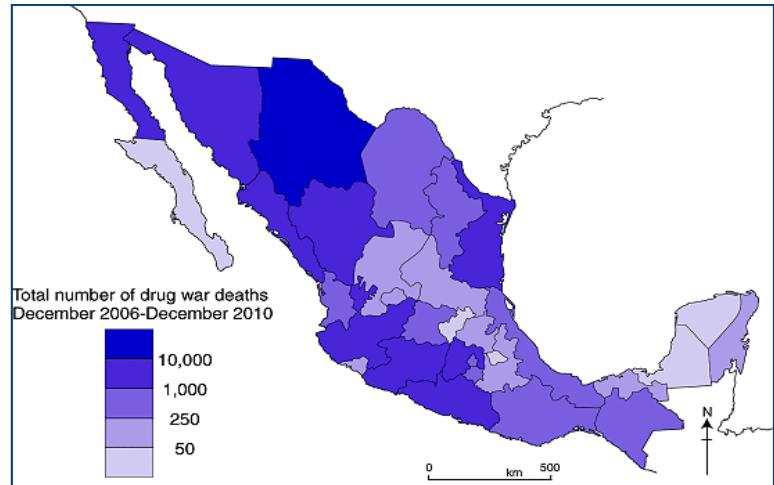
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- Improving knowledge can ground client's decisions in a sensible framework
- This allows clients to write business in new markets and Line of Business while avoiding pitfalls that could appear due to lack of knowledge of the threat
- This includes:
  - Avoiding decontamination in CBRN attacks
  - Reducing the emphasis on Radiological attacks for life business
  - Tightening time restrictions for cyber Business Interruption
  - Creating a sensible triggering mechanism for cyber attacks
- Contextualising the effect of TRIA on client portfolios

# Impact Forecasting - Increasing Market Capacity

- Insurance market is usually reticent to enter new markets
- This leads to excessive conservatism that constrains potential market growth
- Common issues include:
  - Excessive accumulation analysis
  - Overestimation of CBRN threat
  - National view of risk

Understanding the risk gives our client's a comparative advantage and they can take advantage of market opportunities



# Agenda

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- Section 1** Current Status of TRIA & Market Conditions
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- Section 5** Impact Forecasting: Benefits
- Section 6** **Rating Agency Perspective**

# Rating Agency Perspective

## Influence views on ERM

- Continue looking at Terrorism Exposure through an ERM perspective as TRIA is likely to be renewed in some form
- Ex: Analyzing a nuclear scenario (although no specifics guidelines are in place) is good, practical risk management in order to understand how bad things could get and track the trend over time

## Focus on deterministic stress scenarios

- A.M. Best uses the largest 5-ton truck bomb loss net of reinsurance excluding TRIA as a stress event
- S&P collects information for deterministic scenarios; a 2-6 ton truck bomb with a 500ft blast radius for example

## Impacts small insurers

- Large insurers have higher capital available to absorb the shock of a terrorism event
- Small insurers are usually less diversified and have greater exposure as a percent of surplus

## Rating Agency Terrorism Surveys

Category	A.M. Best	Standard & Poor's	Moody's	Fitch
Data Quality	Geocoding % by risk tier	Take-up rates by municipal tier	Geocoding % and data validation	Not requested
Probabilistic	Yes	No	Yes	No
Return Periods	200, 500, and 1,000 Year RP	N/A	10, 20, 50, 100, 250, 500, 1000	N/A
Accumulations	Max Foreseeable	Yes	Zonal Aggregates	No
Deterministic	Yes	Yes	No	No
Attack Types	5-ton truck bomb	Truck bomb, Anthrax, Aircraft Impact, and Nuclear	N/A	N/A
Loss Type	Gross, Net, Impact of TRIA	Gross, Net, (also by LOB)	N/A	N/A

## A.M. Best Terrorism Stress Test

- Oct. 2013: A.M. Best analyzed 226 of the total 889 rating units which deemed to have terrorism exposure after excluding the benefit of TRIA
- The largest accumulation is used to calculate the terrorism charge in the terror stress BCAR model
- Dec. 2013: No rating actions due to stress test

### Population Characteristics

- **Capital: Bigger did better**
  - 31 out of 34 had <\$500M
  - No company with PHS >\$1B failed

- **Focus: As expected**
  - 31 out of 34 were Workers Comp. or Comc. Cas.

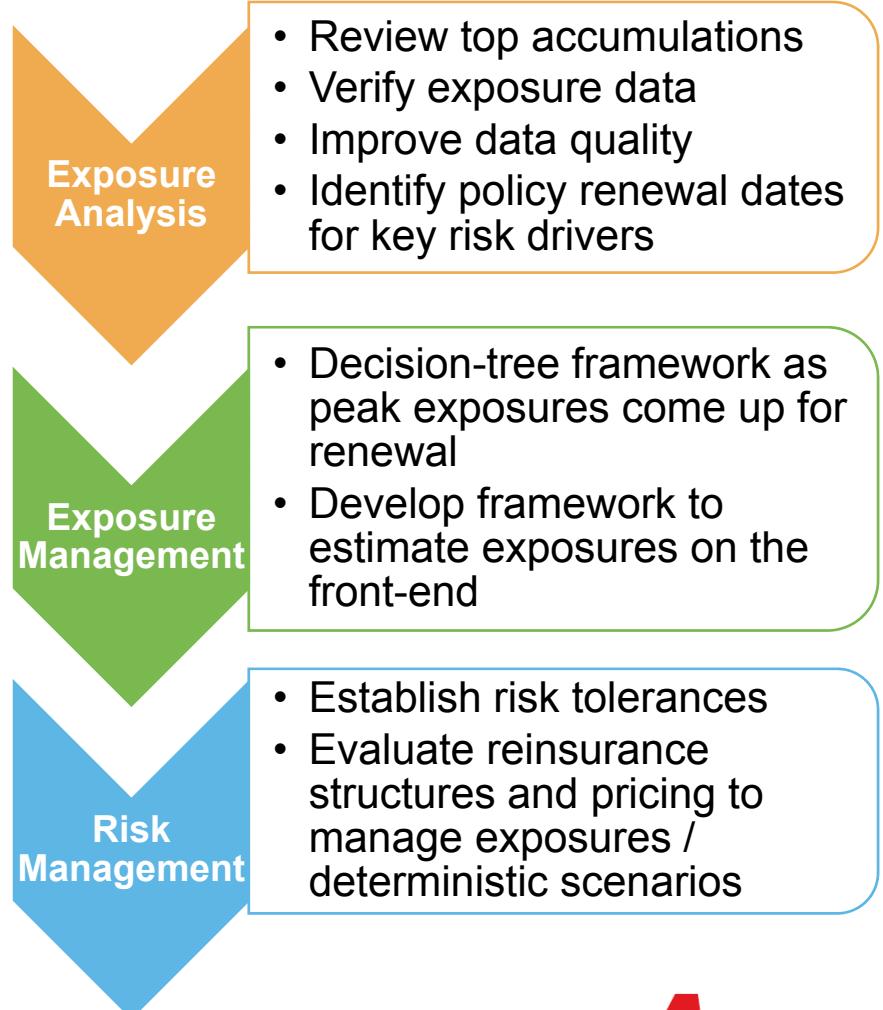
- **Rating: No strong link**
  - ≥A: 13
  - A-:10
  - ≤B++:11

# A.M. Best Terrorism Stress Test

- A.M. Best's terror stress test assesses capital adequacy post terror event
  - Deterministic event based upon 5-ton truck bomb net loss excluding recoveries from TRIA
- Terror stress BCAR adjustments include:
  - Deduct largest net terror loss (after-tax) from surplus
  - Increase net reserves by 40% of net terror loss
  - Increase reinsurance recoverables by 40% of ceded terror loss
- Minimum Stress BCAR level depends on number of loss scenarios > 20% of PHS

Tier 1 only	Tier 1 & 2	Countrywide	# of points below min BCAR for 'A' (145)	Min Terror Stress BCAR for 'A'
>4	> 9	> 19	22	123
4	8 – 9	15 – 19	32	113
3	6 – 7	10 -14	42	103
< 3	< 6	< 10	52	93

## Company Responses to a Failed Stress Test



## Deterministic Top Accumulations (Net of Reinsurance; Prior to TRIA)

### Top Accumulation as % of PHS

	All Companies			Companies < \$500M PHS		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
<b>Average</b>	23%	42%	81%	36%	64%	115%
<b>25th Quart</b>	2%	2%	5%	2%	2%	7%
<b>Median</b>	5%	4%	16%	7%	5%	26%
<b>75th Quart</b>	11%	14%	43%	28%	45%	106%
<b>Max</b>	369%	1078%	648%	369%	1078%	648%

Source: Based upon 2012 ERM SRQ responses of 72 clients

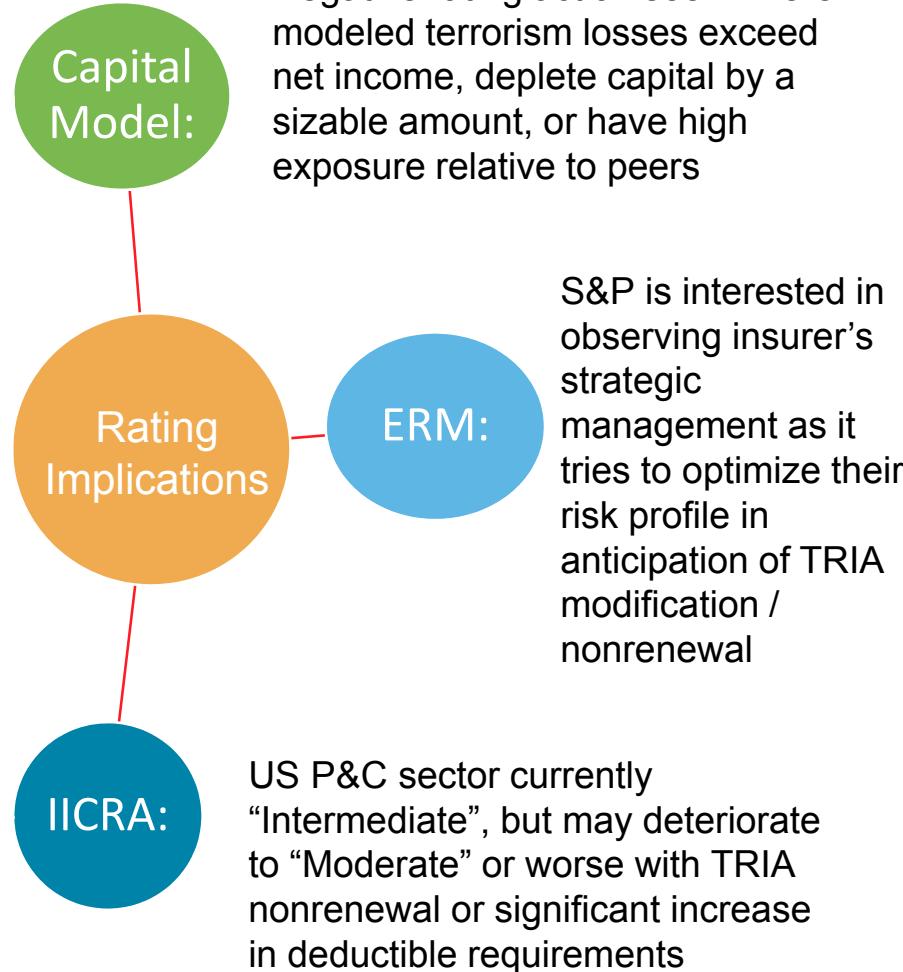
**Tier 1:** New York, Chicago, San Francisco, Washington D.C., Los Angeles

**Tier 2:** Atlanta, Baltimore, Boston, Buffalo, Cleveland, Dallas, Denver, Detroit, Houston, Las Vegas, Miami, Minneapolis/St. Paul, Newark, Orlando, Philadelphia, Phoenix, San Diego, San Jose, Seattle, St. Louis, Tampa/St. Petersburg

**Tier 3:** Nationwide (excluding 26 cities above)

# S&P Terrorism Commentary

## Key Rating Implications:



## Key Terrorism Questionnaire Updates:

- Quantify your gross and net (of TRIA and other reinsurance) losses if a 9/11 event were to happen today.
- What steps are performed to validate model results and align them to management's view?
- What underwriting or pricing rules are in place for terrorism coverage (non- workers' compensation)? i.e. Are there discounts if the insured opts out or is it priced separately?
- Describe how capacity is allocated for terrorism coverage
- If TRIA coverage becomes unsatisfactory, in what capacity/pricing strategy would you offer terrorism coverage for non- workers' compensation business?
- List any criteria for denying terrorism coverage
- Request for large nuclear attack (5-20kt) was removed